Tennessee Village Mixed-Use Project

Initial Study
and
Mitigated Negative Declaration

Lead Agency:

City of Redlands
35 Cajon St., Ste. 20/P.O. Box 3005
Redlands, CA 92373
Office 909.798.7555 ext. 7344

Prepared by:

MIG, Inc.
1650 Spruce Street, Suite 106
Riverside, California 92507

Public Review Draft
April 22, 2024

Table of Contents

List of Tables

List of Exhibits

List of Appendices

1 Introduction

The city of Redlands ("Lead Agency") received a development proposal from Diversified Pacific Development Group, LLC ("applicant") for a mixed-use development on a 13.48-acre site located to the northwest of the intersection of Tennessee Street and Lugonia Avenue in the city of Redlands, California. The development proposal and associated land use applications constitute a *project* that is subject to review under the California Environmental Quality Act (CEQA) 1970 (Public Resources Code §§ 21000, *et seq.*), and the CEQA Guidelines (14 California Code of Regulations §§ 15000, *et. seq.*).

This Initial Study was prepared to assess the short-term, long-term, and cumulative environmental impacts resulting from the proposed project. This report was prepared to comply with CEQA Guidelines § 15063, which sets forth the required contents of an Initial Study. These include:

- A description of the project, including the location of the project (See Section 2);
- Identification of the environmental setting (See Section 2.10);
- Identification of environmental effects by the use of a checklist, matrix, or other methods, provided that entries on the checklist or other form are briefly explained to indicate that there is some evidence to support the entries (See Section 4);
- Examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls (See Section 4.13);
- Discussion of ways to mitigate significant effects identified, if any (See Section 5); and,
- The name(s) of the person(s) who prepared or participated in the preparation of the Initial Study (See Section 6).

1.1 – Purpose of CEQA

CEQA § 21000 of the California Public Resources Code provides as follows:

The Legislature finds and declares as follows:

a) The maintenance of a quality environment for the people of this state now and in the future, is a matter of statewide concern.
b) It is necessary to provide a high-quality environment that at all times is healthful and pleasing to the senses and intellect of man.
c) There is a need to understand the relationship between the maintenance of high-quality ecological systems and the general welfare of the people of the state, including their enjoyment of the natural resources of the state.
d) The capacity of the environment is limited, and it is the intent of the Legislature that the government of the state take immediate steps to identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds being reached.
e) Every citizen has a responsibility to contribute to the preservation and enhancement of the environment.
f) The interrelationship of policies and practices in the management of natural resources and waste disposal requires systematic and concerted efforts by public and private interests to enhance environmental quality and to control environmental pollution.
g) It is the intent of the Legislature that all agencies of the state government which regulate activities of private individuals, corporations, and public agencies which are found to affect the quality of the environment, shall regulate such activities so that major consideration is given to preventing environmental damage while providing a decent home and satisfying living environment for every Californian.

The Legislature further finds and declares that it is the policy of the state to:

h) Develop and maintain a high-quality environment now and in the future, and take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state.
i) Take all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise.
j) Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history.
k) Ensure that the long-term protection of the environment, consistent with the provision of a decent home and suitable living environment for every Californian, shall be the guiding criterion in public decisions.
l) Create and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations.
m) Require governmental agencies at all levels to develop standards and procedures necessary to protect environmental quality.
n) Require governmental agencies at all levels to consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs, and to consider alternatives to proposed actions affecting the environment.

A concise statement of legislative policy, with respect to public agency consideration of projects for some form of approval, is found in CEQA § 21002, quoted below:

> The Legislature finds and declares that it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required by this division are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects. The Legislature further finds and declares that in the event that specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof.

1.2 – Public Comments

Comments from all agencies and individuals are invited prior to the closing date of the public review period regarding the information contained in this Initial Study and Mitigated Negative Declaration. Such comments should explain any perceived deficiencies in the assessment of impacts in the Initial Study. Please submit comments to the contact listed below:

Sean Reilly, Principal Planner
City of Redlands
35 Cajon St., Ste. 20
Redlands, CA 92373
Office 909.798.7555 ext. 7308
Email: sreilly@cityofredlands.org

Following a 30-day period of circulation and review of the Initial Study and Mitigated Negative Declaration, all comments will be considered by the city of Redlands prior to adoption.

1.3 – Availability of Materials

All materials related to the preparation of this Initial Study are available for public review. To request an appointment to review these materials, please contact Sean Reilly, Principal Planner, via telephone at (909) 798-7555 ext. 7344, or via email at sreilly@cityofredlands.org. The Initial Study and Mitigated Negative Declaration are also made available online at the city of Redlands website.

This Page Intentionally Left Blank.

2 Project Description

2.1 – Project Title

Tennessee Village Mixed-Use Project

2.2 – Lead Agency Name and Address

City of Redlands
Planning Department
35 Cajon Street, Suite 15-A
Redlands, California 92373
909-798-7555

2.3 – Contact Person and Phone Number

Sean Reilly, Principal Planner
909-798-7555, ext. 7344

2.4 – Project Location

The city of Redlands is located in southwest San Bernardino County adjacent to the San Bernardino/Riverside County line, (see Exhibit 1, Regional Context Map). The project site is comprised of a single undeveloped, 13.48-acre parcel located to the northeast of the intersection of Tennessee Street and Lugonia Avenue in the City of Redlands, California (see Exhibit 2, Project Vicinity Map). The site is located approximately 0.5 miles north of Interstate 10 (I-10) and is located immediately east of Interstate 210 (I-210). The site is located approximately 3.4 miles southwest of Redlands Municipal Airport. The project site is bound by I-210 to the west and undeveloped land to the north, east, and south.

- Latitude 34° 04’ 21.19” North, Longitude 117° 11’ 54.80” West
- APN# 0167-171-015

2.5 – Project Sponsor’s Name and Address

Diversified Pacific Development Group, LLC
10621 Civic Center Drive
Rancho Cucamonga, California 91730

2.6 – General Plan Land Use Designation

The project site has a General Plan land use designation of Commercial. Sites with this designation may be developed with a stand-alone commercial use, two or more commercial uses, or mixed uses. The Commercial land use category may permit residential and mixed uses consistent with the underlying zoning district.

2.7 – Zoning District

The current zoning designation of the project site is EV/SD (East Valley Corridor Specific Plan/Special Development). A Zone Change from (East Valley Corridor Specific Plan/Special Development) to C-3 (General Commercial District) is proposed as part of the project. The C-3 District allows for both non-residential and residential uses combined as mixed-use development subject to approval of a Conditional Use Permit (CPU).

2.8 – Project Description

The proposed project includes Tentative Parcel Map No. 20688, which would include development of 460 new apartment units, approximately 17,899 square feet of commercial space, and associated landscaping and roadway improvements (see Exhibit 3, TPM No. 20688). The project would consist of two (2) three-story buildings and eight (8) four-story buildings (see Exhibit 4, Conceptual Site Plan). Eight (8) of the proposed buildings would include only residential uses and two (2) of the proposed buildings would include mixed-uses that incorporate ground-floor commercial space with residential units on the floors above (see Exhibit 5, Project Elevations). The residential apartment units would range in size from one-bedroom to three-bedroom units (see Exhibit 6, Floor Plans). The project would include six (6) “Live/Work” units that incorporate retail/office uses on the ground floor and a residential unit on the second floor. In addition, approximately 5% of the proposed residential units would be designated as “very low-income” units, which would allow for a 20 percent density bonus in accordance with the “California Density Bonus Law”. The very low-income units would be spread throughout the site to create a cohesive project that does not separate the market rate units from the very low-income units.

Parking would be provided through a combination of underground, garage, outdoor-covered, outdoor-uncovered, and commercial parking spaces throughout the project. The project would include 673 residential parking spaces, and 91 commercial spaces, for a total of 764 spaces. Residential parking would be regulated by security gates and would be separate from the commercial parking spaces. The parking and street immediately surrounding building ten would be publicly accessible and would be designed to connect to a future commercial development proposed to the south. There are three points of entry into the project: one entry point off Tennessee Street, one entry point off Pennsylvania Avenue, and one entry point at the future commercial development proposed to the south.

The project would include approximately 190,098 square feet of common and private open space. Outdoor and open space amenities would include a linear park leading to a resort-style pool in the center of the site along with other smaller open space areas throughout the site. Finally, Building 9 would house leasing offices, mail rooms, and other amenities that may include office/meeting spaces, kitchens, a movie theater, and a rooftop bar. The remainder of the site would be paved, including sidewalks, streets, driveways, and landscaping planters.

Additional components of the project include: Specific Plan Amendment (SPA) to remove the site from East Valley Corridor Specific Plan; Zone Change (ZC) to establish C-3 (General Commercial District) zoning for the site, Conditional Use Permit (CUP) for the mixed use portion of the project; and Tentative Parcel Map to subdivide the property into four lots.

Project construction is anticipated to begin in the summer of 2024 and last approximately 19 months, based on default assumptions generated by the California Emissions Estimator Model (CalEEMod) (see Appendix A). Based on the preliminary estimates, grading for the project would require cut of approximately 23,076 cubic yards (cy), and fill of 40,489 cy, requiring approximately 17,413 cubic yards of soil import during grading. The project is anticipated to be operational by the spring of 2026.

2.9 – Surrounding Land Uses

Surrounding land uses are summarized in Table 2 (Surrounding Land Uses), below.

Table 1
Surrounding Land Uses

Direction	General Plan Designation	Zoning District	Existing Land Use
Project Site	Commercial	EV/SD (East Valley Corridor Specific Plan/Special Development)	Undeveloped Land
North	Commercial	Concept Plan No. 4	Undeveloped Land
South	Commercial	EV/SD (East Valley Corridor Specific Plan/Special Development)	Undeveloped Land
East	High Density Residential	Multiple Family Residential (R-3)	Undeveloped Land
West	Public Facilities	Public Facilities	Interstate 210

2.10 – Environmental Setting

The project site is located on an approximately 13.48-acre, undeveloped parcel of land covered in native and non-native shrubs and trees in a mostly developed portion of the City of Redlands, California. The site is located northeast of the intersection of Tennessee Street and Lugonia Avenue, in an area of the city characterized by residential, commercial, and light industrial land uses as well as undeveloped land. The project site is flat, with an elevation ranging from approximately 1,275 to 1,291 feet above mean sea level (AMSL). Undeveloped land is located to the north, east, and south of the project site. To the west of the project site is Interstate 210. There are multiple schools and parks located within 2 miles of the project site.

2.11 – Required Approvals

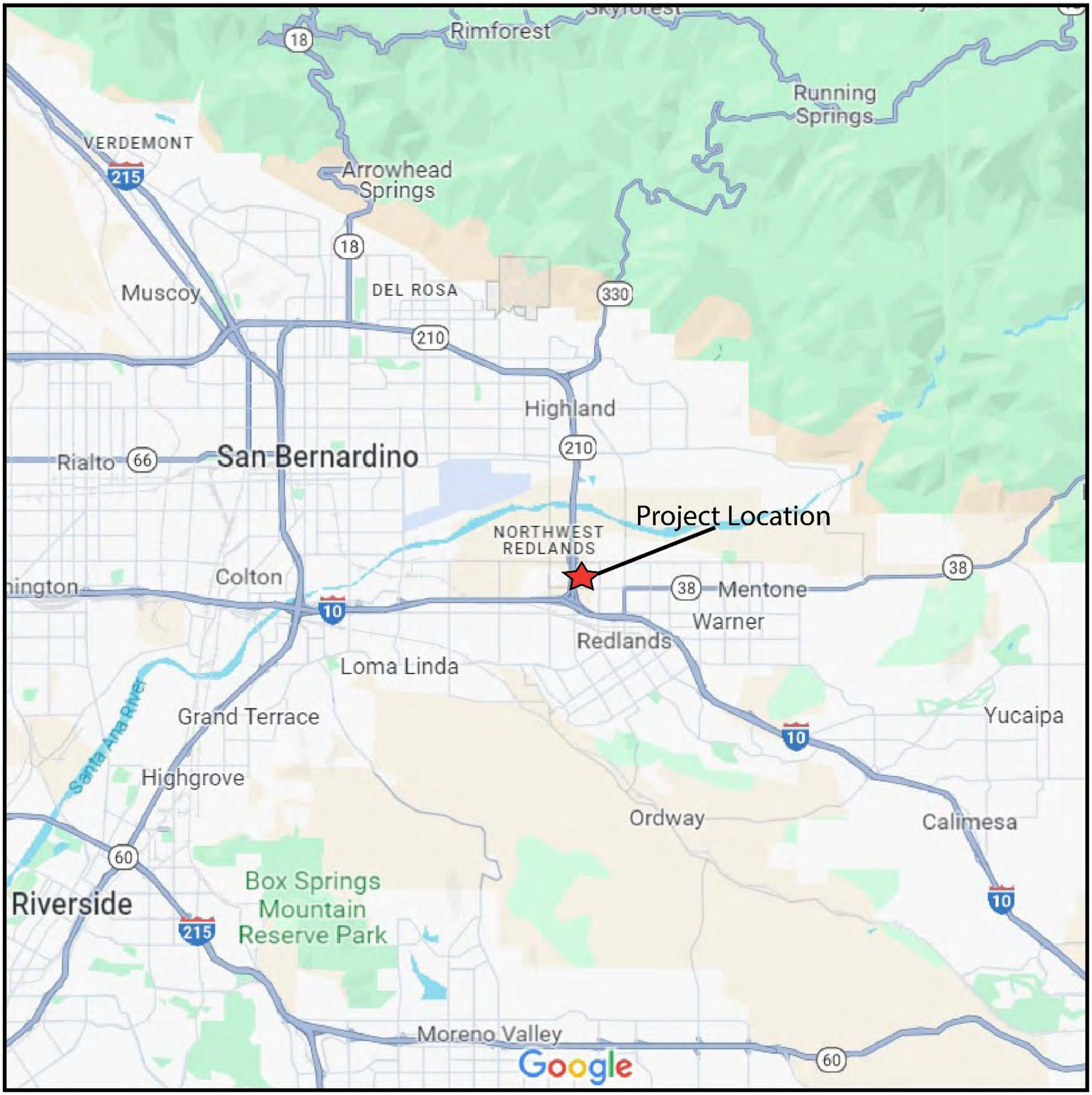
The project will require the following city of Redlands Development Plan and Legislative applications:

- Specific Plan Amendment to remove the project from the East Valley Corridor Specific Plan
- Zone Change to establish the project site's zoning as C-3 (General Commercial)
- Socio-Economic Cost Benefit Analysis
- Tentative Parcel Map No. 20688
- Conditional Use Permit for a mixed-use project within the C-3 zoning district
- Planning Commission (City Council) Review and Approval for site plan and architectural review
- Compliance with the requirements of CEQA
- Density Bonus Housing Agreement
- Grading Permits and Encroachment Permits
- Building Permits*

2.12 – Other Public Agency Whose Approval is Required

- None

This Page Intentionally Left Blank.



Not to Scale

Source: Google Maps

http://www.migcom.com • 951-787-9222

MIG

Exhibit 1 Regional Context Map

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

🟥 - Project Site

Not to Scale

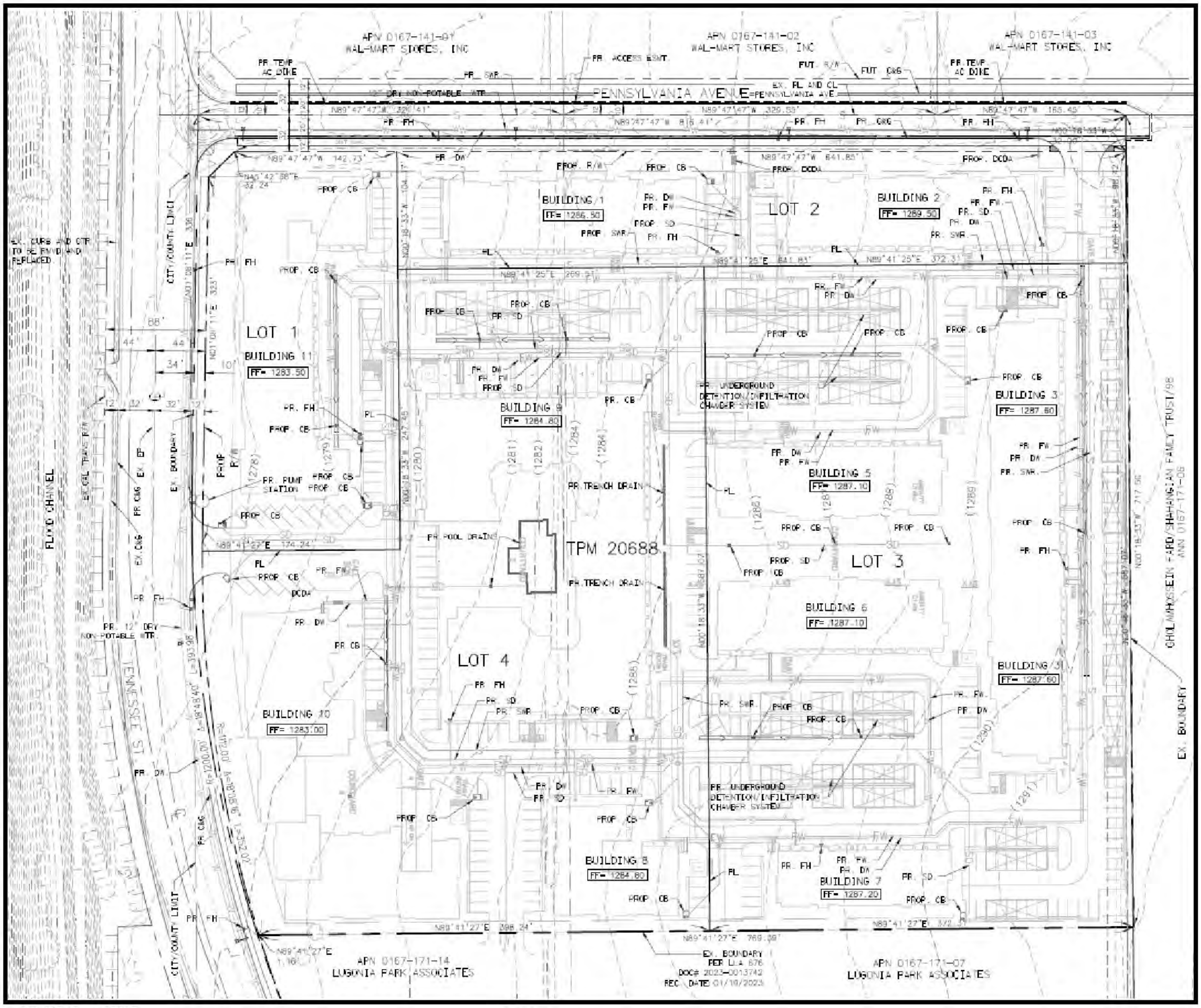
Source: Google Maps

http://www.migcom.com • 951-787-9222

Exhibit 2 Project Vicinity Map

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.



GENERAL NOTES

1. ASSESSOR'S PARCEL NUMBERS: PORTION OF 0167-171-007,014
2. EXISTING ZONING DESIGNATION: EV/SD (EAST VALLEY/SPECIAL DEVELOPMENT)
3. PROPOSED ZONING DESIGNATION: COMMERCIAL C-3
4. EXISTING GENERAL PLAN DESIGNATION: COMMERCIAL
5. PROPOSED GENERAL PLAN DESIGNATION: COMMERCIAL
6. EXISTING USE: VACANT LAND
7. PROPOSED USE: MIXED USE; COMMERCIAL AND MULTI-FAMILY
8. NO REGULATED TREES OR PLANTS KNOWN TO EXIST ON-SITE.
9. NO ADJACENT STRUCTURES WITHIN 15' OF PROJECT PROPERTY LINE, UNLESS OTHERWISE SHOWN.
10. THE PROJECT AREA IS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. (FIRM # 06071C8704H)
11. PROJECT GROSS AREA: 587,128 SF (13.48 AC)
12. PROJECT NET AREA: 555,661 SF (12.76 AC) (SEE PROJECT AREA TABLE BELOW)
13. PROPOSED NUMBER OF LOTS: 4
14. SEE PRELIMINARY DRAINAGE STUDY TRIBUTARY MAP FOR DRAINAGE AREAS.

LEGEND

RIGHT-OF-WAY LINE
LOT/PARCEL LINE
STREET CENTERLINE
BOUNDARY LINE
ORIGINAL LOT/PARCEL LINE
PUBLIC ACCESS EASEMENT
(101) 1 FOOT CONTOUR INTERVAL
(105) 5 FOOT CONTOUR INTERVAL
NO VEHICULAR ACCESS
UTILITY MH
STREET LIGHT
VEGETATION

ABBREVIATIONS

APN	ASSESSOR PARCEL NUMBER	ℙ	PROPERTY LINE
CB	CATCH BASIN	PROP.	PROPOSED
℄	CENTERLINE	GB	GRADE BREAK
DW	DOMESTIC WATER	HP	HIGH POINT
DWY.	DRIVEWAY	R/W	RIGHT OF WAY
ELEV.	ELEVATION	REF	REFERENCE
EG	EXISTING GRADE	SD	STORM DRAIN
EX.	EXISTING	SWR	SEWER
FG	FINISHED GRADE	S/W	SIDEWALK
FW	FIRE WATER	TC	TOP OF CURB
FL	FLOWLINE	TF	TOP OF FOOTING
HP	HIGH POINT	TG	TOP OF GRATE
INV.	INVERT	TW	TOP OF WALL
MIN.	MINIMUM	TRW	TOP OF RETAINING WALL
MAX.	MAXIMUM	W/	WITH
NG	NATURAL GROUND		

	SF	ACRES
LOT 1	59,558	1.37
LOT 2	65,014	1.49
LOT 3	218,575	5.02
LOT 4	212,514	4.88
SUB-TOTAL (NET AREA)	**555,661**	**12.76**
ADDITIONAL TENNESSEE ST. R/W	6,429	0.15
ADDITIONAL PENNSYLVANIA AVE. R/W	25,038	0.57
SUB-TOTAL	**31,467**	**0.72**
Totals	**587,128**	**13.48**

Exhibit 3 Tentative Parcel Map

Tennessee Village Mixed-Use Project
Redlands, California

M I G

This Page Intentionally Left Blank.

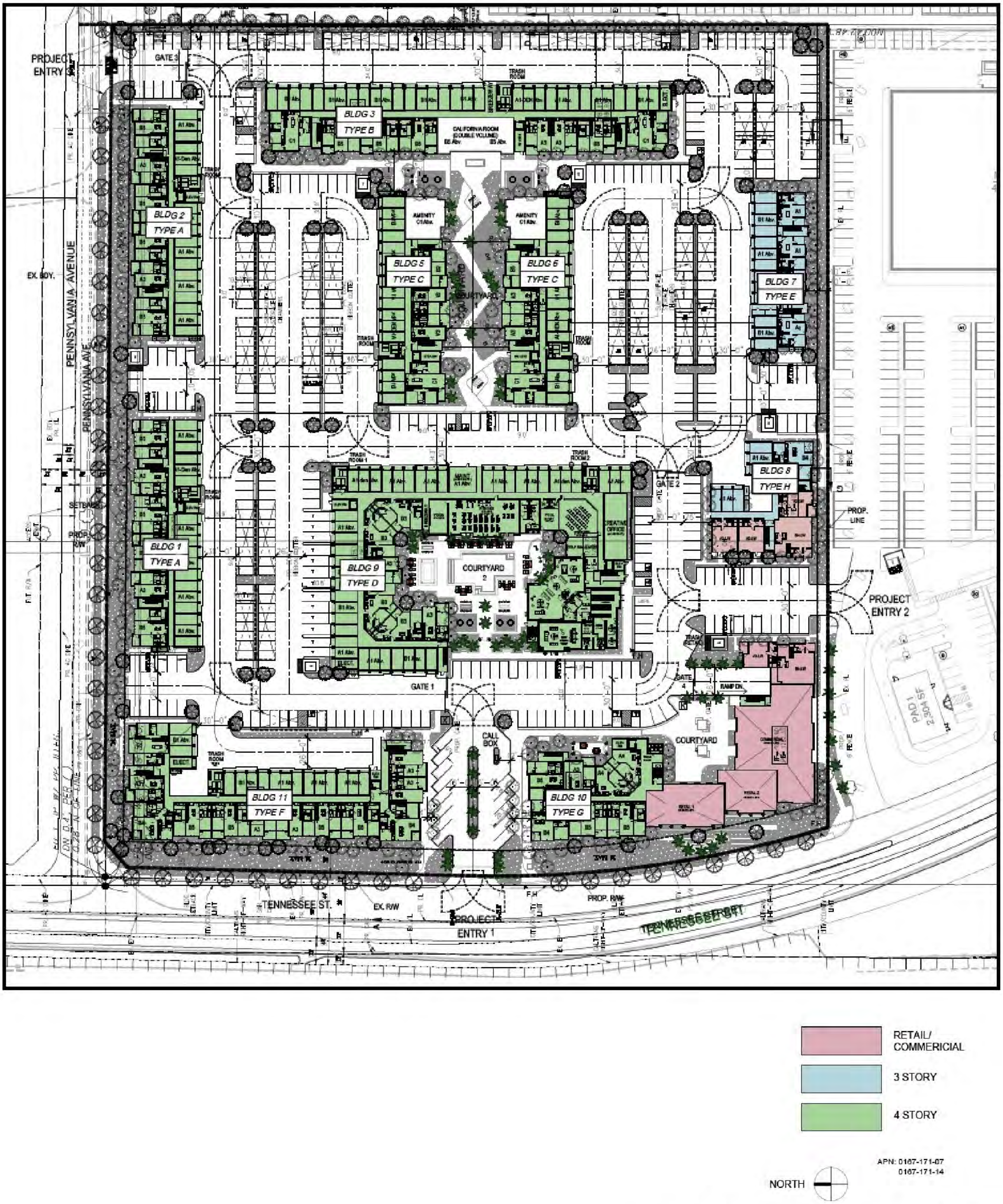


Exhibit 4 Conceptual Site Plan

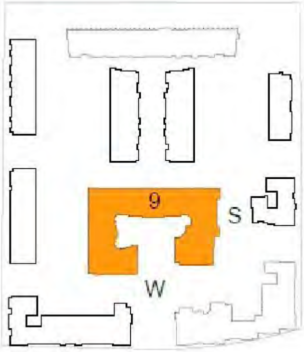
Tennessee Village Mixed-Use Project
Redlands, California

MIG

EXTERIOR ELEVATION KEYNOTES

1. STUCCO
2. BRICK VENEER
3. VINYL WINDOW
4. SHADE CANOPY
5. GARAGE DOOR
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. EXTERIOR LIGHTING
12. JULIET BALCONY RAILING
13. METAL AWNING

SOUTH ELEVATION



WEST ELEVATION

Exhibit 5a - Project Elevations - Type D Building 9

Tennessee Village Mixed-Use Project
Redlands, California

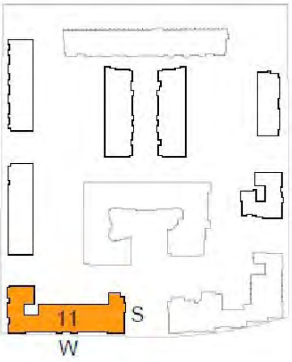
MIG

This Page Intentionally Left Blank.

EXTERIOR ELEVATION KEYNOTES

1. STUCCO
2. BRICK VENEER
3. VINYL WINDOW
4. SHADE CANOPY
5. GARAGE DOOR
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. EXTERIOR LIGHTING
12. JULIET BALCONY RAILING
13. METAL AWNING

SOUTH ELEVATION



WEST ELEVATION

Exhibit 5b - Project Elevations - Type F Building 11

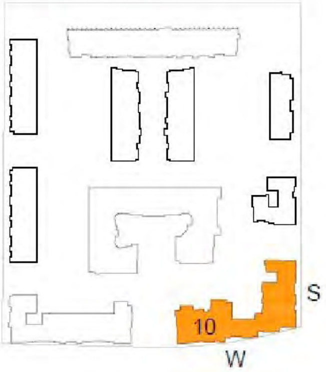
Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

EXTERIOR ELEVATION KEYNOTES

1. STUCCO
2. BRICK VENEER
3. VINYL WINDOW
4. SHADE CANOPY
5. GARAGE DOOR
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. EXTERIOR LIGHTING
12. JULIET BALCONY RAILING
13. METAL AWNING

SOUTH ELEVATION



WEST ELEVATION

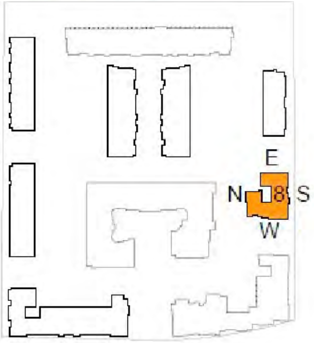
Exhibit 5c - Project Elevations - Type G Building 10

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

EXTERIOR ELEVATION KEYNOTES

1. STUCCO
2. BRICK VENEER
3. VINYL WINDOW
4. SHADE CANOPY
5. GARAGE DOOR
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. EXTERIOR LIGHTING
12. JULIET BALCONY RAILING
13. METAL AWNING



WEST ELEVATION

SOUTH ELEVATION

EAST ELEVATION

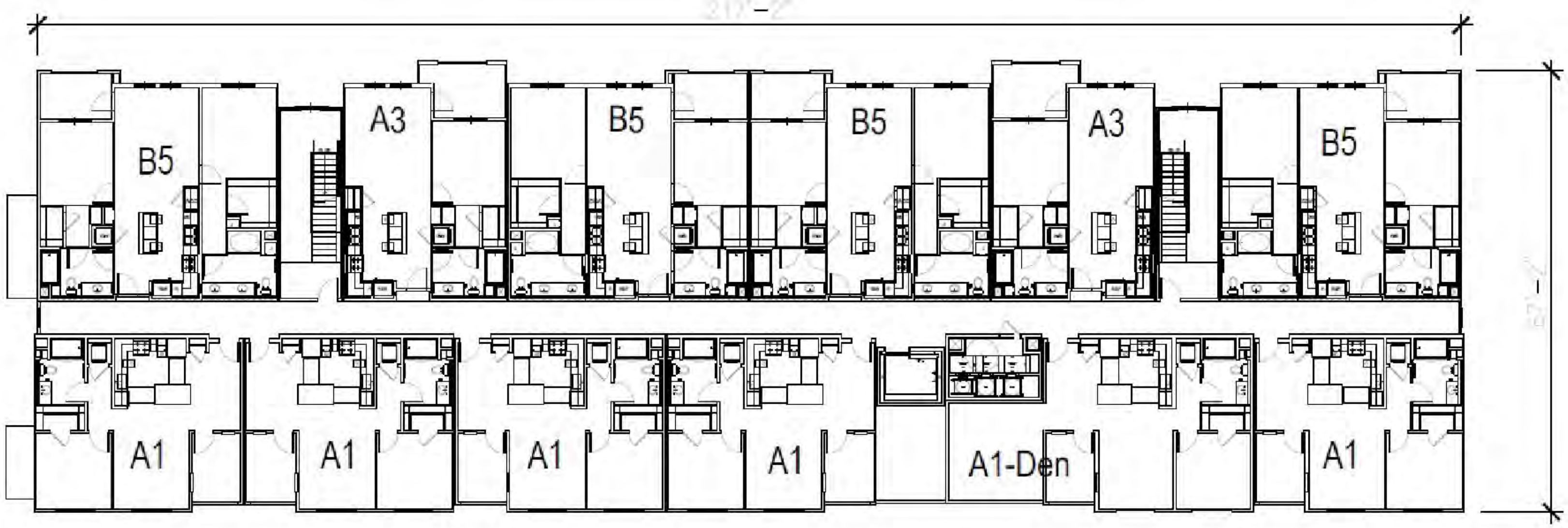
NORTH ELEVATION

Exhibit 5d - Project Elevations - Type H Building 8

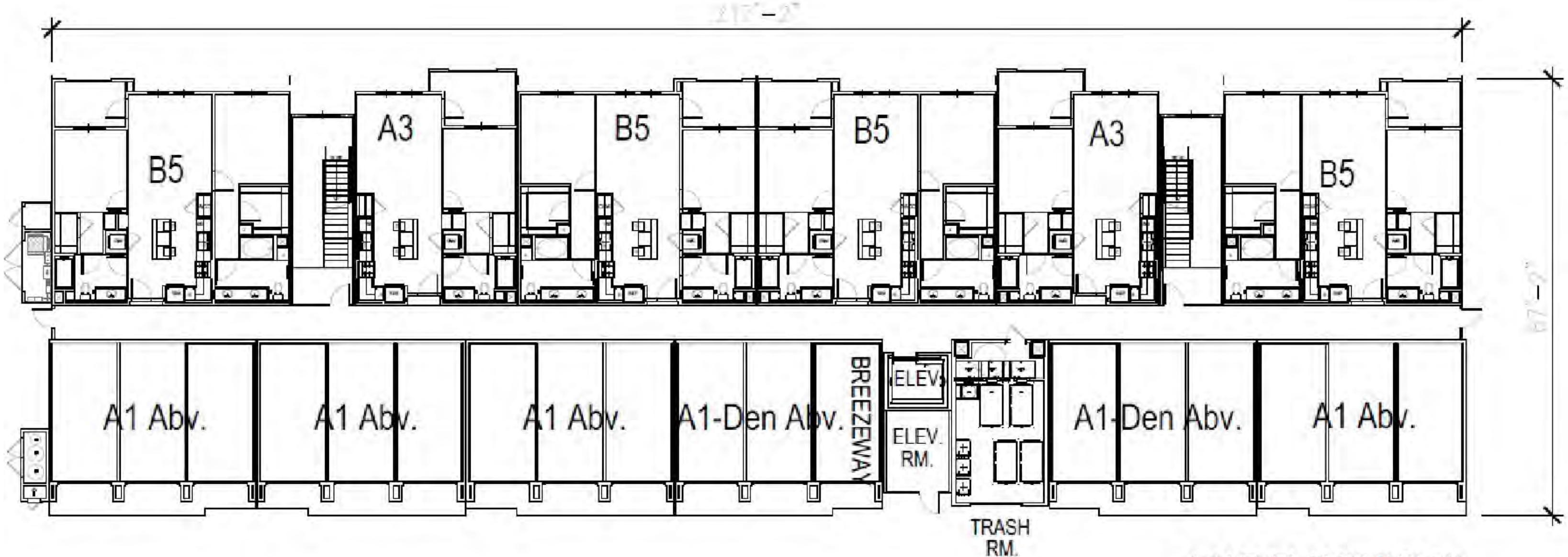
Tennessee Village Mixed-Use Project
Redlands, California

MIG

This Page Intentionally Left Blank.



2nd - 4th LEVEL FLOOR PLAN



1st LEVEL FLOOR PLAN

Exhibit 6a - Type A Buildings 1 & 2 Floor Plans

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

3rd & 4th LEVEL FLOOR PLAN

2nd LEVEL FLOOR PLAN

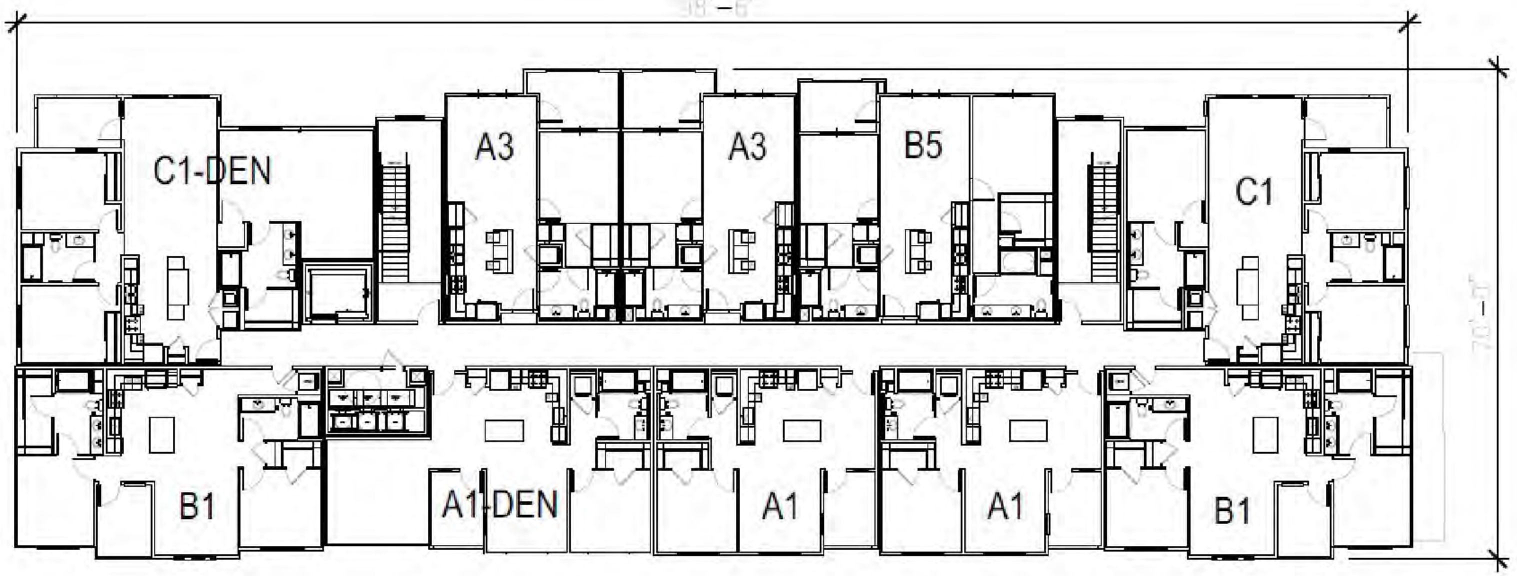
1st LEVEL FLOOR PLAN

Exhibit 6b - Type B Building 3 Floor Plan

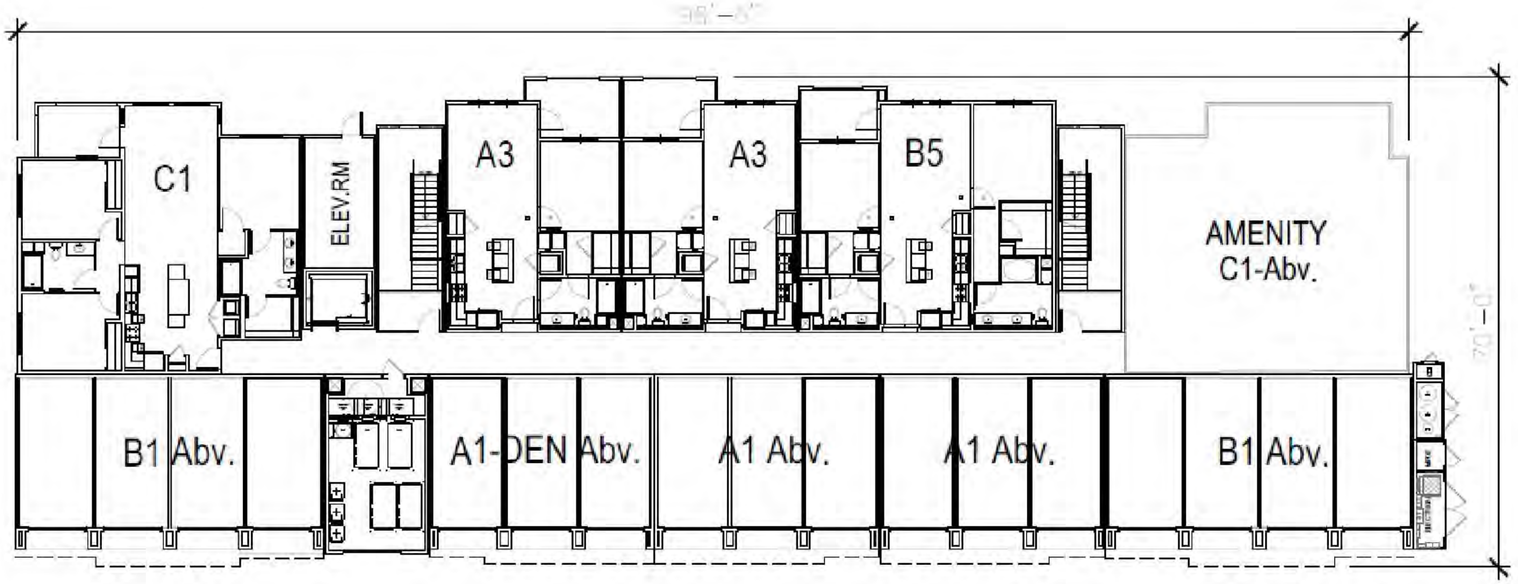
Tennessee Village Mixed-Use Project
Redlands, California

MIG

This Page Intentionally Left Blank.



BLDG.5 & 6, 2nd - 4th LEVEL FLOOR PLAN



BLDG. 5 & 6,1st LEVEL FLOOR PLAN

Exhibit 6c - Type C Buildings 5 & 6 Floor Plans

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

Exhibit 6d - Type D Building 9 - 1st Floor Plan

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

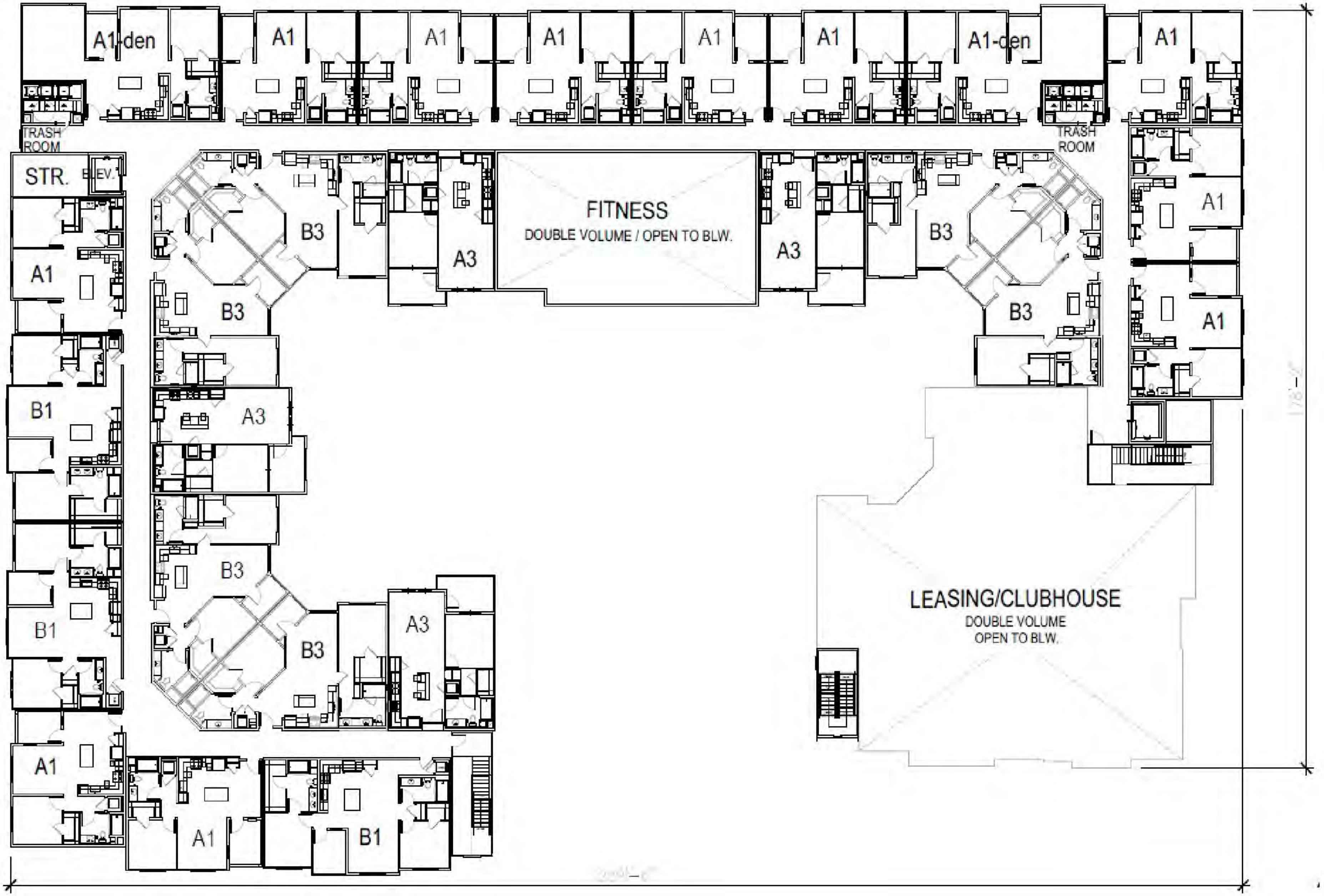


Exhibit 6e - Type D Building 9 - 2nd Floor Plan

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

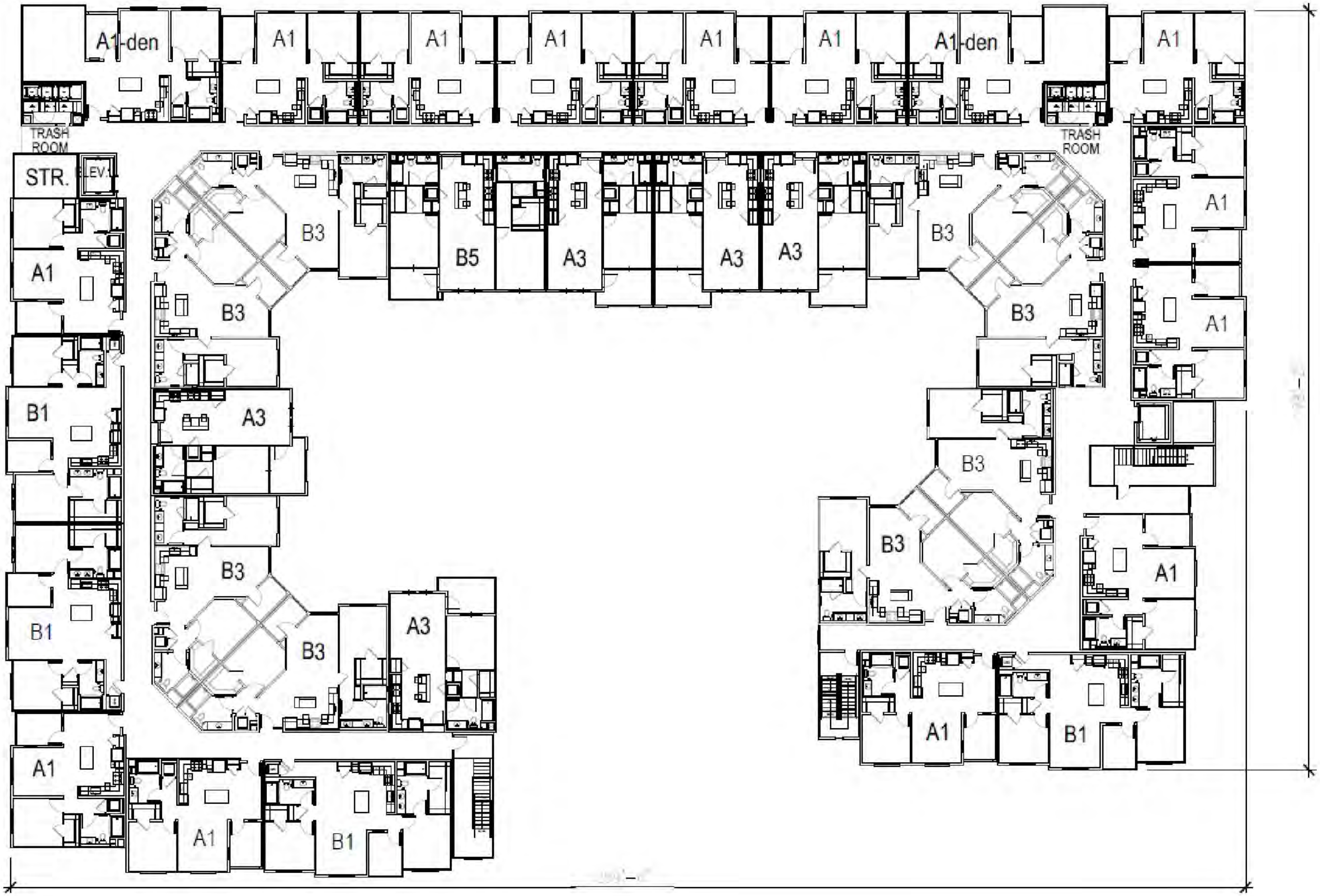


Exhibit 6f - Type D Building 9 - 3rd Floor Plan

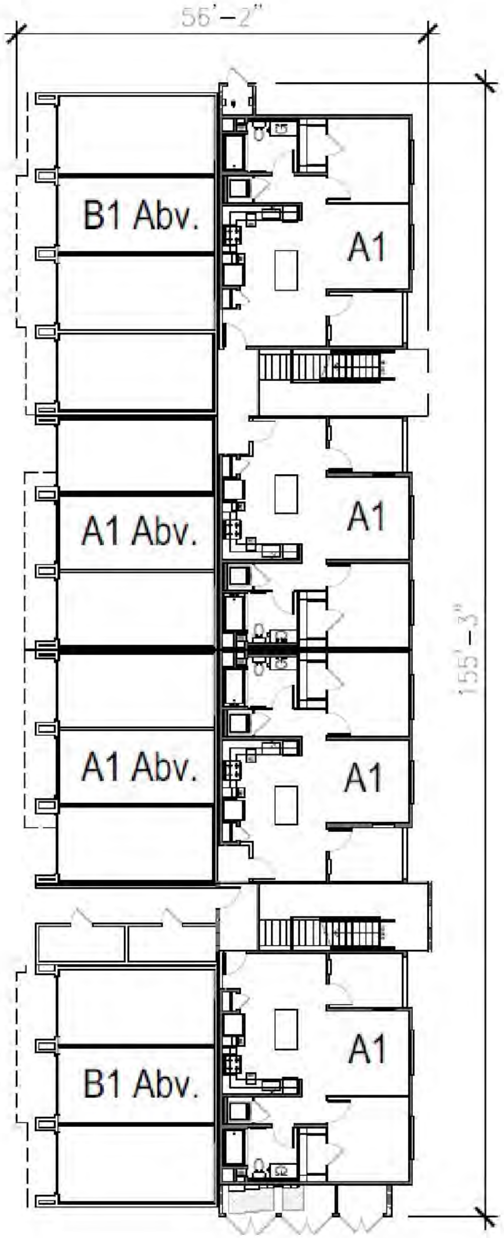
Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

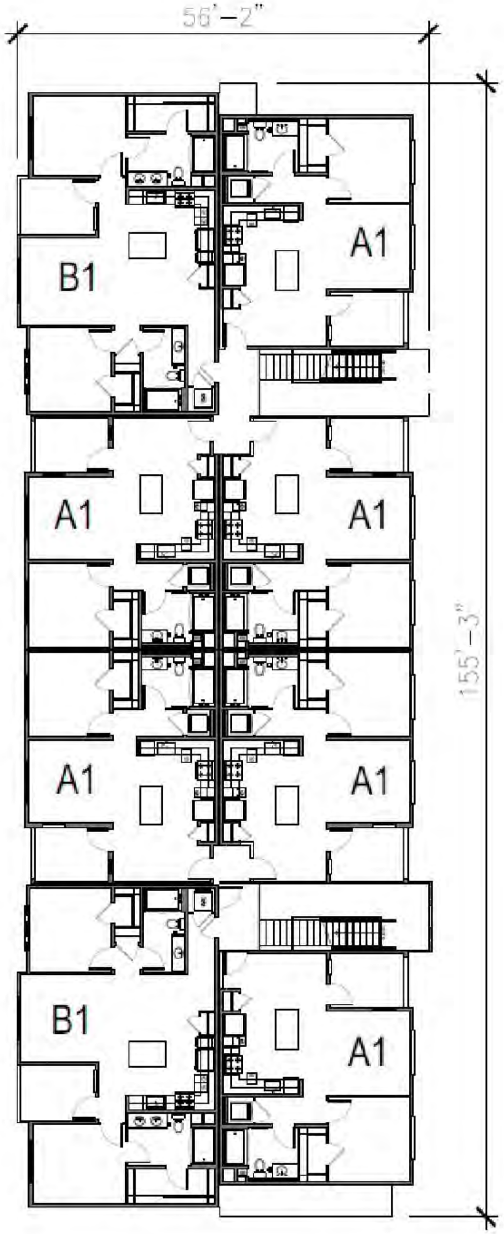
Exhibit 6g - Type D Building 9 - 4th Floor Plan

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.



1st LEVEL FLOOR PLAN



2nd - 3rd LEVEL FLOOR PLAN

Exhibit 6h - Type E Building 7 - Floor Plan

Tennessee Village Mixed-Use Project

Redlands, California

This Page Intentionally Left Blank.

Exhibit 6i - Type F Building 11 - Floor Plans

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

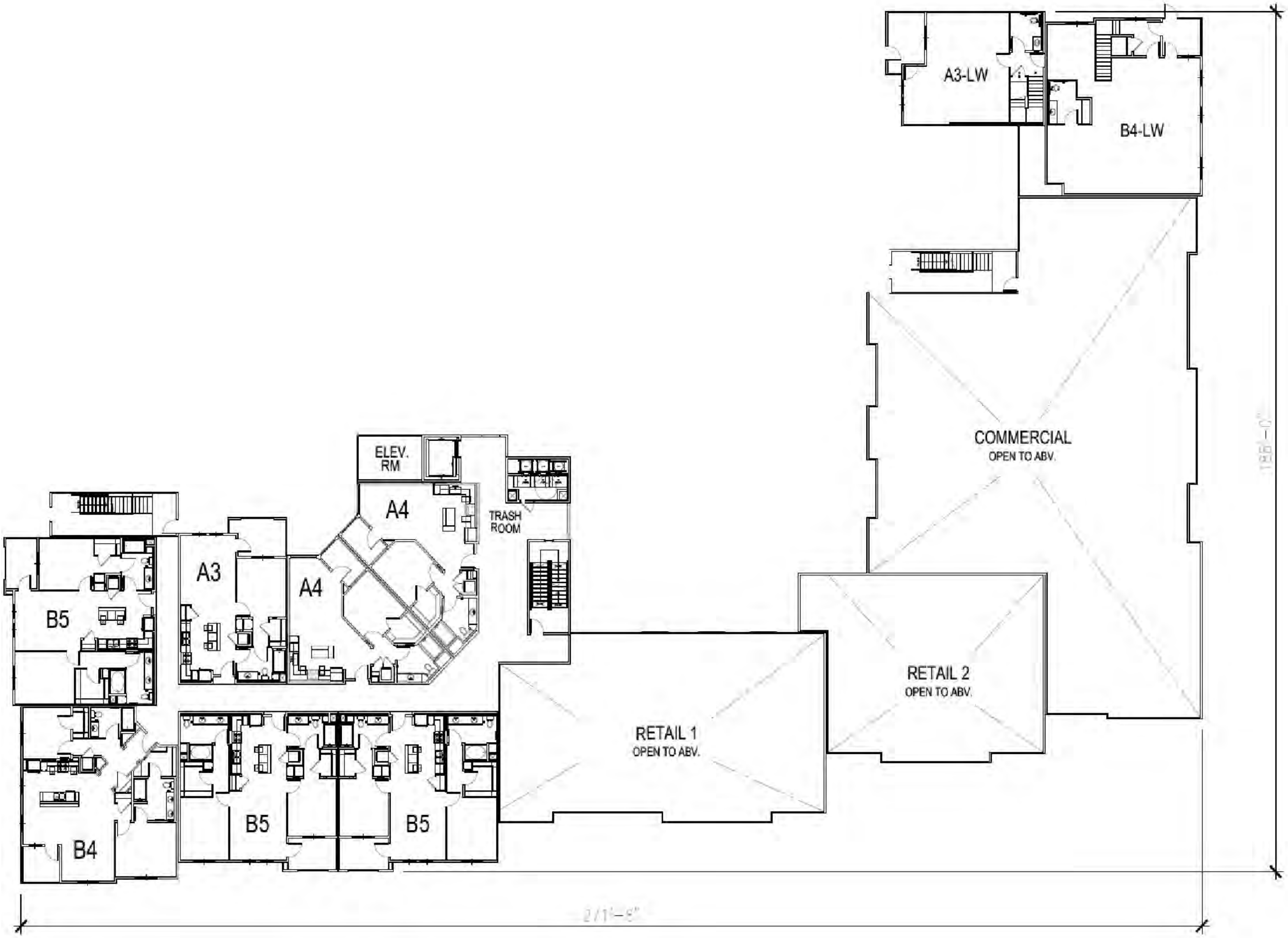


Exhibit 6j - Type G Building 10 - 1st Floor Plan

Tennessee Village Mixed-Use Project
Redlands, California

This Page Intentionally Left Blank.

3.1 – 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' as indicated by the checklist on the following pages.

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

3.2 – Determination

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☑	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a 'potentially significant impact' or 'potentially significant unless mitigated' impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Name: Sean Reilly, Principal Planner

Date

This Page Intentionally Left Blank.

4.1 – Aesthetics

Except as provided in Public Resources Code Section 21099, 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 view from 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 view 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?	☐	☐	☑	☐

a) Less than Significant Impact. Scenic vistas can generally be defined as natural landscapes that form views of unique flora, geologic, or other natural features that are generally free from urban intrusions. Such resources can be impacted when a structure is built that blocks the view of the vista, or if a development is built on the vista itself. Generally, these vistas play a significant role in the community's character, and will affect the way projects are designed, so as to take advantage of viewsheds.

Redland's visual character is tied to its surrounding open space areas, and as such is incorporated into the city's General Plan. The city has over time acquired open space land around Redlands and incorporated it into a concept called the "Emerald Necklace;" a series of open space and park areas surrounding the city connected by scenic trails and roads. Areas within the City's Planning Area include 254 acres of the San Timoteo Canyon south of the city called the "San Timoteo Nature Sanctuary". Also, to the south, the city owns 338 acres of Live Oak Canyon, 245 acres of which is specifically set aside for conservation. The 4,000 acres of the Santa Ana River Wash makes up the northern boundary of the city, and is owned by multiple stakeholders including Federal, State, and local governments, utilities, and private groups. The Crafton Hills Open Space makes up part of the eastern portion of the city, and with a general elevation above 2,400 feet, the area is valuable to the city as natural habit and scenic resource. The General Plan ensures the preservation of Redlands' open space corridors and limits development on and around those areas to preserve its visual character and limit encroachment. The General Plan does not designate any scenic vistas within the city.

The project site is located on an undeveloped parcel of land in a mostly developed portion of the city. The project site is surrounded by undeveloped land to the north, south, and east, and is bounded by Interstate 210 (I-210) to the west. The project site is located in an urbanized area, and construction of the proposed mixed-use development would not interfere with the visibility of a scenic vista, as the area's urbanized setting already limits visibility of existing scenic vistas. Impacts to the visibility of scenic vistas in Redlands would be less than significant.

b) No Impact. There are no State Scenic Highways on or near the project site, and the site is not visible to a designated state scenic highway as identified on the California Scenic Highway Mapping System.[1] The nearest officially designated scenic highways are California State Route 243 just outside of Banning, and California State Route 38 near Big Bear Lake; the former starting approximately 25 miles southeast of the project site. As of this document being written, State Route 38 in Redlands has not been officially designated but is eligible. The project site is not located on or near any designated State Scenic Highway and the project site does not include any scenic resources. No impacts would occur.

c) Less than Significant Impact. The project site is currently an undeveloped parcel of land in an urbanized environment. The proposed residential and commercial mixed-use development has been designed according to City design guidelines. The maximum height of the of buildings as part of the proposed project would be 52 feet 6 inches; however, there is no height requirement for developments within the C-3 Zone.[2] The project includes a Specific Plan Amendment (SPA) to remove the site from East Valley Corridor Specific Plan; a Zone Change (ZC) to establish C-3 (General Commercial District) zoning for the site, a Conditional Use Permit (CUP) for the mixed use portion of the project; and a Tentative Parcel Map to subdivide the property into four lots. The project would comply with all applicable zoning regulations with the approval of the SPA and ZC, and would not deteriorate the visual quality of the project area. The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. Impacts would be less than significant.

d) Less than Significant Impact. Excessive or inappropriately directed lighting can adversely impact night-time views by reducing the ability to see the night sky and stars. Glare can be caused by unshielded or misdirected lighting sources, or reflective surfaces. Impacts associated with glare range from a simple nuisance to potentially dangerous. Sources of daytime glare are typically concentrated in commercial areas and associated parking areas that contain reflective materials such as hi-efficiency window glass, highly polished surfaces, and expanses of pavement. Development of parking improvements, related lighting, and associated glare prevention would be conducted in accordance with Conditions of Approval requiring that lighting be shielded and photometrics be provided demonstrating that light spillover is limited. Glare is not expected to result from the increase in pavement or from the proposed buildings as non-reflective materials and architectural coatings would be utilized in the project design. Adhering to Conditions of Approval for the project would ensure any impacts related to excessive or inappropriately directed lighting would be less than significant.

4.2 – Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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 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?	☐	☐	☐	☑

a) Less than Significant Impact. The California Important Farmland Finder prepared by the California Department of Conservation does not identify the project site as being located on prime farmland, unique farmland, or farmland of Statewide Importance.[3] The project site is identified as Grazing Land by the Important Farmland Finder, and is categorized as Annual Grassland in Figure 6-2: Land Use and

Vegetation of the Vital Environment Element of the city's General Plan.[4] The project site is currently undeveloped and features scattered non-native vegetation and grasses, however, it is not zoned for agricultural uses, and is not currently used for agricultural or grazing purposes. There would be no conversion of farmlands to non-agricultural uses, and as such impacts would be less than significant.

b) No Impact. The project site is not located on land that is used for or conflicts with nearby agriculturally zoned land. The project is currently zoned as East Valley Corridor Specific Plan/Special Development, which only allows for agricultural uses in an interim setting until a Planned Development is approved.[5] Permitted land uses in the special district include those uses permitted in General Commercial, Commercial Industrial, Administrative Professional, Public Institutional, and Open Space Districts. A Zone Change from (East Valley Corridor Specific Plan/Special Development) to C-3 (General Commercial District) is proposed as part of the project. The parcel comprising the project site is not involved in an active Williamson Act contract, and there would be no conflict with existing zoning for agricultural use or a Williamson Act contract. No impacts would occur.

c) No Impact. Public Resources Code Section 12220(g) identifies forest land as *land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits*. The project site and surrounding properties are not currently being managed or used for forest land as identified in Public Resources Code Section 12220(g). The project site is currently zoned as East Valley Corridor Specific Plan/Special Development, which allows for permitted uses related to administrative, commercial, and light industrial uses as stated above. As such, development of the project would have no impact on any timberland or forestland zoning.

d) No Impact. As indicated in 4.2 c), the area is not designated as forest land; thus, there would be no loss of forest land or conversion of forest land to non-forest use as a result of the project. No impacts would occur.

e) No Impact. The project site is currently undeveloped, vacant land with scattered non-native vegetation. The site and its surrounding areas are characterized by undeveloped land, residential, commercial, and light industrial land uses. None of the surrounding sites contain existing agricultural or forest uses. The development of this proposed project would not change the existing environment in a manner that would result in the conversion of forest land to non-forest use. No impact would occur.

4.3 – Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

	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?	☐	☐	☑	☐

An *Air Quality & Greenhouse Gas Assessment* was prepared for the proposed project by Urban Crossroads, dated September 30, 2022 (see Appendix A) to evaluate the air quality and greenhouse gas impacts associated with the construction and operation of the proposed project. The information presented below is summarized from this report, which is attached as Appendix A.

a) Less than Significant Impact. The project site is located within the South Coast Air Basin (SoCAB), which is characterized by relatively poor air quality. The Southern California Air Quality Management District (SCAQMD) has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards. Currently, these state and federal air quality standards are exceeded in most parts of the SoCAB. In response, the SCAQMD has adopted a series of AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and minimize any negative fiscal impacts of air pollution control on the economy.

In December 2022, the SCAQMD released the Final 2022 AQMP, which continues to evaluate current integrated strategies and control measures to meet the CAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels. Similar to the 2016 AQMP, the 2022 AQMP incorporates scientific and technological information and planning assumptions, including the 2020-2045 RTP/SCS, a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements. Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the 1993 CEQA Handbook. These indicators are discussed below.

Criterion 1: The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations that under this criterion refer to are the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded. As evaluated, the project's regional and localized construction and operational-source emissions would not exceed applicable regional significance thresholds. As such, a less than significant impact is expected. On the basis of the preceding discussion, the project is determined to be consistent with the first criterion.

Criterion 2: The project will not exceed the assumptions in the AQMP based on the years of project buildout phase.

The 2022 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the SCAG, which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in City of Redlands General Plan is considered to be consistent with the AQMP. Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities. As such, when considering that no emissions thresholds would be exceeded, a less than significant impact would result. The city of Redlands General Plan designates the Project site for Commercial uses. The Commercial designation allows for a wide range of commercial uses including neighborhood-serving stores and convenience centers, regional commercial centers and commercial recreation. Additionally, this category allows for residential and mixed uses consistent with the zoning district. As the project is to consist of up to 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4 story buildings and a 17,899-sf retail component, the project's proposed uses are consistent with the site's land use designations, and a general plan amendment will not be required. For these reasons, the project is determined to be consistent with the second criterion.

Conclusion

On the basis of the preceding discussion, the proposed project is consistent with the site's land use designation, would not exceed any applicable regional or local thresholds, and would not result in or cause NAAQS or CAAQS violations. Therefore, the project would be consistent with the AQMP and a less than significant impact is expected.

b) Less than Significant Impact. The U.S. EPA, CARB, and the SCAQMD assess the air quality of an area by measuring and monitoring the amount of pollutants in the ambient air and comparing pollutant levels against the National and California Ambient Air Quality Standards (NAAQS and

CAAQS). The CAAQS designates the project site as nonattainment for O_3, PM_{10}, and $PM_{2.5}$ while the NAAQS designates the project site as nonattainment for O_3 and $PM_{2.5}$. The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. In this report the SCAQMD clearly states (Page D-3):

> *"…the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which SoCAB is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. The proposed project's estimated construction schedule and anticipated equipment usage is listed in Table 2 (Project Construction Schedule). The project is anticipated to be operational by the spring of 2026.

Table 2
Project Construction Schedule

Construction Phase	Duration (Days)^(A)^	Typical Equipment Used^(B)^
Site Preparation	10	Rubber Tired Dozers, Crawler Tractors
Grading	30	Excavators, Graders, Rubber Tired Dozers, Scrapers, Crawler Tractors
Building Construction	300	Cranes, Forklifts, Generator Sets, Tractors/Loaders/Backhoes, Welders
Paving	20	Pavers, Rollers, Paving Equipment
Architectural Coating	20	Air Compressors

Source: Urban Crossroads, 2024. See Appendix A.
(A) Days refers to total active workdays in the construction phase, not calendar days.
(B) The typical equipment list does not reflect all equipment that would be used during the construction phase. Not all equipment would operate eight hours per day each workday.

The SCAQMD's recommended thresholds of significance for criteria pollutants and incremental increases in health risk are shown in Table 3 (SCAQMD-Recommended CEQA Thresholds). The SCAQMD's CEQA Air Quality Significance Thresholds indicate that any projects in the SoCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

Table 3
SCAQMD-Recommended CEQA Thresholds

Pollutant	Maximum Daily Emissions (lbs/day)	
	Construction	Operation
NO_X	100	55
VOC/ROG	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Source: SCAQMD, 2019b		

Regional Construction Emissions Summary

The estimated maximum daily construction emissions without mitigation are summarized in Table 4 (Overall Regional Construction Emissions Summary). Detailed construction model outputs are included in Attachment A of Appendix A. Under the assumed scenarios, emissions resulting from the Project construction will not exceed thresholds established by the SCAQMD for emissions of any criteria pollutant.

Table 4
Overall Regional Construction Emissions Summary

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SOx	PM_{10}	$PM_{2.5}$
Summer 2024	4.42	23.40	54.90	0.05	5.95	2.06
Summer 2025	68.20	15.90	48.00	0.04	6.21	1.83
Winter 2023	4.99	47.20	39.20	0.06	8.44	5.07
Winter 2024	4.04	37.90	36.70	0.06	5.36	2.69
Winter 2025	2.70	14.60	34.80	0.04	5.29	1.59
Maximum Daily Emissions	**68.20**	**47.20**	**54.90**	**0.06**	**8.44**	**5.07**
SCAQMD CEQA Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Source: Urban Crossroads, 2024; Appendix A. Note: PM10 and PM2.5 source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.						

Regional Operational Emissions Summary

Operational activities associated with the project would result in emissions of CO, VOCs, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, and mobile source emissions. The project related operational air quality impacts derive primarily from vehicle trips generated by the project. Trip characteristics available from the *Tennessee Street and Lugonia Avenue Mixed-Use Measure U Growth Management Analysis* report were utilized in this analysis. The estimated operation-source emissions from the Project are summarized in Table 5 (Total Project Regional Operational Emissions). Detailed operation model outputs are presented in Attachment A. As shown in Table 5, operational source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

Table 5
Total Project Regional Operational Emissions

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SOx	PM_{10}	$PM_{2.5}$
Summer						
Mobile Source	11.60	8.66	79.10	0.18	5.96	1.16
Area Source	13.70	7.13	29.70	0.05	0.57	0.57
Energy Source	0.09	1.50	0.65	0.01	0.12	0.12
Total Maximum Daily Emissions	**25.39**	**17.29**	**109.45**	**0.24**	**6.65**	**1.85**
SCAQMD Regional Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Winter						
Mobile Source	10.70	9.28	68.20	0.17	5.96	1.16
Area Source	11.20	6.87	2.92	0.04	0.56	0.56
Energy Source	0.09	1.50	0.65	0.01	0.12	0.12
Total Maximum Daily Emissions	**21.99**	**17.65**	**71.77**	**0.22**	**6.64**	**1.84**
SCAQMD CEQA Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Urban Crossroads, 2024; Appendix A.
Note: PM10 and PM2.5 source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

The project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed project operational-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, the proposed project operational-source emissions would be considered less than significant on a project-specific and cumulative basis. Impacts pertaining to construction and operational emissions would be considered less than significant.

c) Less than Significant Impact. The analysis below makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards. Collectively, these are referred to as Localized Significance Thresholds (LSTs). The SCAQMD established LSTs in response to the SCAQMD Governing Board’s Environmental Justice Initiative I-41. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses. It should be noted that SCAQMD also states that projects that are statutorily or categorically exempt under CEQA would not be subject to LST analyses. Projects exempt from CEQA also include infill projects that meet the H&S Code provisions. As such, although not required for this project, LST analysis is presented to further underscore that there are in fact no significant impacts associated with the project.

The SCAQMD recommends that the nearest sensitive receptor be considered when determining a project’s potential to cause an individual or cumulatively significant impact. The nearest land use where an individual could remain for 24 hours to the proposed project site has been used to determine localized construction and operational air quality impacts for emissions of PM_{10} and $PM_{2.5}$ (since PM_{10} and $PM_{2.5}$ thresholds are based on a 24-hour averaging time). The nearest receptor used for evaluation of localized impacts of PM_{10} and $PM_{2.5}$ is location R6 represented by the future residences adjacent and east of the project site, in the recently approved Lugonia Village Project (between the project's eastern boundary and Karon Street). Receptors in the project study area shown on Exhibit 2 of Appendix A.

As consistent with LST Methodology, the nearest industrial/commercial use to the project site was used to determine construction and operational LST air impacts for emissions of NO_X and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assume that an individual could be present at these sites for periods of one to 8 hours. It should be noted that the existing residence R6 is located at a closer distance than the nearest industrial/commercial use. As such, the same receptor was used for evaluation of localized NO_X and CO. It should also be noted that the LST Methodology explicitly states, "It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters (11)." As such, a 25-meter receptor distance was used for evaluation of localized PM_{10}, $PM_{2.5}$, NO_X and CO.

Localized Construction Emissions

Table 5 identifies the localized impacts at the nearest receptor location in the vicinity of the project. Outputs from the model runs for construction LSTs are provided in Attachment A of Appendix A. For analytical purposes, emissions associated with peak demolition, site preparation and grading activities are considered for purposes of LSTs since these phases represents the maximum localized emissions that would occur. Any other construction phases of development that overlap would result in lesser emissions and consequently lesser impacts than what is disclosed herein. As shown in Table 6 (Project Localized Construction Impacts), emissions resulting from the project construction will not exceed the numerical thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized project-related construction-source emissions and no mitigation is required.

Table 6
Project Localized Construction Impacts

On-Site Emissions	**Emissions (lbs/day)**			
	NO_x	**CO**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation				
Maximum Daily Emissions	47.00	38.00	8.19	5.02
SCAQMD Localized Threshold	**220**	**1,625**	**11**	**7**
Threshold Exceeded?	**No**	**No**	**No**	**No**
Grading				
Maximum Daily Emissions	40.90	32.70	4.65	2.78
SCAQMD Localized Threshold	**237**	**1,175**	**12**	**8**
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: Urban Crossroads, 2024; Appendix A.
Note: PM10 and PM2.5 source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

The construction-source air pollutant emissions from the proposed project would not result in exceedances of regional thresholds. Therefore, proposed project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

Localized Operational Emissions

The proposed project is located on approximately 13.48 acres, and the total development is proposed to consist of 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4-5 story buildings and a 17,899-sf retail component. According to the SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include such uses, and thus, due to the lack of significant stationary source emissions, localized operational emissions from the project are expected to be less than significant.

Toxic Air Contaminants

Construction Activities

During short-term construction activity, the project would result in the emission of some diesel particulate matter (DPM), which is a listed carcinogen and toxic air contaminant (TAC) in the State of California. The 2015 Office of Environmental Health Hazard Assessment (OEHHA) revised risk assessment guidelines suggest that construction projects as short as 2-6 months may warrant evaluation. Notwithstanding, given the distance of the project from surrounding sensitive receptors, the dominant wind patterns blowing to the southwest away for receptors (15), and the annual $PM_{2.5}$ emissions from equipment during each year of construction, any DPM generated from construction activity would result in less than significant ground level concentrations of DPM and not result in a significant health risks and no further evaluation is required.

Operational Activities

TACs analysis applies to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include such uses, and thus, due to the lack of significant stationary source emissions, no TAC analysis is needed for operations.

CO Hot Spot Analysis

The Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—in order to generate a significant CO impact. An adverse CO concentration, known as a “hot spot,” would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. Traffic volumes generating the CO concentrations for the “hot spot” analysis is shown in Table 7 (CO Model Results). The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vph and AM/PM traffic volumes of 8,062 vph and 7,719 vph, respectively. The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm; this indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations (4.6 ppm x 4= 18.4 ppm) would still not likely exceed the most stringent 1-hour CO standard (20.0 ppm).

Table 7
CO Model Results

Intersection Location	Peak Traffic Volumes (vph)				
	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
Wilshire Boulevard / Veteran Avenue	4,954 / 2,069	1,830 / 3,317	721 / 1,400	560 / 933	8,062 / 7,719
Sunset Boulevard / Highland Avenue	1,417 / 1,764	1,342 / 1,540	2,304 / 1,832	1,551 / 2,238	6,614 / 5,374
La Cienega Boulevard / Century Boulevard	2,540 / 2,243	1,890 / 2,728	1,384 / 2,029	821 / 1,674	6,634 / 8,674
Long Beach Boulevard / Imperial Highway	1,217 / 2,020	1,760 / 1,400	479 / 944	756 / 1,150	4,212 / 5,514
Source: Urban Crossroads, 2024; Appendix A.					

As summarized in Table 8 (Peak Hour Traffic Volumes), the intersection of SR-210 WB Ramps-Tennessee Street/San Bernardino Avenue would have the highest AM traffic volume of 2,343 vph and the intersection of Tennessee Street/Lugonia Avenue would have the highest PM traffic volume of 3,238 vph. As such, total traffic volumes at the intersections considered are less than the traffic volumes identified in the 2003 AQMP. Therefore, the project considered herein along with background and cumulative development would not produce the volume of traffic required to generate a CO “hot spot” either in the context of the 2003 Los Angeles hot spot study or based on representative BAAQMD CO threshold considerations. As shown in Table 8, the project would not result in potentially adverse CO concentrations or “hot spots.” Therefore, CO “hot spots” are not an environmental impact of concern for the proposed project, and localized air quality impacts related to mobile-source emissions would therefore be less than significant.

Table 8
Peak Hour Traffic Volumes

Intersection Location	Peak Traffic Volumes (vph)				
	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
SR-210 WB Ramps-Tennessee St / San Bernardino Ave	473/580	254/300	705/1180	911/571	2,343/2,631
Tennessee St / Lugonia Ave	536/999	246/267	434/1,290	675/682	1,891/3,238
Tennessee St / I-10 EB Ramps	718/819	574/786	680/1,074	0/0	1,972/2,679
Tennessee St / Colton Ave	646/670	825/897	199/681	352/459	2,022/2,707
Source: Urban Crossroads, 2024; Appendix A.					

d) Less than Significant Impact. The project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed project’s (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the solid waste regulations. The proposed project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed project construction and operations would be less than significant and no mitigation is required.

4.4 – 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 Game or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game 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 native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑	☐

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

A *General Biological Resources Assessment* (see Appendix B) and *Burrowing Owl Survey Report* (see Appendix C) were prepared for the proposed project by MIG Inc., and are both dated July 2023. The reports analyze the potential impacts of the construction and operation of the proposed project to biological resources. The information presented below is condensed from the memos prepared by MIG and are attached as Appendix B and Appendix C, respectively.

a) Less than Significant Impact with Mitigation. The entire project area has been historically altered by mowing and discing, and all the landcover at the project site can be classified as Disturbed and/or Developed. Disturbed habitat type is composed primarily of early successional /ruderal plant species. Much of the vegetation present at the project site is non-native, and the site receives regular clearing to maintain compliance with fire code. A discussion of potential impacts to special-status plant and wildlife species is provided below.

Special-Status Plant Species

Special-status plants are defined here to include: (1) plants that are federal- or state-listed as rare, threatened, or endangered, (2) federal and state candidates for listing, (3) plants assigned a Rank of 1 through 4 by the CNPS Inventory, and (4) plants that qualify under the definition of "rare" in the CEQA, section 15380. The project site was initially determined to provide potentially suitable habitat for a total of 90 special-status plant species based on the proximity of the project to previously recorded occurrences in the region, vegetation types and habitat quality, topography, elevation, soil types, and other species-specific habitat requirements. As determined in the *General Biological Resources Assessment*, none of the 90 plant species are expected to occur on the project site, primarily due to disturbance such as historical discing and recent mowing. Therefore, impacts to special-status plant species would not occur as a result of the proposed project.

Special Status Wildlife Species

Special-status wildlife species include those species listed as endangered or threatened under the FESA or CESA; candidates for listing by the USFWS or CDFW; and species of special concern to the CDFW; and birds protected by the CDFW under CFGC Sections 3503 and 3513. According to the *General Biological Resources Assessment*, it was initially determined that 62 special-status wildlife species have been recorded in the vicinity of the project site. Of these wildlife species, 56 are not expected to occur on the project site. Reasons include the absence of essential habitat requirements for the species, the distance to known occurrences and/or the species distributional range, the limited availability of foraging and nesting habitat, amount of site disturbance from past and present land uses, and/or the proximity of existing human-related disturbances. The wildlife species that occur or have some potential to occur on-site include six (6) birds: Cooper's hawk [*Accipiter cooperii*], burrowing owl [*Athene cunicularia*], Swainson's hawk [*Buteo swainsoni*], California horned lark [*Eremonphila alpestris actia*], merlin [*Falco columbarius*], and loggerhead shrike [*Lanius ludovicianus*]. It is assumed that all of these species could potentially be present at the site because they have been observed in disturbed habitats and/or in similar habitats close proximity to the Project Site. These species could be affected by project construction and/or habitat loss due the construction of the project. As such, and as detailed below, implementation of **Mitigation Measures BIO-1 and BIO-2** would be required to reduce potential impacts to special status wildlife species to a less than significant level.

Nesting Birds

Nesting birds are protected under California Fish and Game Code (CFGC) 3503, 3503.5, and 3512, which prohibits the take of active bird nests. Native and non-native shrubs and trees within the project site provide highly suitable nesting habitat for songbirds, including common species protected by the code. There is potential for ground- and tree-nesting birds to establish nests on the project site prior to any project-related construction. Construction activities including site mobilization, vegetation clearing, grading, and noise and vibration from the operation of heavy equipment have the potential to result in significant direct (i.e., death or physical harm) and/or indirect (i.e., nest abandonment) impacts to nesting birds. The loss of an active nest of common or special-status bird species and/or their eggs or young as a result of project construction would be considered a violation of the CDFGC, Section 3503, 3503.5, 3513. Therefore, implementation of **Mitigation Measure BIO-1** is required to reduce impacts to nesting birds to a less than significant level.

Burrowing Owls

As determined in the *Burrowing Owl Survey Report,* suitable habitat type (Disturbed and/or Developed) for burrowing owl was determined to be present on the project site. While no burrowing owls or sign thereof were observed on the project site, it was determined that burrows and other round structures present on the project site could potentially provide habitat for burrowing owls. Burrowing owls are commonly found in disturbed sites like the project site and can also be found in a wide variety of other open habitats such as grassland or deserts with sparse vegetation. As such, construction activities may impact burrowing owls in a manner like those already described under the discussion of nesting birds above. Therefore, implementation of **Mitigation Measure BIO-2** is required to reduce impacts to burrowing owls to a less than significant level.

b) No Impact. The project site is located in a developed area of the city of Redlands. As determined in the *Biological Resources Assessment,* no USFWS Critical Habitat is located within the project site. In addition, no sensitive plant communities were observed on the project site, and the site does not exhibit the characteristic attributes that may support sensitive plant communities (such as the known distribution and elevation, landscape position, plant species composition, soil and/or substrate type, water chemistry, and/or hydroperiod) as the project site is highly disturbed. Eight Sensitive Plant Communities were uncovered by the CDFW CNDDB (2023) search as being in the project vicinity; however, none of these communities occurs on the project site. In addition, no USFWS-designated critical habitat areas for any federally listed animals are present within the project boundary. Therefore, no impacts would occur.

c) No Impact. According to the *General Biological Resources Assessment*, no waterways, wetlands, or riparian vegetation subject to regulation by the USACE, CDFW, or RWQCB are present on the project site. Additionally, no features were detected by the National Wetlands Inventory at or immediately adjacent to the project site. The project area is relatively flat and fully separated from drainages such as the adjacent industrial complex as well as other developments in the area. There is no evidence (e.g., watermarks, vegetation, or other characteristics) that water flows from any jurisdictional waterway that may enter the project site. No evidence of previous ponding (no hydric vegetation, no hydric or clay soils, no evidence of hydrology/watermarks) was observed during the site visit or historical aerial photos that would suggest any suitable areas for vernal pools or vernal pool species. Therefore; there would be no impacts related to wetlands as a result of the project.

d) No Impact. The project site is expected to be utilized by common, non-special-status wildlife for foraging and possibly breeding. However, the project site is situated in an urbanized area and does not represent a wildlife movement corridor as it (along with other small neighboring vacant lots) is largely bound on all sides by developments, possesses vegetation that is largely non-native that would support high levels of species diversity, and it is too small of an area to support significant wildlife movement. According to the *Biological Resources Assessment*, no migratory wildlife corridors or native wildlife nursery sites were identified within the project site. The project site and surrounding area does not connect large areas of native habitats and development at this site would not preclude wildlife movement in otherwise open areas. Therefore, no impacts would occur as a result of the project.

e) Less than Significant Impact. The project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. During construction operations, trees and other plant varieties would need to be removed to accommodate current building designs and construction. The removal of trees and plants during construction activities would not interfere with Redlands' Tree Protection Guidelines as outlined in the city's Municipal Code.[6] The Guidelines are applicable to "Native or Specimen trees, Landmark trees, and Public Trees" as defined by the city. As determined in the *Biological Resources Assessment*, plant species observed onsite were described as non-native, and there are no trees on the project site that have been designated as native or specimen by the city. In addition, there are no trees of any historic significance that would warrant a landmark designation. Therefore, impacts would be less than significant.

f) No Impact. The city of Redlands is an active participant in the Upper Santa Ana River Wash Habitat Conservation Plan (the Wash Plan).[7] The project site is located south of the plan, and outside of its boundaries. The project site is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other local, regional, or state habitat conservation plan. Therefore, no impacts would occur.

Mitigation Measures

BIO-1 **Pre-construction Survey for Nesting Birds.** To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Bernardino County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than 5 days prior to the initiation of any site disturbance activities and equipment mobilization, vegetation removal, fence installation, grading, etc. If project activities are delayed by more than 5 days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all vegetation and other potential nesting habitats (e.g., shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

BIO-2: **Pre-construction Survey for Burrowing Owl.** No more than 14 days prior to ground disturbance a focused survey for burrowing owl will be required to ensure take avoidance. Even though burrowing owls were not located as part of the general biological survey, a pre-construction survey for burrowing owl is required because burrowing owls may encroach or migrate to the property at any time, and therefore steps should be taken to ensure avoidance, including reevaluating the locations/presence of burrowing owl or burrows. Pre-construction surveys shall be conducted in accordance with the survey requirements outlined in Appendix D of the CDFW's Staff Report on Burrowing Owl, dated March 7, 2012. If burrowing owl are found on the project site during pre-construction surveys, the biologist conducting surveys shall immediately contact the CDFW to develop a plan for avoidance and/or translocation prior to construction crews initiating any ground disturbance on the project site.

4.5 – 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 '15064.5?	☐	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☑	☐	☐

A *Cultural Resources Inventory and Evaluation Report* was prepared by Ecorp Consulting Inc., dated November 2022, to assess possible cultural and historical impacts associated with the construction and operation of the project (see Appendix D).

a) No Impact. A significant impact would occur if the proposed project would cause a substantial adverse change in the significance of a historic resource listed or eligible for listing in the California Resources of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). CEQA Guidelines state the term “historical resources” applies to resources that meet any of the following criteria for listing on the California Register of Historical Resources:

(1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c)).

A field survey and records search conducted for the Cultural Report of this project identified one cultural resource within the project area: a concrete and brick water conveyance system. The system consists of six features: two north-south water channels, two concrete rectangular vaults, and two standpipe features. The conveyance system was used to irrigate orange groves northeast of Redlands and was likely built in 1945. According to the Ecorp report, the irrigation system identified onsite is not eligible for listing in the California Register of Historical Resources and is not listed on any Certified Local Government historic property register. As described in the Cultural Report, while the project site and the irrigation system were formerly used for agricultural purposes, they are not associated with events or persons that made significant contributions to the history of the local area. Development of the project would not have any physical impacts outside the designated project area boundary. The project would not result in any adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5. No impact would occur.

b) Less than Significant with Mitigation Incorporated. The project site has been routinely disturbed over time and as such, any archaeological resources that may exist likely have been previously unearthed, disturbed, or left in place. While the field survey conducted as part of the Cultural Report did not identify any archaeological resources, the project area contains Holocene alluvial deposits synchronous with human occupation of the region. Due to the presence of these deposits, as well as the known ephemeral waterways in the vicinity of the project site, there does exist a moderate potential for buried pre-contact archaeological sites within the project site. While it is unlikely, it is possible that subsurface archaeological resources could be encountered during development of the proposed project. **Mitigation Measure CUL-1,** which requires evaluation if deposits are found that could be of cultural or human origin. With implementation of Mitigation Measure CUL-1 potential impacts would be less than significant.

c) Less than Significant with Mitigation Incorporated. No known human remains are anticipated to be located on or beneath the project site. However, these findings do not preclude the existence of previously unknown human remains located below the ground surface, which may be encountered during construction excavations associated with the project, and it is possible to encounter buried human remains during construction. Implementation of **Mitigation Measure CUL-1** will reduce potentially significant impacts to previously undiscovered human remains. With implementation of **Mitigation Measure CUL-1,** impacts would be less than significant as a result of construction of the proposed project.

Mitigation Measures

CUL-1: If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.

- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

4.6 – 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 or energy resources, during project construction or operation?	☐	☐	☑	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☑	☐

An *Energy Consumption Estimate Report* was prepared for the proposed project by Urban Crossroads, dated February 7th, 2024 (see Appendix E) to evaluate the possible energy impacts associated with the construction and operation of the proposed project. The information presented below is summarized from the report and is attached as Appendix E.

a) Less than Significant Impact. The proposed project consists of the development of 460 new apartment units, approximately 17,899 square feet of commercial space, and associated landscaping and roadway improvements. Construction activities associated with the proposed project would require the use of heavy-duty, off-road equipment and construction-related vehicle trips that would combust fuel, primarily diesel and gasoline. Heavy-duty construction equipment would be required to comply with the California Air Resources Board's (CARB's) airborne toxic control measures, which restrict heavy-duty diesel vehicle idling to five minutes.

Once operational, the proposed project would consume energy for vehicle trips and electricity and natural gas usage. Operational vehicle trips are anticipated to consume approximately 257,711 gallons of gasoline, 19,752 gallons of diesel, and 119,905 kWh of electricity on an annual basis, upon its first year of operation. As estimated using CalEEMod, the proposed project buildings would consume approximately 2,322 megawatt-hours (mWh) of electricity and 5,940 million British Thermal Units (BTU) of natural gas per year. Electricity, natural gas, and gasoline fuel consumption are energy sources necessary to operate and maintain the proposed project in a safe manner. Lighting is essential for safety and security and natural gas consumption is needed for heating and other temperature-controlled activities. The proposed project would not cause a substantial environmental impact due to wasteful, inefficient, or unnecessary consumption or energy resources, during project construction or operation. As such, impacts would be less than significant.

b) Less than Significant Impact. The proposed project is consistent with the City of Redlands CAP, as discussed below in Section 4.9, Greenhouse Gas Emissions. The proposed project would not conflict with or obstruct any other state or local plan adopted for the purposes of increasing the amount of renewable energy or energy efficiency because no other plans are in place in the project area. Impacts would be less than significant.

4.7 – 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 or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☑

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

a.i) Less than Significant Impact. The city of Redlands, as well as the greater Southern California region, is considered a seismically active region. According to the Healthy Community Element of the city's General Plan, the project site is not located within an Alquist-Priolo Fault Zone, and there are no active or potentially active faults within or adjacent to the project site.[8] Crafton Hills Fault Zone (also known as the Redlands Fault) is the closest fault to the project site, and is located approximately 3.7 miles southeast of the project. This fault, however, is not categorized as an Alquist-Priolo Fault Zone, or as a San Bernardino County designated Fault Zone. According to the city General Plan, development should be restricted within and near Alquist-Priolo designated fault zones.[9] Furthermore, structures should incorporate design standards recommended by the most current California Building Code (CBC). The project is not located on or near a Alquist-Priolo fault zone, and would adhere to design and repair requirements adopted in the current city of Redlands Code of Ordinances from the 2022 CBC.[10] Design requirements adopted by the city would be sufficient in mitigating seismic hazards to the proposed project, and as such, impacts are determined to be less than significant.

a.ii) Less than Significant Impact. Given the project's location in a seismically active region, the site is subject to ground shaking. Per the city's General Plan, the potential for ground shaking and seismic-related damage is also dependent on the underlying soil composition. As indicated in the General Plan, much of the city of Redlands is built on alluvial deposits that create a potential for severe ground shaking.[11] The project site is of no greater risk to ground shaking than another area of Redlands, and while a structure may be damaged during an earthquake, adherence to design requirements adopted by the city from the CBC would minimize damage to property within the structure, as they are designed to not collapse. The CBC is intended to provide minimum requirements to prevent major structural failure and loss of life. As such, impacts due to ground shaking would be less than significant.

a.iii) Less than Significant Impact. Liquefaction is a form of ground failure that occurs when soil transforms from a solid state to liquefied condition due to intense seismic ground shaking. Liquefaction typically occurs in loose granular materials, such as alluvium-type soils, of which much of the city is built on. Saturated soils or areas located near waterways and areas with a high groundwater level are also susceptible to such ground failure. Parts of the city of Redlands are susceptible to liquefaction and ground failure, however, the city's General Plan indicates that the project site is not located in an area considered susceptible to liquefaction.[12] Impacts related to seismic-related ground failure and liquefaction would be less than significant.

a.iv) No Impact. The city's General Plan outlines areas in Redlands susceptible to landslides. According to the Healthy Community Element of the Redlands General Plan, the project site is not located in an area with high susceptibility, or even low to medium susceptibility, to landslide or ground subsidence.[13] Therefore, no impacts related to landslides would occur.

b) Less than Significant Impact. The project site is currently undeveloped, although it has been routinely disturbed and features non-native grasses and ruderal vegetation. The site is located in a mostly developed area of Redlands, characterized by residential, commercial, and light industrial land uses. Although the site is surrounded to the north, south, and east by undeveloped land, with Interstate 210 located at the western boundary of the project site. As the site is undeveloped, there is the potential to expose surface soils to wind and water erosion during demolition and construction activities. However, wind erosion would be minimized through soil stabilization measures required by SCAQMD Rule 403 (Fugitive Dust), such as daily watering.[14] Stormwater related erosion would further be prevented through control practices outlined in the Redlands NPDES program.[15] Following project construction, much of the site would consist of impervious surfaces consisting of houses, commercial businesses, and roadways. The completed project would also feature pervious surfaces in the form of accent landscaping within and around the perimeter of the project site, as well as a courtyard area for residential use. Trees, shrubbery, and other vegetation would keep in place topsoil, and further reduce any potential risk of soil erosion. Impacts related to soil erosion would be less than significant with the implementation of existing regulations.

c) Less than Significant Impact. Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. The downslope movement is due to a combination of gravity and ground shaking. Lateral spreading has been observed to generally take place toward a free face (i.e., retaining wall, slope, or channel) and to lesser extent on ground surfaces with a very gentle slope. As outlined in Sections 4.6.a.iii and 4.6.a.iv above, the project site is not located in an area susceptible to landslides or liquefaction. As the site has a low susceptibility to liquefaction, there is a low potential for lateral spreading to occur on the project site. The project is required to be constructed in accordance with the CBC, and keeping in compliance with existing CBC regulations would limit hazard impacts arising from unstable soils to less than significant levels.

d) Less than Significant Impact. Much of the city of Redlands is built on alluvium-type soils that are susceptible to liquefaction from ground-shaking and expansion with saturation. Expansive soils are susceptible to ground failure, and lead to property damage and human harm. Development of the proposed project is required to comply with the CBC as adopted by the City Code of Ordinances. The CBC requires building permits to comply with current building code standards. Such standards include the consideration of geological and seismic conditions. Prior to construction, soil conditions at the site would be identified and considered during the design process. Compliance with existing CBC regulations would reduce any impacts from potentially hazardous expansive soils to a less than significant amount.

e) No Impact. The project proposes to install new onsite water and sewer lines that would connect to the existing municipal sewer infrastructure in the surrounding streets. The proposed project would connect to this system and would not require the use of septic tanks. No impact would occur.

f) Less than Significant with Mitigation Incorporated. Development of the proposed project would require site preparation, grading, and construction operations. Given that the proposed project site has been previously disturbed, it is considered unlikely that paleontological resources (fossil evidence of life from past geologic time frames) would be found. However, in the event that paleontological materials are uncovered, **Mitigation Measure GEO-1** would ensure that uncovered resources are evaluated and curated as recommended by a qualified paleontologist. Therefore, impacts to paleontological resources would be less than significant.

Mitigation Measures

GEO-1: **Inadvertent Discovery of Paleontological Resources.** If paleontological materials are uncovered during grading or other earth moving activities, the contractor shall be required to halt work in the immediate area of the find, and to retain a professional paleontologist to examine the materials to determine whether it is a significant paleontological resource. If this determination is positive, the resource shall be left in place, if determined feasible by the project paleontologist. Otherwise, the paleontologist shall fully recover the scientifically consequential information. Work may continue outside of the area of the find; however, no further work shall occur in the immediate location of the find until all information recovery has been completed and a report concerning it filed with the Development Services Director. The applicant shall bear the cost of implementing this mitigation.

4.8 – 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 gases?	☐	☐	☑	☐

A *Residential Air Quality & Greenhouse Gas Assessment* was prepared for the proposed project by Urban Crossroads, dated September 30, 2022 (see Appendix A) to evaluate the air quality and greenhouse gas impacts associated with the construction and operation of the proposed project. The information presented below is summarized from the report and is attached as Appendix A.

a) Less than Significant Impact. Gases that trap heat in the atmosphere and affect regulation of the Earth's temperature are known as GHGs. GHGs that contribute to climate change are a different type of pollutant than criteria or hazardous air pollutants because climate change is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide), and off-gassing from low oxygen environments such as swamps or exposed permafrost (methane); however, GHG emissions from human activities such as fuel combustion (e.g., carbon dioxide) and refrigerants use (e.g., hydrofluorocarbons) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change.

The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHGs – carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride – and two groups of gases – hydrofluorocarbons and perfluorocarbons. These GHG are the primary GHG emitted into the atmosphere by human activities. The six most common GHG's are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride, hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

The City of Redlands Climate Action Plan (CAP) was adopted on December 5, 2017. The CAP was prepared pursuant to Section 15183.5(b) of the CEQA Guidelines to be utilized as a tiering document for the General Plan as well as future projects within the City of Redlands that are consistent with the General Plan. The CAP incorporates the guidelines established in CARB's 2017 Scoping Plan. The 2017 Scoping Plan was prepared to meet the most current GHG emissions reduction targets set in Executive Order S-3-15 and SB 32 that recommends local governments to develop plans to reduce GHG emissions to 6 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/yr) by the year 2030 and 2 $MTCO_2e$/yr by the year 2050. Since the CAP was prepared in coordination with the General Plan that has a horizon year of 2035, the Redlands CAP also provided a year 2035 target of 5 $MTCO_2e$/yr, which was determined through interpolation of the 2030 and 2050 GHG emissions targets from the 2017 Scoping Plan. The CAP also has a Year 2030 GHG emissions target of 6.0 per capita per year.

The estimated GHG emissions for the project land use are summarized in Table 9 (Total Project GHG Emissions. The estimated GHG emission include emissions from Carbon Dioxide (CO_2), Methane (CH4), Nitrous Oxide ($N0_2$), and Refrigerants (R). As shown in Table 9, the project would generate a total of approximately 2.94 $MTCO_2e$/SP.

Table 9
Total Project GHG Emissions

Source	**Emission ($MTCO_2e$/yr)**				
	CO_2	**CH_4**	**N_2O**	**R**	**Total CO_2E**
Construction-related emissions*	39.04	0.00	0.00	0.04	39.65
Mobile	2645.00	0.16	0.14	4.44	2696.00
Area	107.00	<0.005	<0.005	0.00	107.00
Energy	682.00	0.06	<0.005	0.00	685.00
Water	28.60	0.67	0.02	0.00	50.10
Waste	32.00	3.20	0.00	0.00	112.00
Refrigerants	0.00	0.00	0.00	0.49	0.49
Total CO_2E (All Sources)	3690.24				
Service Population	1254.53				
Total CO_2e/Service Population	**2.94**				
Threshold (CO_2E)	**6.00**				
Threshold Exceeded?	**No**				

Source: Urban Crossroads, 2024; Appendix A.
* Amortized over a period of 30 years.

The project would result in 2.94 $MTCO_2e$/SP per year in 2025 as summarized in Table 9. As such, the project total GHG emissions would not exceed the screening threshold of 6.0 $MTCO_2e$/SP per year. Thus, project-related emissions would not have a potential significant direct or indirect impact on GHG and climate change. Impacts would be less than significant.

b) Less than Significant Impact.

2022 CARB Scoping Consistency

Included in the 2022 Scoping Plan is a set of Local Actions (Appendix D to the 2022 Scoping Plan) aimed at providing local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. Notably, this section is focused on Residential and Mixed-Use Projects, in fact CARB states in Appendix D (page 4): "…focuses primarily on climate action plans (CAPs) and local authority over new residential development. It does not address other land use types (e.g., industrial) or air permitting."

Table 10 (Consistency with the 2022 Scoping Plan) summarizes the reduction actions/strategies by emissions source category to determine how the project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan, and as shown, the Project would be consistent with the strategies discussed below.

Table 10
Consistency with the 2022 Scoping Plan

Reduction Strategy	Project Consistency Analysis
Smart Growth / Vehicles Miles Traveled	
Reduce VMT per capita to 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	**Consistent.** The project site is currently undeveloped and would develop the underutilized land with 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4 story buildings and a 17,899-sf retail component. The project is within walking and biking distance between existing commercial and residential developments. Therefore, future residents traveling from and to the proposed project would have more access to work, educational and other destinations and would reduce VMT. As such, the project is consistent with this strategy.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial) contributing to 6 million heat pumps installed statewide by 2030	**Consistent.** The project is expected to utilize natural gas heating and/or cooking on-site. The City of Redlands has not adopted an ordinance or program limiting the use of natural gas for on-site cooking and/or heating. However, if one is adopted, the project would comply with the applicable goals or policies limiting the use of natural gas equipment in the future. As such, the project would be consistent with this strategy.
Non-combustion Methane Emissions	
Divert 75% of organic waste from landfills by 2025	**Consistent.** The project would be required to recycle and compost 75 percent of waste per AB 341. As such, the project would be consistent with the strategy.

2020-2045 RTP/SCS Consistency

The 2020-2045 RTP/SCS, developed with input from local governments, including the city of Redlands, establishes GHG emissions goals for automobiles and light-duty trucks for 2035, 2045 and establishes an overall GHG target for the region consistent with both the statewide GHG reduction targets for the post-2020 statewide GHG reduction goals. The 2020-2045 RTP/SCS is a long-range visioning plan to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. Future investments seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently.

Table 11 (Consistency with SCAG's 2020-2045 RTP/SCS) summarizes the project's consistency with the five strategies found within the SCAG's 2020-2045 RTP/SCS and as shown, the project would be consistent with the GHG reduction strategies contained within the SCAG's RTP/SCS. Implementing SCAG's RTP/SCS will reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. The proposed project would be consistent with and would not conflict with the goals of the RTP/SCS; therefore, the proposed project would not interfere with SCAG's ability to achieve the region's year post-2020 mobile source GHG reduction targets outlined in the RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS.

Table 11
Consistency with SCAG's 2020-2045 RTP/SCS

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
Focus Growth Near Destinations and Mobility Options		
• Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations • Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets • Plan for growth near transit investments and support implementation of first/last mile strategies • Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses • Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods	Center Focused Placemaking, Priority Growth Areas (PGA), Job Centers, High Quality Transit Areas (HQTAs), Transit Priority Areas (TPA), Neighborhood Mobility Areas (NMAs), Livable Corridors, Spheres of Influence (SOIs), Green Region, Urban Greening.	**Consistent.** The Project site is currently undeveloped and would develop the underutilized land with 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4 story buildings and a 17,899-sf retail component. Therefore, future residents traveling from and to the proposed Project would have more access to work, educational and other destinations, as well as reduced commuting times and distances, which would all in turn reduce GHG associated with transportation. Therefore, the Project is consistent with the focus growth near destinations and mobility options strategy.

• Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) • Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g., shared parking or smart parking)		
Promote Diverse Housing Choices		
• Preserve and rehabilitate affordable housing and prevent displacement • Identify funding opportunities for new workforce and affordable housing development • Create incentives and reduce regulatory barriers for building context sensitive accessory dwelling units to increase housing supply • Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions	PGA, Job Centers, HQTAs, NMA, TPAs, Livable Corridors, Green Region, Urban Greening	**Consistent.** The project site is currently undeveloped and would develop the underutilized land with 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4 story buildings and a 17,899-sf retail component. Therefore, similar to the discussion above, the Project is consistent with promoting diverse housing choices strategy.
Leverage Technology Innovations		
• Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space • Improve access to services through technology—such as telework and telemedicine as well as other incentives such	HQTA, TPAs, NMA, Livable Corridors.	**Consistent.** The project would include EV charging infrastructure and provide bike storage spaces in accordance with the California Green Building Standards Code. Therefore, the Project is consistent with leveraging technology innovations strategy and would promote alternative modes of transportation that would help the State, County and City meet their GHG reduction goals.

as a "mobility wallet," an app-based system for storing transit and other multi-modal payments • Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation		
Support Implementation of Sustainability Policies		
• Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions • Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations • Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space • Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies • Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region • Continue to support long range planning efforts by local jurisdictions	Center Focused Placemaking, Priority Growth Areas (PGA), Job Centers, High Quality Transit Areas (HQTAs), Transit Priority Areas (TPA), Neighborhood Mobility Areas (NMAs), Livable Corridors, Spheres of Influence (SOIs), Green Region, Urban Greening.	**Consistent.** As mentioned previously, the proposed project would install EV charging infrastructure and provide bike storage spaces to promote alternative modes of transportation. Additionally, the project would comply with sustainable development practices included in the 2022 Title 24 standards and CALGreen Code, including installation of vanpooling and carpooling parking spaces, installation of high-efficient lighting, and implementation of water-efficiency irrigation and drought-tolerant landscaping. Thus, the project would be consistent with supporting implementation of sustainability policies strategy.

• Provide educational opportunities to local decisions makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy		
Promote a Green Region		
• Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards • Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration • Integrate local food production into the regional landscape • Promote more resource efficient development focused on conservation, recycling and reclamation • Preserve, enhance and restore regional wildlife connectivity • Reduce consumption of resource areas, including agricultural land • Identify ways to improve access to public park space	Green Region, Urban Greening, Greenbelts and Community Separators.	The proposed project consists of currently undeveloped and would develop the underutilized land with 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4 story buildings and a 17,899-sf retail component and would not interfere with regional wildlife connectivity or concert agricultural land. The project would be required to comply with 2022 Title 24 standards and CALGreen Code, which would help reduce energy consumption and reduce GHG emissions. Thus, the project would support resource efficient development that reduces energy consumption and GHG emissions and the Project would be consistent with promoting a green region strategy.

City of Redlands General Plan and CAP Consistency

The city of Redlands adopted both the General Plan and CAP on December 5, 2017. The CAP was developed concurrently with the General Plan, which identifies the city's most current land use and transportation strategies and GHG implementation of various General Plan's goals and principles. The CAP provides actions to operationalize the General Plan policies that help with GHG reductions. As summarized in Table 12 (Consistency with the General Plan and Climate Action Plan), the project is consistent with the goals related to GHG emissions reductions in the General Plan and CAP. Thus, the project would not obstruct the city of Redlands CAP GHG reduction measures and would not conflict with the GHG projections included in the CAP and the project would have a less than significant impact.

Table 12
Consistency with the General Plan and Climate Action Plan

Reduction Strategy	Project Consistency Analysis
General Plan Sustainable Community Element	
Goal: Serve as an environmental steward; ensure that residents enjoy clean air and water; make efficient use of energy, water, and land resources; and grow in a manner in which increased population does not negatively impact resources (25). • 8-P.8: Promote sustainability by reducing the community's greenhouse gas (GHG) emissions and festering green development patterns- including buildings, sites, and landscapes. • 8-P.9: Undertake initiatives to enhance sustainability by reducing the community's GHG emissions.	**Consistent.** The project site is currently undeveloped and would develop the underutilized land with 35 multifamily residential dwelling units within 3-story buildings, 425 multifamily residential dwelling units located within 4 story buildings and a 17,899-sf retail component. The project would comply with Title 24 Building Energy Efficiency Standards and is within walking and biking distance between existing commercial and residential developments. Additionally, the Project would provide EV infrastructure and bike storage spaces. Therefore, the Project would be consistent with this goal and promote growth in a manner in which the future population does not negatively impact resources.
Climate Action Plan	
All electric appliances beginning 2026 (residential) and 2029 (commercial) contributing to 6 million heat pumps installed statewide by 2030.	**Consistent.** The project is expected to utilize natural gas heating and/or cooking on-site. The City of Redlands has not adopted an ordinance or program limiting the use of natural gas for on-site cooking and/or heating. However, if one is adopted, the project would comply with the applicable goals or policies limiting the use of natural gas equipment in the future. As such, the project would be consistent with this strategy.

Finally, the project is consistent with the general plan land use designation, density, building intensity, and applicable policies specified for the project area in SCAG's Sustainable Community Strategy/Regional Transportation Plan, which pursuant to SB 375 calls for the integration of transportation, land-use and housing policies to plan for achievement of the GHG-emissions target for the region. Thus, a less than significant impact related to GHG emissions from project construction and operation would occur and no mitigation is required.

4.9 – 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 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 a significant risk of loss, injury or death involving wildland fires?	☐	☐	☑	☐

A *Phase I Environmental Site Assessment and Limited Phase II Site Assessment* was prepared for the proposed project by Petra Geosciences, dated June 20, 2022 (see Appendix F) to evaluate the potential presence of hazardous materials on the project site. The information presented below is summarized from the report and is attached as Appendix F.

a) Less than Significant Impact. Construction of the proposed project would require the temporary use and transport of fuels, equipment, earth and building materials, as well as other potentially hazardous materials. The contractor would be required to develop and adhere to a Health and Safety Plan, which pursuant to California state Health and Safety Code Chapter 6.95, Division 20 (§§ 25500-25532), would minimize potentially hazardous effects of handling potentially hazardous materials during construction.[16] The project is within the jurisdiction of the Environmental Protection Agency (EPA) and County of San Bernardino, both of which manage the inspection, regulation, transportation, use, and disposal of hazardous materials in Redlands. Development of the project will comply with the standards and regulations of both bodies. Adherence to local, state, and federal regulations, impacts related to the potential disposal or transport of onsite hazardous materials or waste would be less than significant.

The project site is currently zoned as EV/SD (East Valley Corridor Specific Plan/Special Development). The proposed project includes a Zone Change (ZC) to establish C-3 (General Commercial District) zoning for the site. The C-3 zoning designation allows for mixed-use and residential uses, with the residential density permitted as R-3 (multi-family residential district). Development of the project includes 460 new apartment units and the development of approximately 17,899 square feet of commercial space. The transport, use, and/or disposal of hazardous materials is not associated with or expected with the development of onsite residential land uses. While specific commercial uses are not known at the time of this document’s preparation, such uses would not require the routine transport and/or use of hazardous materials associated with industrial-related businesses, as those uses are not permitted as part of the C-3 zoning designation. Any hazardous materials used in conjunction with commercial uses would include relatively limited amounts of cleaners, lubricants, and pesticides. Such materials would be disposed of with other Household Hazard Wastes (HHWs) generated from onsite residences. HHWs are prohibited or discouraged from being disposed of at local landfills. As such, the San Bernardino County Fire Protection District operates a Household Hazardous Waste Program, with 14 permanent HHW collection facilities.[17] These facilities would allow easy disposal of any HHW generated from future residents and businesses of the site. With adherence to local regulations, the use of common household hazardous materials, created waste, and their disposal would not present a substantial health risk to the community. As such, impacts would be less than significant.

b) Less than Significant Impact. Based on information obtained during the Phase I Environmental Site Assessment (ESA), the project site appears to have been developed as an orchard since at least 1930 until sometime between/during 1975 and 1985. Infrared aerial photographs suggest that sometime between/during 1975 and 1985 the orchards were removed from the project site and some sort of irrigated vegetation was present over portions of the project site. Irrigated vegetation areas decreased between the 1985 and 1989 photographs. Some sort of managed vegetation was noted within the southern portion of the project site in the black and white aerial photograph from 1994. Sometime between/during 1994 and 2002, the project site appeared to be fallow land and has remained vacant land to present day. Minor debris was also observed along the northern and western portions of the project site, consisting mostly of windblown trash, a car bumper, and remnants of a reclining chair. One area of plywood fragments and plastic sheeting was observed in the central portion of the project site. A concrete irrigation valve riser located in the northwest corner of the project site contained dumped trash and plastic bags. There were no visible signs of this trash containing hazardous substances; however, the trash was not disturbed.

No water wells were observed within the project site during the Phase I ESA. Two concrete irrigation valve risers were observed along the northern boundary of the project site, within the proposed Pennsylvania Avenue extension. Remnants of north-south orientated concrete and brick irrigation channels were observed north of the proposed Pennsylvania Avenue extension and near the east property boundary. There are no current visual signs that these channels extended into the project site. In addition, remnants of a concrete and brick irrigation valve box with exposed concrete pipe trending east-west along the north side of the dirt road at the northern boundary of the project site was observed. The concrete pipe is estimated to connect with the two concrete irrigation valve risers. No wooden power poles, pole-mounted transformers, or ground mounted transformers are located within or adjacent to the project site. There was no evidence of drums, sumps, pits, pools, or lagoons identified during our site reconnaissance.

One site was identified in a search of various government agency database records, which appears to have adversely impacted the soils, groundwater or soil vapor beneath the project site at this time – the former Lockheed Martin facility (1500 Crafton Avenue), in northeast Redlands (approximately 4.5 miles east-northeast of the project site). Based upon groundwater monitoring results, the project site is located within the Crafton-Redlands Plume boundary, a groundwater plume with known synthetic perchlorate and trichloroethylene (TCE) contamination. Although the boundary of the plume varies in publications, groundwater monitoring wells associated with the plume extends from the former Lockheed Martin facility in northeast Redlands west to near the Waterman Avenue/Interstate 10 interchange. Groundwater monitoring wells associated with the Crafton-Redlands Groundwater Plume are mapped throughout the Redlands area. The closest monitoring wells to the project site, COR#30-A, COR#31-A, and COR#32, are situated east in Texonia Park on Texas Street.

Recognized Environmental Conditions

Recognized Environmental Conditions (REC's) are defined by the American Society of Testing and Materials (ASTM) as any hazardous substance or petroleum product under conditions that indicate an existing, past, or material threat of release into the structures, ground, groundwater, or surface water at the subject site. If the presences of recognized environmental conditions are identified on a subject site, it may warrant additional research, site evaluation, and/or action. However, no REC's have been identified within or affecting the project site.

Controlled recognized environmental conditions (CREC's) are defined by the American Society of Testing and Materials (ASTM) Practice E 1527-13 as a recognized environmental condition resulting from the past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority (i.e., as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with *hazardous substances* or *petroleum products* allowed to remain in place subject to the implementation of required controls. One CREC (former Lockheed Martin Facility), related to a groundwater plume containing TCE and synthetic perchlorate, has been identified underlying the project site. The former Lockheed Martin Facility is mapped approximately 4.5 mile east-northeast of the project site.

Historical recognized environmental conditions (HREC's) are defined by the American Society of Testing and Materials (ASTM) Practice E 1527-13 as a past release of any *hazardous substances or petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory agency, without subjecting the *property* to any required controls (i.e., *property* use restrictions, *activity and use limitations*, *institutional controls* or *engineering controls*). However, no HREC'S have been identified within or affecting the project site.

The Phase I Environmental Site Assessment found no evidence of recognized environmental conditions in connection with the project site. However, it was determined that the project site is located within the Crafton-Redlands Plume boundary, a groundwater plume with known trichloroethylene (TCE) contamination. Strict definition of the Crafton-Redlands plume warrants it to be labeled as a Controlled Recognized Environmental Condition; however, based on 2021 measured depths to groundwater (approximately 195 feet below grade [fbg]), the concentrations of TCE are reported to be sufficiently low (below MCLs in close proximity to the site) as to not present a health risk to future residents. Additionally, synthetic perchlorate concentrations are slightly above the MCL and decreasing in close proximity to the project site. Finally, because of the known presence of groundwater contamination and the source, the Regional Water Quality Control Board will more than likely not identify future property owners as Responsible Parties. As a result, the plume underlying the site is considered a de minimis condition.

Limited Phase II Site Assessment

Based upon the property being used as an orchard from at least 1930 to sometime before/during 1985, it was determined that the potential exists for restricted agricultural chemicals (i.e., pesticides) to have been legally applied to the project site. This legal application may have resulted in pesticide residues to be detectable within the subject site. As a result of the proposed land-use change to residential, a Limited Phase II Soil Residue Survey was conducted to evaluate shallow, near surface site soils for detectable pesticide residues. To evaluate pesticide soil residues within the site, soil samples were collected and were discretely analyzed for Organochlorine Pesticides (OCPs) according to Environmental Protection Agency (EPA) Test Method 8081A, and arsenic and lead according to EPA Method 6010B. Three of the samples were analyzed for Title 22 Metals, including arsenic and lead, according to EPA Method 6010B/7471A, one sample was tested for Chlorinated Herbicides using EPA Method 8151A, and four of the 0 to 1-foot samples were analyzed for Total Petroleum Hydrocarbons using EPA Method 8015B. All soil samples analyzed during this assessment were analyzed by Enviro-Chem, Inc. (ECI) in Pomona, California. ECI is accredited by the California Environmental Protection Agency, Department of Health Services Environmental Laboratory Accreditation Program (ELAP). Analyses were requested on a chain-of-custody record. Below is a discussion of the laboratory results.

Organochlorinated Pesticides
Seven discreet and one duplicate soil samples collected at a depth of 0 to 1 foot were tested for Organochlorinated Pesticides (OCPs) according to EPA Method 8081A. All detectable concentrations of Dichlorodiphenyldichloroethylene (DDE) were found to be below the USEPA Region 9 Regional Screening Level (RSL) of 2.0 mg/kg for DDE residential use soils. No other OCP analytes were reported at concentrations above their respective actual detection limit (ADL). Based upon these results, soil containing OCPs residues, DDE, are not considered a recognized environmental condition (REC). As such, no further action is warranted, and near surface soils may be reused as fill materials during grading of the proposed project.

Chlorinated Herbicides
One of the samples collected from a depth of 0 to 1 foot was also analyzed for Chlorinated Herbicides. No detectable levels of Chlorinated Herbicides were present in the sample analyzed. Based upon these results, soil containing chlorinated herbicide residues were not detected above the ADL and are not considered an REC. As such, no further action is warranted, and near surface soils may be re-used as fill materials during grading of the proposed residential project.

Title 22 Metals
Seven discrete soil samples and one duplicate sample collected at a depth of 0 to 1 foot were analyzed for arsenic and lead using EPA Method 6010B based upon their historical use as pesticides. In addition, three discrete soil samples collected at a depth of 0 to 1 foot were tested for CAM Title 22 Metals using EPA Method 6010B/7471. Detected levels of barium, chromium, cobalt, copper, lead, mercury, nickel,

vanadium and zinc were reported below their respective Regional Screening Levels (RSLs) for residential use soil.

Arsenic. A total of eleven tests were ran for residual arsenic levels on eight discrete samples collected from a depth of 0 to 1 foot on the project site (including one duplicate). Arsenic levels detected onsite are well under concentrations and considered background levels. As a result of screening near-surface soils onsite for elevated arsenic residues, concentrations are highly likely related to background levels and not associated with historic pesticide usage.

Lead. Lead residues was reported in the seven discrete samples and one duplicate sample analyzed ranging from 2.38 mg/kg to 21.0 mg/kg. The USEPA RSLs were evaluated for lead residues in soil pertaining to residential land use. Based upon the results, soils containing Title 22 Metal residues, including arsenic and lead, were not detected above their respective residential soil RSL's, DTSC's SL's, or background levels, and are not considered an REC. As such, no further action is warranted, and near surface soils may be re-used as fill materials during grading of the proposed residential project.

Total Petroleum Hydrocarbons. Since petroleum hydrocarbons may have been historically used for weed abatement or dust control in the orchards, three discrete soil samples collected at a depth of 0 to 1 foot were analyzed for total petroleum hydrocarbons (TPH) - carbon chain using EPA Method 8015B. None of the three samples reported TPH-gasoline chain (TPH-g), TPH-diesel chain (TPH-d), and TPH-motor oil chain (TPH-mo) concentrations above non-detect. Based upon the results, soils containing TPH-g, TPH-d, and TPH-mo residues were not detected above the ADL and are not considered a recognized environmental condition (REC). As such, no further action is warranted, and near surface soils may be re-used as fill materials during grading of the proposed residential property.

The proposed project would be required to adhere to the site considerations and recommendations of the *Phase I Environmental Site Assessment and Limited Phase II Site Assessment* as a condition of approval. As such, adherence to the site considerations and recommendations would ensure any impacts to the public through the accidental release of hazardous materials would be less than significant.

c) Less than Significant Impact. Lugonia Elementary School is located approximately 1.1 miles east of the project site. Citrus Valley High School is located approximately 1.3 miles northeast of the project site. The proposed project involves the development of a multi-family mixed-use development that includes 460 new apartment units with approximately 17,899 square feet of commercial space. Daily operation of the proposed project would not involve the use of acutely hazardous materials, substances, or wastes. The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school. Impacts would be less than significant.

d) No Impact. The proposed project is not located on a site listed on the state *Cortese List*, a compilation of various sites throughout the state that have been compromised due to soil or groundwater contamination from past uses.[18] Based upon review of the *Cortese List*, the project site is not:

- listed as a hazardous waste and substance site by the Department of Toxic Substances Control (DTSC),[19]
- listed as a leaking underground storage tank (LUST) site by the State Water Resources Control Board (SWRCB),[20]
- listed as a hazardous solid waste disposal site by the SWRCB,[21]
- currently subject to a Cease and Desist Order (CDO) or a Cleanup and Abatement Order (CAO) as issued by the SWRCB,[22] or

- developed with a hazardous waste facility subject to corrective action by the DTSC.[23]

Based on the above review of the Cortese List, the proposed project would not create a significant hazard to the public or the environment. No impact would occur.

e) Less than Significant Impact. The proposed project is not located within 2 miles of a public or private use airport. The project is located approximately 2.3 miles southeast of the San Bernardino International Airport, and 4 miles west of the Redlands Municipal Airport.[24] No impact would occur with regard to safety hazards or excessive airport noise.

f) Less than Significant Impact. Construction work along Tennessee Street would include lateral utility connections and half-width roadway improvements. These activities would require temporary street or lane closures during construction and could potentially result in the diversion of traffic onto other area roadways. However, the project applicant would be required to prepare and implement a traffic control plan for construction. Implementation of a traffic control plan would ensure that construction of the proposed project would not interfere with access for emergency personnel or the evacuation of onsite staff in an emergency. Implementation of a traffic control plan would also ensure that construction operations would not significantly impede movement on any major evacuation routes identified in the city's General Plan, including Interstates 10, 15, 210, and 215, and State Highways 30, 60, 66, 71, and 83. While the project is located adjacent to I-210, its development would not impact the availability of the route, or the other identified highways and roadways as evacuation routes. The project as proposed includes three points of entry into the project: one off Tennessee Street, one off Pennsylvania Avenue, and one at the future commercial development proposed to the south of the project site. Development of the proposed project would not impact the implementation of or physically interfere with an adopted emergency response plan or evacuation plan because no permanent public street or lane closures are proposed. Therefore, project impacts would be less than significant.

g) Less than Significant Impact. The project site is not located within a State Responsibility Areas (SRA). The nearest SRA area is located approximately 3.5 miles south of the project site near the San Timoteo Canyon.[25] There are no wildland conditions in the urbanized area where the project site is located. Any potential impacts related to wildland fire would be less than significant.

4.10 – 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 off-site;	☐	☐	☑	☐
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?	☐	☐	☑	☐

A *Preliminary Water Quality Management Plan* (WQMP) dated February 7, 2024 (see Appendix G), a *Hydrology and Hydraulics Report* (Hydrology Report) dated September 2023 (see Appendix H), and a *Preliminary Sewer Sizing Memo* (Sewer Memo) dated October 2023 (see Appendix I) were prepared for the proposed project by Kimley Horn & Associates, Inc.to evaluate the potential water quality impacts associated with the construction and operation of the proposed project. The information presented below is condensed from the above documents and is attached as Appendices G, H, and I respectively.

a) Less than Significant Impact. While the project site is currently undeveloped, it has been regularly disturbed overtime or agricultural uses, and is located in an urbanized area of Redlands. The project proposes the development of 460 new apartment units, approximately 17,899 square feet of commercial space, as well as associated landscaping and roadway improvements to the site. The new streets, sidewalks, and structures on the project site would increase the amount of impermeable surfaces, as well as increase flows into storm drains. Construction and use of the proposed apartments would be required to comply with federal, state and local water guidelines and requirements.

According to the city's General Plan, Redlands is part of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWM), which aims to improve water supply reliability, flood management, stormwater recharge, water quality, and habitats/open space. Development of the proposed project would be required to adhere to benchmarks outlined in the San Bernardino Valley Regional Urban Water Management Plan (RUWMP), of which the city is one of 10 water providers included.[26] Landscaping proposed with the project would be utilized to limit runoff and provide permeable surfaces throughout the site. Compliance would include following irrigation schedules, water efficiency audits, and non-potable irrigation systems among other guidelines.

The project must also adhere to all Santa Ana Regional Water Quality Control Board (SARWQCB) permitting requirements for construction and NPDES standards for stormwater runoff, as well as adhere to city ordinances requiring the use of Best Management Practices (BMPs) to control the release of potential pollutants entering storm drain systems.[27] Such BMPs include, but are not limited to; routine street sweeping, routine storm drain and catch basin cleaning, regular pavement repair/maintenance, and spill prevention practices. Non-structural, structural source control BMPs, and Low Impact Development (LID) BMPs are included in the preliminary WQMP (Appendix G) and shall be implemented as part of the project. With implementation of BMPs and city and regional standards and guidelines, impacts to water quality standards or waste discharge requirements would be less than significant.

b) Less than Significant Impact. Construction of the proposed residential and commercial mixed-use development has the potential to interfere with groundwater recharge. According to the Hydrology Report prepared for this project, groundwater was not encountered during the field investigation of the project site. The maximum depth explored was 51.5 feet, and while the site's historical groundwater depth is unknown, it is anticipated to be approximately 95 feet below the ground surface. The nearest groundwater well is located approximately 0.5 miles east of the project site, adjacent to Texonia Park off Pennsylvania Avenue. The well has a depth of 743 feet and as of writing this document, the latest measurement recorded was a depth to water of 218.7 feet taken September 9th, 2023.[28]

The project includes the development of 460 residential multi-family dwelling units, as well as approximately 17,899 square feet of commercial space, and associated landscaping and roadway improvements, all within a 13.48-acre parcel. Building, road, sidewalk, and parking development onsite would compromise of a total of 412,152 square feet or 9.46 acres of impervious surfaces. The paving of previously undeveloped land and the increase in building surface area would increase impervious surface coverage on the site, thereby potentially reducing the total amount of infiltration onsite. The remaining 175,037 square feet, or 4.02 acres of the project site would be compromised of open space and landscaping coverage. The project site will have two drainage areas that will capture on-site storm runoff and convey water to various on-site inlets throughout the site. Flows will be diverted to two onsite underground infiltration facilities. The project site is not utilized for groundwater recharge and would include landscaping and drainage improvements that would contribute to infiltration. The development of the project site would have a less than significant impact on groundwater recharge.

c.i) Less than Significant Impact. The city of Redlands is located in and around several regional watersheds. The city's existing water system is reliant on the Mill Creek and Santa Ana Watersheds. No rivers or streams intersect the project site, and the project would not alter existing drainage patterns and facilities, as it would install new onsite water and storm drains that would connect to the existing infrastructure in the surrounding streets. Those facilities will be regularly maintained. Development of the proposed project will require site grading, which will require a standalone Erosion Control Plan per the city of Redlands.[29] Adherence to the city's erosion plan guidelines during construction of the project and proper maintenance of drainage facilities would decrease any likelihood of erosion of sensitive stream habitats. Impacts related to erosion or siltation would be less than significant.

c.ii) Less than Significant Impact. There are no rivers or streams that intersect the project site, and as such, development of the project would not result in the alteration of any stream course. During construction, the project applicant would be required to comply with drainage and runoff guidelines pursuant to Redlands Municipal Code Chapter 15.54.200.[30] A total of 412,152 square feet (70%) of the project site would consist of buildings, roads, and parking coverage. The majority of the project site would therefore consist of impervious surfaces and would increase the net area of impermeable surfaces on the site and, therefore, may increase discharges to the city's existing storm drain system.

A new on-site storm drain system, designed for the 100-yr 1-hr storm, will be installed to collect surface runoff at designated storm inlet locations across the site and convey flows downstream. The project site will be delineated into 2 major drainage areas. The drainage areas will capture on-site storm runoff and convey water to various on-site inlets throughout the site. These flows will be diverted to two onsite proprietary underground infiltration systems that will serve as the water quality facilities. Per San Bernardino water quality design requirements, the two underground detention systems also have the purpose of allowing storm runoff to infiltrate into the subsurface soils. Additionally, each infiltration system is outfitted with an orifice downstream. The water captured in the detention system will work in conjunction with proposed infiltration basins which will serve as the water quality infiltration BMPs. They will retain the 100-year storm, 24-hour event so the ultimate post construction stormwater flow is no more than the pre-construction stormwater flow. There is no existing stormwater infrastructure for the project to connect to. A proprietary pump is included in the design at the western boundary of the site to bring stormwater to grade. Construction of the proposed project would be required to adhere to all SARWQCB permitting requirements and NPDES standards for stormwater runoff, as well as adhere to city ordinances requiring the use of BMPs to control the release of potential pollutants entering storm drain systems as indicated in the city's General Plan. Impacts will be less than significant with compliance of local drainage guidelines and implementation of pollutant-related BMPs.

c.iii) Less than Significant Impact. Development of the proposed project would increase the area of impermeable surfaces on the site. As discussed in Section 4.9.c.ii above, construction of the proposed project would install new onsite water, sewer, and infiltration facilities. Flows will be diverted to two onsite proprietary underground infiltration systems that will serve as the water quality facilities that will also allow storm runoff to infiltrate into subsurface soils. The proposed Pennsylvania Avenue sewer mainline shall connect to the existing maintenance hole and flow westerly to Tennessee Street. The proposed Tennessee Street sewer mainline shall flow from Pennsylvania Avenue north to a mainline in San Bernardino Avenue (see Appendix I). All drainage plans are subject to city review and approval. As discussed in sections 4.9.a and 4.9.c.ii, BMPs would be required to be incorporated to protect water quality. With proper maintenance of drainage facilities and adherence to BMPs, impacts would be less than significant.

c.iv) Less than Significant Impact. According to flood maps prepared by the Federal Emergency Management Agency (FEMA) and the Healthy Community Element of the city's General Plan, the project site is located in an area designated as Flood Zone "X." Zone X represents areas determined to be outside the 0.2% annual chance, and not located within a floodway, or within a 100 or 500-year floodplain.[31] The project site is currently undeveloped, vacant land, and construction operations would not impede or redirect flood flows. In addition, the proposed project would comply with city of Redlands Municipal Code Chapter 15.32 (Flood Damage Protection), which would ensure flood flows would not be impeded.[32] Impacts would be less than significant.

d) Less than Significant Impact. The city is not exposed to tsunami hazards due to its inland location. In addition, according to the California Department of Water Resources, the project site is not located in a dam inundation area.[33] There are no impacts related to tsunami or dam inundation.[34] The project site is located in Flood Zone X, representing an area determined to be outside the 0.2% annual chance. Adherence to city ordinances requiring the use of BMPs to control the release of potential pollutants would reduce the potential for the release of pollutants in the event of inundation by a flood. Impacts would be less than significant.

e) Less than Significant Impact. The proposed project will be subject to the regulations and guidelines of various plans governing water quality and groundwater management throughout the region. Development of the proposed project would be required to adhere to requirements of the Santa Ana Regional Water Quality Control Board's (SARWQCB) Basin Plan. The Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Included in the Plan are the incorporation of BMPs to protect water quality during construction and operation of a project. The project would be subject to policies included in the Sustainable Community Element that limit potential water quality impacts and promote groundwater conservation. Development of the project site would be subject to all existing water quality regulations and programs, including all applicable construction permits. Implementation of General Plan and Basin Plan policies would ensure that water quality impacts related to the proposed project would be less than significant.

4.11 – 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?	☐	☐	☑	☐

a) No Impact. The project site encompasses one undeveloped, 13.48-acre parcel of land in the city of Redlands. The parcel is surrounded by mostly undeveloped land to the north, south and east of the project site, and is bounded by Interstate 210 to the west. This portion of the city is characterized by residential, commercial, and light industrial uses. Development of the project site would not include the reconfiguration of existing roadways and would not divide an established community. No impacts would occur.

b) Less than Significant Impact. The project includes a Specific Plan Amendment (SPA) to remove the site from East Valley Corridor Specific Plan; a Zone Change (ZC) to establish C-3 (General Commercial District) zoning for the site, a Conditional Use Permit (CUP) for the mixed use portion of the project; and a Tentative Parcel Map to subdivide the property into four lots. The Commercial Land Use Designations allow for mixed-use and residential land uses consistent with the underlying zoning district.[35] The C-3 Zoning District permits residential uses, subject to the approval of a conditional use permit; and those residences may be combined with nonresidential uses as a mixed use development, as indicated in the Redlands Code of Ordinances.[36] While the development requires a SPA and ZC for the project site, the proposed development would be subject to all land use and planning policies in the General Plan. A site design review as part of the project review process will take place and ensure compliance with all site-specific development standards, as outlined in the City's Code of Ordinances. The proposed project would not conflict with a land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As such, impacts will be less than significant.

4.12 – 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?	☐	☐	☑	☐

a) Less Than Significant Impact. The California Surface Mining and Reclamation Act (SMARA) identifies and protects mineral resources within the State of California. It establishes several Mineral Resource Zones (MRZ), divisions of land containing within them various amounts of known or unknown mineral resources. The MRZ's are defined as follows: MRZ-1 are areas where no significant minerals are considered to be present, MRZ-2 are areas where mineral resources have been identified, MRZ-3 are areas of undetermined mineral resource significance, and MRZ-4 areas are of unknown mineral resource potential. According to the city's General Plan, the Santa Ana Wash, which adjoins Redlands to the north, contains high quality construction aggregates. According to the city's General Plan, the project site is entirely located within an area designated as an MRZ-2 area, suggesting that significant mineral resources may be present.[37] However, Figure 6-4 of the Vital Environment Element of the General Plan indicates that the project site is not located in an area designated by the State Mining and Geology Board as having regionally significant PCC-grade aggregate resources.[38] The project site is currently undeveloped, however it is located in an urbanized area of Redlands, with residential and commercial uses in the surrounding areas. Development of the proposed project would be in keeping with the character of the surrounding area, and would not constitute a loss of availability of a mineral resource. The project site location in an urbanized area is incompatible with mining operations, as such operation would negatively impact nearby businesses and residents. As such, development of the proposed project would not 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. Impacts would be less than significant.

b) Less than Significant Impact. Mineral resources found in and around Redlands have been deemed significant to the region and the State; however, such mineral resources identified have not been designated as locally significant to the city of Redlands. The project site is located entirely within an MRZ-2 area, of which significant mineral deposits are likely to be present. However, while project site is currently undeveloped, the surrounding area is characterized by residential and commercial uses that are incompatible with the development of any mining operations and subsequent related pollution that would take place. Development of the proposed project does not constitute a loss of mineral resources as surrounding land uses do not support mining operations. Impacts to a locally important mineral resources would be less than significant.

4.13 – Noise

Would the project:

	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?	☐	☐	☑	☐

A *Noise and Vibration Analysis Memo* was prepared by MIG (January, 2024) to evaluate and document noise levels associated with construction and operation of the proposed project (see Appendix J). The information in this section is taken from the *Noise and Vibration Analysis Memo* for the proposed project. Additional detail regarding how noise is defined and measured can be found in Appendix J.

a) Less than Significant with Mitigation Incorporated. Existing ambient noise levels in the project area were monitored on December 12, 2023 (Appendix J). Three (3) short-term measurements were conducted to determine typical ambient noise levels in the vicinity of the project area, provide direct observations of existing noise sources at and in the vicinity of the project area, and evaluate project noise levels at nearby sensitive receptors. The three monitoring locations are described below and shown in Appendix J.

- Location ST-1 was at the central eastern portion of the project site, approximately 62 feet east of the centerline of Tennessee Street and approximately 930 feet north of the centerline of Lugonia Avenue.
- Location ST-2 was at the south central portion of the project site, approximately 435 feet east of the centerline of Tennessee Street and approximately 800 feet north of the centerline of Lugonia Avenue.
- Location ST-3 was at the central eastern of the project site, approximately 695 feet east of the centerline of Tennessee Street and approximately 980 feet north of the centerline of Lugonia Avenue.

Based on observations made during the ambient noise monitoring, the existing noise environment in the project vicinity consists primarily of vehicles on Tennessee Street and I-210. Table 13 (Measured Short-Term Ambient Noise Levels (dBA)) summarizes the results of the ambient noise monitoring.

Table 13
Measured Short-Term Ambient Noise Levels (dBA)

Monitor	Duration	Measured Noise Level		
		L_{eq}	L_{min}	L_{max}
ST-1	4 hours	70.3	61.7	96.2
ST-2	3.5 hours	62.2	57.1	72.4
ST-3	3.75 hours	60.3	54.8	75.0
Source: MIG, 2024; Appendix J.				

As shown in Table 13, measured ambient noise levels were highest along Tennessee Street (ST-1) while noise levels on the interior of the site (ST-2 and ST-3) were much lower. These noise levels indicate traffic noise levels at the site attenuate at rate of approximately 3 decibel per doubling of distance from the roadway centerline.

Construction Noise Impact Analysis

The proposed project involves construction activities including site preparation, grading, building construction, paving and architectural coating on an undeveloped parcel in an existing residential area of the city. Construction activities are anticipated to begin in 2024 and may last approximately 18 months in total. In general, construction activities would involve the use of worker vehicles, delivery trucks, dump trucks, and heavy-duty construction equipment such as (but not limited to) dozers, backhoes, tractors, loaders, graders, excavators, scrapers, welders, rollers, cranes, material lifts, generators, pavers, paving equipment, and air compressors. These types of construction activities would generate noise and vibration from the following sources:

- Heavy equipment operations at different work areas. Some heavy equipment would consist of mobile equipment such as a loader and excavator that would move around work areas; other equipment would consist of stationary equipment (e.g., cranes or material hoists/lifts) that would generally operate in a fixed location until work activities are complete. Heavy equipment generates noise from engine operation, mechanical systems, and components (e.g., fans, gears, propulsion of wheels or tracks), and other sources such as back-up alarms. Mobile equipment generally operates at different loads, or power outputs, and produces higher or lower noise levels depending on the operating load. Stationary equipment generally operates at a steady power output that produces a constant noise level.
- Vehicle trips, including worker, vendor, and haul truck trips. These trips are likely to primarily occur on Lugonia Avenue and Tennessee Street.

Typical construction equipment noise levels at different distances are shown in Table 14 (Potential Project Construction Equipment Noise Levels) below.

Table 14
Potential project Construction Equipment Noise Levels

Typical Equipment	Noise Level at 50 feet (L_{max})(A)	Percent Usage Factor(B)	Predicted Equipment Noise Levels (L_{eq})(C)						
			25 Feet	50 Feet	100 Feet	200 Feet	300 Feet	425 Feet	850 Feet
Air Compressor	80	40	82	76	70	64	56	57	44
Bulldozer	85	40	87	81	75	69	65	62	56
Backhoe	80	40	82	76	70	64	56	57	51
Compact Roller	80	20	79	73	67	61	57	54	48
Concrete Mixer	85	40	87	81	75	69	65	57	56
Crane	85	16	83	77	71	65	61	58	52
Delivery Truck	85	40	87	81	75	69	65	57	56
Excavator	85	40	87	81	75	69	65	57	56
Grader	85	40	87	81	75	69	65	57	56
Generator	82	50	85	79	73	67	66	60	54
Paver	85	50	88	82	76	70	66	63	57
Pneumatic Tools	85	50	88	82	76	70	66	63	57
Tractor	84	40	86	80	74	68	64	61	55
Scraper	85	40	87	81	75	69	65	62	56
Welder	73	40	75	69	63	57	53	50	44

Source: Caltrans, 2013 and FHWA, 2010.

(A) L_{max} noise levels based on manufacturer's specifications.

(B) Usage factor refers to the amount (percent) of time the equipment produces noise over the time period.

(C) Estimate does not account for any atmospheric or ground attenuation factors. Calculated noise levels based on Caltrans, 2013: L_{eq} (hourly) = L_{max} at 50 feet – 20log (D/50) + 10log (UF), where: L_{max} = reference L_{max} from manufacturer or other source; D = distance of interest; UF = usage fraction or fraction of time period of interest equipment is in use.

With regard to construction noise, site preparation and grading phases typically result in the highest temporary noise levels due to the use of heavy-duty equipment such as dozers, excavators, graders, tractors, scrapers, and trucks. Construction noise impacts generally occur when construction activities occur in areas immediately adjoining noise sensitive land uses, during noise sensitive times of the day, or when construction durations last over extended periods of time.

The proposed project would have a limited potential to result in construction noise impacts at existing sensitive receptor locations because the closest residential properties are located approximately 880 feet east of the project boundary. As shown in Table 14, typical construction noise levels would not exceed 57 dBA L_{eq} at a distance of approximately 850 feet. Thus, the proposed project's potential construction noise levels would be less than the measured ambient levels along Karon Street in December 2022 (Appendix J) and would not result in a significant impact at existing sensitive receptor locations on Karon Street. In addition, the proposed project would be required to comply with all applicable Municipal Code requirements pertaining to the control of construction noise, including Section 8.06.090(F) and 8.06.120(G), which limits construction activities to the hours of 7 AM to 6 PM, Monday through Saturday, with no activities taking place on Sunday or holidays and requires all equipment to include air intake silencers and exhaust mufflers in good work order.[39] These mandatory requirements would further reduce the project's less than significant construction noise levels.

The vacant land that borders the proposed project to the east (between the proposed project's eastern boundary and Karon Street) is the site of the planned Lugonia Village residential project and subdivision, which would consist of 451 apartment units, 72 townhomes, and 18 single-family detached homes on approximately 24.4 acres of land. The Lugonia Village project is anticipated to begin construction by June 2025 and complete construction by January 2028 (see Appendix J). Based on this published schedule, the Lugonia Village project would result in adjacent sensitive residential receptors no sooner than January 2028. In contrast, the proposed project is anticipated to be constructed over an 18-month period beginning in 2024 and concluding, at latest (i.e., assuming construction begins in December 2024), by May 2026. Thus, the proposed project's construction activities would be complete before the Lugonia Village project is occupied. The proposed project, therefore, would not have the potential to impact future receptors at the Lugonia Village project.

It is noted that, based on their respective schedules, the proposed project's construction activities would combine with the Lugonia Village project's construction activities to result in a cumulative noise impact to existing sensitive receptors on Karon Street. Specifically, it could be possible for the proposed project's building construction, paving, and architectural coating phases to overlap with grading and other activities associated with the Lugonia Village project. If this were to occur, the proposed project would not result in a cumulatively considerable contribution to total construction noise levels on Karon Street because the proposed project's work activities would be located more than 850 feet from Karon Street and result in substantially lower noise levels than heavy equipment operations in the Lugonia Village project area that would be occurring much closer to Karon Street receptors.

Finally, based on their respective schedules, the proposed project may be occupied by sensitive residential receptors prior to the completion of Lugonia Village construction activities. Specifically, Lugonia Village building construction, paving, and architectural coating activities may still be occurring after May 2026, when the proposed project would be occupied. The Initial Study / Mitigated Negative Declaration (IS/MND) prepared for the Lugonia Village project included standard conditions requiring Lugonia Village construction activities to occur in accordance with the Municipal Code's allowable time periods and all construction equipment to be equipped with exhaust and air intake silencers in good working order. With implementation of these conditions, the IS/MND concluded Lugonia Village noise impacts on adjacent sensitive receptors would be less than significant.

In conclusion, the proposed project's construction activities would occur more than 850 feet away from existing sensitive receptors and would not result in significant construction noise levels at existing sensitive receptor locations. The proposed project also would not have the potential to impact future receptors in the Lugonia Village project because the Lugonia Village project is anticipated to be occupied after the proposed project is constructed. Regardless of the timing of the Lugonia Village project, the proposed project's construction activities would occur in compliance with Municipal Code limits on allowable work hours and requirements for intake and exhaust mufflers. The proposed project's construction noise levels would be less than significant.

Operational Noise Impact Analysis

<u>(On-Site Noise Sources)</u>
The proposed project would generate noise from human activity (e.g., use of open space areas), vehicle parking activities, garbage collection activities, landscaping activities, stationary heating, ventilation, and air conditioning (HVAC) equipment, and other residential and commercial activities (e.g., building maintenance). These new sources of noise could be audible at adjacent properties; however, the project would have a limited potential to generate significant on-site noise levels or substantially change overall noise levels in the vicinity of the project for the following reasons:

- Residential uses: Residential land uses, including high density and mixed-use residential development, are a not a substantial source of noise because:

  - Buildings and equipment are setback from front, side, and rear property lines;
  - Mechanical equipment associated with elevators, amenities (e.g., pools,) are typically enclosed within closets, sheds, or equipment rooms;
  - Heating, ventilation, and air conditioning (HVAC) equipment is typically roof mounted behind a parapet wall or screened from public view by landscaping, fences, or walls and, therefore, shielded from adjacent property lines; and
  - Residential activities are subject to the Municipal Code requirements that control and abate unnecessary, excessive, or annoying noise, including . . . .
  - Pursuant to Assembly Bill 1307, for residential projects, the effects of noise generated by project occupants and their guests on human beings is not a significant effect on the environment for the purposes of CEQA.

- Commercial uses: Ground level commercial uses would be located in the southwest corner of the project (in Building 8 and Building 10). The commercial space is intended to create a walkable environment for residents to have easy access to goods and services, as well as access to the potential commercial development to the south of the project area (between the proposed project's southern boundary and Lugonia Avenue). The commercial area would, at closest, be more than 1,300 feet away from existing sensitive receptors on Karon Street, and more than 450 feet away from future sensitive receptors associated with the Lugonia Village project to the east (between the proposed project's eastern boundary and Karon Street). In addition, residential buildings 3, 6, 7, and 9 would serve to partially or fully shield ground-level potential commercial noise from sensitive, off-site receptors to the east. Finally, the proposed project's commercial uses do not include intensive operations or features that could generate elevated exterior noise levels, such as drive-throughs with speaker boxes. The commercial area would include a gated loading dock that would be located at least 75 feet from any residential building façade and the loading dock would operate in accordance with Municipal Code Section 8.06.090(E), which prohibits loading and unloading activities between the hours of 10 PM and 6 AM or at any time in violation of the Municipal Code's general noise regulation contained in Section 8.06.030.
- Project layout: The proposed project layout generally places the housing units around the perimeter of the site, which would shield adjacent properties from noise originating on-site. For example, the courtyards would be shielded from existing and future residences to the east by the proposed project's residential buildings. Indoor common space such as the fitness center and club room would also be shielded from receptors by the project's residential buildings. The roof deck, which is located near the center of the site, would be located over 400 feet from the nearest sensitive receptors and would not generate substantial noise levels at shared property lines.

Once constructed, the proposed project's primary on-site stationary noise source would be HVAC equipment, which would be located on the roof of the project's three- and four-story buildings, at least 30 or 40 feet above the ground, respectively. HVAC units would be located on a platform in the center of each building (or building wing), with approximately one unit per tenant. Although the exact make and model of the HVAC units are unknown at this time, the type of HVAC unit anticipated to be installed is a small fan-type residential unit capable of generating noise levels between 70 and 76 dBA at a distance of three feet, depending on the type of model installed (Appendix J). A parapet wall would shield the HVAC units from adjacent property lines and increase the effective distance equipment noise must travel to reach the property line. Each building's parapet wall would provide a different level of HVAC noise attenuation due to differences in distance between the HVAC platform and the parapet wall and the parapet wall and the adjacent property line, as well as differences in receiver, source (i.e., HVAC), and top of wall elevations. For the purposes of this analysis, only HVAC equipment noise associated with perimeter buildings adjacent to shared property lines was estimated. The proposed project's estimated HVAC unit noise levels with distance and barrier attenuation are provided in Table 15 (residential property lines) and Table 16 (commercial property lines).

Table 15
Potential HVAC System Noise Levels at Residential Property Lines

HVAC System Variable	Building 2	Building 3	Building 7
Reference HVAC Noise Level at 3 Feet	76.0 dBA L_{eq}	76.0 dBA	76.0 dBA
Distance to Residential Property Line^(A)^	200 Feet	90 Feet	240 Feet
Number of HVAC Units Operating	42	32	20
Estimated Total Noise Level	42.8	50.0	43.6
Residential Daytime Standard (7 AM – 10 PM)	**60 dBA L_{eq}**	**60 dBA L_{eq}**	**60 dBA L_{eq}**
Residential Nighttime Standard (10 PM – 7 AM)	**50 dBA L_{eq}**	**50 dBA L_{eq}**	**50 dBA L_{eq}**
Standards Exceeded?	**No**	**No**	**No**

Source: MIG, 2024; Appendix J.

(A) Distance is as measured from the center of the HVAC platform to the closest point on the property line.

(B) Total noise level includes attenuation with distance and shielding by parapet wall.

Table 16
Potential HVAC System Noise Levels at Commercial Property Lines

HVAC System Variable	Building 7	Building 8	Building 10
Reference HVAC Noise Level at 3 Feet	76.0 dBA L_{eq}	76.0 dBA	76.0 dBA
Distance to Residential Property Line^(A)^	45 Feet	30 Feet	50Feet
Number of HVAC Units Operating	20	16	24
Estimated Total Noise Level	51.3	52.5	46.9
Residential Daytime Standard (7 AM – 10 PM)	**65 dBA L_{eq}**	**65 dBA L_{eq}**	**65 dBA L_{eq}**
Residential Nighttime Standard (10 PM – 7 AM)	**60 dBA L_{eq}**	**60 dBA L_{eq}**	**60 dBA L_{eq}**
Standards Exceeded?	**No**	**No**	**No**

Source: MIG, 2024; Appendix J.

(A) Distance is measured from the center of the HVAC platform to the closest point on the property line.

(B) Total noise level includes attenuation with distance and shielding by parapet wall.

As shown in Table 15 and Table 16, the proposed project's potential HVAC noise levels would not exceed the city's daytime or nighttime noise standards for residential or commercial districts. The HVAC estimates provided in Table 15 and Table 16 are considered conservative (i.e., likely to overestimate potential noise levels) because the estimated noise levels assume all HVAC units in a given area are operating at the same time, for a full 30 minutes. In actuality, this condition is unlikely to occur. Although estimated HVAC noise levels would not exceed a city standard, Building 3 HVAC noise levels would be equal to the Municipal Code's residential nighttime standard of 50 dBA L_{eq}. To allow for potential small differences in assumed and final setback distances and building elevations, **Mitigation Measure NOI-1** is incorporated into the project to ensure Building 3 HVAC noise levels do not exceed the city's nighttime noise standard of 50 dBA L_{eq}.

The implementation of **Mitigation Measure NOI-1** would provide a minimum of 1 dBA of additional HVAC noise attenuation along the shared eastern property line and ensure that HVAC noise levels would not exceed the city's 50 dBA L_{eq} exterior nighttime noise standard, nor any other exterior noise standard (e.g., the city's 60 dBA L_{eq} daytime standard for residential properties).

The project also would not have the potential to result in noise levels that exceed the city's maximum permissible interior noise limit of 45 dBA L_{eq} for residential properties. Noise levels inside existing residential buildings would be approximately 12 dBA to 30 dBA lower than estimated exterior noise levels, depending on whether windows and doors were open or closed. Thus, potential HVAC-related interior noise levels at existing residential receptors adjacent to the project would be less than 40 dBA L_{eq} even with windows open, which is less than the city's 45 dBA L_{eq} interior noise standard.

Finally, it is noted that HVAC equipment does not operate continuously and would not affect ambient noise levels when the equipment is not in use. For these reasons, potential HVAC equipment would not generate noise levels that have the potential to exceed the 45 dBA CNEL interior noise standard established by General Plan Policy 9.0s. Furthermore, with **Mitigation Measure NOI-1,** potential HVAC noise is estimated to be less than 50.0 dBA L_{eq} when in operation, which is approximately 10 dBA less than the CNEL measured on Karon Street for the Lugonia Village project (Appendix J). The proposed project, therefore, would not substantially change noise levels in the vicinity of the project, result in incompatible noise levels at sensitive receptor locations, or otherwise result in a substantial permanent increase in ambient noise levels in the vicinity of the project (considered by General Plan Policy 9.0v to be 4 dBA if a land use compatibility threshold is exceeded or 6 dBA in any situation).

For the reasons outlined above, the proposed project would not result in a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of city standards with the incorporation of **Mitigation Measure NOI-1**. With implementation of the above mitigation measure, impacts would be less than significant.

(Off-Site Vehicle Trip Noise)
The Transportation Study Screening Analysis prepared for the proposed project indicates the project would result in a net increase of 2,704 daily vehicle trips (see Appendices L and M). Currently, there are approximately 5,058 passenger car equivalent (PCE) trips per day at the intersection of SR-210 West Bound Ramps and Tennessee Street, 4,828 PCE per day at the intersection of SR-210 East Bound Ramps and San Bernardino Avenue, 6,186 PCE trips per day at the intersection of Tennessee Street and Lugonia Avenue, and 4,162 PCE trips per day at the intersection of Tennessee Street and I-10 West Bound ramps, and 5,174 PCE trips per day at the intersection of Tennessee Street and I-10 East Bound ramps (Appendices L and M). In general, it takes a doubling of traffic to increase traffic noise volumes by 3 dBA, which is considered an audible increase for exterior noise environments by the city's General Plan (Appendix J). The addition of 2,704 passenger cars to the roadway system would not result in a doubling of traffic on any roadway segment at or in the vicinity of the project site and, therefore, would result in a less than 3 dBA increase in noise levels on local roads used to access the project site. The proposed project would not result in a substantial, permanent increase in noise levels along the roadways used to access the proposed project as compared to existing or future conditions. Therefore, this impact would be less than significant.

b) Less than Significant Impact. Construction vibration impacts generally occur when construction activities occur in close proximity to buildings and vibration-sensitive areas, during evening or nighttime hours, or when construction activities last extended periods of time. The potential for groundborne vibration is typically greatest when vibratory or large equipment such as rollers or bulldozers are operated adjacent to or in proximity of occupied buildings and structures. For the proposed project, large equipment would primarily operate during the site preparation, grading, and paving phases; however, the proposed project is currently bordered by vacant land on the east and south, with the closest existing structures being residences located 880 feet east of the project. The proposed project, therefore, does not have the potential to result in excessive groundborne vibrations at existing structures. In addition, the planned Lugonia Village residential project and subdivision is anticipated to begin construction by June 2025 and complete construction by January 2028.[40] In contrast, the proposed project is anticipated to be constructed over an 18-month period beginning in 2024 and concluding, at latest (i.e., assuming construction begins in December 2024), by May 2026. Thus, the proposed project's site preparation, grading, and paving activities would be complete before the Lugonia Village project is constructed and occupied. The proposed project, therefore, would not have the potential to result in ground-borne vibrations during construction that could impact existing or future off-site receptors or structures. This impact would be less than significant impact.

Once operational, the proposed project would consist of a mix of residential and commercial uses that would not involve any large equipment or other operations that would generate excessive groundborne vibration levels. As such, impacts related to groundborne vibrations and noise levels would be less than significant.

c) Less than Significant Impact. The proposed project is located approximately 2.3 miles southeast of the San Bernardino International Airport. The project site is located outside of the 65 CNEL noise contour for the San Bernardino International Airport and is not located within any other airport planning boundary (SBIAA, 2019; City of Redlands, 2003).[41] The proposed project, therefore, would not expose people living or working at the site to excessive airport-related noise levels.

Mitigation Measures

NOI-1 **Reduce Potential Building 3 HVAC Noise Levels.** To reduce potential noise levels from Building 3 heating, ventilation, and air conditioning (HVAC) equipment:

1. The installation of HVAC units or systems that generate a noise level greater than 75 dBA (at 3 feet) for units located within 90 lateral feet of the project's eastern property line shall be prohibited; or

2. Parapet walls for any building with an HVAC unit or system within 90 feet of the project's eastern property line shall be at least 1 foot taller than the top of the tallest installed HVAC unit.

4.14 – 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 (for example, through extension of roads or other infrastructure)?	☐	☐	☑	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

a) Less than Significant Impact. The project would directly induce population growth in the area with the development of new multi-family housing. As outlined in “Table 4-4: Residential Buildout (2035)” of the Livable Community Element of the Redlands General Plan, potential buildout of multi-family residential within the city, outside of the Transit Village, is projected at 374 units by 2035.[42] Furthermore, future development of commercial buildout outside within the city and outside of the Transit Village is projected at 2,889,357 square-feet by 2035.[43] These numbers do not include projects that were under construction, entitled, or in the planning stage when the General Plan was written. The table additionally estimates a population growth from total future buildout, including multi-family residential, of 10,964 people.

The project as proposed includes development of 460 new apartment units and approximately 17,899 square feet of commercial space. Eight of the proposed buildings would exclusively serve as residential uses, while the remaining two buildings would serve mixed-uses that incorporate ground-floor commercial space with residential units on the floors above (see Exhibit 5, Project Elevations). The project also proposes a Specific Plan Amendment (SPA) to remove the site from East Valley Corridor Specific Plan; Zone Change (ZC) to establish C-3 (General Commercial District) zoning for the site, Conditional Use Permit (CUP) for the mixed use portion of the project; and Tentative Parcel Map to subdivide the property into four lots. Per the Redlands Code of Ordinances (18.92.080) the residential density permitted within the C-3 zoning district is R-3 (multi-family residential district). The R-3 residential zoning district allows for high density residential apartments, at a density of 1,450 square feet of lot area per dwelling unit.[44] The 12.79-acre (557,132.4 square-foot) project would therefore support a density of 384 du/ac. As part of the project proposal, approximately 5% of the proposed residential units would be designated as “very low-income” units spread throughout the site, allowing for a 20 percent density bonus in accordance with the “California Density Bonus Law”. The 20% density bonus would allow for the possible addition of another 76 dwelling units. As such, the proposed 460 apartments as proposed would not exceed the city’s R-3 zoning district’s maximum density.

Using an average of 2.91 persons per household (from a current population of 73,849 divided by 25,319 households in Redlands) the proposed 460 apartments would house approximately 1,339 persons.[45] Furthermore, this increase in units and potential population growth would not represent substantial unplanned growth that cannot be handled by the city's existing utilities and service providers. As discussed in Section 4.18 (Public Services), payment of development impact fees by the proposed project would offset incremental increases in demand for services such as fire protection, police protection, schools, parks and recreation facilities, and other public services such as libraries. Additionally, the potential increase in population growth would be within the SCAG 2020 RTP/SCS growth projections for the City of Redlands (i.e., an increase of 11,300 residents between 2016 and 2045).[46] Therefore, the proposed project would not exceed regional growth assumptions, and as such, impacts would be less than significant.

b) No Impact. The project site is currently undeveloped. No housing would be displaced as a result of project development and as such there would be no impacts.

4.15 – 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?	☐	☐	☑	☐

a) Less than Significant Impact. The project is located in the service area of the City of Redlands Fire Department. The Fire Department responds to medical emergencies, hazardous materials incidents, rescue calls, and motor-related accidents, in addition to regular fire suppression services. There are four stations in Redlands[47]:

- Fire Station 261: 525 E Citrus Ave.
- Fire Station 262: 1690 Garden St.
- Fire Station 263: 10 W Pennsylvania Ave.
- Fire Station 264: 1270 W Park Ave.

The nearest fire station to the project site is Station 263, located approximately one mile directly east of the project site off Pennsylvania Avenue. The project may create an incremental increase in demand for fire services. To offset any incremental demand in fire protection and emergency medical services, development impact fees are collected at the time of building permit issuance for approved projects. The project as proposed is a mixed-use development that will incorporate 460 multi-family residential units with approximately 17,899 square feet of commercial space. developments and commercial. Fees would be charged at a rate of $528.21 per multi-family dwelling unit, and $69.89 per 1,000 square feet of commercial space, and would go towards fire facilities and staffing.[48] Impacts related to expansion of fire protection services would be less than significant with payment of fees.

b) Less than Significant Impact. The project area is served by the Redlands Police Department. The Police Department and Patrol building is located at 1270 W Park Ave, Building C, Redlands, CA 92373. The station is approximately 1 mile south of the project site. Development of the project may generate an incremental increase in the need for police protection in the project area. The Police Department reviews its needs on a yearly basis and adjusts service levels as needed to maintain an adequate level of public protection. To offset an incremental increase in police services, development impact fees will be collected at the time of building permit issuance. Fees would be charged at a current rate of $27.56 per multi-family dwelling unit and $3.65 per 1,000 square feet of commercial building area.[49] Fees would go towards law enforcement facilities and staffing, and as such, would offset any impacts from development of the proposed project. Impacts will be less than significant.

c) Less than Significant Impact. The project proposes construction of a mixed-use development incorporating 460 apartment units with approximately 17,899 square feet of commercial space, and is anticipated to lead to a population growth of approximately 1,339 persons (See Threshold 4.14a above). This growth will most likely have a direct growth on the student population of the Redlands Unified School District. To offset this impact, payment of development impact fees towards the cost of increased demand of school district facilities is required under State law. The Redlands Unified School District has established a school fee and charge a current rate of $4.79 per square foot of "assessable space" (space within the perimeter of a residential structure) within new residential construction.[50] Additionally, the District charges a rate of $0.78 per square foot of commercial/industrial space.[51] Payment of these development impact fees would offset any project impacts on school facilities. As such, impacts would be less than significant.

d) Less than Significant Impact. Development of the project could have the potential to impact demand for parks and recreation facilities as it is anticipated to have a direct impact on the growth of the city's population. However, development impact fees collected at the time of building permit issuance would offset any impacts of development on the utilization of local park services. The city has established Open Space and Parks Fees going to those facilities and the project would be charged at a current rate of $3,624.62 per multi-family dwelling.[52] Less than significant impacts would occur with payment of fees.

e) Less than Significant Impact. The project is expected to result in an increase in residents, who may generate an additional demand for public facilities such as libraries. However, the development of the proposed dwelling units is in line with the region's future growth and buildout. Payment of required development impact fees determined by the City of Redlands would offset the cost of increased demand for such facilities in the future. Fees for public facilities would be charged at a current rate of $628.33 per multi-family residential dwelling unit, and $83.13 per 1,000 square feet of commercial building area.[53] Potential impacts to public facilities in Redlands would be less than significant with payment of fees.

4.16 – 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?	☐	☐	☐	☑

a) Less than Significant Impact. The project involves the development of 460 multi-family apartments units, as well as approximately 17,899 square feet of commercial space, and associated landscaping and roadway improvements. Texonia Park is a 10.7-acre neighborhood park located approximately 0.7 miles east of the project site. The park includes a lighted soccer field and basketball courts, as well as picnic and playground facilities.[54] Development of the proposed project may lead to an increased use of the park due to the anticipated population increase associated with the project. However, the project proposes several amenities for future residents. The project proposes a 30-foot by 73-foot pool and a 19-foot by 24-foot spa to be located in the courtyard of Building 9. Building 9 is also proposed to feature a golf simulator, theater, and yoga and fitness centers. Use of these facilities would reduce any exacerbation of current local recreational areas. Additionally, Development Impact Fees collected at the time of building permit issuance would help to offset any incremental impacts of development on the utilization of local park services. The city has established Open Space and Parks Fees at a current rate of $3,624.62 per multi-family dwelling.[55] The proposed project will lead to a population increase in the area, however, this increase would not induce unforeseen stress on the city's local or regional parks. The proposed project would not increase the use of local recreational resources to such a substantial amount that would lead to their accelerated physical deterioration. Impacts would be less than significant.

b) No Impact. The project does not include the construction of recreational facilities which might have an adverse physical impact on the environment. No impacts will occur.

4.17 – 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) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☑	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☑	☐
d) Result in inadequate emergency access?	☐	☐	☑	☐

A *Measure U Growth Management Analysis* dated October 12, 2023 (see Appendix K) and a *Vehicle Miles Traveled Screening Analysis* (VMT Study) dated March 21, 2024 (see Appendix L) were prepared for the proposed project by Translutions. The information presented below is provided from the aforementioned evaluations provided in Appendices K and L.

a) Less than Significant Impact. The *Measure U Growth Management Analysis* was prepared to calculate the project's trip generation and evaluate the potential for transportation impacts resulting from the development of the proposed project in the context of the City of Redlands's discretionary authority for conformance with locally established operational standards – specifically Measure U policies (which are largely based on Level of Service (LOS) standards that measure traffic congestion). The *Vehicle Miles Traveled Screening Analysis* was prepared to determine whether the proposed project meets the vehicle miles traveled (VMT) requirements for the San Bernardino County Transportation Authority (SBCTA) Guidelines and screens out from needing to conduct a detailed VMT analysis. CEQA Guidelines section 15064.3(A) states that VMT is the most appropriate measure for transportation impacts, and LOS shall not be considered an environmental impact and "a project's effect on automobile delay shall not constitute a significant environmental impact" (for CEQA purposes).

Project Trip Generation

Table 17 (Proposed Project Trip Generation) shows the estimated trip generation for the proposed project based on trip generation rates collected from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021). As shown in Table 17, the proposed project is forecast to generate a total of approximately 2,704 new daily trips, including 195 trips during the AM peak hour and 245 trips during the PM peak hour.

Table 17
Proposed Project Trip Generation

Land Use	**Dwelling Units / Square Footage**	**AM Peak Hour**			**PM Peak Hour**			**Daily**
		In	**Out**	**Total**	**In**	**Out**	**Total**	
Residential (Multifamily Housing – Low-Rise)[1] Trip Generation Rates	135 DU	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Trip Generation		13	41	54	43	26	69	910
Internal Trips		(1)	(1)	(2)	(3)	(2)	(5)	(80)
Net Trip Generation		12	40	52	40	24	64	830
Residential (Multifamily Housing – Mid-Rise)[2] Trip Generation Rates	325 DU	0.09	0.28	0.37	0.24	0.15	0.39	4.54
Trip Generation		28	92	120	77	50	127	1,476
Internal Trips		(1)	(1)	(2)	(6)	(5)	(11)	(131)
Net Trip Generation		27	91	118	71	45	116	1,345
Retail (Strip Retail Plaza (<40k))[3] Trip Generation Rates	17.764 TSF	1.42	0.94	2.36	3.30	3.30	6.59	54.45
Trip Generation		25	17	42	59	59	118	967
Internal Trips		0	0	0	(4)	(6)	(10)	(86)
Net Trip Generation		25	17	42	55	53	108	881
Pass By Rate[4]				40%			40%	40%
Pass By Trips		(8)	(9)	(17)	(21)	(22)	(43)	(352)
Net After Pass-By		17	8	25	34	31	65	529
Total Project Trips		**56**	**139**	**195**	**145**	**100**	**245**	**2,704**

Source: Translutions, 2023.
1 - Trip generation based on rates for Land Use 220 - "Multifamily Housing (Low-Rise)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).
2 - Trip generation based on rates for Land Use 221 - "Multifamily Housing (Mid-Rise)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).
3- Trip generation based on rates for Land Use 822 - "Strip Retail Plaza(<40k)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).
4 - Daily Pass-by rates for Land Use 822 (Strip Retail Plaza) are based on pass-by rates for Land Use 821 (Shopping Plaza) from ITE Trip Generation (11th Edition). Rates for a.m.peak hour and daily are assumed to be same as p.m. peak hour rate.

Conflicts with Redlands Measure U

Measure U was an initiative approved by the voters of Redlands in 1997 to enact several principles of managed development within the City of Redlands. The principles in Measure U have been incorporated throughout the new 2035 General Plan, as well as several sections of the Redlands Municipal Code. The *Measure U Growth Management Analysis* evaluated the project using the applicable Measure U Policies identified in the Connected City Element of the City of Redlands 2035 General Plan as well as the County of San Bernardino Transportation Impact Study Guidelines (TIS Guidelines). The Measure U Policies are largely based on Level of Service (LOS) standards that measure traffic congestion. A detailed LOS evaluation is included in the *Measure U Growth Management Analysis* (See Appendix K) in order to demonstrate project compliance with Measure U. As shown in Table 18 below, all study areas intersections are currently operating at satisfactory levels of service, with the exception of the following:

- Tennessee Street and Lugonia (am and pm peak hours)
- Tennessee Street and Redlands Avenue (am and pm peak hours)

The existing "with project levels of service" for the study area intersections are summarized in Table 18 below as well. As shown below, all study areas intersections are forecast to operate at satisfactory levels of service, with the exception of the following:

- Tennessee Street and Lugonia (am and pm peak hours)
- Tennessee Street and Redlands Avenue (am and pm peak hours)

Table 18
Existing Without and With Project Levels of Service

Intersection	**Jurisdiction**	**LOS Standard**	**Control**	**Without Project**				**With Project**			
				AM Peak Hour		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
				Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
SR-210 EB Ramps/San Bernardino Ave.	Caltrans	D	Signal	38.6	D	39.4	D	39.9	D	40.3	D
SR-210 WB Ramps-Tennessee ST/San Bernardino	Caltrans	D	Signal	42.7	D	49.6	D	43	D	49.8	D
Tennessee St/Pennsylvania Ave	Redlands	C	TWSC	Future Intersection				13.6	B	16.1	C
Tennessee St/ DWY 1	Redlands	C	TWSC	Future Intersection				15.8	C	21.9	C
Tennessee St/ Lugonia Ave	Redlands	C	Signal	42.9	D*	52.7	D*	43.5	D*	53.7	D*
Tennessee St/ I-10 WB Ramps	Caltrans	D	Signal	17.4	B	19.4	B	16.6	B	22.2	C
Tennessee St/ I-10 EB Ramps	Caltrans	D	Signal	30.3	C	37.0	D	30.1	C	38.3	D
Tennessee St/ Colton Ave	Redlands	C	Signal	22.5	C	34.6	C	22.5	C	34.6	C
Tennessee St/ Redlands Ave	Redlands	C	Signal	48	D*	50.1	D*	48	D*	50.1	D*

Notes:
LOS = Level of Service
TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement

Based on Measure U guidelines, where the current LOS at a location within the city is below the LOS standard C, no development project shall be approved that cannot be mitigated so that it does not reduce the existing LOS at that location. Table 18 above demonstrates that, while the intersection of Tennessee Street and Redlands Ave. operates at unsatisfactory LOS D under both "without and with" project conditions, the project does not increase the intersection delay. Therefore, no improvements are recommended at that intersection.

Additionally, the city requires circulation improvements if the study area intersections do not meet Measure U guidelines. Signal cycle length improvements are recommended for the intersection of Tennessee Street and Lugonia Avenue. Table 19 below shows that with the addition of improvements, the intersection delay would be reduced to pre-project conditions.

Table 19
Existing With Project Improvements Levels of Service

Intersection	Jurisdiction	LOS Standard	Control	Without Project				With Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Tennessee St/ Lugonia Ave	Redlands	C	Signal	43.5	D	53.7	D	39.8	D	50.6	D

As discussed above, the project does not result in a drop in LOS at any intersection and therefore would not cause the LOS to drop below Measure U standards. As shown in the *Measure U Growth Management Analysis,* all study area intersections are forecast to operate at satisfactory levels of service, except for the intersections of Tennessee Street and Lugonia Avenue and Tennessee Street and Redlands Avenue. There is no increase in intersection delay at the latter intersection, and with the addition of circulation improvements, delays at Tennessee Street and Lugonia Avenue are reduced to pre-project conditions. As such, the project would not result in any unsatisfactory LOS; therefore, the project would be in compliance with Measure U, no mitigation is required, and impacts would be less than significant.

b) Less than Significant Impact. In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts, under CEQA, associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. All agencies and projects State-wide are required to utilize the updated CEQA guidelines recommending the use of VMT for evaluating transportation impacts as of July 1, 2020. CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation.

The City of Redlands' CEQA Assessment VMT Analysis Guidelines provides guidelines for analysis of transportation impacts under CEQA. The guidelines also provide three types of screening that can be applied to determine if a project is exempt from project-level VMT analysis. The project was screened using the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool. If a project meets one of the following criteria, then the VMT impact of the project is considered less-than significant and no further analysis of VMT would be required:

1. The project is located within a Transit Priority Area.
2. The project is located in a low VMT screening area.
3. The project is considered a local serving use or would generate less than 3,000 metric tons of CO2 equivalent (3,000 MT CO2e) per year.

Below are the results of the screening criteria for the project:

<u>Screening Criteria 1 –Transit Priority Area (TPA) Screening</u>
Projects located within a TPA, defined as within one-half mile of a major transit stop or high-quality transit corridor, may be presumed to result in a less than significant VMT impact absent substantial evidence to the contrary. This presumption may not apply, however, if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75.

2. Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking)
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the jurisdiction with input from the Metropolitan Planning Organization): or
4. Replaces affordable residential units with a smaller number of moderate or high-income residential units.

According to Figure 1 of the VMT Study (Appendix L) conducted for the project, the project site is not located within a TPA, and therefore this screening criteria does not apply to the proposed project.

Screening Criteria 2 – Low VMT Screening Area

Residential and office projects located within a low VMT generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population (residential plus employment) that is similar to the existing land uses in the low VMT area.

As prescribed in the City VMT Guidelines, the SBCTA VMT Screening Tool was used to assess low VMT area screening for the project, as well as the city's threshold of 15% below the County regional average VMT per service population. The SBCTA VMT Screening Tool utilizes county travel forecasting models to measure VMT performance for individual jurisdiction and for individual traffic analysis zones (TAZ) within the SBCTA region. TAZs are geographic polygons similar to census block groups used to represent areas of homogenous travel behavior.

Total daily VMT per service population was estimated for the TAZ encompassing the project area. The VMT for project TAZ is 24.9 miles and the County VMT is 32 miles (Figure 2, Appendix L). The TAZ VMT is 22.15% lower than the County's VMT, and meets the County's threshold of 15% below County regional average (28.4 VMT per service population). As such, the project is located within a low VMT generating TAZ, and the project is presumed to have a less than significant impact on VMT.

Screening Criteria 3 – Project Type Screening

Some project types have been identified as having the presumption of a less than significant impact as they are local serving by nature, or they are small enough to not warrant assessment. Local serving retail projects with stores less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel. In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- Local-serving K-12 schools
- Local Parks
- Day care centers
- Local-serving gas stations
- Local-serving banks
- Local-serving hotels (e.g., non-destination hotels)
- Student housing projects on or adjacent to a college campus
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (public libraries, fires stations, local government)
- Local-serving community colleges that are consistent with the assumptions noted in the RTP/SCS

- Affordable or supportive housing
- Assisted living facilities
- Senior housing (as defined by HUD)
- Projects which generate less than 3,000 MTCO2e per year can be presumed to have a less than significant impact on VMT. Projects which generate less than 3,000 MTCO2e per year5 include the following:
    - Single-family residential – 167 dwelling units or fewer
    - Multi-family residential (1-2 stories) – 232 dwelling units or fewer
    - Multi-family residential (3+ stories) – 299 dwelling units or fewer
    - Office – 59,100 square feet or less
    - Local-serving retail center – 112,400 square feet or less (no stores larger than 50,000 square feet)
    - Warehousing – 463,400 square feet or less
    - Light industrial – 74,600 square feet or less

The project as proposed includes the development of 460 multi-family dwellings in 3 to 4 story buildings and approximately 17,899 square feet of commercial space. The project is not included in the above listed project types, and therefore the Project Type Screening does not apply to the proposed project.

Conclusion
Based on the above analysis, the proposed project is determined to have a less than significant impact on VMT since it satisfies one of more of the VMT screening criteria established by the City of Redlands CEQA Assessment VMT Analysis Guidelines. The project's VMT impact is considered less than significant and no additional VMT analysis is required.

c) Less than Significant Impact. A significant impact would occur if the proposed project substantially increased an existing hazardous design feature or introduced incompatible uses to the existing traffic pattern. There are three points of entry into the project: one entry point off Tennessee Street, one entry point off Pennsylvania Avenue, and one entry point at the future commercial development proposed to the south. Approximately 764 total parking spaces will be available onsite through a combination of underground, garage, outdoor-covered, outdoor-uncovered, and commercial parking spaces throughout the project. Access to above ground parking will be available through aisles, akin to driveways, connected to the three project entry points. Those entry points, as well as turns within the project site, will be designed to accommodate the inner (20 feet) and outer (40 feet) turning radius for fire vehicles. The project does not involve any changes to the alignment or uses of existing roadways, and the proposed project is consistent with City of Redlands driveway spacing and design requirements. Construction operations occurring on site would comply with the California Building Code adopted in the City of Redlands Municipal Code.[56] The proposed project would not result in a traffic safety hazard due to any design features, and impacts would be less than significant.

d) Less than Significant Impact. A significant impact would occur if the design of the proposed project would not satisfy emergency access requirements of the City of Redlands Fire Department or in any other way threaten the ability of emergency vehicles to access and serve the project site or adjacent uses. As outlined above, entry ways and aisle turns within the proposed project are designed to accommodate the inner and outer turn radii of fire vehicles, so as to allow adequate access for emergency services throughout the project site. As previously discussed above, access within the project site would be provided aisles accessible via the three entry points. Entry Point 1 via Tennessee Street will be divided by median with ornamental landscaping. The road on each side of the median will be 16 feet wide. Entry Points 2 and 3, connecting the future southern commercial development and Pennsylvania Avenue respectively, will each be 30 feet wide. The streets' width is sufficient to provide access to fire and emergency vehicles and is consistent with California Fire Code requirements. All access features are subject to and must satisfy the City of Redlands design and the Fire Department's requirements. The project would not result in adverse impacts with regard to emergency access, and impacts would be less than significant.

4.18 – Tribal 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 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 Cultural Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☑
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☑	☐	☐

a.i) No Impact. A significant impact would occur if the proposed project would cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Resources of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). A field survey and records search was conducted as part of the Cultural Resources Report (Report) (see Appendix D) and identified one cultural resource within the project area: a concrete and brick water conveyance system consisting of two north-south water channels, two concrete rectangular vaults, and two standpipe features. This irrigation system, however, is not considered a “historical resource” per the Report, is not eligible for listing in the California Register of Historical Resources, and is not listed on any Certified Local Government historic property register. While the city has several historic landmarks and sites listed under its historic preservation program as defined in Public Resources Code Section 5020.1(k), the proposed project site is completely undeveloped and there are no buildings, structures, or features on the site that could be listed as a "historical resource." The project site was formerly used for agricultural purposes and is not known to be associated with an important historical period or important persons from the past. The project would not have any physical impacts outside the designated project area boundary. Therefore, the project would not result in any adverse change in the significance of a historical resource as defined in Public Resources Code Section 5020.1(k). No impact would occur.

a.ii) Less than Significant with Mitigation Incorporated. Government Code §§ 65352.3 and 65562.5 (SB 18); and Public Resources Code §§ 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 (AB 52) provide that a project that may cause a substantial adverse change to a defined Tribal Cultural Resource (TCR) can result in a significant effect on the environment. SB18 requires public notice to be sent to tribes listed on the Native American Heritage Commission's SB18 Tribal Consultation list within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time frame has been agreed upon by the tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that may be affected by the proposed adoption or amendment to a general or specific plan. The Lead Agency is required to notify tribes within 14 days of deeming a development application complete subject to CEQA to notify the requesting tribe as an invitation to consult on the project.

AB 52 identifies examples of mitigation measures that would avoid or minimize impacts to TCR. The bill makes the above provisions applicable to projects that have a notice of preparation or a notice of intent to adopt a negative declaration/mitigated negative declaration circulated on or after July 1, 2015. Although there is no indication of TCRs at the project site, AB 52 is clear in stating that it is the responsibility of the Public Agency (i.e., Lead Agency) to consult with Native American tribes early in the CEQA process to allow tribal governments, lead agencies, and project proponents to discuss the appropriate level of environment review, identify and address potential adverse impacts to TCRs, and reduce the potential for delay and conflict in the environmental review process (see Public Resources Code Section 2108.3.2). Specifically, government-to-government consultation may provide "tribal knowledge" of the project area that can be used in identifying TCRs that cannot be obtained through other investigative means. Pursuant to AB 52, as the CEQA Lead Agency, the city of Redlands sent consultation notification letters on March 9th, 2023 to tribes identified by the NAHC as having a historic or cultural connection to the project area. Of the contacted tribes, the representatives of the following tribes responded:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Gabrieleno Band of Mission Indians – Kizh Nation
- Morongo Band of Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- Rincon Band of Luiseno Indians

Of those tribes who responded, only the Agua Caliente Band of Cahuilla Indians (ACBCI) and the Morongo Band of Mission Indians (MBMI) requested specific actions be taken by the Lead Agency as part of project development. As the project site is located within the ACBCI's Traditional Use Area, they requested the following actions be taken:

- A records search conducted at the appropriate California Historical Resources Information System (CHRIS) center with at least a 1.0-mile search radius from the project boundary. If this work has already been completed, please furnish copies of the reports and site records generated through this search so that we can compare these with our records to begin productive consultation.

- Tribal participation during survey and testing if this fieldwork has not already taken place. In the event that archaeological crews have completed this work, our office requests a copy of the Phase I study or other cultural assessments as soon as available.

A records search was conducted using CHRIS as part of the *Cultural Resources Inventory and Evaluation Report* prepared by Ecorp Consulting Inc. Pursuant to AB 52, the city will provide the requested items to ACBCI as well as incorporate mitigation measures requested by MBMI, as described below. The other four respondent tribes had no comment on the project as proposed at the time of notification. The city has not been presented with any information or evidence regarding the presence or likelihood of any TCR occurring on or near the project site. Implementation of **Mitigation Measures TCR-1** through **TCR-8**, as requested by MBMI, will reduce potentially significant impacts to previously undiscovered TCRs to less than significant by providing for monitoring during grading and construction of the project. With implementation of **Mitigation Measures TCR-1** through **TCR-8,** impacts would be less than significant with regards to resources of potential importance to California Native American tribes.

Mitigation Measures

TCR-1 **Native American Treatment Agreement.** Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.

TCR -2 **Retention of Archaeologist.** Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.

TCR -3 **Cultural Resource Management Plan.** Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of

Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.

TCR -4 **Pre-Grade Meeting.** The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

TCR -5 **On-Site Monitoring.** During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

TCR -6 **Inadvertent Discovery of Cultural Resources.** In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference:

A. Full avoidance.
B. If avoidance is not feasible, Preservation in place.
C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.
D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

TCR -7 **Inadvertent Discovery of Human Remains.** The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98.

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

TCR -8 **Final Report.** The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).

4.19 – 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 stormwater 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 and 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?	☐	☐	☐	☑

a) Less than Significant Impact. The Redlands Municipal Utilities Department oversees some 21,500 metered connections and approximately 400 miles of pipelines that delivers water throughout its service area that includes Redlands, Mentone, parts of Crafton Hills, San Timoteo Canyon, and San Bernardino. The Department receives its water from a mix of sources including local groundwater wells, the Mill Creek Watershed, Santa Ana Watershed, and imported water provided through the State Water Project (SWP). The city owns 15 domestic wells and receives water from an additional two wells owned by the South Mountain Water Company.[57] Furthermore, the city operates both the Tate and Hinkley surface water treatment plants (WTPs), both of which provide treated water from the Mill Creek and Santa Ana watersheds, respectively. Both WTPs treat water from the SWP when required. The city maintains ownership in multiple local private and mutual water companies to bolster and secure reliable water supplies for their treatment plants. Wastewater is collected and treated at the Redlands Wastewater Treatment Facility and has a treatment capacity of 9.5 million gallons.[58]

As discussed in Section 4.9 (Hydrology and Water Quality), as the project site is currently undeveloped, the project will require the construction of new onsite water, sewer, and stormwater drainage facilities onsite that would connect to the existing infrastructure in the surrounding streets. The project will comply with local drainage guidelines and implement various pollutant-related BMPs that will reduce the chances of substantial runoff accumulating. According to the Preliminary Water Quality Management Plan (WQMP) (see Appendix G) prepared for the project, the project has two drainage areas that will convey stormwater west of the site to an onsite pump system that will flow to Tennessee Street, as it does in the existing condition prior to project development (See Appendix H). Landscaping improvements and BMPs would mitigate any increase in surface runoff due to the expansion of new impermeable surfaces on site. Additionally, standard connection fees would address any incremental impacts of the project. The project would therefore result in a less than significant impact in relation to new or expanded water supply and wastewater treatment facilities.

The project would connect to existing electric power, natural gas, and telecommunications facilities and would not require any expansion of services. Therefore, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause a significant environmental effect. As such, impacts would be less than significant.

b) Less than Significant Impact. According to the *2020 Integrated Regional Urban Water Management Plan* (*UWMP*) for the Upper Santa Ana River Watershed Region, the city of Redlands is projected to have a total demand of 25,818 acre-feet (AF) in 2025.[59] The same estimates calculated a supply total of 31,039 AF in 2020, a difference of 5,221 AF. The Urban Water Management Plan anticipates an overall increase in demand associated with the continued development of Redlands over 2015 conditions. Development of the proposed project is anticipated to result in operational water demand of approximately 20,489,165 million gallons per year, or approximately 62 AFY. Therefore, the project would not substantially deplete water supplies, and the project would have a less than significant impact on entitled water supplies.

c) Less than Significant Impact. Impacts could be potentially significant as a result of project development if it is determined by the wastewater treatment provider that the project does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. As outlined above in Sections 4.19.a and 4.19.b, the project can be adequately served by existing wastewater treatment facilities. Impacts would be less than significant.

d) Less than Significant Impact. Significant impacts could occur if solid waste generated by the proposed project exceeds the existing permitted landfill capacity or violates federal, state, and local statutes and regulations. Solid waste disposal services are overseen by the City of Redlands Trash Collection. Solid waste collected in Redlands is primarily transferred to the San Timoteo Landfill in Redlands, located approximately 4 miles south of the project site. According to CalRecycle, the San Timoteo Landfill has a maximum capacity of 23,685,785 tons, with a remaining capacity of 12,360,396 tons measured April 30th, 2019.[60] Construction of the project is estimated to generate approximately 3,139 pounds of solid waste per dwelling unit per year, and 4,745 pounds per 1000 square feet of commercial space per year.[61] This would result in a total of approximately 1,528,870 pounds, or approximately 764 tons, of solid waste per year. There would be adequate landfill capacity in the area to accommodate project-generated waste. The project is therefore not expected to generate solid waste in excess of the capacity of local infrastructure. Impacts related to solid waste disposal capacity would be less than significant.

e) No Impact. The proposed project is required to comply with all applicable federal, state, County, and city statutes and regulations related to solid waste. Therefore, no impact would occur.

4.20 – 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?	☐	☐	☐	☑

a) No Impact. The project site is not located within a State Responsibility Areas (SRA). The nearest SRA area is located approximately 3.5 miles south of the project site near the San Timoteo Canyon.[62] While the project site is currently undeveloped, the site has been routinely disturbed and is located in an urbanized area surrounded by commercial and residential uses. The city's General Plan identifies several evacuation routes out of the city; these routes were previously designated as potential evacuation routes in the 2007 San Bernardino General Plan.[63] These include: Interstates 10, 15, 210, and 215, and State Highways 30, 60, 66, 71, and 83. In the event of an earthquake, the following roads would provide safe access out of the San Bernardino Valley, as indicated by Caltrans and cited in the Redlands General Plan:

- Hospitality Lane from Tippecanoe Avenue to Waterman Avenue
- Coulston Street from Mountain View Avenue to Tippecanoe Avenue
- Lugonia Avenue from Orange Street to Mountain View Avenue
- Redlands Boulevard from Orange Street to Waterman Avenue

While the project is located adjacent to I-210, its development would not impact the availability of the route, or the other identified highways and roadways as evacuation routes. The project would not substantially impair any adopted or informal emergency response plan or evacuation plan. No impacts would occur.

b) No Impact. The project site is not located within a fire hazard zone, as identified on the Very High Fire Hazard Severity Zone (VHFHSZ) maps prepared by the California Department of Forestry and Fire Protection (CALFIRE).[64] The nearest VHFHSZ is located approximately three miles south of the project site adjacent to the Redlands Community Hospital. The project site is located in an urbanized area that is relatively flat. Therefore, the project would not exacerbate wildfire risks, thereby exposing occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact would occur.

c) No Impact. The project site is not located within or near a State Responsibility Areas as indicated in Threshold 4.19.a above. Development of the proposed project would involve the construction of two driveways and access roadways within the development providing access throughout as well as in and out of the proposed development. The installation of utility connections to the new mixed-use development would also be required to provide water, heating, and electricity to residents. Such project improvements would not exacerbate fire risk or would result in a temporary or ongoing impact from wildfires. Construction of the project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk, or that may result in temporary or ongoing impacts to the environment. No impact would occur.

d) No Impact. The project site is not located within or near any State Responsibility Areas. As described in Threshold 4.9.c.iv above, the project site is located in an area not considered at risk of flood or inundation. According to Figure 7-3: Flood Hazards, of the Healthy Community Element of the city's General Plan, the project site is not located within a floodway, or within a 100 or 500-year floodplain.[65] Additionally, the project site is not located in a dam inundation area.[66] The project site is located in a relatively flat area, with little to no potential for landslides or downstream flooding or runoff. If the project stie were to experience a flooding event, the city's General Plan includes strategies to mitigate potential impacts from flooding. Development of the proposed project would not exacerbate risks to people from flooding or landslides, and as such, no impacts would occur.

4.21 – 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?	☐	☑	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☑	☐	☐

a) Less than Significant with Mitigation Incorporated. The proposed project would not substantially impact any scenic vistas, scenic resources, or the visual character of the area, as discussed in Section 4.1, and would not result in excessive light or glare. The project site is located within a developed area with no natural habitat. The proposed project would not significantly impact any sensitive plants, plant communities, fish, wildlife, or habitat for any sensitive species. Impacts to burrowing owl and nesting birds would be less than significant with adherence to existing regulations and incorporation of **Mitigation Measures BIO-1** and **BIO-2**. There are no jurisdictional waters on the project site. Impacts to archaeological resources, buried human remains, and Tribal Cultural Resources would be reduced to less than significant with implementation of **Mitigation Measures CUL-1** and **TCR-1** through **TCR-8**. Based on the preceding analysis of potential impacts in the responses to items 4.1 through 4.20, no evidence is presented that this proposed project would degrade the quality of the environment. Impacts related to degradation of the environment would be less than significant with incorporation of mitigation measures.

b) Less than Significant with Mitigation Incorporated. Cumulative impacts can result from the interactions of environmental changes resulting from one proposed project with changes resulting from other past, present, and future projects that affect the same resources, utilities and infrastructure systems, public services, transportation network elements, air basin, watershed, or other physical conditions. Such impacts could be short-term and temporary, usually consisting of overlapping construction impacts, as well as long-term, due to the permanent land-use changes and operational characteristics involved with the proposed project. Cumulative impacts would be less than significant, as further discussed herein.

Aesthetics

Impacts related to aesthetics at the project-level have no potential for cumulative impacts because impacts are limited to on-site conditions and include no component that could result in similar impacts over time or space. Therefore, no cumulative impacts related to this topic would occur.

Agricultural Resources

The analysis provided in Sections 4.2 found that no individual impacts would occur; therefore, the project could not contribute considerably to local agriculture or forestry.

Air Quality

The analysis provided in Section 4.3 found that impacts would be less than significant. Therefore, the project would not contribute to cumulatively considerable air quality impacts.

Biological Resources

The analysis provided in Section 4.4 found that no individual impacts to sensitive species or migratory birds would occur with implementation of **Mitigation Measures BIO-**1 and **BIO-2**; therefore, the project would not contribute considerably to regional impacts on such species, and impacts would be less than significant. The analysis also found that the project would have no other impacts on biological resources and would not result in localized or regional cumulative impacts, and as such, impacts would be less than significant.

Cultural Resources

The analysis provided in Section 4.5 found that impacts to archaeological resources and buried human remains would be less than significant with incorporation of **Mitigation Measures CUL-1**. Therefore, the project would not contribute to cumulatively considerable cultural resources impacts.

Energy

The analysis provided in Section 4.6 found that no individual impacts related to energy use would occur as a result of the proposed project. Therefore, the project would not contribute to cumulative energy impacts.

Geology and Soils

Impacts related to geology at the project-level have no potential for cumulative impacts. Therefore, the proposed project would have no contribution to potential geological or soil degradation or other such impacts. The analysis in section 4.7 found that if during construction operations, paleontological resources are discovered, **Mitigation Measure GEO-1** would establish proper care and attention to such discoveries. Therefore, the project would not contribute to cumulative paleontological resources impacts.

Greenhouse Gas Emissions

As discussed in Section 4.8, climate change is the result of numerous, cumulative sources of greenhouse gas emissions all over the world. The project would not contribute considerably to global climate change.

Hazardous Materials

The analysis provided in Section 4.9 related to hazards and hazardous materials found that impacts would be less than significant. Additionally, compliance with all regulations related to the disposal and storage of household hazardous waste would ensure that impacts would be less than significant.

Land Use and Planning
The analysis provided in Section 4.11 related to Land Use and Planning found that impacts would be less than significant; therefore, while the proposed project would contribute to individual, localized, or regional cumulative impacts, its contribution would not be considerable.

Mineral Resources
The analysis provided in Section 4.12 related to mineral resources found that there would be no impact; therefore, while the project would contribute to localized or regional cumulative impacts, the project contribution would not be considerable.

Noise
The analysis provided in Section 4.13 found that impacts related to the construction and operation of the proposed project would be less than significant with incorporation of **Mitigation Measures NOI-1**. Therefore, the project would not contribute considerably to cumulative noise impacts.

Population and Housing
The analysis provided in Section 4.14 related to Population and Housing found that no impacts would result; therefore, no cumulative impacts related to this topic would occur.

Public Services
The analysis provided in Section 4.15 related to Public Services found that impacts would be less than significant; therefore, while the proposed project would contribute to localized cumulative impacts, the contribution would not be cumulatively considerable.

Recreation
The analysis provided in Section 4.16 related to Recreation found that impacts would be less than significant; therefore, no cumulative impacts related to this topic would occur.

Traffic and Transportation
Traffic conditions were analyzed in Section 4.17 and found to be less than significant. The proposed project's contribution to cumulative impacts to local and regional transportation facilities would not be considerable.

Tribal Cultural Resources
The analysis provided in Section 4.18 related to Tribal Cultural Resources found that impacts would be less than significant with adherence to **Mitigation Measures TCR-1** through **TCR-8**.

Utilities and Service Systems
The analysis provided in Section 4.19 related to Utilities and Service Systems found that impacts would be less than significant; therefore, while the project would contribute to localized or regional cumulative impacts, the project contribution would not be considerable.

Wildfire
The analysis provided in Section 4.20 related to Wildfire found that no impacts would result; therefore, no cumulative impacts related to this topic would occur.

c) Less than Significant with Mitigation Incorporated. The proposed project would not have environmental effects which would cause substantial adverse effects on humans, either directly or indirectly, as noted in the previous sections above, except as it related to operational noise impacts from HVAC units on Building 3. However, potential noise impacts from HVAC units would be reduced to less than significant with incorporation of mitigation.

This Page Intentionally Left Blank.

BIO-1 **Pre-construction Survey for Nesting Birds.** To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Bernardino County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than 5 days prior to the initiation of any site disturbance activities and equipment mobilization, vegetation removal, fence installation, grading, etc. If project activities are delayed by more than 5 days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all vegetation and other potential nesting habitats (e.g., shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

BIO-2: **Pre-construction Survey for Burrowing Owl.** No more than 14 days prior to ground disturbance a focused survey for burrowing owl will be required to ensure take avoidance. Even though burrowing owls were not located as part of the general biological survey, a pre-construction survey for burrowing owl is required because burrowing owls may encroach or migrate to the property at any time, and therefore steps should be taken to ensure avoidance, including reevaluating the locations/presence of burrowing owl or burrows. Pre-construction surveys shall be conducted in accordance with the survey requirements outlined in Appendix D of the CDFW's Staff Report on Burrowing Owl, dated March 7, 2012. If burrowing owl are found on the project site during pre-construction surveys, the biologist conducting surveys shall immediately contact the CDFW to develop a plan for avoidance and/or translocation prior to construction crews initiating any ground disturbance on the project site.

CUL-1: If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

GEO-1: **Inadvertent Discovery of Paleontological Resources.** If paleontological materials are uncovered during grading or other earth moving activities, the contractor shall be required to halt work in the immediate area of the find, and to retain a professional paleontologist to examine the materials to determine whether it is a significant paleontological resource. If this determination is positive, the resource shall be left in place, if determined feasible by the project paleontologist. Otherwise, the paleontologist shall fully recover the scientifically consequential information. Work may continue outside of the area of the find; however, no further work shall occur in the immediate location of the find until all information recovery has been completed and a report concerning it filed with the Development Services Director. The applicant shall bear the cost of implementing this mitigation.

NOI-1 **Reduce Potential Building 3 HVAC Noise Levels.** To reduce potential noise levels from Building 3 heating, ventilation, and air conditioning (HVAC) equipment:

1. The installation of HVAC units or systems that generate a noise level greater than 75 dBA (at 3 feet) for units located within 90 lateral feet of the project's eastern property line shall be prohibited; or

2. Parapet walls for any building with an HVAC unit or system within 90 feet of the project's eastern property line shall be at least 1 foot taller than the top of the tallest installed HVAC unit.

TCR-1 **Native American Treatment Agreement.** Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.

TCR-2 **Retention of Archaeologist.** Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.

TCR -3 **Cultural Resource Management Plan.** Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.

TCR -4 **Pre-Grade Meeting.** The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

TCR -5 **On-Site Monitoring.** During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

TCR -6 **Inadvertent Discovery of Cultural Resources.** In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference:

A. Full avoidance.
B. If avoidance is not feasible, Preservation in place.
C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.
D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

TCR -7 **Inadvertent Discovery of Human Remains.** The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County

Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98.

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

TCR-8 **Final Report.** The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).

This Page Intentionally Left Blank.

6 References

6.1 – List of Preparers

City of Redlands
Planning Department
35 Cajon Street, Suite 15-A
Redlands, California 92373
909-798-7555

MIG, Inc.
1650 Spruce Street, Suite 106
Riverside, California 92507
(951) 787-9222

- Bob Prasse, Director of Environmental Services
- Cameron Hile, Senior Analyst
- Chris Dugan, Director of Air Quality, GHG, and Noise Services
- Phil Gleason, Senior Project Manager II
- Kasey Kitowski, Air Quality Noise Analyst
- Todd Easley, Director of Biological Services
- Duncan Edwards, Assistant Planner

Urban Crossroads Inc. (Air Quality & Greenhouse Gas Assessment)
20341 SW Birch St Suite 230,
Newport Beach, CA 92660

- Haseeb Qureshi
- Ali Dadabhoy

ECORP Consulting Inc. (Cultural Resources Inventory)
215 North 5th Avenue
Redlands, CA. 92374

Kimley-Horn & Associates Inc.
3880 Lemon Street, Suite 420
Riverside, CA. 92501

- Rob Otte, P.E. (Preliminary Water Quality Management Plan)
- Taylor Thorig, P.E. (Preliminary Sewer Sizing Memo)

Translutions Inc. (Measure U Growth & VMT Analysis)
17632 Irvine Boulevard, Suite 200
Tustin, CA. 92780
(949) 656-3131

6.2 – Persons and Organizations Consulted

- N/A

6.3 – Bibliography

[1] Caltrans. *California State Scenic Highways.* https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. [Accessed December 2023].

[2] City of Redlands. *Municipal Code Chapter 18.92.130: Building Height.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-17822#JD_18.92.040 [Accessed December 2023].

[3] California Department of Conservation. *California Important Farmland Finder.* https://maps.conservation.ca.gov/DLRP/CIFF/. [Accessed December 2023].

[4] City of Redlands. General Plan: *Vital Environment Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[5] City of Redlands. *Chapter 11. Special Development District*. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.cityofredlands.org/sites/main/files/file-attachments/ev-sd_-_special_development.pdf?1582745158. [Accessed December 2023].

[6] City of Redlands City Code. *Chapter 12.52: Trees and Tree Protection.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-9277. [Accessed December 2023].

[7] San Bernardino Valley Water Conservation District. *The Upper Santa Ana River Wash Habitat Conservation Plan*. https://www.sbvwcd.org/santa-ana-wash-plan#:~:text=The%20Wash%20Plan%20provides%20several,will%20be%20funded%20in%20perpetuity. [Accessed December 2023].

[8] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[9] City of Redlands. General Plan: Healthy Community Element. https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[10] City of Redlands City Code. *Chapter 15.04 California Building Code.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-11655. [Accessed December 2023].

[11] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[12] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[13] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[14] South Coast AQMD. *Rule 403 Dust Control Information*. https://www.aqmd.gov/home/rules-compliance/compliance/rule-403-dust-control-information. [Accessed December 2023].

[15] City of Redlands City Code. *Chapter 13.54.300: NPDES Program Regulatory Fees.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-10951. [Accessed December 2023].

[16] California Laws - Health and Safety Code. *Chapter 6.95. Hazardous Materials Release Response Plans and Inventory.* https://www.easylawlookup.com/California-Law/Health-and-Safety-Code/par-36866/_easylookup.blp?GO=Prepare&site=easy&print=&data=health&p_start=1620&p_end=1640&p_para=36866&p_epara=37309&par=36866&displayer=YES#:~:text=The%20Legislature%20declares%20that%2C%20in,threatened%20release%20of%20hazardous%20materials. [Accessed December 2023].

[17] San Bernardino County Fire District. *Household Hazardous Waste (HHW)*. https://sbcfire.org/hhw/ [Accessed December 2023].

[18] California Environmental Protection Agency. Cortese List Data Resources. http://www.calepa.ca.gov/sitecleanup/corteselist/ [Accessed December 2023].

[19] California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,FUDS&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+%28CORTESE%29 [Accessed December 2023].

[20] California State Water Resources Control Board. GeoTracker. https://calepa.ca.gov/sitecleanup/corteselist/ [Accessed December 2023].

[21] California State Water Resources Control Board. Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit. https://calepa.ca.gov/sitecleanup/corteselist/. [Accessed December 2023].

[22] California State Water Resources Control Board. List of Active CDO and CAO. https://calepa.ca.gov/sitecleanup/corteselist/. [Accessed December 2023].

[23] California Department of Toxic Substances Control. Cortese List: Section 65962.5(a). https://calepa.ca.gov/sitecleanup/corteselist/. [Accessed December 2023].

[25] CAL Fire. *State Responsibility Area Viewer*. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1. [Accessed December 2023].

[26] City of Redlands. General Plan: *Vital Environment Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[27] City of Redlands. General Plan: *Vital Environment Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[28] California Department of Water Resources. *Groundwater Live*. https://storymaps.arcgis.com/stories/b3886b33b49c4fa8adf2ae8bdd8f16c3. [Accessed December 2023].

[29] City of Redlands. *Erosion Control Plan*. https://www.cityofredlands.org/post/erosion-control-plans. [Accessed December 2023].

[30] City of Redlands City Code. *Chapter 15.54.200: Stormwater Management and Rainwater Retention.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-27953. [Accessed December 2023].

[31] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[32] City of Redlands City Code. *Chapter 15.32: Flood Damage Prevention.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-27953. [Accessed December 2023].

[33] California Department of Water Resources. *Dam Breach Inundation Map*. https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2. [Accessed December 2023].

[34] California Department of Water Resources. *Dam Breach Inundation Map*. https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2. [Accessed December 2023].

[35] City of Redlands. *General Plan: Livable Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[36] City of Redlands City Code. *18.92.080: Conditional Uses.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-17822#JD_18.92.040. [Accessed December 2023].

[37] City of Redlands. General Plan: *Vital Environment Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[38] City of Redlands. General Plan: *Vital Environment Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[39] City of Redlands City Code. *Chapter 8.06: Community Noise Control*. https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-5191. [Accessed January 2024].

[40] LSA. *The Neighborhoods at Lugonia Village Project. Appendix G-1 Noise Survey Sheets.* December 6, 2023. [Accessed January, 2024]. https://ceqanet.opr.ca.gov/2023120124.

[41] City of Redlands, 2003. *Redlands Municipal Airport Land Use Compatibility Plan.* [Accessed January 2024].https://raacp.org/wp-content/uploads/2016/07/Redlands-Airport-Land-Use-Compatibility-Plan.pdf.

San Bernardino International Airport Authority (SBIAA). 2019. Final Environmental Assessment Eastgate Air Cargo Facility. [Accessed January 2024].

[42] City of Redlands. General Plan: *Livable Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[43] City of Redlands. General Plan: *Livable Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[44] City of Redlands City Code. *Chapter 18.60. R-3 Multiple Family Residential District*. https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-16922. [Accessed December 2023].

[45] United States Census Bureau. https://www.census.gov/quickfacts/fact/table/redlandscitycalifornia,US/RHI725222. [Accessed December 2023].

[46] Southern California Association of Governments. *Connect SoCal (2020-2045: Regional Transportation Plan/Sustainable Communities Strategy)*. https://scag.ca.gov/read-plan-adopted-final-connect-socal-2020. [Accessed December 2023].

[47] City of Redlands. *Fire Station Locations*. https://www.cityofredlands.org/pod/fire-station-locations-0. [Accessed December 2023].

[48] City of Redlands. *Development Impact Fees.* https://www.cityofredlands.org/post/development-impact-fees. [Accessed December 2023].

[49] City of Redlands. *Development Impact Fees.* https://www.cityofredlands.org/post/development-impact-fees. [Accessed December 2023].

[50] Redlands Unified School District. *School Facility Fees.* *https://www.redlandsusd.net/cms/lib/CA01900901/Centricity/Domain/61/Facl%20Fees%20Flyer%20Effective%2010-8-22%20with%20Holidays.pdf*. [Accessed December 2023].

[51] Redlands Unified School District. *School Facility Fees.* *https://www.redlandsusd.net/cms/lib/CA01900901/Centricity/Domain/61/Facl%20Fees%20Flyer%20Effective%2010-8-22%20with%20Holidays.pdf*. [Accessed December 2023].

[52] City of Redlands. *Development Impact Fees.* https://www.cityofredlands.org/post/development-impact-fees. [Accessed December 2023].

[53] City of Redlands. *Development Impact Fees.* https://www.cityofredlands.org/post/development-impact-fees. [Accessed December 2023].

[54] City of Redlands. *Texonia Park*. https://www.cityofredlands.org/post/texonia-park. [Accessed December 2023].

[55] City of Redlands. *Development Impact Fees.* https://www.cityofredlands.org/post/development-impact-fees. [Accessed December 2023].

[56] City of Redlands City Code. *Chapter 15.04 California Building Code.* https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-11655. [Accessed January 2024].

[57] City of Redlands. *Water System*. https://www.cityofredlands.org/post/water-system. [Accessed December 2023].

[58] City of Redlands. *Wastewater Treatment*. https://www.cityofredlands.org/post/wastewater-treatment. [Accessed December 2023].

[59] Upper Santa Ana River Watershed. *Integrated Regional Urban Water Management Plan*. https://www.cityofredlands.org/sites/main/files/file-attachments/part_2_chapter_4_redlands_2020_uwmp.pdf?1622145365 [Accessed January 2024].

[60] CalRecycle. *SWIS Facility / Site Activity Details*. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1906?siteID=2688. [Accessed January 2024].

[61] CalRecycle. *Estimated Solid Waste Generation Rates.* https://www2.calrecycle.ca.gov/wastecharacterization/general/rates. [Accessed January 2024].

[62] CAL Fire. *State Responsibility Area Viewer*. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1. [Accessed December 2023].

[63] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[64] CAL Fire. *Fire Hazard Severity Zone Maps.* https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. [Accessed December 2023].

[65] City of Redlands. General Plan: *Healthy Community Element.* https://www.cityofredlands.org/post/planning-division-general-plan. [Accessed December 2023].

[66] California Department of Water Resources. *Inundation Maps*. https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2. [Accessed December 2023].

This Page Intentionally Left Blank.

URBAN | CROSSROADS

DATE: February 29, 2024
TO: Nolan C. Leggio, Diversified Pacific Communities
FROM: Haseeb Qureshi
Ali Dadabhoy
JOB NO: 14552-04 AQ & GHG Assessment

REDLANDS RESIDENTIAL AIR QUALITY & GREENHOUSE GAS ASSESSMENT

Nolan C. Leggio,

Urban Crossroads, Inc. is pleased to provide the following Air Quality & Greenhouse Gas Assessment for the Redlands Residential (**Project**), which is located east of Tennessee Street and north of West Lugonia Avenue in the City of Redlands.

PROJECT OVERVIEW

The Project is a proposed mixed use residential, consisting of 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component. The proposed Project is anticipated to have an opening year of 2025. The Project's Tentative Tract Map is shown as Exhibit 1.

SUMMARY OF FINDINGS

Results of the assessment indicate that the Project would result in a less than significant with respect to air quality, and greenhouse gases.

EXHIBIT 1: PROJECT'S TENTATIVE TRACT MAP

PROJECT AIR QUALITY IMPACTS

AIR QUALITY SETTING

SOUTH COAST AIR BASIN (SCAB)

The Project site is located in the SCAB within the jurisdiction of South Coast Air Quality Management District (SCAQMD) (3). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As previously stated, the Project site is located within the SCAB, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The SCAB is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bounded by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

Regional Climate

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s degrees Fahrenheit (°F). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide (SO2) to sulfates (SO4) is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent (%) along the coast and 59% inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90% of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14½ hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as nitrogen oxides (NOX) and carbon monoxide (CO) from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

Wind Patterns and Project Location

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The SCAB is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

Criteria Pollutants

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O_3) (precursor emissions include NO_X and reactive organic gases (ROG), CO, particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Riverside County portion of the SCAB is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$.

Sensitive Receptor Locations

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as “sensitive receptors”. These structures typically include uses such as residences, hotels, and hospitals where an individual can remain for 24 hours. Consistent with the LST Methodology, the nearest land use where an individual could remain for 24 hours to the Project site has been used to determine construction and operational air quality impacts for emissions of PM_{10} and $PM_{2.5}$, since PM_{10} and $PM_{2.5}$ thresholds are based on a 24-hour averaging time.

Receptors in the Project study area are described below. All distances are measured from the Project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, whichever is closer to the Project site. Receptors in the Project study area are shown on Exhibit 2 under the Localized Construction Emissions section later in the report.

- Receptor R1 represents the residence at 1430 Karon St, approximately 983 feet east of the Project site.
- Receptor R2 represents the residence at 1414 Karon St, approximately 946 feet east of the Project site.
- Receptor R3 represents the residence at 1336 Karon St, approximately 889 feet east of the Project site.
- Receptor R4 represents the Jack In The Box at 1141 W Lugonia Ave, approximately 714 feet south of the Project site.
- Receptor R5 represents the Bob’s Discount Furniture and Mattress Store at 27550 W Lugonia Ave, approximately 505 feet west of the Project site.
- Receptor R6 represents the future residence at E. Lugonia Ave. at Karon St, adjacent east of the Project site.

REGULATORY BACKGROUND

FEDERAL REGULATIONS

The EPA is responsible for setting and enforcing the national ambient air quality standards (NAAQS) for O_3, CO, NO_X, SO_2, PM_{10}, and lead (Pb) (5). The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (6). The CAA also mandates that each state submit and implement state implementation plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions) (7) (8). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3, NO_2, SO_2, PM_{10}, CO, $PM_{2.5}$, and Pb. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_X. NO_X is a collective term that includes all forms of NO_X which are emitted as byproducts of the combustion process.

CALIFORNIA REGULATIONS

CARB

The CARB, which became part of the California EPA (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. AB 2595 mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the California ambient air quality standards (CAAQS) for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for SO4, visibility, hydrogen sulfide (H2S), and vinyl chloride (C2H3Cl). However, at this time, H2S and C2H3Cl are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (1) (2).

Local air quality management districts, such as the SCAQMD, regulate air emissions from stationary sources such as commercial and industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare Air Quality Management Plans (AQMP) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;

- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a 5% or more annual reduction in emissions or 15% or more in a period of three years for ROGs, NO_X, CO and PM_{10}. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than 5% per year under certain circumstances.

AQMP

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMP to meet the state and federal ambient air quality standards (10). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

APPLICABLE REGULATORY REQUIRMENTS

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to Rule 403 (Fugitive Dust), Rule 445 (Wood Burning Devices), and Rule 1113 (Architectural Coatings) (3) (4) (5).

SCAQMD Rule 403

This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent and reduce fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust and requires best available control measures to be applied to earth moving and grading activities. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression techniques are summarized below.

- Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.
- All onsite roads will be paved as soon as feasible or watered periodically or chemically stabilized.
- All material transported offsite will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.
- Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the workday to remove soil tracked onto the paved surface.

SCAQMD Rule 445

This rule is intended to reduce the emission of particulate matter from wood-burning devices. The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development.

SCAQMD Rule 1113

This rule serves to limit the volatile organic compound (VOC) content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.

METHODOLOGY

In May 2022, the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (6). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality and greenhouse gas emissions.

Standards of Significance

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the California Environmental Quality Act Guidelines (CEQA Guidelines) (14 CCR §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (7):

- **Threshold 1**: Conflict with or obstruct implementation of the applicable air quality plan.
- **Threshold 2**: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.
- **Threshold 3**: Expose sensitive receptors to substantial pollutant concentrations.
- **Threshold 4**: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

AIR QUALITY REGIONAL EMISSIONS THRESHOLDS

The SCAQMD has developed regional significance thresholds for criteria pollutants, as summarized at Table 1 (8). The SCAQMD's CEQA Air Quality Significance Thresholds (April 2019) indicate that any projects in the South Coast Air Basin (SCAB) with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 1: MAXIMUM DAILY REGIONAL EMISSIONS THRESHOLDS

Pollutant	Construction	Operations
NO_X	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day

lbs/day – Pounds Per Day

AIR QUALITY LOCALIZED EMISSIONS THRESHOLDS

For this Project, the appropriate SRA for the LST analysis is the SCAQMD East San Bernardino Valley Area monitoring station (SRA 35). LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size. The SCAQMD's screening look-up tables are utilized in determining localized impacts. It should be noted that since the look-up tables identify thresholds at only 1 acre, 2 acres, and 5 acres, linear regression has been utilized to determine localized significance thresholds. Consistent with SCAQMD guidance, the thresholds presented in Table 2 were calculated by interpolating the threshold values for the Project's disturbed acreage and is based on Receptor R6 for evaluation of localized PM_{10}, $PM_{2.5,}$ NO_X and CO.

The acres disturbed is based on the equipment list and days in the site preparation and grading phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday. The equipment-specific grading rates are summarized in the CalEEMod user's guide, Appendix A: Calculation Details for CalEEMod (9). It should be noted that the disturbed area per day is representative of a piece of equipment making multiple passes over the same land area. In other words, one Rubber Tired Dozer can make multiple passes over the same land area totaling 0.5 acres in a given 8-hour day. Appendix A of the CalEEMod User Manual only identifies equipment-specific grading rates for Crawler Tractors, Graders, Rubber Tired Dozers, and Scrapers; therefore, Tractors/Loaders/Backhoes equipment that was included in the site preparation and grading phase was replaced with crawler tractors. For analytical purposes, emissions associated with peak site preparation and grading activities are considered for purposes of localized significance thresholds (LSTs) since this phase represents the maximum localized emissions that would occur. The Project's construction activities could disturb a maximum of approximately 3.5 acres per day for site preparation and 4 acres per day for grading activities. Any other construction phases of development would result in lesser emissions and consequently lesser impacts than what is disclosed herein. As such, Table 2 presents thresholds for localized construction and operational emissions.

TABLE 2: MAXIMUM DAILY LOCALIZED EMISSIONS THRESHOLDS

Source	Activity	Emissions (lbs/day)			
		NO_X	CO	PM_{10}	$PM_{2.5}$
Construction	Site Preparation	220 lbs/day	1,625 lbs/day	11 lbs/day	7 lbs/day
	Grading	237 lbs/day	1,775 lbs/day	12 lbs/day	8 lbs/day

[1] Source of localized significance threshold (LSTs) is provided on page 14.

REGIONAL CONSTRUCTION EMISSIONS SUMMARY

The estimated maximum daily construction emissions without mitigation are summarized on Table 3. Detailed construction model outputs are presented in Attachment A. Under the assumed scenarios, emissions resulting from the Project construction will not exceed thresholds established by the SCAQMD for emissions of any criteria pollutant.

TABLE 3: OVERALL REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
2024	4.42	23.40	54.90	0.05	5.95	2.06
2025	68.20	15.90	48.00	0.04	6.21	1.83
Winter						
2023	4.99	47.20	39.20	0.06	8.44	5.07
2024	4.04	37.90	36.70	0.06	5.36	2.69
2025	2.70	14.60	34.80	0.04	5.29	1.59
Maximum Daily Emissions	**68.20**	**47.20**	**54.90**	**0.06**	**8.44**	**5.07**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

[1] PM_{10} and $PM_{2.5}$ source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

REGIONAL OPERATIONAL EMISSIONS

Operational activities associated with the Project would result in emissions of CO, VOCs, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, and mobile source emissions,

The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Trip characteristics available from the *Tennessee Street and Lugonia Avenue Mixed-Use Measure U Growth Management Analysis* report were utilized in this analysis (10).

The estimated operation-source emissions from the Project are summarized on Table 4. Detailed operation model outputs are presented in Attachment A. As shown on Table 4, operational-source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

TABLE 4: TOTAL PROJECT REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Mobile Source	11.60	8.66	79.10	0.18	5.96	1.16
Area Source	13.70	7.13	29.70	0.05	0.57	0.57
Energy Source	0.09	1.50	0.65	0.01	0.12	0.12
Total Maximum Daily Emissions	**25.39**	**17.29**	**109.45**	**0.24**	**6.65**	**1.85**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO
Winter						
Mobile Source	10.70	9.28	68.20	0.17	5.96	1.16
Area Source	11.20	6.87	2.92	0.04	0.56	0.56
Energy Source	0.09	1.50	0.65	0.01	0.12	0.12
Total Maximum Daily Emissions	**21.99**	**17.65**	**71.77**	**0.22**	**6.64**	**1.84**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

LOCALIZED CONSTRUCTION EMISSIONS

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology) (11). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs). The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-41. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses. It should be noted that SCAQMD also states that Projects that are

---

[1] The purpose of SCAQMD's Environmental Justice program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. Further, the SCAQMD defines Environmental Justice as "…equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

statutorily or categorically exempt under CEQA would not be subject to LST analyses. Projects exempt from CEQA also include infill projects that meet the H&S Code provisions. As such, although not required for this Project, LST analysis is presented to further underscore that there are in fact no significant impacts associated with the Project.

The SCAQMD recommends that the nearest sensitive receptor be considered when determining the Project's potential to cause an individual or cumulatively significant impact. The nearest land use where an individual could remain for 24 hours to the Project site has been used to determine localized construction and operational air quality impacts for emissions of PM_{10} and $PM_{2.5}$ (since PM_{10} and $PM_{2.5}$ thresholds are based on a 24-hour averaging time). The nearest receptor used for evaluation of localized impacts of PM_{10} and $PM_{2.5}$ is location R6 represented by the future residence at E. Lugonia Ave. at Karon St, adjacent east of the Project site . Receptors in the Project study area shown on Exhibit 2.

As previously stated, and consistent with LST Methodology, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO_X and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assume that an individual could be present at these sites for periods of one to 8 hours. It should be noted that the existing residence R6 is located at a closer distance than the nearest industrial/commercial use. As such, the same receptor will be used for evaluation of localized NO_X and CO.

It should be noted that the LST Methodology explicitly states, "It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters (11)." As such, a 25-meter receptor distance would be used for evaluation of localized PM_{10}, $PM_{2.5,}$ NO_X and CO.

EXHIBIT 2: SENSITIVE RECEPTOR LOCATIONS

Table 5 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. Outputs from the model runs for construction LSTs are provided in Attachment A. For analytical purposes, emissions associated with peak demolition, site preparation and grading activities are considered for purposes of LSTs since these phases represents the maximum localized emissions that would occur. Any other construction phases of development that overlap would result in lesser emissions and consequently lesser impacts than what is disclosed herein. As shown in Table 5, emissions resulting from the Project construction will not exceed the numerical thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized Project-related construction-source emissions and no mitigation is required.

TABLE 5: PROJECT LOCALIZED CONSTRUCTION IMPACTS

On-Site Emissions	Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation				
Maximum Daily Emissions	47.00	38.00	8.19	5.02
SCAQMD Localized Threshold	220	1,625	11	7
Threshold Exceeded?	NO	NO	NO	NO
Grading				
Maximum Daily Emissions	40.90	32.70	4.65	2.78
SCAQMD Localized Threshold	237	1,175	12	8
Threshold Exceeded?	NO	NO	NO	NO

LOCALIZED OPERATIONAL EMISSIONS

The proposed project is located on approximately 13.88 acres, and the total development is proposed to consist of 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include such uses, and thus, due to the lack of significant stationary source emissions, no LST analysis is needed for operations.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In December 2022, the SCAQMD released the Final 2022 AQMP (2022 AQMP). The 2022 AQMP continues to evaluate current integrated strategies and control measures to meet the CAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (12). Similar to the 2016 AQMP, the 2022 AQMP incorporates scientific and technological information and planning assumptions, including the 2020-2045 RTP/SCS, a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements (13). The Project's consistency with the AQMP will be determined using the 2022 AQMP as discussed below.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the 1993 CEQA Handbook (18). These indicators are discussed below.

The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations that under this criterion refer to are the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded.

CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded. As evaluated, the Project's regional and localized construction and operational-source emissions would not exceed applicable regional significance thresholds. As such, a less than significant impact is expected.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

The 2022 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the SCAG, which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in City of Redlands General Plan is considered to be consistent with the AQMP.

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities. As such, when considering that no emissions thresholds will be exceeded, a less than significant impact would result.

The City of Redlands General Plan designates the Project site for Commercial uses. The Commercial designation allows for a wide range of commercial uses including neighborhood-serving stores and convenience centers, regional commercial centers and commercial recreation. Additionally, this category allows for residential and mixed uses consistent with the zoning district (14).

As the Project is to consist of up to 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component, the Project's proposed uses are consistent with the site's land use designations, and a general plan amendment will not be required.

On the basis of the preceding discussion, the Project is determined to be consistent with the second criterion.

As the proposed Project is consistent with site's land use designation, would not exceed any applicable regional or local thresholds, and would not result in or cause NAAQS or CAAQS violations, the Project is therefore considered to be consistent with the AQMP and a less than significant impact is expected.

TOXIC AIR CONTAMINANTS

Construction Activity

During short-term construction activity, the Project will result in the emission of some diesel particulate matter (DPM), which is a listed carcinogen and toxic air contaminant (TAC) in the State of California. The 2015 Office of Environmental Health Hazard Assessment (OEHHA) revised risk assessment guidelines suggest that construction projects as short as 2-6 months may warrant evaluation. Notwithstanding, based on Urban Crossroad's professional opinion and experience in preparing health risk assessments for development projects, given the distance of the Project from surrounding sensitive receptors, the dominant wind patterns blowing to the southwest away for receptors (15), and the annual $PM_{2.5}$ emissions from equipment during each year of construction, any DPM generated from construction activity would result in less than significant ground level concentrations of DPM and not result in a significant health risks and no further evaluation is required.

Furthermore, many air districts throughout the state, including the SCAQMD, are currently evaluating the applicability of age sensitivity factors and have not established CEQA guidance. More specifically in their response to comments received on SCAQMD New Source Review rule, the SCAQMD explicitly states that:

"The Proposed Amended Rules are separate from the CEQA significance thresholds. The SCAQMD staff is currently evaluating how to implement the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will evaluate a variety of options on how to evaluate health risks under the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will conduct public workshops to gather input before bringing recommendations to the Governing Board. In the interim, staff will continue to use the previous guidelines for CEQA determinations."

Operational

TACs analysis applies to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include such uses, and thus, due to the lack of significant stationary source emissions, no TAC analysis is needed for operations.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

The CAAQS designate the Project site as nonattainment for O_3, PM_{10}, and $PM_{2.5}$ while the NAAQS designates the Project site as nonattainment for O_3 and $PM_{2.5}$.

The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (16). In this report the SCAQMD clearly states (Page D-3):

> *"…the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.*
>
> *Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which SCAB is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

Construction Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, proposed Project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

Operational Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project operational-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, the proposed Project operational-source emissions would be considered less than significant on a project-specific and cumulative basis.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 3

Would the expose sensitive receptors to substantial pollutant concentrations?

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Results of the LST analysis indicate that the Project will not exceed the SCAQMD localized significance thresholds during construction. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during Project construction.

CO "HOT SPOT" ANALYSIS

As discussed below, the Project would not result in potentially adverse CO concentrations or "hot spots." Further, detailed modeling of Project-specific CO "hot spots" is not needed to reach this conclusion. An adverse CO concentration, known as a "hot spot", would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur.

It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SCAB is now designated as attainment. To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO "hot spot" analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards, as shown on Table 6.

TABLE 6: CO MODEL RESULTS

Intersection Location	CO Concentrations (ppm)		
	Morning 1-hour	Afternoon 1-hour	8-hour
Wilshire Boulevard/Veteran Avenue	4.6	3.5	3.7
Sunset Boulevard/Highland Avenue	4	4.5	3.5
La Cienega Boulevard/Century Boulevard	3.7	3.1	5.2
Long Beach Boulevard/Imperial Highway	3	3.1	8.4

Notes: Federal 1-hour standard is 35 ppm and the deferral 8-hour standard is 9.0 ppm.

Based on the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. As evidence of this, for example, 8.4 ppm 8-hr CO concentration measured at the Long Beach Blvd. and Imperial Hwy. intersection (highest CO generating intersection within the "hot spot" analysis), only 0.7 ppm was attributable to the traffic volumes and congestion at this intersection; the remaining 7.7 ppm were due to the ambient air measurements at the time the 2003 AQMP was prepared (20). In contrast, an adverse CO concentration, known as a "hot spot", would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (21). Traffic volumes generating the CO concentrations for the "hot spot" analysis is shown on Table 7. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vph and AM/PM traffic volumes of 8,062 vph and 7,719 vph respectively (20). The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm; this indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations (4.6 ppm x 4= 18.4 ppm) would still not likely exceed the most stringent 1-hour CO standard (20.0 ppm).

TABLE 7: CO MODEL RESULTS

Intersection Location	Peak Traffic Volumes (vph)				
	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
Wilshire Boulevard/Veteran Avenue	4,954/2,069	1,830/3,317	721/1,400	560/933	8,062/7,719
Sunset Boulevard/Highland Avenue	1,417/1,764	1,342/1,540	2,304/1,832	1,551/2,238	6,614/5,374
La Cienega Boulevard/Century Boulevard	2,540/2,243	1,890/2,728	1,384/2,029	821/1,674	6,634/8,674
Long Beach Boulevard/Imperial Highway	1,217/2,020	1,760/1,400	479/944	756/1,150	4,212/5,514

As summarized on Table 8 below, the intersection of SR-210 WB Ramps-Tennessee St/San Bernardino Ave would have the highest AM traffic volume of 2,343 vph and the intersection of Tennessee St/Lugonia Ave would have the highest PM traffic volume of 3,238 vph. As such, total traffic volumes at the intersections considered are less than the traffic volumes identified in the 2003 AQMP. As such, the Project considered herein along with background and cumulative development would not produce the volume of traffic required to generate a CO "hot spot" either in the context of the 2003 Los Angeles hot spot study or based on representative BAAQMD CO threshold considerations. Therefore, CO "hot spots" are not an environmental impact of concern for the Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

TABLE 8: PEAK HOUR TRAFFIC VOLUMES

Intersection Location	Peak Traffic Volumes (vph)				
	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
SR-210 WB Ramps-Tennessee St/San Bernardino Ave	473/580	254/300	705/1180	911/571	2343/2631
Tennessee St/Lugonia Ave	536/999	246/267	434/1290	675/682	1891/3238
Tennessee St/I-10 EB Ramps	718/819	574/786	680/1074	0/0	1972/2679
Tennessee St/Colton Ave	646/670	825/897	199/681	352/459	2022/2707

Source: Tennessee Street and Lugonia Avenue Mixed-Use *Measure U Growth Management Analysis* (Translutions, Inc., 2023)

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 4

Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construct ion. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the solid waste regulations. The proposed Project would also be required to comply with

SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required (17).

PROJECT GHG ANALYSIS

CLIMATE CHANGE SETTING

Global climate change (GCC) is the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. The majority of scientists believe that the climate shift taking place since the Industrial Revolution is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that GCC is the result of increased concentrations of GHGs in the earth's atmosphere, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. The majority of scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

An individual project like the proposed Project evaluated in this memo cannot generate enough GHG emissions to affect a discernible change in global climate. However, the proposed Project may participate in the potential for GCC by its incremental contribution of GHGs combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, this memo will evaluate the potential for the proposed Project to have a significant effect upon the environment as a result of its potential contribution to the greenhouse effect.

GCC refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2, N_2O, CH_4, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the earth's atmosphere, but prevent radioactive heat from escaping, thus warming the earth's atmosphere. GCC can occur naturally as it has in the past with the previous ice ages.

Gases that trap heat in the atmosphere are often referred to as GHGs. GHGs are released into the atmosphere by both natural and anthropogenic activity. Without the natural GHG effect, the earth's average temperature would be approximately 61 degrees Fahrenheit (°F) cooler than it is currently. The cumulative accumulation of these gases in the earth's atmosphere is considered to be the cause for the observed increase in the earth's temperature.

For the purposes of this analysis, emissions of CO_2, CH_4, and N_2O were evaluated because these gases are the primary contributors to GCC from development projects. Although there are other substances such as fluorinated gases that also contribute to GCC, these fluorinated gases were not evaluated as their sources are not well-defined and do not contain accepted emissions factors or methodology to accurately calculate these gases.

REGULATORY SETTING

Executive Order S-3-05

Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80% below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Assembly Bill (AB) 32

The California State Legislature enacted AB 32, which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. “GHGs” as defined under AB 32 include CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. Pursuant to AB 32, CARB adopted regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 states the following:

“Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.”

CARB approved the 1990 GHG emissions level of 427 million metric ton of CO_2 equivalent per year ($MMTCO_2e$) on December 6, 2007 (18). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a “business as usual” (BAU) scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (19). At that level, a 28.4% reduction was required to achieve the 427 MMTCO2e 1990 inventory. In October 2010, CARB prepared an updated BAU 2020 forecast to account for the recession and slower forecasted growth. The forecasted inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7% reduction from BAU is required to achieve 1990 levels (20).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by CARB for 2000 through 2012 (21). The State has achieved the Executive Order S-3-05 target for

2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target.

- 1990: 427 $MMTCO_2e$ (AB 32 2020 target)
- 2000: 463 $MMTCO_2e$ (an average 8% reduction needed to achieve 1990 base)
- 2010: 450 $MMTCO_2e$ (an average 5% reduction needed to achieve 1990 base)

CARB has also made substantial progress in achieving its goal of achieving 1990 emissions levels by 2020. As described earlier in this section, CARB revised the 2020 BAU inventory forecast to account for new lower growth projections, which resulted in a new lower reduction from BAU to achieve the 1990 base. The previous reduction from 2020 BAU needed to achieve 1990 levels was 28.4% and the latest reduction from 2020 BAU is 21.7%.

- 2020: 545 $MMTCO_2e$ BAU (an average 21.7% reduction from BAU needed to achieve 1990 base)

Senate Bill (SB) 32

On September 8, 2016, Governor Jerry Brown signed the SB 32 and its companion bill, AB 197. SB 32 requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80% below 1990 levels by 2050. AB 197 creates a legislative committee to oversee regulators to ensure that CARB not only responds to the Governor, but also the Legislature (22).

AB 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

Executive Order B-55-18 and SB 100

Executive Order B-55-18 and SB 100. SB 100 and Executive Order B-55-18 were signed by Governor Brown on September 10, 2018. Under the existing RPS, 25% of retail sales are required to be from renewable sources by December 31, 2016, 33% by December 31, 2020, 40% by December 31, 2024, 45% by December 31, 2027, and 50% by December 31, 2030. SB 100 raises California's RPS requirement to 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030. In addition to targets under AB 32 and SB 32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural

Resources Agency (CNRA), California Environmental Protection Agency (CalEPA), the Department of Food and Agriculture (CDFA), and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

Title 24 California Code of Regulations (CCR)

California Code of Regulations (CCR) Title 24 Part 6: The California Energy Code was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on August 1, 2009, and is administered by the California Building Standards Commission.

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that will be effective on January 1, 2023[2]. As construction of the Project is anticipated to be completed in 2025, it is presumed that the Project would be required to comply with the Title 24 standards in place at that time.

SCAQMD

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the SCAB. The Working Group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold, that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.

---

[2] The 2022 California Green Building Standard Code will be published July 1, 2022.

- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project is less than significant:
    - Residential and commercial land use: 3,000 metric ton of CO_2 equivalent ($MTCO_2e$/yr)
    - Industrial land use: 10,000 $MTCO_2e$/yr
    - Based on land use type: residential: 3,500 $MTCO_2e$/yr; commercial: 1,400 $MTCO_2e$/yr; or mixed use: 3,000 $MTCO_2e$/yr
- Tier 4 has the following options:
    - Option 1: Reduce Business-as-Usual (BAU) emissions by a certain percentage; this percentage is currently undefined.
    - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
    - Option 3: 2020 target for service populations (SP), which includes residents and employees: 4.8 $MTCO_2e$ per SP per year for projects and 6.6 $MTCO_2e$ per SP per year for plans;
    - Option 3, 2035 target: 3.0 $MTCO_2e$ per SP per year for projects and 4.1 $MTCO_2e$ per SP per year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's interim thresholds used the Executive Order S-3-05-year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap CO_2 concentrations at 450 ppm, thus stabilizing global climate.

SCAQMD only has authority over GHG emissions from development projects that include air quality permits. At this time, it is unknown if the project would include stationary sources of emissions subject to SCAQMD permits. Notwithstanding, if the Project requires a stationary permit, it would be subject to the applicable SCAQMD regulations.

SCAQMD Regulation XXVII, adopted in 2009 includes the following rules:

- Rule 2700 defines terms and post global warming potentials.
- Rule 2701, Southern California (SoCal) Climate Solutions Exchange, establishes a voluntary program to encourage, quantify, and certify voluntary, high quality certified GHG emission reductions in the SCAQMD.
- Rule 2702, GHG Reduction Program created a program to produce GHG emission reductions within the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

County of Redlands Climate Action Plan

The City of Redlands CAP was designed to reinforce the City of Redlands commitment to reducing greenhouse gas (GHG) emissions and demonstrate compliance with the State of California's GHG emission reduction standards (23). The CAP includes goals and policies to promote energy efficiency, waste reduction, and resource conservation and recycling. The CAP's GHG emission targets and goals were based on meeting the goals in EO B-30-15 and SB 32 and following the guidance established in the 2017 Scoping Plan. The CAP used the 2017 Scoping Plan recommended Plan Level emissions target of 6.0 $MTCO_2e$ per capita per year for 2030. Based on the CAP analysis, the City of Redlands will achieve the 2030 target based on State actions and existing development standards and would not require any specific measures to reduce GHG emissions. Regardless, the CAP does recommend some actions including encourage the development of solar photovoltaic systems on residential and non-residential development, increase energy efficiency 5% over 2016 standards, increase the use of high efficiency lighting, and reduce the intensity of GHG emissions associated with water delivery and treatment.

GHG IMPACTS

Standards of Significance

According to the CEQA Guidelines Appendix G thresholds, to determine whether impacts from GHG emissions are significant. Would the project:

- **Threshold 1**: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- **Threshold 2**: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

Discussion on Establishment of Significance Thresholds

The City of Redlands CAP was adopted on December 5, 2017. The CAP was prepared pursuant to Section 15183.5(b) of the CEQA Guidelines to be utilized as a tiering document for the General Plan as well as future projects within the City of Redlands that are consistent with the General Plan. The CAP incorporates the guidelines established in CARB's 2017 Scoping Plan. The 2017 Scoping Plan was prepared to meet the most current GHG emissions reduction targets set in Executive Order S-3-15 and SB 32 that recommends local governments to develop plans to reduce GHG emissions to 6 $MTCO_2e$/yr by the year 2030 and 2 $MTCO_2e$/yr by the year 2050. Since the CAP was prepared in coordination with the General Plan that has a horizon year of 2035, the Redlands CAP also provided a year 2035 target of 5 $MTCO_2e$/yr, which was determined through interpolation of the 2030 and 2050 GHG emissions targets from the 2017 Scoping Plan. The CAP also has a Year 2030 GHG emissions target of 6.0 per capita per year.

GHG IMPACTS – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project have the potential to generate direct or indirect GHG emissions that would result in a significant impact on the environment?

PROJECT GHG EMISSIONS

The estimated GHG emissions for the Project land use are summarized on Table 9. The estimated GHG emission include emissions from Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_20), and Refrigerants (R). As shown on Table 8, the Project would generate a total of approximately 2.94 $MTCO_2e$/SP.

TABLE 9: TOTAL PROJECT GHG EMISSIONS

Source	Emission ($MTCO_2e$/yr)				
	CO_2	CH_4	N_20	R	Total CO_2E
Annual construction-related emissions amortized over 30 years	39.04	0.00	0.00	0.04	39.65
Mobile	2645.00	0.16	0.14	4.44	2696.00
Area	107.00	< 0.005	< 0.005	0.00	107.00
Energy	682.00	0.06	< 0.005	0.00	685.00
Water	28.60	0.67	0.02	0.00	50.10
Waste	32.00	3.20	0.00	0.00	112.00
Refrigerants	0.00	0.00	0.00	0.49	0.49
Total CO_2E (All Sources)	3,690.24				
Service Population	1,254.53				
Total CO_2e/Service Population	**2.94**				
Threshold (CO_2E)	6.00				
Threshold Exceeded?	NO				

The Project would result in 2.94 $MTCO_2e$/SP per year in 2025 as summarized in Table 8. As such, the Project total GHG emissions would not exceed the screening threshold of 6.0 $MTCO_2e$/SP per year. Thus, Project-related emissions would not have a potential significant direct or indirect impact on GHG and climate change.

GHG IMPACTS – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

2022 CARB SCOPING PLAN CONSISTENCY

Included in the 2022 Scoping Plan is a set of Local Actions (Appendix D to the 2022 Scoping Plan) aimed at providing local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. Notably, this section is focused on Residential and Mixed-Use Projects, in fact CARB states in Appendix D (page 4): "…focuses primarily on climate action plans (CAPs) and local authority over new residential development. It does not address other land use types (e.g., industrial) or air permitting."

Table 10 summarizes the reduction actions/strategies by emissions source category to determine how the project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan, and as shown, the Project would be consistent with the strategies discussed below (24).

TABLE 10: CONSISTENCY WITH THE 2022 SCOPING PLAN

Reduction Strategy	Project Consistency Analysis
Smart Growth / Vehicles Miles Traveled	
Reduce VMT per capita to 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	**Consistent.** The Project site is currently undeveloped and would develop the underutilized land with 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component. The Project is within walking and biking distance between existing commercial and residential developments. Therefore, future residents traveling from and to the proposed Project would have more access to work, educational and other destinations and would reduce VMT. As such, the Project is consistent with this strategy.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial) contributing to 6 million heat pumps installed statewide by 2030	**Consistent.** The project is expected to utilize natural gas heating and/or cooking on-site. The City of Redlands has not adopted an ordinance or program limiting the use of natural gas for on-site cooking and/or heating. However, if one is adopted, the project would comply with the applicable goals or policies limiting the use of natural gas equipment

Reduction Strategy	Project Consistency Analysis
	in the future. As such, the project would be consistent with this strategy.
Non-combustion Methane Emissions	
Divert 75% of organic waste from landfills by 2025	**Consistent.** The project would be required to recycle and compost 75 percent of waste per AB 341. As such, the project would be consistent with the strategy.

2020-2045 RTP/SCS CONSISTENCY

The 2020-2045 RTP/SCS, developed with input from local governments, including the City of Redlands, establishes GHG emissions goals for automobiles and light-duty trucks for 2035, 2045 and establishes an overall GHG target for the region consistent with both the statewide GHG-reduction targets for the post-2020 statewide GHG reduction goals. The 2020-2045 RTP/SCS is a long-range visioning plan to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. Future investments seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently.

Table 11 summarizes the Projects consistency with the five strategies found within the SCAG's 2020-2045 RTP/SCS and as shown, the Project would be consistent with the GHG reduction strategies contained within the SCAG's RTP/SCS. Implementing SCAG's RTP/SCS will reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. The proposed Project would be consistent with and would not conflict with the goals of the RTP/SCS; therefore, the proposed Project would not interfere with SCAG's ability to achieve the region's year post-2020 mobile source GHG reduction targets outlined in the RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS.

TABLE 11: CONSISTENCY WITH SCAG'S 2020-2045 RTP/SCS

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
Focus Growth Near Destinations and Mobility Options		
• Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations • Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets • Plan for growth near transit investments and support implementation of first/last mile strategies • Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses • Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods • Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) • Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g., shared parking or smart parking)	Center Focused Placemaking, Priority Growth Areas (PGA), Job Centers, High Quality Transit Areas (HQTAs), Transit Priority Areas (TPA), Neighborhood Mobility Areas (NMAs), Livable Corridors, Spheres of Influence (SOIs), Green Region, Urban Greening.	**Consistent.** The Project site is currently undeveloped and would develop the underutilized land with 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component. Therefore, future residents traveling from and to the proposed Project would have more access to work, educational and other destinations, as well as reduced commuting times and distances, which would all in turn reduce GHG associated with transportation. Therefore, the Project is consistent with the focus growth near destinations and mobility options strategy.

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
Promote Diverse Housing Choices		
• Preserve and rehabilitate affordable housing and prevent displacement • Identify funding opportunities for new workforce and affordable housing development • Create incentives and reduce regulatory barriers for building context sensitive accessory dwelling units to increase housing supply • Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions	PGA, Job Centers, HQTAs, NMA, TPAs, Livable Corridors, Green Region, Urban Greening	**Consistent.** The Project site is currently undeveloped and would develop the underutilized land with 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component. Therefore, similar to the discussion above, the Project is consistent with promoting diverse housing choices strategy.
Leverage Technology Innovations		
• Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space • Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a “mobility wallet,” an app-based system for storing transit and other multi-modal payments	HQTA, TPAs, NMA, Livable Corridors.	**Consistent.** The Project would include EV charging infrastructure and provide bike storage spaces in accordance with the California Green Building Standards Code. Therefore, the Project is consistent with leveraging technology innovations strategy and would promote alternative modes of transportation that would help the State, County and City meet their GHG reduction goals.

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
• Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation		
Support Implementation of Sustainability Policies		
• Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions • Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations • Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space • Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies • Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region	Center Focused Placemaking, Priority Growth Areas (PGA), Job Centers, High Quality Transit Areas (HQTAs), Transit Priority Areas (TPA), Neighborhood Mobility Areas (NMAs), Livable Corridors, Spheres of Influence (SOIs), Green Region, Urban Greening.	**Consistent.** As mentioned previously, the proposed project would install EV charging infrastructure and provide bike storage spaces to promote alternative modes of transportation. Additionally, the project would comply with sustainable development practices included in the 2022 Title 24 standards and CALGreen Code, including installation of vanpooling and carpooling parking spaces, installation of high-efficient lighting, and implementation of water-efficiency irrigation and drought-tolerant landscaping. Thus, the project would be consistent with supporting implementation of sustainability policies strategy.

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
• Continue to support long range planning efforts by local jurisdictions • Provide educational opportunities to local decisions makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy		
	Promote a Green Region	
• Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards • Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration • Integrate local food production into the regional landscape • Promote more resource efficient development focused on conservation, recycling and reclamation • Preserve, enhance and restore regional wildlife connectivity • Reduce consumption of resource areas, including agricultural land • Identify ways to improve access to public park space	Green Region, Urban Greening, Greenbelts and Community Separators.	The proposed project consists of currently undeveloped and would develop the underutilized land with 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component and would not interfere with regional wildlife connectivity or concert agricultural land. The project would be required to comply with 2022 Title 24 standards and CALGreen Code, which would help reduce energy consumption and reduce GHG emissions. Thus, the project would support resource efficient development that reduces energy consumption and GHG emissions and the Project would be consistent with promoting a green region strategy.

CITY OF REDLANDS GENERAL PLAN AND CAP CONSISTENCY

The City of Redlands adopted both the General Plan and CAP on December 5, 2017. The CAP was developed concurrently with the General Plan, which identifies the City's most current land sue and transportation strategies and GHG implementation of various General Plan's goals and principles. The CAP provides actions to operationalize the General Plan policies that help with

GHG reductions. As summarized on Table 12 below, the Project is consistent with the goals related to GHG emissions reductions in the General Plan and CAP. Thus, the Project would not obstruct the City of Redlands CAP GHG reduction measures and would not conflict with the GHG projections included in the CAP and the Project would have a less than significant impact.

TABLE 12: CONSISTENCY WITH THE GENERAL PLAN AND CLIMATE ACTION PLAN

Reduction Strategy	Project Consistency Analysis
General Plan Sustainable Community Element	
Goal: Serve as an environmental steward; ensure that residents enjoy clean air and water; make efficient use of energy, water, and land resources; and grow in a manner in which increased population does not negatively impact resources (25). • 8-P.8: Promote sustainability by reducing the community's greenhouse gas (GHG) emissions and festering green development patterns- including buildings, sites, and landscapes. • 8-P.9: Undertake initiatives to enhance sustainability by reducing the community's GHG emissions.	**Consistent.** The Project site is currently undeveloped and would develop the underutilized land with 135 multifamily residential dwelling units within 3-story buildings, 325 multifamily residential dwelling units located within 4-5 story buildings and a 17,764-sf retail component. The Project would comply with Title 24 Building Energy Efficiency Standards and is within walking and biking distance between existing commercial and residential developments. Additionally, the Project would provided EV infrastructure and bike storage spaces. Therefore, the Project would be consistent with this goal and promote growth in a manner in which the future population does not negatively impact resources.
Climate Action Plan	
All electric appliances beginning 2026 (residential) and 2029 (commercial) contributing to 6 million heat pumps installed statewide by 2030.	**Consistent.** The project is expected to utilize natural gas heating and/or cooking on-site. The City of Redlands has not adopted an ordinance or program limiting the use of natural gas for on-site cooking and/or heating. However, if one is adopted, the project would comply with the applicable goals or policies limiting the use of natural gas equipment in the future. As such, the project would be consistent with this strategy.

Finally, the Project is consistent with the general plan land use designation, density, building intensity, and applicable policies specified for the Project area in SCAG's Sustainable Community Strategy/Regional Transportation Plan, which pursuant to SB 375 calls for the integration of transportation, land-use and housing policies to plan for achievement of the GHG-emissions target for the region. Thus, a less than significant impact related to GHG emissions from Project construction and operation would occur and no mitigation is required.

CONCLUSION

Results of the assessment indicate that the Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality, and greenhouse gas.

REFERENCES

1. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: April 16, 2018.] http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm.
2. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. https://www.epa.gov/environmental-topics/air-topics.
3. **South Coast Air Quality Management District.** RULE 403. FUGITIVE DUST. [Online] https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.
4. —. RULE 445. Wood-Burning Devices. [Online] http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-445.pdf.
5. —. RULE 1113. Architectural Coatings. [Online] http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf.
6. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] May 2022. www.caleemod.com.
7. **State of California.** *2020 CEQA California Environmental Quality Act.* 2020.
8. **South Coast Air Quality Management District (SCAQMD).** SCAQMD Air Quality Significance Thresholds. [Online] http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.
9. **California Air Pollution Control Officers Association (CAPCOA).** Appendix A: Calculation Details for CalEEMod. *CalEEMod.* [Online] http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6.
10. **Translutions, Inc.** *Tennessee Street and Lugonia Avenue Mixed-Use Measure U Growth Management Analysis.* 2023.
11. **South Coast Air Quality Management District.** *Localized Significance Thresholds Methodology.* s.l. : South Coast Air Quality Managment District, 2003.
12. —. Final 2016 Air Quality Management Plan (AQMP). [Online] March 2017. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=11.
13. **Southern California Association of Governments.** 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy. [Online] September 2020. https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176.
14. **City of Redlands.** City of Redlands General Plan 2035. [Online] 2017. https://gis.cityofredlands.org/generalplan/gp2035.pdf.
15. **Iowa State University.** Iowa State University, Iowa Environmental Mesonet. *Station Data & Meta Data/CA_ASOSSBD San Bernardino [1943-].* [Online] [Cited: 1 17, 2024.] https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=SBD&network=CA_ASOS.

16. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003. http://www.aqmd.gov/rules/ciwg/final_white_paper.pdf.

17. **South Coast Air Quality Management District.** RULE 402 NUISANCE. [Online] http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf.

18. **California Air Resources Board.** GHG 1990 Emissions Level & 2020 Limit. *California Air Resources Board.* [Online] https://ww2.arb.ca.gov/ghg-2020-limit.

19. —. *Climate Change Draft Scoping Plan.* 2008.

20. —. STATUS OF SCOPING PLAN RECOMMENDED MEASURES. [Online] [Cited: September 19, 2019.] https://ww3.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

21. —. *First Update to the Climate Change Scoping Plan.* 2014.

22. **California Legislative Information.** Senate Bill No. 32. [Online] September 8, 2016. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

23. **City of Redlands.** *City of Redlands Climate Action Plan.* Redlands, CA : s.n., December 2017.

24. **California Air Resources Board.** *2022 Scoping Plan for Achieving Carbon Neutrality.*

25. **City of Redlands Chapter 8, Sustainable Community.** City of Redlands Chapter 8, Sustainable Community. [Online] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.cityofredlands.org/sites/main/files/file-attachments/08_sustainability_low.pdf?1591207434.

ATTACHMENT A

CALEEMOD PROPOSED PROJECT EMISSIONS MODEL OUTPUTS

14552-Redlands Residential Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14552-Redlands Residential
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	24.0
Location	34.07209240401937, -117.19758489787327
County	San Bernardino-South Coast
City	Redlands
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5398
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Low Rise	135	Dwelling Unit	3.01	131,287	0.00	—	447	—
Apartments Mid Rise	325	Dwelling Unit	7.26	316,061	0.00	—	1,076	—

Regional Shopping Center	17.8	1000sqft	0.41	17,764	0.00	—	—	—
Parking Lot	759	Space	2.98	0.00	0.00	—	—	—
Other Non-Asphalt Surfaces	9.71	1000sqft	0.22	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.73	68.2	23.4	54.9	0.05	0.95	5.68	6.21	0.87	1.35	2.06	—	10,670	10,670	0.49	0.44	25.2	10,834
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.94	4.99	47.2	39.2	0.06	2.53	5.91	8.44	2.33	2.74	5.07	—	8,539	8,539	0.43	0.41	0.61	8,671
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.67	9.01	8.81	16.5	0.02	0.35	1.92	2.27	0.32	0.48	0.80	—	3,695	3,695	0.18	0.15	3.72	3,749
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.30	1.64	1.61	3.01	< 0.005	0.06	0.35	0.41	0.06	0.09	0.15	—	612	612	0.03	0.03	0.62	621

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.73	4.42	23.4	54.9	0.05	0.95	5.00	5.95	0.87	1.19	2.06	—	10,670	10,670	0.49	0.43	24.3	10,834
2025	3.85	68.2	15.9	48.0	0.04	0.52	5.68	6.21	0.48	1.35	1.83	—	9,944	9,944	0.46	0.44	25.2	10,112
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.94	4.99	47.2	39.2	0.06	2.53	5.91	8.44	2.33	2.74	5.07	—	7,155	7,155	0.30	0.09	0.04	7,189
2024	4.82	4.04	37.9	36.7	0.06	1.78	4.80	5.36	1.63	1.14	2.69	—	8,539	8,539	0.43	0.41	0.61	8,671
2025	3.21	2.70	14.6	34.8	0.04	0.49	4.80	5.29	0.45	1.14	1.59	—	8,422	8,422	0.42	0.41	0.56	8,554
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.22	0.19	1.78	1.48	< 0.005	0.09	0.20	0.29	0.08	0.09	0.17	—	244	244	0.01	< 0.005	0.02	245
2024	1.67	1.43	8.81	16.5	0.02	0.35	1.92	2.27	0.32	0.48	0.80	—	3,695	3,695	0.18	0.15	3.72	3,749
2025	1.20	9.01	5.42	13.4	0.01	0.18	1.78	1.96	0.16	0.42	0.59	—	3,136	3,136	0.16	0.15	3.50	3,187
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.04	0.03	0.32	0.27	< 0.005	0.02	0.04	0.05	0.02	0.02	0.03	—	40.3	40.3	< 0.005	< 0.005	< 0.005	40.5
2024	0.30	0.26	1.61	3.01	< 0.005	0.06	0.35	0.41	0.06	0.09	0.15	—	612	612	0.03	0.03	0.62	621
2025	0.22	1.64	0.99	2.45	< 0.005	0.03	0.33	0.36	0.03	0.08	0.11	—	519	519	0.03	0.02	0.58	528

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	16.2	25.4	17.3	109	0.23	0.81	5.84	6.65	0.81	1.04	1.85	233	31,125	31,358	24.9	1.03	69.5	32,357

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.7	22.0	17.7	71.8	0.22	0.80	5.84	6.64	0.79	1.04	1.83	233	29,932	30,165	25.0	1.06	4.66	31,110
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.8	22.5	10.9	84.8	0.17	0.28	5.45	5.73	0.28	0.97	1.25	233	20,880	21,113	24.7	0.99	29.7	22,055
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.33	4.10	1.99	15.5	0.03	0.05	0.99	1.05	0.05	0.18	0.23	38.5	3,457	3,495	4.10	0.16	4.92	3,651

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	12.6	11.6	8.66	79.1	0.18	0.12	5.84	5.96	0.12	1.04	1.16	—	18,080	18,080	1.00	0.89	66.5	18,436
Area	3.42	13.7	7.13	29.7	0.05	0.57	—	0.57	0.57	—	0.57	0.00	8,790	8,790	0.17	0.02	—	8,799
Energy	0.18	0.09	1.50	0.65	0.01	0.12	—	0.12	0.12	—	0.12	—	4,122	4,122	0.38	0.03	—	4,140
Water	—	—	—	—	—	—	—	—	—	—	—	39.3	133	172	4.04	0.10	—	302
Waste	—	—	—	—	—	—	—	—	—	—	—	193	0.00	193	19.3	0.00	—	677
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.93	2.93
Total	16.2	25.4	17.3	109	0.23	0.81	5.84	6.65	0.81	1.04	1.85	233	31,125	31,358	24.9	1.03	69.5	32,357
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	11.7	10.7	9.28	68.2	0.17	0.12	5.84	5.96	0.12	1.04	1.16	—	16,961	16,961	1.05	0.92	1.72	17,262
Area	0.80	11.2	6.87	2.92	0.04	0.56	—	0.56	0.56	—	0.56	0.00	8,717	8,717	0.16	0.02	—	8,726

Energy	0.18	0.09	1.50	0.65	0.01	0.12	—	0.12	0.12	—	0.12	—	4,122	4,122	0.38	0.03	—	4,140
Water	—	—	—	—	—	—	—	—	—	—	—	39.3	133	172	4.04	0.10	—	302
Waste	—	—	—	—	—	—	—	—	—	—	—	193	0.00	193	19.3	0.00	—	677
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.93	2.93
Total	12.7	22.0	17.7	71.8	0.22	0.80	5.84	6.64	0.79	1.04	1.83	233	29,932	30,165	25.0	1.06	4.66	31,110
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.8	9.86	8.77	65.6	0.16	0.12	5.45	5.56	0.11	0.97	1.08	—	15,978	15,978	0.97	0.86	26.8	16,285
Area	1.84	12.5	0.65	18.6	< 0.005	0.05	—	0.05	0.05	—	0.05	0.00	647	647	0.01	< 0.005	—	648
Energy	0.18	0.09	1.50	0.65	0.01	0.12	—	0.12	0.12	—	0.12	—	4,122	4,122	0.38	0.03	—	4,140
Water	—	—	—	—	—	—	—	—	—	—	—	39.3	133	172	4.04	0.10	—	302
Waste	—	—	—	—	—	—	—	—	—	—	—	193	0.00	193	19.3	0.00	—	677
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.93	2.93
Total	12.8	22.5	10.9	84.8	0.17	0.28	5.45	5.73	0.28	0.97	1.25	233	20,880	21,113	24.7	0.99	29.7	22,055
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.80	1.60	12.0	0.03	0.02	0.99	1.02	0.02	0.18	0.20	—	2,645	2,645	0.16	0.14	4.44	2,696
Area	0.34	2.28	0.12	3.39	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	107	107	< 0.005	< 0.005	—	107
Energy	0.03	0.02	0.27	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	682	682	0.06	< 0.005	—	685
Water	—	—	—	—	—	—	—	—	—	—	—	6.50	22.1	28.6	0.67	0.02	—	50.1
Waste	—	—	—	—	—	—	—	—	—	—	—	32.0	0.00	32.0	3.20	0.00	—	112
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49	0.49
Total	2.33	4.10	1.99	15.5	0.03	0.05	0.99	1.05	0.05	0.18	0.23	38.5	3,457	3,495	4.10	0.16	4.92	3,651

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.83	4.90	47.0	38.0	0.05	2.53	—	2.53	2.33	—	2.33	—	5,530	5,530	0.22	0.04	—	5,549
Dust From Material Movement	—	—	—	—	—	—	5.66	5.66	—	2.69	2.69	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.29	1.04	< 0.005	0.07	—	0.07	0.06	—	0.06	—	152	152	0.01	< 0.005	—	152
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.24	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25.1	25.1	< 0.005	< 0.005	—	25.2
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.22	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	236	236	0.01	0.01	0.03	238
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	56.8	56.8	< 0.005	0.01	< 0.005	59.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	6.55	6.55	< 0.005	< 0.005	0.01	6.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.63
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	5.00	4.20	40.9	32.7	0.06	1.96	—	1.96	1.80	—	1.80	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.38	< 0.005	0.02	—	0.02	0.02	—	0.02	—	78.9	78.9	< 0.005	< 0.005	—	79.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.1	13.1	< 0.005	< 0.005	—	13.1
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.12	1.39	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	269	269	0.01	0.01	0.03	273

Vendor	0.02	< 0.005	0.21	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	170	170	0.01	0.03	0.01	178
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	3.21	3.21	< 0.005	< 0.005	0.01	3.25
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.69	3.94	37.6	31.4	0.06	1.77	—	1.77	1.63	—	1.63	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.65	2.21	< 0.005	0.12	—	0.12	0.11	—	0.11	—	473	473	0.02	< 0.005	—	475
Dust From Material Movemen	—	—	—	—	—	—	0.19	0.19	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	78.3	78.3	< 0.005	< 0.005	—	78.6
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.11	1.28	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	264	264	0.01	0.01	0.03	267
Vendor	0.02	< 0.005	0.20	0.10	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	168	168	0.01	0.03	0.01	176
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	18.9	18.9	< 0.005	< 0.005	0.04	19.1
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	3.12	3.12	< 0.005	< 0.005	0.01	3.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	2.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.55	1.30	12.2	14.2	0.03	0.54	—	0.54	0.49	—	0.49	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.55	1.30	12.2	14.2	0.03	0.54	—	0.54	0.49	—	0.49	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.38	5.12	0.01	0.19	—	0.19	0.18	—	0.18	—	947	947	0.04	0.01	—	950
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.09	0.80	0.93	< 0.005	0.04	—	0.04	0.03	—	0.03	—	157	157	0.01	< 0.005	—	157
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.93	1.76	1.63	28.5	0.00	0.00	0.27	0.27	0.00	0.00	0.00	—	4,850	4,850	0.20	0.17	19.4	4,924
Vendor	0.16	0.04	1.68	0.90	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,462	1,462	0.11	0.22	4.08	1,534
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.83	1.66	1.92	21.5	0.00	0.00	0.27	0.27	0.00	0.00	0.00	—	4,445	4,445	0.21	0.17	0.50	4,501
Vendor	0.15	0.04	1.75	0.91	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,463	1,463	0.11	0.22	0.11	1,531
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.66	0.59	0.69	8.15	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,623	1,623	0.08	0.06	3.01	1,646
Vendor	0.06	0.01	0.63	0.33	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	527	527	0.04	0.08	0.63	552
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.13	1.49	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	269	269	0.01	0.01	0.50	273
Vendor	0.01	< 0.005	0.12	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	87.2	87.2	0.01	0.01	0.10	91.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.43	4.01	5.01	0.01	0.17	—	0.17	0.15	—	0.15	—	932	932	0.04	0.01	—	935
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.73	0.91	< 0.005	0.03	—	0.03	0.03	—	0.03	—	154	154	0.01	< 0.005	—	155
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.71	1.54	1.48	26.2	0.00	0.00	0.27	0.27	0.00	0.00	0.00	—	4,747	4,747	0.20	0.17	17.6	4,819
Vendor	0.14	0.04	1.60	0.86	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,439	1,439	0.11	0.22	4.05	1,511
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.62	1.45	1.63	19.8	0.00	0.00	0.27	0.27	0.00	0.00	0.00	—	4,352	4,352	0.20	0.17	0.46	4,407
Vendor	0.14	0.04	1.67	0.87	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,440	1,440	0.11	0.22	0.11	1,507
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.51	0.63	7.39	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,563	1,563	0.07	0.06	2.69	1,585
Vendor	0.05	0.01	0.59	0.30	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	510	510	0.04	0.08	0.62	534
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	259	259	0.01	0.01	0.45	262
Vendor	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	84.4	84.4	0.01	0.01	0.10	88.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.43	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.07	1.27	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	216	216	0.01	0.01	0.86	219
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	11.0	11.0	< 0.005	< 0.005	0.02	11.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.82	1.82	< 0.005	< 0.005	< 0.005	1.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	64.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.15	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.9	21.9	< 0.005	< 0.005	—	22.0
Architectural Coatings	—	8.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.63	3.63	< 0.005	< 0.005	—	3.65
Architectural Coatings	—	1.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.31	0.30	5.25	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	949	949	0.04	0.03	3.52	964
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.51	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	109	109	0.01	< 0.005	0.19	110
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	18.0	18.0	< 0.005	< 0.005	0.03	18.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	3.52	3.23	2.64	24.5	0.06	0.04	0.31	0.35	0.04	0.10	0.13	—	5,766	5,766	0.30	0.27	21.3	5,876
Apartments Mid Rise	5.75	5.28	4.30	39.9	0.09	0.06	0.51	0.58	0.06	0.16	0.22	—	9,411	9,411	0.48	0.45	34.8	9,590
Regional Shopping Center	3.31	3.13	1.71	14.7	0.03	0.02	0.15	0.17	0.02	0.05	0.07	—	2,903	2,903	0.22	0.17	10.4	2,969
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.6	11.6	8.66	79.1	0.18	0.12	0.98	1.11	0.12	0.30	0.42	—	18,080	18,080	1.00	0.89	66.5	18,436
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	3.28	2.99	2.83	20.8	0.05	0.04	0.31	0.35	0.04	0.10	0.13	—	5,407	5,407	0.31	0.28	0.55	5,499
Apartments Mid Rise	5.35	4.88	4.62	34.0	0.09	0.06	0.51	0.58	0.06	0.16	0.22	—	8,824	8,824	0.50	0.46	0.90	8,975
Regional Shopping Center	3.06	2.87	1.83	13.4	0.03	0.02	0.15	0.17	0.02	0.05	0.07	—	2,730	2,730	0.24	0.17	0.27	2,788

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	11.7	10.7	9.28	68.2	0.17	0.12	0.98	1.11	0.12	0.30	0.42	—	16,961	16,961	1.05	0.92	1.72	17,262
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.53	0.48	0.47	3.51	0.01	0.01	0.05	0.06	0.01	0.02	0.02	—	807	807	0.05	0.04	1.36	822
Apartments Mid Rise	0.94	0.86	0.83	6.22	0.02	0.01	0.09	0.10	0.01	0.03	0.04	—	1,432	1,432	0.08	0.07	2.41	1,458
Regional Shopping Center	0.49	0.46	0.30	2.24	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	407	407	0.03	0.03	0.66	416
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.80	1.60	12.0	0.03	0.02	0.17	0.19	0.02	0.05	0.07	—	2,645	2,645	0.16	0.14	4.44	2,696

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	—	604	604	0.06	0.01	—	608
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,340	1,340	0.13	0.02	—	1,348
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	165	165	0.02	< 0.005	—	166
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	109	109	0.01	< 0.005	—	109
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,218	2,218	0.21	0.03	—	2,231
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	604	604	0.06	0.01	—	608
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,340	1,340	0.13	0.02	—	1,348
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	165	165	0.02	< 0.005	—	166
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	109	109	0.01	< 0.005	—	109
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,218	2,218	0.21	0.03	—	2,231
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	100	100	0.01	< 0.005	—	101
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	222	222	0.02	< 0.005	—	223
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	18.0	18.0	< 0.005	< 0.005	—	18.1
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	367	367	0.03	< 0.005	—	369

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.07	0.03	0.57	0.24	< 0.005	0.05	—	0.05	0.05	—	0.05	—	721	721	0.06	< 0.005	—	723
Apartments Mid Rise	0.11	0.05	0.91	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,150	1,150	0.10	< 0.005	—	1,153
Regional Shopping Center	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.7
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.18	0.09	1.50	0.65	0.01	0.12	—	0.12	0.12	—	0.12	—	1,904	1,904	0.17	< 0.005	—	1,909
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.07	0.03	0.57	0.24	< 0.005	0.05	—	0.05	0.05	—	0.05	—	721	721	0.06	< 0.005	—	723
Apartments Mid Rise	0.11	0.05	0.91	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,150	1,150	0.10	< 0.005	—	1,153
Regional Shopping Center	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.7
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.18	0.09	1.50	0.65	0.01	0.12	—	0.12	0.12	—	0.12	—	1,904	1,904	0.17	< 0.005	—	1,909
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.01	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	—	119	119	0.01	< 0.005	—	120
Apartments Mid Rise	0.02	0.01	0.17	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	190	190	0.02	< 0.005	—	191
Regional Shopping Center	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.56	5.56	< 0.005	< 0.005	—	5.57
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.03	0.02	0.27	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	315	315	0.03	< 0.005	—	316

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	65.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.80	0.40	6.87	2.92	0.04	0.56	—	0.56	0.56	—	0.56	0.00	8,717	8,717	0.16	0.02	—	8,726
Consumer Products	—	9.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.61	2.47	0.26	26.8	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.0	73.0	< 0.005	< 0.005	—	73.2
Total	3.42	78.6	7.13	29.7	0.05	0.57	—	0.57	0.57	—	0.57	0.00	8,790	8,790	0.17	0.02	—	8,799
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.80	0.40	6.87	2.92	0.04	0.56	—	0.56	0.56	—	0.56	0.00	8,717	8,717	0.16	0.02	—	8,726
Consumer Products	—	9.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.80	11.2	6.87	2.92	0.04	0.56	—	0.56	0.56	—	0.56	0.00	8,717	8,717	0.16	0.02	—	8,726
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.01	0.09	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	98.9	98.9	< 0.005	< 0.005	—	99.0
Consumer Products	—	1.82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.33	0.31	0.03	3.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.27	8.27	< 0.005	< 0.005	—	8.30
Total	0.34	3.74	0.12	3.39	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	107	107	< 0.005	< 0.005	—	107

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	10.8	36.6	47.4	1.11	0.03	—	83.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	26.0	88.1	114	2.67	0.06	—	200

Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.52	8.56	11.1	0.26	0.01	—	19.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	39.3	133	172	4.04	0.10	—	302
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	10.8	36.6	47.4	1.11	0.03	—	83.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	26.0	88.1	114	2.67	0.06	—	200
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.52	8.56	11.1	0.26	0.01	—	19.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	39.3	133	172	4.04	0.10	—	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.79	6.06	7.84	0.18	< 0.005	—	13.7
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	4.30	14.6	18.9	0.44	0.01	—	33.1

Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	0.42	1.42	1.83	0.04	< 0.005	—	3.22
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.50	22.1	28.6	0.67	0.02	—	50.1

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	53.8	0.00	53.8	5.38	0.00	—	188
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	130	0.00	130	12.9	0.00	—	453
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.00	0.00	—	35.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	193	0.00	193	19.3	0.00	—	677

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	53.8	0.00	53.8	5.38	0.00	—	188
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	130	0.00	130	12.9	0.00	—	453
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.00	0.00	—	35.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	193	0.00	193	19.3	0.00	—	677
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	8.91	0.00	8.91	0.89	0.00	—	31.2
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	21.4	0.00	21.4	2.14	0.00	—	75.0
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	1.66	0.00	1.66	0.17	0.00	—	5.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	32.0	0.00	32.0	3.20	0.00	—	112

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.84	0.84
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.02	2.02
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.93	2.93
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.84	0.84
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.02	2.02
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.93	2.93
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.34	0.34
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49	0.49

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipme Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	12/12/2023	12/25/2023	5.00	10.0	10
Grading	Grading	12/26/2023	2/5/2024	5.00	30.0	30
Building Construction	Building Construction	7/1/2024	6/30/2025	5.00	261	300
Paving	Paving	6/24/2024	7/19/2024	5.00	20.0	20
Architectural Coating	Architectural Coating	4/29/2025	6/30/2025	5.00	45.0	20

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48

Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.79	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	5.36	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	337	18.5	LDA,LDT1,LDT2

Building Construction	Vendor	46.6	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	67.4	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	905,880	301,960	26,646	8,882	8,371

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

Site Preparation	—	—	35.0	0.00	—
Grading	—	—	120	0.00	—
Paving	0.00	0.00	0.00	0.00	3.20

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Low Rise	—	0%
Apartments Mid Rise	—	0%
Regional Shopping Center	0.00	0%
Parking Lot	2.98	100%
Other Non-Asphalt Surfaces	0.22	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	349	0.03	< 0.005
2024	0.00	349	0.03	< 0.005
2025	0.00	349	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Low Rise	830	560	475	270,386	6,715	4,533	3,846	2,187,693
Apartments Mid Rise	1,345	1,355	1,117	479,516	10,881	10,960	9,040	3,879,765
Regional Shopping Center	881	747	342	286,475	3,273	2,776	1,270	1,064,410
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	122
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	14
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	293
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	33

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
905879.7	301,960	26,646	8,882	8,371

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Low Rise	632,576	349	0.0330	0.0040	2,248,635
Apartments Mid Rise	1,402,753	349	0.0330	0.0040	3,587,083
Regional Shopping Center	172,814	349	0.0330	0.0040	104,727
Parking Lot	113,713	349	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Low Rise	5,626,959	0.00
Apartments Mid Rise	13,546,382	0.00

Regional Shopping Center	1,315,824	0.00
Parking Lot	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Low Rise	30.2	0.00
Apartments Mid Rise	72.6	0.00
Regional Shopping Center	18.7	0.00
Parking Lot	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Regional Shopping Center	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0

Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.6	annual days of extreme heat
Extreme Precipitation	4.20	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	6.46	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A

Air Quality	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	100
AQ-PM	54.6
AQ-DPM	47.4
Drinking Water	60.1
Lead Risk Housing	44.9
Pesticides	73.5
Toxic Releases	41.5
Traffic	71.6
Effect Indicators	—
CleanUp Sites	7.71
Groundwater	7.24
Haz Waste Facilities/Generators	72.0
Impaired Water Bodies	0.00
Solid Waste	0.00

Sensitive Population	—
Asthma	64.5
Cardio-vascular	60.1
Low Birth Weights	81.0
Socioeconomic Factor Indicators	—
Education	72.2
Housing	45.0
Linguistic	44.4
Poverty	43.5
Unemployment	40.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	44.95059669
Employed	33.01680996
Education	—
Bachelor's or higher	42.93596818
High school enrollment	100
Preschool enrollment	12.34441165
Transportation	—
Auto Access	52.22635699
Active commuting	19.2865392
Social	—
2-parent households	62.19684332
Voting	40.38239446

Neighborhood	—
Alcohol availability	59.19414859
Park access	81.35506224
Retail density	54.72860259
Supermarket access	13.10150135
Tree canopy	24.98395996
Housing	—
Homeownership	57.5003208
Housing habitability	57.17952008
Low-inc homeowner severe housing cost burden	86.79584242
Low-inc renter severe housing cost burden	19.62017195
Uncrowded housing	40.20274605
Health Outcomes	—
Insured adults	55.13922751
Arthritis	42.6
Asthma ER Admissions	47.7
High Blood Pressure	42.5
Cancer (excluding skin)	47.4
Asthma	51.9
Coronary Heart Disease	51.0
Chronic Obstructive Pulmonary Disease	53.7
Diagnosed Diabetes	41.8
Life Expectancy at Birth	42.0
Cognitively Disabled	58.3
Physically Disabled	57.4
Heart Attack ER Admissions	41.5
Mental Health Not Good	51.7

Chronic Kidney Disease	45.1
Obesity	51.2
Pedestrian Injuries	44.3
Physical Health Not Good	47.6
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	50.7
Current Smoker	55.2
No Leisure Time for Physical Activity	48.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	44.5
English Speaking	62.2
Foreign-born	51.1
Outdoor Workers	59.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	69.6
Traffic Density	70.4
Traffic Access	23.0
Other Indices	—
Hardship	59.9
Other Decision Support	—
2016 Voting	61.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	68.0
Healthy Places Index Score for Project Location (b)	39.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health and Equity Evaluation Scorecard not completed.

8. User Changes to Default Data

Screen	Justification
Land Use	Taken from Site plan
Construction: Construction Phases	Based on client provided data and construction end date of Q2 2025. OY 2025
Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases Standard 8-hour work days
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	SCAQMD Rule 1113
Operations: Vehicle Data	Trip rates taken from Traffic Study and ITE weekend trip rates. 40% pass by rate applied
Operations: Hearths	Woodstoves - Rule 445 no wood burning devices, Wood burning devices added to gas devices
Operations: Refrigerants	Beginning 1 January 2025, all new air conditioning equipment may not use refrigerants with a GWP of 750 or greater

This Page Intentionally Left Blank.

General Biological Resources Assessment

Tennessee Village Project
City of Redlands, San Bernardino County, California

Prepared for:
City of Redlands
35 Cajon St. Ste. 20
P.O. Box 3005
Redlands, CA 92373

Prepared by:
MIG, Inc.
1650 Spruce Street, Suite 106
Riverside, California 92507
Contact: Todd Easley
teasley@migcom.com
July 2023

This document is formatted for double-sided printing

TABLE OF CONTENTS

List of Figures

Appendices

List of Abbreviated Terms

AMSL	Above Mean Sea Level
APN	Assessor Parcel Number
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
GIS	Geographic Information Systems
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NOAA	National Oceanic Atmospheric Administration
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	United States Army Corps Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

This Page Intentionally Left Blank

1.0 INTRODUCTION

This report presents the results of MIG's general biological resources assessment on the proposed Tennessee Village Project property (Project Site). The purpose of this report is to verify the type, location, and extent of potential sensitive biological resources within the project site and vicinity. This report provides a thorough description of the biological setting of the project site and surrounding area, as well as a description of the vegetation communities and wildlife observed at the project site. This report also includes information regarding potential wildlife movement/migration corridors, potential special-status species, sensitive natural communities, and potential for jurisdictional waters and wetlands to occur at the project site. An assessment of the Project impacts and recommended mitigation measures to avoid, minimize, or compensate for potential adverse impacts to sensitive habitats and species is also included in the report. The evaluation of potential project impacts follows the checklist items from Appendix G of the California Environmental Quality Act (CEQA) guidelines and has been prepared in a format suitable to support CEQA review and to submit with any future regulatory application packages.

1.1 Project Site Location

The project site is located west of the 210 freeway and immediately east of Tennessee Street and south of Pennsylvania Avenue in the City of Redlands, San Bernardino County, California (Figure 1, *Regional Map)*. The project is specifically located within the south half of the northeast quarter of Section 21, Township 1 South, Range 3, west of San Bernardino meridian, within the United States Geological Survey (USGS) 7.5' series Redlands quadrangle, (Figure 2, *USGS Topographic Map*), and includes portions of Assessor Parcel Numbers (APN) 0167-171-007, and 014 (Figure 3, *Project Site Map*).

The Project Site is located at just northeast of the intersection of Tennessee Street and Lugonia Avenue in a vacant lot that comprises approximately 13.48 acres. Residential properties and Texonia Park are east of the Project site, commercial properties to the south (Home Depot, 7-Eleven, and Jack in the box), the 210 freeway to the west and an additional vacant lot to the north (Figure 3).

1.2 Project Description

The City is proposing to construct a mixed-use development of 460 apartment units and approximately 18,000 square feet for commercial space. The project will require the approval of a tentative parcel map, a site plan approval, and a change of zone for a portion of the project site. The project site is primarily undeveloped; however, historically the site appeared to be disked and mowed. A narrow concrete channel, pipe, and small concrete pad were observed on the site. Most of the vegetation on site is non-native vegetation, generally classified as disturbed or ruderal. The project site is flat with an elevation of 1404.80 feet above mean sea level (AMSL) (Figure 2, *USGS Topographic Map*).

The Project Site comprises 4 lots and easements of approximately 13.48 acres consisting mainly of disturbed habitat just north of Tennessee Street at its intersection with Pennsylvania Avenue to the north and Lugonia Avenue to the south. In addition, the Project site and adjacent vacant lots to the north contain evidence of historical mowing and discing. The Project would result in the removal of all existing vegetation within the entire 13.48-acre site.

Access. A paved access road would be graded and maintained along the north of the site (Pennsylvania Ave). Additional public and utility access would be constructed throughout the development.

2.0 REGULATORY SETTING

The following discussion identifies federal, state, and local environmental regulations and policies that serve to protect sensitive biological resources relevant to the proposed project site and any subsequent CEQA review process.

2.1 Federal

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the FESA. Both the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) share the responsibility for administration of the FESA. The FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the USFWS and/or the NOAA Fisheries, (3) prohibitions against "taking" (meaning harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". The FESA also discusses recovery plans and the designation of critical habitat for listed species. Section 7 requires Federal agencies, in consultation with, and with the assistance of the USFWS or NOAA Fisheries, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Non-federal agencies and private entities can seek authorization for take of federally listed species under Section 10 of FESA, which requires the preparation of a Habitat Conservation Plan (HCP).

2.1.2 The Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." Previously, under MBTA it was illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg.

2.1.3 Clean Water Act Sections 404 and 401

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA) (33 USC 1344). Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the United States regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a water quality certification from the state in which the discharge originates. The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The EPA has delegated responsibility for the protection of water quality in California to the State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCBs).

2.1.4 National Pollutant Discharge Elimination System (NPDES)

The NPDES program requires permitting for activities that discharge pollutants into waters of the United States. This includes discharges from municipal, industrial, and construction sources. These are considered point-sources from a regulatory standpoint. Generally, these permits are issued and monitored under the oversight of the State Water Resources Control Board and administered by each RWQCB. Construction activities that disturb one acre or more (whether a single project or part of a larger development) are required to obtain coverage under the state’s General Permit for Discharges of Storm Water Associated with Construction Activity. All dischargers are required to obtain coverage under the Construction General Permit. The activities covered under the Construction General Permit include clearing, grading, and other disturbances. The permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) and implementation of Best Management Practices (BMPs) with a monitoring program. The Project will require coverage under the Construction General Permit.

2.2 State

2.2.1 California Endangered Species Act

The state of California enacted similar laws to the FESA, including the California Native Plant Protection Act (NPPA) in 1977 and the California Endangered Species Act (CESA) in 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the California Fish and Game Code (CFGC) (section 2.2.2). To align with the FESA, CESA created the categories of “threatened” and “endangered” species. It converted all designated “rare” animals into the CESA as threatened species but did not do so for rare plants. Thus, these laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. The California Department of Fish and Wildlife (CDFW) implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the California Natural Diversity Database (CNDDB), a computerized inventory of information on the general location and status of California’s rarest plants, animals, and natural communities. During the CEQA review process, the CDFW is given the opportunity to comment on the potential of the proposed Project to affect listed plants and animals.

2.2.2 Native Plant Protection Act

The NPPA of 1977 (CFGC, §§ 1900 through 1913) directed the CDFW to carry out the Legislature’s intent to “preserve, protect and enhance rare and endangered plants in this State.” The NPPA is administered by the CDFW, which has the authority to designate native plants as endangered or rare and to protect them from “take.”

2.2.3 California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. CEQA (Public Resources Code Sections 21000 et. seq.) requires public agencies to review activities which may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an Initial Study and Negative Declaration (or Mitigated Negative Declaration) or with an Environmental Impact Report. Certain classes of projects are exempt from detailed analysis under CEQA. CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of CEQA and clarifies that CEQA review extends to other species that are not formally listed under the CESA or FESA but that meet specified criteria.

2.2.4 Fully Protected Species and Species of Special Concern

The classification of “fully protected” was the CDFW’s initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with “fully protected” species states that these species “…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species,” (CDFW Fish and Game Commission 1998) although take may be authorized for necessary scientific research. This language makes the “fully protected” designation the strongest and most restrictive regarding the “take” of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

Species of special concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or they historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during project review.

2.2.5 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 prohibits the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW.

2.2.6 Other Sensitive Plants – California Native Plant Society

The California Native Plant Society (CNPS), a non-profit plant conservation organization, publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California in both hard copy and electronic version (http://www.cnps.org/cnps/rareplants/inventory/).

The Inventory assigns plants to the following categories:

1A	Presumed extinct in California;
1B	Rare, threatened, or endangered in California and elsewhere;
2	Rare, threatened, or endangered in California, but more common elsewhere;
3	Plants for which more information is needed – A review list; and
4	Plants of limited distribution – A watch list.

Additional endangerment codes are assigned to each taxon as follows:

1	Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat).
2	Fairly endangered in California (20-80% occurrences threatened).
3	Not very endangered in California (<20% of occurrences threatened or no current threats known).

Plants on Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and the CDFW, as well as other state agencies (e.g., California Department of Forestry and Fire Protection). As part of the CEQA process, such species should be fully considered, as they meet the definition of threatened or endangered under the NPPA and Sections 2062 and 2067 of the CFGC. California Rare Plant Rank 3 and 4 species are considered to be plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species be evaluated for consideration during the preparation of CEQA documents (CNPS 2018, CDFW 2018).

2.2.7 California Fish and Game Code Section 1600-1603

Streams, lakes, and riparian vegetation, as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC. Any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations ("CCR") as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life". This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). Riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFW 1994). In addition to impacts to jurisdictional streambeds, removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

2.2.8 Sensitive Natural Communities

Sensitive natural communities are habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW or the USFWS. The CNDDB identifies a number of natural communities as rare, which are given the highest inventory priority (CDFW 2023a). Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

2.3 Local

2.3.1 City of Redlands General Plan

The City of Redlands General Plan 2035 (adopted in 2017) contains policies for the protection and preservation of biological resources. The plan dictates several principles and actions that should be taken to preserve and protect sensitive species, wildlife habitats, and waterways. Principles and actions specifically pertaining to biological resources include the following (excerpted from page 6-12 of the General Plan):

Principles

- 6-P.7 Protect environmentally sensitive lands, wildlife habitats, and rare, threatened, or endangered plant and animal communities.
- 6-P.8 Minimize disruption of wildlife and valued habitat throughout the Planning Area and emphasize that open space is for more than just human use, but also serves as habitat for biological resources.
- 6-P.9 Preserve, protect, and enhance wildlife corridors, including natural watercourses, connecting the San Bernardino National Forest, Santa Ana River Wash, Crafton Hills, San Timoteo and Live Oak Canyons, the Badlands, and other open space areas.
- 6-P.10 Landscape public areas using native vegetation where practical.

Actions

- 6-A.11 Require a biological assessment of any proposed project site within the Planning Area where species that are State or federally listed as rare, threatened, or endangered are identified as potentially present.
- 6-A.12 Require that proposed projects adjacent to, surrounding, or containing wetlands, riparian corridors, or wildlife corridors be subject to a site-specific analysis that will determine the appropriate size and configuration of a buffer zone.
- 6-A.13 Utilize conservation easements and preserves as means to conserve natural habitats.
- 6-A.14 Construct freeway and arterial street under-crossings or overpasses where necessary to establish and preserve identified wildlife corridors.

2.3.2 Redlands Municipal Code

The Redlands Municipal Code contains ordinances for stormwater discharge restrictions (13.54 *et. seq.*), and the tree protection guidelines (12.52.010 *et. seq.*). The Redlands Municipal codes protecting biological resources aim to establish regulations and procedures for the preservation, conservation, and restoration of natural resources and habitats within its boundaries. The goal of the Redlands Municipal Code is to strike a balance between economic growth and development on the one hand and the maintenance of healthy ecosystems and biodiversity on the other. By doing so, the city can promote a sustainable and environmentally responsible approach to development that supports the local community and enhances the overall quality of life in the area.

3.0 METHODS

This analysis of potential biological resources located on the project site includes a review of available background information in and around the vicinity of the project site and completion of a field survey. The field survey was conducted to document existing conditions within the Project and assess the potential for special-status biological resources to occur on the site.

3.1 Literature Review

Prior to conducting field surveys, MIG biologists reviewed available background information pertaining to the biological resources on and in the vicinity of the project. Available literature and resource mapping reviewed included the occurrence records for special-status species and sensitive natural communities and numerous other information sources listed below:

- California Natural Diversity Data Base (CNDDB) record search for State and Federally Listed Endangered, Threatened, and Wildlife and Rare Plants of California within the Redlands and surrounding eight USGS quadrangles: Yucaipa, San Bernardino South, San Bernardino North, Harrison Mtn., Keller Peak, Sunnymead, El Casco, and Riverside East (CDFW CNDDB 2023; Appendix A).
- California Native Plant Society (CNPS) Rare Plant Program, Inventory of Rare and Endangered Plants of California (CNPS 2023a) records search within the Redlands and surrounding eight USGS quadrangles (Appendix A)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC; USFWS 2023a; Appendix A)
- Soil Survey Staff, Natural Resource Conservation Service (NRCS), United States Department of Agricultural (USDA NRCS 2023)
- California Department of Fish and Wildlife (CDFW) California Natural Community List (CDFW 2023)
- USFWS National Wetlands Inventory (USFWS 2023b)
- iNaturalist, Search for Observations in Redlands, San Bernardino County, CA (2023)
- eBird, Search for Hotspots in Redlands, San Bernardino County, CA (2023)
- Redlands General Plan
- Google Earth Pro aerial Imagery

3.2 Field Survey

A biological field survey was conducted by MIG biologist Todd Easley, on May 19, 2023, between the hours of 7am and 11:30am. Weather conditions were 58-65 degrees Fahrenheit and cloud cover ranged from 100% overcast to 5% during the duration of the survey. Wind speed ranged from 0-8 miles per hour. The field survey was conducted to assess the existing conditions of the project site, including recording observed plant and wildlife species, identifying jurisdictional waters, characterizing the vegetation communities and associated wildlife habitats, and evaluating the potential for these habitats to support special-status species and sensitive communities.

The survey included coverage of the project impact area and adjacent 150-meter survey buffer of the surrounding vacant undeveloped lots. Wildlife species were detected during field surveys by sight, calls, tracks, scat, or other sign. In addition to species observed, expected wildlife usage of the site was determined per known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. Representative photos of conditions found in the field are provided in Figure 9.

3.2.1 Plant Communities

During the field survey, the MIG biologist traversed areas within the project site by foot via binoculars and evaluated the suitability of on-site vegetation communities to support special-status species. An attempt was made to classify plant communities according to the Second Edition of the Manual of California Vegetation (Sawyer et al. 2009) classification system, where practical, as this method is preferred (but not required) by CDFW. However, for certain vegetation types, this system is too species-specific in its definitions of plant associations and alliances and does not accurately characterize the highly variable species composition of plant communities. For this project site, it was necessary to identify variants of plant community types for ruderal and ornamental plant assemblages and unvegetated areas that are not described in the literature. The List of California Natural and Terrestrial Communities (CDFW 2023) was consulted to determine if any rare or sensitive plant communities are present. In addition, plant communities were evaluated to determine if they are considered sensitive under federal and/or other state regulations and local policies.

3.2.2 Jurisdictional Habitats and Aquatic Features

The project site was inspected to determine if any wetlands and “other waters” or streambeds potentially subject to jurisdiction by the USACE, RWQCB, or CDFW were present. MIG certified wetland delineator Todd Easley conducted a search for jurisdictional areas on the 13.48 -acre project site on May 19, 2023. If found, areas would have been delineated according to the USACE’s 1987 Wetland Delineation Manual (Environmental Laboratory 1987) in conjunction with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid West Supplement) (USACE 2008a) and A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b). The Interim Draft National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2022) was also reviewed to identify any classification differences that may soon be applicable. Wetland vegetation, hydric soils, and hydrology information were collected according to the USACE’s routine methodology to determine if wetlands were present. The project site was also inspected for the presence of drainages, streams, and other aquatic features, including those that support stream-dependent (i.e., riparian) plant species that may be considered jurisdictional by CDFW. Evaluation of CDFW jurisdiction followed guidance in the CFGC and standard field practices by CDFW personnel.

3.2.3 Special-Status Species Habitat Assessment

The potential occurrence of special-status plant and animal species on the project site was initially evaluated by conducting a 9-quadrangle database records search[1] of CNDDB, CNPS Electronic Inventory, and the USFWS IPaC database (Appendix A) to ensure a complete list of species was generated for the

---

[1] A 9-quadrangle search is conducted using a U.S. Geological Survey 7.5-minute topographic quadrangle map. The search includes the quadrangle where the project is located (Redlands) and the eight surrounding quadrangles (Yucaipa, San Bernardino South, San Bernardino North, Harrison Mtn., Keller Peak, Sunnymead, El Casco, and Riverside East).

habitat assessment. Following the records search, the list of special-status species was developed (see Appendices B and C) and subsequently listing-status and habitat information was summarized for each species for comparison with habitats within the project site. The list of species was further refined by evaluating the habitat requirements of each species relative to the conditions observed during the field survey (see column titled “Discussion” in Appendices B and C). Species that would not be expected on-site are not evaluated further and no recommendations are provided for these species (see last column of Appendices B and C, species indicated with the classification of “None”). Recommendations (last column of Appendices B and C) are only provided for species that could occur on the project site and are intended to serve as avoidance and protection actions to reduce the potential for impacts to less than significant per CEQA.

Wildlife species detected by sight, calls, tracks, scat, or other signs were recorded during the field survey. Field guides, iNaturalist, and eBird were used to assist with the identification of species. If present, the biologist also identified any natural corridors and linkages that may support the movement of wildlife through the project site.

Nomenclature used for plant names follows the Second Edition of The Jepson Manual (Baldwin et al. 2012). Nomenclature for wildlife follows CDFW’s Complete List of Amphibian, Reptile, Bird, And Mammal Species in California (CDFW 2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW’s list.

4.0 EXISTING CONDITIONS

The following provides a description of the soils, vegetation communities, wildlife, and wildlife movement corridors present on the project site. Wildlife and plant species that were observed on the project site during the biological field survey, on May 19, 2023, are listed in Appendix D.

4.1 Physical Characteristics

The project is located within the United States Geological Survey (USGS) 7.5' series Redlands quadrangle (Figure 1, Regional Map, Figure 2, USGS Topographic Map). The project site is flat with an elevation of 1404.80 feet above mean sea level (AMSL) (Figure 2, *USGS Topographic Map*). The project area consists entirely of a vacant lot. The project area is highly disturbed due to previous discing and mowing. Remnant vegetation that was identified on the site consisted primarily of ruderal non-native plants.

4.2 Soils

Soils within the proposed project site have been mechanically disturbed (i.e., disked). The USDA Web Soil Survey reports three soil units within the boundary of the project site (USDA NRCS 2023), and none of these are classified as hydric soils (see Figure 5):

HbA	Hanford, sandy loam, 0 to 2 percent slopes
TuB	Tujunga, loamy sand, 0 to 5 percent slopes

The "Hanford sandy loam, 0 to 2 percent slopes" soil type is generally comprised of alluvium derived from granite and can be found in alluvial fans. Overall slopes associated with this soil type are 0 to 2 percent, and this soil type is rarely flooded, well drained, and would not be considered hydric soil that would typically support wetlands. Conditions present at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

The "Tujunga loamy sand, 0 to 5 percent slopes" soil type is generally comprised of alluvium derived from granite and can be found in alluvial fans. Overall slopes associated with this soil type are 0 to 5 percent, and this soil type is rarely flooded, somewhat excessively drained, and would not be considered hydric soil that would typically support wetlands. The minor component (10%) was Tujunga, gravelly loamy sand. This also would not be considered hydric soil that would typically support wetlands and does not have a hydric soil rating. Conditions present at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

4.3 Plant Communities & Associated Wildlife Habitats

Plant communities on-site were evaluated to determine if they are considered sensitive under federal, state, or local regulations or policies. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations. The proposed project site supports vacant, undeveloped land that has been subject to anthropogenic disturbances associated with the surrounding development and potential historical agricultural activities. The project footprint supports a land cover type that would be classified as disturbed and signs of previously developed areas (i.e., concrete). Refer to Figure 8, Site Photographs for representative photos of the project site. No native plant communities will be impacted as a result of the construction of the proposed project.

*Disturbed and/or Developed (*13.48 acres*)*

The entire Project Area has been historically altered by mowing and discing; all the landcover at the Project Area can be classified as Disturbed and/or Developed. Disturbed habitat type is composed primarily of early successional /ruderal plant species. Much of the vegetation present at the Project Area is non-native, and the site receives regular clearing to maintain compliance with fire code. Dominant plants included shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), Russian thistle (*Salsola tragus*), tumbleweed (*Amaranthis albus*), redstem storksbill (*Erodium cicutarium*), puncture vine (*Tribulus terrestris*), red brome (*Bromus rubens*), and foxtail barley (*Hordeum murinum*). A more complete list of vegetation is provided in Appendix D, Floral and Faunal Compendium.

4.4 Sensitive Plant Communities and Critical Habitat

No sensitive plant communities were observed on the project site, and the site does not exhibit the characteristic attributes that may support (such as the known distribution and elevation, landscape position, plant species composition, soil and/or substrate type, water chemistry, and/or hydroperiod) as the project site is highly disturbed. Eight Sensitive Plant Communities were uncovered by the CDFW CNDDB (2023) search and are outlined at the end of Appendix B; however, none of these are expected to occur at the Project Area. In addition, no USFWS-designated critical habitat areas for any federally listed animals are present within the project boundary (Figure 6).

4.5 Special-Status Plants

Special-status plants are defined here to include: (1) plants that are federal- or state-listed as rare, threatened, or endangered, (2) federal and state candidates for listing, (3) plants assigned a Rank of 1 through 4 by the CNPS Inventory, and (4) plants that qualify under the definition of "rare" in the CEQA, section 15380. The project site was initially determined to provide potentially suitable habitat for a total of 90 special-status plant species based on the proximity of the project to previously recorded occurrences in the region, vegetation types and habitat quality, topography, elevation, soil types, and other species-specific habitat requirements (CDFW CNDDB 2023, CNPS 2023). Based on results of the habitat suitability analysis and field survey conducted on May 19, 2023, none of the 90 plant species are expected to occur on the project site, primarily due to disturbance such as historical discing and recent mowing. A table presenting the special-status plant species considered and evaluated for their potential occurrence on the project site, including plant species' habitat requirements and reported blooming periods, is provided in Appendix B.

4.6 Special-Status Wildlife

Special-status wildlife species include those species listed as endangered or threatened under the FESA or CESA; candidates for listing by the USFWS or CDFW; and species of special concern to the CDFW; and birds protected by the CDFW under CFGC Sections 3503 and 3513. It was initially determined that 62 special-status wildlife species have been recorded in the vicinity of the project site (CDFW CNDDB 2023). Of these wildlife species, 56 are not expected to occur on the project site (species with Recommendations listed as “None” in the table provided in Appendix C. Reasons include the absence of essential habitat requirements for the species, the distance to known occurrences and/or the species distributional range, the limited availability of foraging and nesting habitat, amount of site disturbance from past and present land uses, and/or the proximity of existing human-related disturbances. A table presenting the special-status wildlife species considered and evaluated for their potential occurrence on the project site, including species-specific habitat requirements, is provided in Appendix C.

The wildlife species that occur or have some potential to occur on-site included: 6 birds Cooper's hawk [*Accipiter cooperii*], burrowing owl [*Athene cunicularia*], Swainson's hawk [*Buteo swainsoni*], California horned lark [*Eremonphila alpestris actia*], merlin [*Falco columbarius*], and loggerhead shrike [*Lanius ludovicianus*]. It is assumed that all of these species could potentially be present at the site, because they have been observed in disturbed habitats and/or in similar habitats close proximity to the Project Site. No USFWS Critical Habitat is located within the project site (Figure 6).

Nesting Birds

Nesting birds are protected under CFGC 3503, 3503.5, and 3512, which prohibits the take of active bird nests. Native and non-native shrubs and trees within the project site provide highly suitable nesting habitat for songbirds, including common species protected by the code. There is potential for ground- and tree-nesting birds to establish nests on the project site prior to initiation of project construction.

No other special-status wildlife species are expected to be impacted by project construction due to a lack of suitable habitat (refer to Appendix C) and high degree of site disturbance due to existing development within and surrounding the Project Area.

4.7 Wildlife Movement Corridors

Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species. The regional movement and migration of wildlife species has been substantially altered due to habitat fragmentation over the past century. This fragmentation is most commonly caused by development of open areas, which can result in large patches of land becoming inaccessible and forming a functional barrier between undeveloped areas. Additional roads associated with development, although narrow, may result in barriers to smaller or less mobile wildlife species. Habitat fragmentation results in isolated islands of habitat, which affects wildlife behavior, foraging activity, reproductive patterns, immigration and emigration or dispersal capabilities, and survivability. Wildlife corridors can consist of a sequence of stepping-stones across the landscape (i.e., discontinuous areas of habitat such as isolated wetlands), continuous linear strips of vegetation and habitat (e.g., riparian strips and ridge lines), or they may be parts of larger habitat areas selected for its known or likely importance to local wildlife.

The Project Area is expected to be utilized by common, non-special-status wildlife for foraging and possibly breeding. However, the Project Area is situated in an urbanized area and does not represent a wildlife movement corridor as it (along with other small neighboring vacant lots) is largely bound on all sides by developments, possesses vegetation that is largely non-native that would support high levels of species diversity, and it is too small of an area to support significant wildlife movement. This Project Area does not connect large areas of native habitats and development at this site would not preclude wildlife movement in otherwise open areas.

4.8 Jurisdictional Waters/Wetlands

No waterways, wetlands, or riparian vegetation subject to regulation by the USACE, CDFW, or RWQCB are present at the Project Area. No features were detected by the National Wetlands Inventory (as shown on Figure 7) at or immediately adjacent to the Project Area. The Project Area is relatively flat and fully separated from drainages such as the adjacent industrial complex as well as other developments in the area. There is no evidence (e.g., watermarks, vegetation, or other characteristics) that water flows from any jurisdictional waterway that may enter the Project Area. No evidence of previous ponding (no hydric vegetation, no hydric or clay soils, no evidence of hydrology/watermarks) was observed during the visit or historical aerial photos that would suggest any suitable areas for vernal pools or vernal pool species.

5.0 ENVIRONMENTAL IMPACTS

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and aquatic resources that may occur in the project site. Each impact discussion includes mitigation measures that would be implemented during the project to avoid and/or reduce the potential for and/or level of impacts to each resource. With the implementation of the recommended mitigation measures, all impacts to biological resources are anticipated to be reduced to less than significant pursuant to CEQA.

5.1 Thresholds of Significance

This section describes potential impacts to biological resources that may occur as a result of the construction of the proposed project. CEQA Guidelines provide guidance in evaluating project impacts and determining whether impacts may be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." In accordance with Appendix G of the CEQA Guidelines, a project could have a significant environmental impact on biological resources if it would:

- 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 CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plant (NCCP), or other approved local, regional, or state HCP

5.2 Impacts and Mitigation Measures

Consistent with the requirements of CEQA and local regulations, the significance of potential impacts is evaluated through the application of the significance criteria described above. The objective of the biological resources analysis is to identify potential adverse effects and/or significant impacts on biological resources. Avoidance is often the preferred approach for the management of biological resources; however, it is not always possible to completely avoid impacts. Mitigation measures to avoid or minimize impacts are identified, as appropriate, including procedures to be followed if significant biological resources are identified prior to the initiation of construction.

5.2.1 Impacts

Special-Status Wildlife

Impact BIO-1: Special-status Wildlife

The wildlife species that occur or have some potential to occur on-site included: 6 birds Cooper's hawk [*Accipiter cooperii*], burrowing owl [*Athene cunicularia*], Swainson's hawk [*Buteo swainsoni*], California horned lark [*Eremonphila alpestris actia*], merlin [*Falco columbarius*], and loggerhead shrike [*Lanius ludovicianus*]. It is assumed that all of these species could potentially use the site, because they have been observed in disturbed type habitats and/or in similar habitats close proximity to the Project Site. These species could be affected by project construction and/or habitat loss due the construction of the project. Recommendation BIO-1 and BIO-2 would be required to reduce potential impacts to wildlife to a less than significant level.

Impact BIO-2: Nesting Birds

Native plants, vegetation, as well as various other substrates on the project site, have the potential to provide nesting habitat for bird species protected by the CDFGC Sections 3503 and 3513. There is potential for ground- and tree-nesting birds to establish nests on the project site prior to any project-related construction. Construction activities including site mobilization, vegetation clearing, grading, and noise and vibration from the operation of heavy equipment have the potential to result in significant direct (i.e., death or physical harm) and/or indirect (i.e., nest abandonment) impacts to nesting birds. The loss of an active nest of common or special-status bird species and/or their eggs or young as a result of project construction would be considered a violation of the CDFGC, Section 3503, 3503.5, 3513 and therefore, would be considered a potentially significant impact. Implementation of Recommendation BIO-1 would be required to reduce impacts to nesting birds to a less than significant level.

Impact BIO-3: Burrowing Owl

Burrows and other round structures present on the property provide habitat for burrowing owl. Suitable habitat type (Disturbed and/or Developed) for burrowing owl was also determined to be present on-site. Construction activities may impact burrowing owl in a manner like those already described under Impact-BIO-1 for nesting birds. Recommendation BIO-2 would be required to reduce impacts to burrowing owl to a less than significant level.

Sensitive Biological Resources

No sensitive biological resources areas (i.e., jurisdictional waters, plant communities, Critical Habitat, Conservation Areas) are expected to be present on the project site due the lack of designation or suitable habitat (refer to Appendix B); therefore, no impacts to these resources are anticipated as a result of Project implementation, and no further mitigation is required.

5.2.1 Recommendations

BIO-1 Pre-construction Survey for Nesting Birds. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Bernardino County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than 5 days prior to the initiation of any site disturbance activities and equipment mobilization, vegetation removal, fence installation, grading, etc. If project activities are delayed by more than 5 days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all vegetation and other potential nesting habitats (e.g., shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

BIO-2: Pre-construction Survey for Burrowing Owl. No more than 14 days prior to ground disturbance a focused survey for burrowing owl will be required to ensure take avoidance. Even though burrowing owls were not located as part of the general biological survey, a pre-construction survey for burrowing owl is required because burrowing owls may encroach or migrate to the property at any time, and therefore steps should be taken to ensure avoidance, including reevaluating the locations/presence of burrowing owl or burrows. Pre-construction surveys shall be conducted in accordance with the survey requirements outlined in Appendix D of the CDFW's Staff Report on Burrowing Owl, dated March 7, 2012. If burrowing owl are found on the project site during pre-construction surveys, the biologist conducting surveys shall immediately contact the CDFW to develop a plan for avoidance and/or translocation prior to construction crews initiating any ground disturbance on the project site.

6.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken [editors]. 2012. The Jepson Manual: Vascular Plants of California. 2nd edition, thoroughly revised and expanded. University of California Press, Berkeley, CA.

CDFW. 2016. Complete List of Amphibian, Reptile, Bird and Mammal Species in California, May 2016. California Wildlife Habitat Relationships Program, Sacramento. 26 pp.

CDFW. 2018. Protocols for Surveying And Evaluating Impacts To Special Status Native Plant Populations And Communities. March 20, 2018. Accessed online: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html.

CDFW. 2022. California Natural Community List, dated July 5, 2022. Available online at www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_background.asp.

CDFW. 2023a. State and Federally Listed Endangered and Threatened Animals of California, Updated January 2023. Biogeographic Data Branch, CNDDB.

CDFW. 2023b. State and Federally Listed Endangered, Threatened, and Rare Plants of California, Updated January 2023. Biogeographic Data Branch, CNDDB.

CDFW CNDDB. 2023. Sensitive Element Record Search. California Department of Fish and Wildlife. Sacramento, California.

CNPS. 2001. Botanical Survey Guidelines. Available online at https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf

CNPS, 2023a. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Available online at http://www.rareplants.cnps.org.

CNPS, 2023b. A Manual of California Vegetation, Online Edition. Available online at http://www.vegetation.cnps.org

eBird. 2023. Explore Hotspots. Available at: https://ebird.org/hotspots

iNaturalist. 2023. Observations. https://www.inaturalist.org/observations

USDA NRCS. 2023. SSURGO Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.

USFWS. 2023a. IPAC: Information for Planning and Conservation. Available online at: https://ecos.fws.gov/ipac/.

USFWS. 2023b. National Wetlands Inventory. Wetlands Mapper. Available online at: http://www.fws.gov/wetlands/data/mapper.html.

This Page Intentionally Left Blank

7.0 FIGURES

Figure 1: Vicinity Map

Figure 2: USGS Topographic Map

Source: ESRI, San Bernardino County, USGS, MIG, 2023

Legend

▭ Project Boundary (Estimated)

0 1,150 2,300 4,600 Feet

Figure 2. USGS Topographic Map
Tennessee Village
City of Redlands, CA

Figure 3: Project Location Map

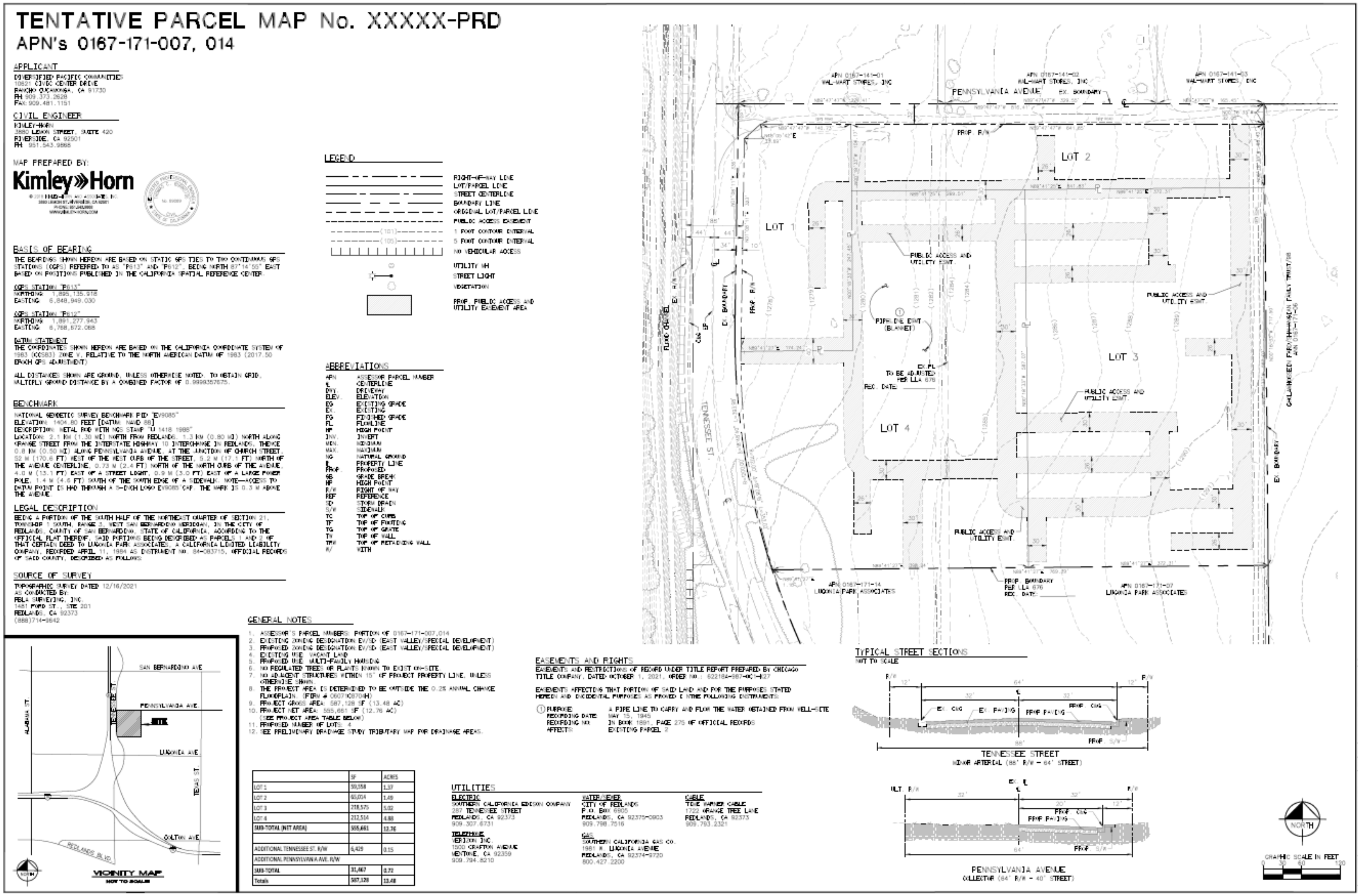
Source: ESRI, San Bernardino County, MIG, 2023

Legend

🟥 Project Boundary (Estimated)

Figure 3. Project Location
Tennessee Village
City of Redlands

Figure 4: Project Site Plan



TENTATIVE PARCEL MAP No. XXXXX-PRD
APN's 0167-171-007, 014

APPLICANT
DIVERSIFIED PACIFIC COMMUNITIES
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730
PH: 909.373.2628
FAX: 909.481.1151

CIVIL ENGINEER
KIMLEY-HORN
3880 LEMON STREET, SUITE 420
RIVERSIDE, CA 92501
PH: 951.543.9868

MAP PREPARED BY:
Kimley»Horn

BASIS OF BEARING
THE BEARINGS SHOWN HEREON ARE BASED ON STATIC GPS TIES TO TWO CONTINUOUS GPS STATIONS (CGPS) REFERRED TO AS "P613" AND "P612", BEING NORTH 87°14'55" EAST BASED ON POSITIONS PUBLISHED IN THE CALIFORNIA SPATIAL REFERENCE CENTER.

CGPS STATION "P613"
NORTHING: 1,895,135.918
EASTING: 6,848,949.030

CGPS STATION "P612"
NORTHING: 1,891,277.943
EASTING: 6,768,672.068

DATUM STATEMENT
THE COORDINATES SHOWN HEREON ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) ZONE V, RELATIVE TO THE NORTH AMERICAN DATUM OF 1983 (2017.50 EPOCH GPS ADJUSTMENT)

ALL DISTANCES SHOWN ARE GROUND, UNLESS OTHERWISE NOTED. TO OBTAIN GRID, MULTIPLY GROUND DISTANCE BY A COMBINED FACTOR OF 0.9999357675.

BENCHMARK
NATIONAL GEODETIC SURVEY BENCHMARK PID "EV9085"
ELEVATION: 1404.80 FEET [DATUM: NAVD 88]
DESCRIPTION: METAL ROD WITH NGS STAMP "U 1418 1988"
LOCATION: 2.1 KM (1.30 MI) NORTH FROM REDLANDS. 1.3 KM (0.80 MI) NORTH ALONG ORANGE STREET FROM THE INTERSTATE HIGHWAY 10 INTERCHANGE IN REDLANDS, THENCE 0.8 KM (0.50 MI) ALONG PENNSYLVANIA AVENUE, AT THE JUNCTION OF CHURCH STREET, 52 M (170.6 FT) WEST OF THE WEST CURB OF THE STREET, 5.2 M (17.1 FT) NORTH OF THE AVENUE CENTERLINE, 0.73 M (2.4 FT) NORTH OF THE NORTH CURB OF THE AVENUE, 4.0 M (13.1 FT) EAST OF A STREET LIGHT, 0.9 M (3.0 FT) EAST OF A LARGE POWER POLE, 1.4 M (4.6 FT) SOUTH OF THE SOUTH EDGE OF A SIDEWALK. NOTE—ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO EV9085 CAP. THE MARK IS 0.3 M ABOVE THE AVENUE.

LEGAL DESCRIPTION
BEING A PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3, WEST SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, SAID PORTIONS BEING DESCRIBED AS PARCELS 1 AND 2 OF THAT CERTAIN DEED TO LUGONIA PARK ASSOCIATES, A CALIFORNIA LIMITED LIABILITY COMPANY, RECORDED APRIL 11, 1984 AS INSTRUMENT NO. 84-083715, OFFICIAL RECORDS OF SAID COUNTY, DESCRIBED AS FOLLOWS:

SOURCE OF SURVEY
TOPOGRAPHIC SURVEY DATED 12/16/2021
AS CONDUCTED BY:
FELA SURVEYING, INC.
1481 FORD ST., STE 201
REDLANDS, CA 92373
(888)714-9642

LEGEND

— — — — — —	RIGHT-OF-WAY LINE
————————	LOT/PARCEL LINE
——— – ——— – ———	STREET CENTERLINE
———— — — ————	BOUNDARY LINE
– — — — — — — –	ORIGINAL LOT/PARCEL LINE
- - - - - - - - - - - -	PUBLIC ACCESS EASEMENT
- - - - (101) - - - -	1 FOOT CONTOUR INTERVAL
- - - - (105) - - - -	5 FOOT CONTOUR INTERVAL
⊔⊔⊔⊔⊔⊔⊔⊔	NO VEHICULAR ACCESS
○	UTILITY MH
☼—•	STREET LIGHT
○	VEGETATION
▭	PROP. PUBLIC ACCESS AND UTILITY EASEMENT AREA

ABBREVIATIONS

APN	ASSESSOR PARCEL NUMBER
℄	CENTERLINE
DWY.	DRIVEWAY
ELEV.	ELEVATION
EG	EXISTING GRADE
EX.	EXISTING
FG	FINISHED GRADE
FL	FLOWLINE
HP	HIGH POINT
INV.	INVERT
MIN.	MINIMUM
MAX.	MAXIMUM
NG	NATURAL GROUND
ℙ	PROPERTY LINE
PROP.	PROPOSED
GB	GRADE BREAK
HP	HIGH POINT
R/W	RIGHT OF WAY
REF	REFERENCE
SD	STORM DRAIN
S/W	SIDEWALK
TC	TOP OF CURB
TF	TOP OF FOOTING
TG	TOP OF GRATE
TW	TOP OF WALL
TRW	TOP OF RETAINING WALL
W/	WITH

GENERAL NOTES
1. ASSESSOR'S PARCEL NUMBERS: PORTION OF 0167-171-007,014
2. EXISTING ZONING DESIGNATION: EV/SD (EAST VALLEY/SPECIAL DEVELOPMENT)
3. PROPOSED ZONING DESIGNATION: EV/SD (EAST VALLEY/SPECIAL DEVELOPMENT)
4. EXISTING USE: VACANT LAND
5. PROPOSED USE: MULTI-FAMILY HOUSING
6. NO REGULATED TREES OR PLANTS KNOWN TO EXIST ON-SITE.
7. NO ADJACENT STRUCTURES WITHIN 15' OF PROJECT PROPERTY LINE, UNLESS OTHERWISE SHOWN.
8. THE PROJECT AREA IS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. (FIRM # 06071C8704H)
9. PROJECT GROSS AREA: 587,128 SF (13.48 AC)
10. PROJECT NET AREA: 555,661 SF (12.76 AC) (SEE PROJECT AREA TABLE BELOW)
11. PROPOSED NUMBER OF LOTS: 4
12. SEE PRELIMINARY DRAINAGE STUDY TRIBUTARY MAP FOR DRAINAGE AREAS.

	SF	ACRES
LOT 1	59,558	1.37
LOT 2	65,014	1.49
LOT 3	218,575	5.02
LOT 4	212,514	4.88
SUB-TOTAL (NET AREA)	555,661	12.76
ADDITIONAL TENNESSEE ST. R/W	6,429	0.15
ADDITIONAL PENNSYLVANIA AVE. R/W		
SUB-TOTAL	31,467	0.72
Totals	587,128	13.48

EASEMENTS AND RIGHTS
EASEMENTS AND RESTRICTIONS OF RECORD UNDER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, DATED OCTOBER 1, 2021, ORDER NO.: 622184-987-0C1-K27

EASEMENTS AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVED I NTHE FOLLOWING INSTRUMENTS:

①
PURPOSE: A PIPE LINE TO CARRY AND FLOW THE WATER OBTAINED FROM WELL-SITE
RECORDING DATE: MAY 15, 1945
RECORDING NO: IN BOOK 1891, PAGE 275 OF OFFICIAL RECORDS
AFFECTS: EXISTING PARCEL 2

UTILITIES

ELECTRIC
SOUTHERN CALIFORNIA EDISON COMPANY
287 TENNESSEE STREET
REDLANDS, CA 92373
909.307.6731

TELEPHONE
VERIZON INC.
1500 CRAFTON AVENUE
MENTONE, CA 92359
909.794.8210

WATER/SEWER
CITY OF REDLANDS
P.O. BOX 6905
REDLANDS, CA 92375-0803
909.798.7516

GAS
SOUTHERN CALIFORNIA GAS CO.
1981 W. LUGONIA AVENUE
REDLANDS, CA 92374-9720
800.427.2200

CABLE
TIME WARNER CABLE
1722 ORANGE TREE LANE
REDLANDS, CA 92373
909.793.2321

TYPICAL STREET SECTIONS
NOT TO SCALE

This Page Intentionally Left Blank

Figure 5: Soils Map

Source: ESRI, USDA-NRCS, San Bernardino County, MIG 2021

Figure 6: Critical Habitat Map

Source: ESRI, USFWS, San Bernardino County, MIG, 2023

Figure 6. USFWS Critical Habitat Map
Tennessee Village
City of Redlands, CA

Figure 7: National Wetland Inventory Map

Figure 8: Project Site Photographs


Photo 1. View south from the site toward the intersection of W. Lugonia Ave and Tennessee St.


Photo 2. View west from the site toward the 210 Freeway.


Photo 3. View northwest from access road to just off the project site.


Photo 4. View northwest from south end of project site.


Photo 5. View west from near center of project site of small concrete pad with utility wire.


Photo 6. Burrow observed on the project site.

Figure 9 (cont.): Current Project Site Photographs


Photo 7. View northeast from near the center of the project site.


Photo 8. View southeast of debris pile adjacent to project site.


Photo 9. Pipe with drain holes observed onsite.


Photo 10. Western fence lizard observed just off site..


Photo 11. Burrow observed near project site


Photo 12. Burrow observed near project site.

APPENDICES

Appendix A
Special Status Species Database Search Results

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Yucaipa (3411711) OR San Bernardino South (3411713) OR Redlands (3411712) OR Harrison Mtn. (3411722) OR San Bernardino North (3411723) OR Keller Peak (3411721) OR Sunnymead (3311782) OR El Casco (3311781) OR Riverside East (3311783))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Allium howellii var. clokeyi Mt. Pinos onion	PMLIL02161	None	None	G4T2	S2	1B.3
Allium marvinii Yucaipa onion	PMLIL02330	None	None	G1	S1	1B.2
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Artemisiospiza belli belli Bell's sparrow	ABPBX97021	None	None	G5T2T3	S3	WL
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	GUT1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coronata var. notatior San Jacinto Valley crownscale	PDCHE040C2	Endangered	None	G4T1	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Batrachoseps gabrieli San Gabriel slender salamander	AAAAD02110	None	None	G2G3	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Berberis nevinii Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus morrisoni Morrison bumble bee	IIHYM24460	None	None	G3	S1S2	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calochortus palmeri var. palmeri Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Canyon Live Oak Ravine Forest Canyon Live Oak Ravine Forest	CTT61350CA	None	None	G3	S3.3	
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Castilleja cinerea ash-gray paintbrush	PDSCR0D0H0	Threatened	None	G1G2	S1S2	1B.2
Castilleja lasiorhyncha San Bernardino Mountains owl's-clover	PDSCR0D410	None	None	G2?	S2?	1B.2
Catostomus santaanae Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Ceratochrysis longimala Desert cuckoo wasp	IIHYM71040	None	None	G1	S1	
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Charina umbratica southern rubber boa	ARADA01011	None	Threatened	G2G3	S2S3	
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
Chorizanthe xanti var. leucotheca white-bracted spineflower	PDPGN040Z1	None	None	G4T3	S3	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coleonyx variegatus abbotti San Diego banded gecko	ARACD01031	None	None	G5T5	S1S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Diadophis punctatus modestus San Bernardino ringneck snake	ARADB10015	None	None	G5T2T3	S2?	
Diplectrona californica California diplectronan caddisfly	IITRI23010	None	None	G1G2	S1	
Dipodomys merriami parvus San Bernardino kangaroo rat	AMAFD03143	Endangered	Candidate Endangered	G5T1	S1	SSC
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Threatened	Threatened	G2	S2	
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
Euchloe hyantis andrewsi Andrew's marble butterfly	IILEPA5032	None	None	G4G5T1	S2	
Eugnosta busckana Busck's gallmoth	IILEM2X090	None	None	G1G3	S2S3	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphydryas editha quino quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Fimbristylis thermalis hot springs fimbristylis	PMCYP0B0N0	None	None	G4	S1S2	2B.2
Galium californicum ssp. primum Alvin Meadow bedstraw	PDRUB0N0E6	None	None	G5T2	S2	1B.2
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Glaucomys oregonensis californicus San Bernardino flying squirrel	AMAFB09021	None	None	G5T1T2	S1S2	SSC
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TX	SX	1A
Heuchera parishii Parish's alumroot	PDSAX0E1F0	None	None	G3	S3	1B.3
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Ivesia argyrocoma var. argyrocoma silver-haired ivesia	PDROS0X021	None	None	G2T2	S2	1B.2
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S1	FP
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Leptonycteris yerbabuenae lesser long-nosed bat	AMACB03030	Delisted	None	G3	S1	SSC
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Lycium parishii Parish's desert-thorn	PDSOL0G0D0	None	None	G4	S1	2B.3
Malacothamnus parishii Parish's bush-mallow	PDMAL0Q0C0	None	None	GXQ	SX	1A
Monardella macrantha ssp. hallii Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
Monardella pringlei Pringle's monardella	PDLAM180J0	None	None	GX	SX	1A
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
Neolarra alba white cuckoo bee	IIHYM81010	None	None	GH	SH	
Neotamias speciosus speciosus lodgepole chipmunk	AMAFB02172	None	None	G4T3T4	S2	
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Packera bernardina San Bernardino ragwort	PDAST8H0E0	None	None	G2	S2	1B.2
Pelazoneuron puberulum var. sonorense Sonoran maiden fern	PPTHE05192	None	None	G5T3	S2	2B.2
Perideridia parishii ssp. parishii Parish's yampah	PDAPI1N0C2	None	None	G4T3T4	S2	2B.2
Perognathus alticola alticola white-eared pocket mouse	AMAFD01081	None	None	G2TH	SH	SSC
Perognathus longimembris brevinasus Los Angeles pocket mouse	AMAFD01041	None	None	G5T2	S1S2	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3	S4	SSC
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	IIDIP05021	Endangered	None	G1T1	S1	
Rhinichthys osculus ssp. 8 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Ribes divaricatum var. parishii Parish's gooseberry	PDGRO020F3	None	None	G5TX	SX	1A
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S3	SSC
Schoenus nigricans black bog-rush	PMCYP0P010	None	None	G4	S2	2B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Sidalcea hickmanii ssp. parishii Parish's checkerbloom	PDMAL110A3	None	Rare	G3T1	S1	1B.2
Sidalcea malviflora ssp. dolosa Bear Valley checkerbloom	PDMAL110FH	None	None	G5T2	S2	1B.2
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Sidalcea pedata bird-foot checkerbloom	PDMAL110L0	Endangered	Endangered	G1	S1	1B.1
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Mixed Riparian Forest Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Riparian Forest Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Riparian Scrub Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3S4	SSC
Sphenopholis obtusata prairie wedge grass	PMPOA5T030	None	None	G5	S2	2B.2
Spinus lawrencei Lawrence's goldfinch	ABPBY06100	None	None	G3G4	S4	
Streptanthus bernardinus Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
Streptanthus campestris southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Trichocoronis wrightii var. wrightii Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

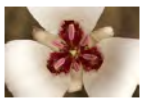
Record Count: 128

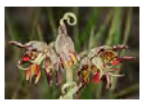
Search Results

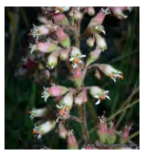
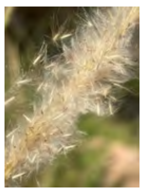
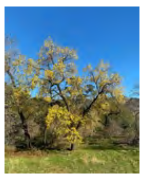
90 matches found. Click on scientific name for details

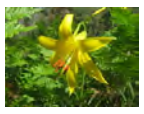
Search Criteria: 9-Quad include [**3411711:3411713:3411712:3411722:3411723:3411721:3311782:3311781:3311783**]

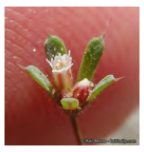
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Abronia villosa var. *aurita*	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	None	None	G5T2?	S2	1B.1		2001-01-01	 © 2011 Aaron E. Sims
Acanthoscyphus parishii var. *parishii*	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	None	None	G4? T3T4	S3S4	4.2	Yes	2007-04-05	 © 2014 Keir Morse
Allium howellii var. *clokeyi*	Mt. Pinos onion	Alliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4T2	S2	1B.3	Yes	1974-01-01	 © 2016 Keir Morse
Allium marvinii	Yucaipa onion	Alliaceae	perennial bulbiferous herb	Apr-May	None	None	G1	S1	1B.2	Yes	2001-01-01	 © 2013 Keir Morse
Androsace elongata ssp. *acuta*	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2		1994-01-01	 © 2008 Aaron Schusteff
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	FE	CE	G1	S1	1B.1		1984-01-01	No Photo Available
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2		1974-01-01	No Photo Available
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2		1974-01-01	No Photo Available
Astragalus hornii var. *hornii*	Horn's milk-vetch	Fabaceae	annual herb	May-Oct	None	None	GUT1	S1	1B.1		2006-12-01	No Photo Available
Astragalus pachypus var. *jaegeri*	Jaeger's milk-vetch	Fabaceae	perennial shrub	Dec-Jun	None	None	G4T1	S1	1B.1	Yes	1994-01-01	No Photo Available

Atriplex coronata var. notatior	San Jacinto Valley crownscale	Chenopodiaceae	annual herb	Apr-Aug	FE	None	G4T1	S1	1B.1	Yes	1988-01-01	 © 2008 Larry Sward
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2		1994-01-01	No Photo Available
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Bouteloua trifida	three-awned grama	Poaceae	perennial herb	(Apr)May-Sep	None	None	G4G5	S3	2B.3		1974-01-01	No Photo Available
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	Yes	1974-01-01	 © 2016 Keir Morse
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	Yes	1974-01-01	No Photo Available
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3T2	S2	1B.2	Yes	1994-01-01	No Photo Available
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	Yes	1994-01-01	No Photo Available
Calochortus simulans	La Panza mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.3	Yes	1980-01-01	 © 2011 Aaron E. Sims
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01	 Dean Wm. Taylor 1997
Castilleja cinerea	ash-gray paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun-Aug	FT	None	G1G2	S1S2	1B.2	Yes	1974-01-01	No Photo Available
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	May-Aug	None	None	G2?	S2?	1B.2	Yes	1980-01-01	No Photo Available
Castilleja montigena	Heckard's paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	None	None	G4	S4	4.2	Yes	1974-01-01	No Photo Available
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.1	Yes	1994-01-01	No Photo Available
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	FE	CE	G4?T1	S1	1B.2		1974-01-01	No Photo Available

Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2		1994-01-01	No Photo Available
Chorizanthe parryi var. parryi	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994-01-01	No Photo Available
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G4T3	S3	1B.2	Yes	1994-01-01	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994-01-01	No Photo Available
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011-08-24	No Photo Available
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2		2001-01-01	No Photo Available
Diplacus clevelandii	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2		1980-01-01	 © 2020 W. Juergen Schrenk
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Polemoniaceae	perennial herb	Apr-Sep	FE	CE	G4T1	S1	1B.1	Yes	1980-01-01	No Photo Available
Eriophyllum lanatum var. obovatum	southern Sierra woolly sunflower	Asteraceae	perennial herb	Jun-Jul	None	None	G5T4	S4	4.3	Yes	1974-01-01	No Photo Available
Erythranthe exigua	San Bernardino Mountains monkeyflower	Phrymaceae	annual herb	May-Jul	None	None	G2	S2	1B.2		1974-01-01	No Photo Available
Fimbristylis thermalis	hot springs fimbristylis	Cyperaceae	perennial rhizomatous herb	Jul-Sep	None	None	G4	S1S2	2B.2		1980-01-01	No Photo Available
Frasera neglecta	pine green-gentian	Gentianaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1980-01-01	No Photo Available
Fritillaria pinetorum	pine fritillary	Liliaceae	perennial bulbiferous herb	May-Jul(Sep)	None	None	G4	S4	4.3	Yes	2001-01-01	 © 2008 Steve Matson
Galium californicum ssp. primum	Alvin Meadow bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G5T2	S2	1B.2	Yes	1974-01-01	 © 2013 Keir Morse

Galium johnstonii	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2015 Keir Morse
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	Yes	1974-01-01	No Photo Available
Heuchera caespitosa	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2015 Keir Morse
Heuchera parishii	Parish's alumroot	Saxifragaceae	perennial rhizomatous herb	Jun-Aug	None	None	G3	S3	1B.3	Yes	1974-01-01	 © 2015 Keir Morse
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001-01-01	 © 2008 Tony Morosco
Hulsea vestita ssp. parryi	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	None	None	G5T4	S4	4.3	Yes	1994-01-01	 © 2015 Keir Morse
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
Ivesia argyrocoma var. argyrocoma	silver-haired ivesia	Rosaceae	perennial herb	Jun-Aug	None	None	G2T2	S2	1B.2	Yes	1974-01-01	 © 2015 Keir Morse
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2020 Zoya Akulova
Juncus duranii	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2017 Keir Morse
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse

Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994-01-01	 © 2015 Keir Morse
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980-01-01	 © 2008 Thomas Stoughton
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	None	None	G3	S3	1B.2		1974-01-01	 © 2009 Thomas Stoughton
Lycium parishii	Parish's desert-thorn	Solanaceae	perennial shrub	Mar-Apr	None	None	G4	S1	2B.3		1980-01-01	No Photo Available
Malacothamnus parishii	Parish's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jul	None	None	GXQ	SX	1A	Yes	1974-01-01	 © 2021 Keir Morse
Monardella macrantha ssp. hallii	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974-01-01	No Photo Available
Monardella pringlei	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
Muhlenbergia californica	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994-01-01	No Photo Available
Muilla coronata	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar-Apr(May)	None	None	G3	S3	4.2		1988-01-01	No Photo Available
Nama stenocarpa	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994-01-01	No Photo Available
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980-01-01	No Photo Available
Packera bernardina	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Pelazoneuron puberulum var. sonorense	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994-01-01	No Photo Available
Perideridia parishii ssp. parishii	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4	S2	2B.2		1974-01-01	No Photo Available
Phacelia mohavensis	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994-01-01	No Photo Available

Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994-01-01	No Photo Available
Piperia leptopetala	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001-01-01	No Photo Available
Pseudorontium cyathiferum	Deep Canyon snapdragon	Plantaginaceae	annual herb	Feb-Apr	None	None	G4G5	S1	2B.3		1980-01-01	No Photo Available
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988-01-01	No Photo Available
Ribes divaricatum var. parishii	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988-01-01	No Photo Available
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		1974-01-01	No Photo Available
Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974-01-01	No Photo Available
Schoenus nigricans	black bog-rush	Cyperaceae	perennial herb	Aug-Sep	None	None	G4	S2	2B.2		2001-01-01	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
Senecio astephanus	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	None	None	G3	S3	4.3	Yes	2006-12-21	No Photo Available
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	Malvaceae	perennial herb	(May)Jun-Aug	None	CR	G3T1	S1	1B.2	Yes	1974-01-01	No Photo Available
Sidalcea malviflora ssp. dolosa	Bear Valley checkerbloom	Malvaceae	perennial herb	May-Aug	None	None	G5T2	S2	1B.2	Yes	2012-06-13	No Photo Available
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
Sidalcea pedata	bird-foot checkerbloom	Malvaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Sidotheca caryophylloides	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	None	None	G4	S4	4.3	Yes	1980-01-01	 ©2021 Keir Morse
Sphenopholis obtusata	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2		1974-01-01	No Photo Available

Streptanthus bernardinus	Laguna Mountains jewelflower	Brassicaceae	perennial herb	May-Aug	None	None	G3G4	S3S4	4.3	Yes	1980-01-01	No Photo Available
Streptanthus campestris	southern jewelflower	Brassicaceae	perennial herb	(Apr)May-Jul	None	None	G3	S3	1B.3		1994-01-01	No Photo Available
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes	2004-01-01	No Photo Available
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1		1988-01-01	No Photo Available
Trichostema micranthum	small-flowered bluecurls	Lamiaceae	annual herb	Jun-Sep	None	None	G4	S3	4.3		1974-01-01	No Photo Available
Yucca brevifolia							GNR	SNR	CBR		2011-12-13	No Photo Available

Showing 1 to 90 of 90 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 30 March 2023].

Appendix B
Special-Status Plant Species with Potential to Occur on the Project Site

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	**Status**[1, 2]			**General Habitat and Micro Habitat Requirements**[1]	**Elevation Range (feet); Lifeform; Blooming Period**[2]	**Discussion**[3]	**Recommendations**
	Federal	**State**	**CNPS CRPR**				
DICOTS							
Chaparral sand-verbena *Abronia villosa* var. *aurita*	None	None	1B.1	Sandy soils in coastal sage scrub and chaparral habitats	262 - 5,249; annual herb; January - September	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**
Parish's oxytheca *Acanthoscyphus parishii var. Parishii*	None	None	4.2	Chaparral and lower montane coniferous forests. Often found in gravelly and sandy soils	2,760 – 5,950; Annual herb; June - September	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking. Out of elevation range.	**None.**
California androsace *Androsace elongata ssp. acuta*	None	None	4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland habitats.	480 – 4,175; Annual herb; March - June	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species.	**None.**
Marsh sandwort *Arenaria paludicola*	FE	SE	1B.1	Wetlands and freshwater marshes	33 - 558; annual herb; May - August	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species. No wetlands on the project site	**None.**
San Diego sagewort *Artemisia palmeri*	None	None	4.2	Sandy, mesic soils within chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland habitats	49 - 3,002; annual herb; February - September	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species.	**None.**
Western spleenwort *Asplenium vespertinum*	None	None	4.2	Chaparral, cismontane woodland, and coastal scrub habitats ; rocky areas	575 - 3,200; annual herb; February - June	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Horn's milk-vetch *Astragalus hornii var. hornii*	None	None	1B.1	Alkaline and lake margins within meadows, seeps, and playas.	192 – 2,720; Perennial herb; May - October	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species.	**None.**
Jaeger's milk-vetch *Astragalus hornii var. jaegeri*	None	None	1B.1	Chaparral, cismontane, woodland, coastal scrub, and valley and foothill grassland.	1,168 – 3,120; Perennial herb; Dec. - June	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species.	**None.**
San Jacinto Valley crownscale *Atriplex coronata var. notatior*	FE	None	1B.1	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland, ocean bluffs, ridgetops, as well as alkaline low places. Can occur in alkaline or clay soils.	5 - 1,475; Perennial herb; March - October	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species.	**None.**
Davidson's saltscale *Atriplex serenana var. davidsonii*	None	None	1B.2	Occurs in alkaline coastal bluff scrub or coastal scrub.	30 - 650; Annual herb; Blooms April - October	**Unlikely to occur.** Disturbed habitat at the Project Site will likely not support this species.	**None.**
Nevin's barberry *Berberis nevinii*	FE	CE	1B.1	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub; Gravelly (sometimes), Sandy (sometimes)	230-2,705; perennial evergreen shrub; (Feb)Mar-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species.	**None.**
Three-awned grama; *Bouteloua trifida*	None	None	2B.3	Mojavean desert scrub within carbonate rocky areas.	2,240 – 6,400; perennial herb (Apr) May - Sept.	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species. Outside of known range.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Castilleja cinerea ash-gray paintbrush	FE	None	1B.1	Dry rocky slopes, ridges and flats, pebble plains, sagebrush openings, open conifer forests.	5.900 – 9.300 perennial herb; May – Oct.	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species. Outside of known range.	**None.**
Castilleja lasiorhyncha San Bernardino Mountains owl's-clover	None	None	1B.2	Meadows and seeps, pebble plains, riparian woodland, and upper montane coniferous forests. Occurs within mesic habitats.	4,160 – 7,648 perennial herb May-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to lack of mesic habitat.	**None.**
Payson's jewelflower *Caulanthus simulans*	None	None	4.2	Chaparral, scrub, pinyon-juniper woodlands	27 – 8,715 perennial herb May-June	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**
Smooth tarplant *Centromadia pungens* ssp. *laevis*	None	None	1B.1	Alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland habitats.	0 - 2,100; annual herb; April – Sept.	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**
Salt marsh bird's-beak *Chloropyron maritimum* ssp. *maritimum*	FE	SE	1B.3	Upper terraces and higher edges of coastal salt marshes	0 - 99; May – October; Annual herb (hemiparasitic)	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Peninsular spineflower *Chorizanthe leptotheca*	None	None	4.2	Chaparral, coastal scrub, and lower montane coniferous forest within granitic soils.	960 – 6,080 annual herb April - June	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	**Status$^{1, 2}$**			**General Habitat and Micro Habitat Requirements^{1}**	**Elevation Range (feet); Lifeform; Blooming Period^{2}**	**Discussion^{3}**	**Recommendations**
	Federal	**State**	**CNPS CRPR**				
Parry's spineflower *Chorizanthe parryi* var. *parryi*	None	None	1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Openings, Rocky (sometimes), Sandy (sometimes)	900-4,005; annual herb; April - June	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**
White-bracted spineflower *Chorizanthe xanti* var. *leucotheca*	None	None	1B.2	Sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats.	984 - 3,937; annual herb; April - June	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**
Small-flowered morning-glory *Convolvulus simulans*	None	None	4.2	Chaparral, coastal scrub, and valley and foothill grasslands. Occurs within clay, seeps, and serpentinite habitats.	96 – 2,368; annual herb; Apr-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking.	**None.**
Peruvian dodder *Cuscuta obtusiflora* var. *glandulosa*	None	None	2B.2	Marshes and swamps (freshwater)	50-920; annual vine (parasitic); Jul-Oct	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Paniculate tarplant Deinandra paniculata	None	None	4.2	Coastal scrub, valley and foothill grasslands, and vernal pools. Found within vernally mesic habitats and sometimes sandy areas.	80 – 3,008 annual herb; (Mar) Apr-Nov	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	**Status[1, 2]**			**General Habitat and Micro Habitat Requirements[1]**	**Elevation Range (feet); Lifeform; Blooming Period[2]**	**Discussion[3]**	**Recommendations**
	Federal	**State**	**CNPS CRPR**				
Cleveland's bush monkeyflower Diplacus clevelandii	None	None	4.2	Chaparral, cismontane woodland, and lower montane coniferous forest. Found within disturbed areas, gabbroic, openings, and rocky areas.	1,440 – 6,400 annual herb; Apr-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking and outside of known range.	**None.**
Slender-horned spineflower *Dodecahema leptoceras*	FE	CE	1B.1	Chaparral, Cismontane woodland, Coastal scrub (alluvial fans); Sandy	655-2,495; annual herb; Apr-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. There are no inner stream benches/terraces.	**None.**
Santa Ana River woollystar *Eriastrum densifolium* ssp. *sanctorum*	FE	CE	1B.1	Sandy or gravelly soils within Riversidean Alluvial Fan Sage Scrub habitat.	299 - 2,001; annual herb; April - Sept.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. Suitable habitat for this species are present within the nearby Santa Anna River, but not at the Project Site.	**None.**
San Bernardino Mountains monkeyflower *Erythranthe exigua*	None	None	1B.2	Meadows, seeps, pebble plains, and upper montane coniferous forest. Found within clay and mesic areas.	5,760 – 7,630 annual herb; May-July	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking and outside of known range.	**None.**
Alvin Meadow bedstraw *Galium californicum ssp. primum*	None	None	1B.2	Chaparral and lower montane coniferous forest. Found within granitic and sandy areas.	4,450 – 5,600 Perennial herb; May-July	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking and outside of known range.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	**Status[1, 2]**			**General Habitat and Micro Habitat Requirements[1]**	**Elevation Range (feet); Lifeform; Blooming Period[2]**	**Discussion[3]**	**Recommendations**
	Federal	**State**	**CNPS CRPR**				
Johnston's bedstraw Galium johnstonii	None	None	4.3	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland, Riparian woodland	4005-7500 Perennial herb; May - August	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking and outside of known range.	**None.**
Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*	None	None	1A	Marshes and swamps (coastal salt and freshwater).	130 – 3000 Perennial herb rhizomatous; August – Oct.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. There are no marshes or swamps).	**None.**
Urn-flowered alumroot *Heuchera caespitosa*	None	None	4.3	Yellow Pine Forest, Red Fir Forest	4,250 – 8,640 Perennial herb; May – Aug.	**Unlikely to occur.** Disturbed habitat present at the Project Site will likely not support this species due to disking and outside of known range.	**None.**
Parish's alumroot *Heuchera parishii*	None	None	1B.1	Chaparral, cismontane woodland, coastal scrub. Found on sandy or gravelly sites.	4,420 - 11,560; perennial herb; Feb - July	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range.	**None.**
Vernal barley *Hordeum intercedens*	None	None	3.2	Coastal dunes, coastal scrub, valley and foothill grassland, and vernal pools.	15 – 3,300 annual herb Mar-June	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Mesa horkelia *Horkelia cuneata* var. *puberula*	None	None	1B.1	Chaparral (maritime), Cismontane woodland, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)	230-2,660; perennial herb; Feb-Jul (Sep)	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species due to disking.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Parry's sunflower *Hulsea vestita ssp. parryi*	None	None	4.2	Lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest habitats in granitic, carbonate, or rocky openings.	4,520 - 9.550 Perennial herb; April - August	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range.	**None.**
Silver-haired ivesia *Ivesia argyrocoma var. argyrocoma*	None	None	1B.1	Meadows and seeps, pebble plains, and upper montane coniferous forests.	4,820 – 9,760 perennial herb Mar-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic.	**None.**
Southern California Black Walnut *Juglans californica*	None	None	4.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland, often alluvial soils.	150 – 2,950 Perennial deciduous tree Mar-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species due to disking.	**None.**
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	None	None	1B.1	Marshes and swamps, playas, and vernal pools.	3 – 4,025 annual herb Feb-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic.	**None.**
Parish's desert-thorn *Lycium parishii*	None	None	2B.3	Coastal scrub and Sonoran desert scrub.	440 – 3,300 perennial shrub; Mar-Apr	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species due to disking.	**None.**
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	None	None	4.3	Chaparral, Coastal scrub	5-2,905; annual herb; Jan-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Parish's bush-mallow *Malacothamnus parishii*	None	None	1A	Chaparral and coastal scrub habitats	1,001 - 1,493; June - July	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. Presumed extinct.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Hall's monardella *Monardella macrantha ssp. hallii*	None	None	1B.3	Broadleafed upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley and foothill grassland.	2,261-9,280; Perennial herb; May – Oct.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Pringle's monardella *Monardella pringlei*	None	None	1A	Coastal scrub communities and on sandy hills.	980 – 1,080 Perennial herb; May-June	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Muilla coronata Crowned muilla	None	None	4.3	Joshua tree woodland, Chenopod scrub, Mojavean desert scrub, and pinyon and juniper woodland.	2,200 – 6,400 perennialbulbiferous herb; Mar-Apr.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Mud nama *Nama stenocarpa*	None	None	2B.2	Marshes and swamps (lake margins, riverbanks)	15-1640 annual/perennial herb; Jan-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic.	**None.**
Gambel's water cress *Nasturtium gambelii*	FE	CT	1B.1	Marshes and swamps that are brackish or freshwater.	16 – 1,080 Perennial rhizomatous herb; Apr-Oct	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic.	**None.**
San Bernardino ragwort *Packera bernardina*	None	None	1B.2	Mountain pine forest, endemic to San Bernardino mountains, pebble plain habitat	4,920-7,521; perennial herb; May-July	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2] Federal	State	CNPS CRPR	General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
Parish's yampah *Perideridia parishii ssp. parishii*	None	None	2B.2	Lower and upper montane coniferous forest, meadows and seeps.	4,830 – 9,900 perennial herb; Jun-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic.	**None.**
Mojave phacelia *Phacelia mohavensis*	None	None	4.3	Forests and wooded slopes of the mountains in sandy and gravelly substrates.	2456 – 8547 annual herb Apr-Aug.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Brand's star phacelia *Phacelia stellaris*	None	None	1B.1	Coastal scrub and dunes.	15 – 1,220 Annual herb; March - June	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Deep Canyon snapdragon *Pseudorontium cyanthiferum*	None	None	2B.3	Sonoran desert scrub.	0 – 2,600 annual herb; Feb-Apr	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Quercus engelmannii Engelmann oak	None	None	4.2	Riparian woodland.	200 – 1,000 perennialdeciduous tree; Mar-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Parish's gooseberry *Ribes divaricatum* var. *parishii*	None	None	1A	Riparian woodland	215-985; perennial deciduous shrub; Feb-Apr.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Coulter's matilija poppy *Romneya coulteri*	None	None	4.2	Chaparral and coastal scrub, often after burns.	60 – 4,000 Perennial rhizomatous herb Mar-Jul(Aug)	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Parish's rupertia *Rupertia rigida*	None	None	4.3	Yellow Pine Forest, Foothill Woodland, Chaparral	299 – 9978 perennial herb Jun-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Chaparral ragwort *Senecio aphanactis*	None	None	2B.2	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)	50-2,625; annual herb; Jan-Apr (May)	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Parish's checkerbloom *Sidalcea hickmanii ssp. parishii*	None	None	1B.2	Chaparral, cismontane woodland, and lower montane coniferous forest.	3,300 – 8,240 perennial herb; (May)Jun-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Bear Valley checkerbloom *Sialcea malviflora ssp. dolosa*	None	None	1B.2	Lower and upper montane coniferous forest, meadows and seeps, and riparian woodlands.	4,900 – 8,860 perennial herb; May-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Salt spring checkerbloom *Streptanthus campestris*	None	None	1B.3	Rocky areas of chaparral, lower montane coniferous forest, and pinyon and juniper woodland.	3,000 – 7,550 perennial herb Mar-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
bird-foot checkerbloom *Sidalcea pedata*	FE	CE	1B.1	Meadows and seeps and pebble plains.	5,200 – 8,200 perennial herb May-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Chickweed oxytheca *Sidotheca caryophylloides*	None	None	4.3	Lower montane coniferous forest in sandy soils.	3,650 – 8,500 Annual herb; blooms July-Oct.	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Laguna Mountains jewelflower *Streptanthus bernardinus*	None	None	4.3	Temperate coniferous forest and chaparral on mountain slopes.	4,650 – 7,550 perennial herb May-Aug	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Southern jewelflower *Streptanthus campestris*	None	None	1B.3	rocky areas of chaparral, lower montane coniferous forest, and pinyon and juniper woodland.	2,950 – 7,500 perennial herb; (Apr)May-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
San Bernardino aster *Symphyotrichum defoliatum*	None	None	1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland (vernally mesic); Streambanks	5-695; perennial rhizomatous herb; Jul-Nov	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Wright's trichocoronis *Trichocoronis wrightii var. wrightii*	None	None	2B.1	eadows and seeps, marshes and swamps, riparian forest, and vernal pools.	15 – 1,430 annual herb May-Sep	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	**State**	**CNPS CRPR**				
Small-flowered Bluecurls *Trichostema micranthum*	None	None	4.3	Meadow wetlands and riparian riverbanks, often in white fir (Abies concolor) and Yellow pine forest	1995 – 8201 annual herb; Jun-Sep	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
MONOCOTS							
Mt. Pinos onion *Allium howelii var. clokeyi*	None	None	1B.3	Great Basin scrub, the edges of meadows and seeps, and pinyon and juniper woodlands.	4,160 – 5,920 Perennial bulbiferous herb; Apr-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. Out of elevation range.	**None.**
Yucaipa onion *Allium marvinii*	None	None	1B.2	Chaparral habitats within clay soils and in openings. Threatened by non-native plants, urbanization, and the alteration of fire regimes.	2,435 – 3,400; perennial bulbiferous herb; Apr-May	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. Out of elevation range.	**None.**
Thread-leaved brodiaea *Brodiaea filifolia*	FT	CE	1B.1	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)	80-3,675; perennial bulbiferous herb; Mar-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. This species occurs in clay soils, which appears to be absent from the Project Site.	**None.**
Catalina mariposa lily *Calochortus catalinae*	None	None	1B.2	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands.	48 – 2,240; Perennial bulbiferous herb; (Feb)Mar-Jun	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. Out of elevation range.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	**State**	**CNPS CRPR**				
Palmer's mariposa-lily *Calochortus palmeri* var. *palmeri*	None	None	1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps; Mesic	2,330-7,840; perennial bulbiferous herb; Apr-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Plummer's mariposa-lily *Calochortus plummerae*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Granitic, Rocky	330-5,580; perennial bulbiferous herb; May-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
La Panza mariposa-lily *Calochortus simulans*	None	None	1B.3	Coastal prairie, marshes and swamps, and valley and foothill grasslands.	1,040 – 3,680; perennial bulbiferous herb; April - June	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Bristly sedge *Carex comosa*	None	None	2B.1	Wetlands, lake margins, loamy clay soil	7-3,343; perennial rhizomatous herb; Jun-Aug	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Hot springs fimbristylis *Fimbristylis thermalis*	None	None	2B.2	Meadows and seeps (alkaline, near hot springs)	360-4,395; perennial rhizomatous herb; Jul-Sep	**Unlikely to occur.** Habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range (feet); Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	**State**	**CNPS CRPR**				
California satintail *Imperata brevifolia*	None	None	2B.1	Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub; Mesic	0-3,985; perennial rhizomatous herb; Sep-May	**Unlikely to occur.** Habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Duran's rush *Juncus duranii*	None	None	4.3	Wetlands, meadows, wet forested habitat	2,336 – 10,069 Perennial rhizomatous herb;	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic.	**None.**
Ocellated Humboldt lily *Lilium humboldtii ssp. ocellatum*	None	None	4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland.	100 – 5,900 perennial bulbiferous Mar-Aug	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Lemon lily *Lilium parryi*	None	None	1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest; Mesic	4,005-9,005; perennial bulbiferous herb; Jul-Aug	**Unlikely to occur.** Habitat present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
California Muhly *Muhlenbergia californica*	None	None	4.3	Moist habitat, such as streambanks and ditches, in the chaparral and woodlands.	816 – 7834 Perennial rhizomatous herb; Jun-Sep	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Narrow-petaledrein orchid *Piperia leptopetala*	None	None	4.3	Scrub and woodland habitat in mountains and foothills.	1,247-7,300 perennial herb; May-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	**Status[1, 2]**			**General Habitat and Micro Habitat Requirements[1]**	**Elevation Range (feet); Lifeform; Blooming Period[2]**	**Discussion[3]**	**Recommendations**
	Federal	**State**	**CNPS CRPR**				
Black bog-rush *Schoenus nigricans*	None	None	2B.2	Marshes and swamps, often alkaline.	perennial herb; Aug-Sep	**Unlikely to occur.** Habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Prairie wedge grass Sphenopholis obtusata	None	None	2B.2	Cismontane woodland and meadows and seeps.	6 – 6,730 perennial herb; Apr-Jul	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Western joshua tree *Yucca brevifolia*	None	None	--	Mojavean desert scrub, Great Basin scrub, and California juniper woodlands. Often found in sandy areas.	1600-6600 Tree; Spring flowing	**Unlikely to occur.** Disturbed habitat present at the Project Site would not support this species.	**None.**
Ferns/Moss							
Sonoran maiden fern *Pelazoneuron [Thelypteris] puberulum* var. *sonorensis*	None	None	2B.2	Meadows and seeps (seeps, streams)	165-2,000; perennial rhizomatous herb; Jan-Sep	**Unlikely to occur.** Habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Plant Communities							
Canyon Live Oak Ravine Forest, Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, Southern Mixed Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, Southern Willow Scrub, and Riversidian Alluvial Fan Sage Scrub						**Unlikely to occur.** Disturbed habitat (i.e., disced / mowed) present at the Project Site would not support these plant / vegetation communities.	**None.**

NOTES:

[1] Excerpted from CNDDB (2023) and/or CNPS (2023)

[2] Excerpted from CNPS (2023)

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

[3] The potential for occurrence is based on occurrences recorded in the CNDDB (2023) and CNPS (2023), knowledge of species requirements, and site inspections during 2023 field survey

STATUS KEY:

Federal
FE: Federally-listed Endangered
FT: Federally-listed Threatened

State
SE: California-listed Endangered
ST: California-listed Threatened

California Native Plant Society (CNPS): CNPS has developed five categories of rarity known as the California Rare Plant Ranking (CRPR). CRPR designations are defined as follows:
1A: Presumed extinct in California
1B: Plants listed as rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which we need more information
4: Species of limited distribution in California, but whose existence does not appear to be susceptible to threat

CNPS also adds a decimal threat rank to the List rank to parallel that used by the CNDDB. CNPS rank designations therefore appear as: 1B.1, 1B.2, etc. Threat code extensions are defined as follows:
.1 – Seriously endangered in California (over 80% of occurrences threatened / high degree of immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Appendix C
Special-Status Wildlife Species with Potential to Occur on the Project Site

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion[2]	Recommendations
	Federal	State			
INVERTEBRATES					
Crotch bumble bee *Bombus crotchii*	--	SC	Various | Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum*	**Unlikely to occur.** Disturbed (disked) Habitat present at the Project Site is not ideal for this species. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum* were not observed at the site.	**None.**
Morrison bumble bee *Bombus morrisoni*	--	--	Scrub	**Unlikely to occur.** Disturbed (disked) Habitat present at the Project Site would not likely support this species.	**None.**
Desert cuckoo wasp *Ceratochrysis longimala*	--	--	Various desert habitats	**Unlikely to occur.** Disturbed (disked) Habitat present at the Project Site would not likely support this species.	**None.**
California diplectronan caddisfly *Diplectrona californica*	--	--	Aquatic	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Andrew's marble butterfly *Euchloe hyantis andrewsi*	--	--	Yellow pine forest| Uses Laguna Mountains jewelflower (*Streptanthus bernardinus*) and pine rockcress (*Arabis holboelli var. pinetorum*) as host plants; larvae feed on mountain tansy mustard (*Descurainia incana*).	**Unlikely to occur.** Disturbed Habitat present at the Project Site would not support this species. Food plants that this species requires were not observed and are unlikely present at the Project Site.	**None.**
Busck's gallmoth *Eugnosta busckana*	--	--	Coastal scrub dunes	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Quino checkerspot butterfly *Euphydryas editha quino*	FE	--	Chaparral	**Unlikely to occur.** Disturbed Habitat present at the Project Site would not support this species. Food plants that this species requires were not observed and are unlikely present at the Project Site.	**None.**
White cuckoo bee *Neolarra alba*	--	--	Desert | American southwest near the host plants for Perdita bee species (mainly *Euphorbia sp.*, i.e., *E. albomarginata*)	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Delhi Sands flower-loving fly	FE	--	Delhi sands composed of Aeolian	**Unlikely to occur.** Habitat present at	**None.**

Species	Status		Habitat Requirements[1]	Discussion[2]	Recommendations
	Federal	State			
			sands, Cieneba soils	the Project Site would not support this species due to the soil type and high disturbance.	
Riverside fairy shrimp *Streptocephalus woottoni*	FE	--	Vernal pool	**Unlikely to occur.** Habitat present at the Project Site would not support this species. No vernal pool habitat present on the Project site.	**None.**
FISHES					
Santa Ana sucker *Catostomus santaanae*	FT	SE	Aquatic | South coast flowing waters	**Unlikely to occur.** Habitat present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
Arroyo chub *Gila orcuttii*	--	SSC	Aquatic | South coast flowing waters	**Unlikely to occur.** Habitat present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
Steelhead – southern California Oncorhynchus mykiss irideaus pop. 10	FE	--	Permanent coastal streams	**Unlikely to occur.** Habitat present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
Santa Ana speckled dace *Rhinichthys osculus* ssp. 8	--	SSC	Aquatic | South coast flowing waters	**Unlikely to occur.** Habitat present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
AMPHIBIANS					
San Gabriel slender salamander *Batrachoseps gabrieli*	Of Limited Range and Distribution		Talus slope; Known only from the San Gabriel Mountains on forested slopes, often near a stream.	**Unlikely to occur.** Habitat present at the Project Site would not support this species. This species is only known to occur near talus slopes.	**None.**

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements¹	Discussion²	Recommendations
	Federal	State			
California red-legged frog *Rana draytonii*	FT	--	Aquatic/ponds | Riparian forest | Woodlands | Riparian scrub | Grasslands | Coastal scrub | Streamside	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Southern mountain yellow-legged frog *Rana muscosa*	FE	SE, WL	Aquatic | Rocky streambeds | Wet meadow	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Western spadefoot *Spea hammondii*	--	SSC	Cismontane woodland | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Coast Range newt *Taricha torosa*	--	SSC	Desert wash | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
REPTILES					
Southern California legless lizard *Anniella stebbinsi*	--	SSC	Broadleaved upland forest | Chaparral | Coastal dunes | Coastal scrub | Sandy washes and alluvial fans | Prefer moist loose soil	**Unlikely to occur.** Habitat present at the Project Site may support this species. Five individuals were found in the adjacent lot in 2014. The Project site is unlikely to support this species due to discing and lack of moisture.	**None.**
California glossy snake *Arizona elegans occidentalis*	--	SSC	Wide variety of scrub and grassland habitats, generally in loose sandy soils	**Unlikely to occur.** The previously disced, disturbed habitat present at the Project Site is unlikely to support this species.	**None.**
Orange-throated whiptail *Aspidoscelis hyperythra*	--	WL	Coastal scrub | mixed chaparral | Valley-foothill hardwood | Washes |Stream sides | Rocky hillsides	**Unlikely to occur.** The previously disced, disturbed habitat present at the Project Site is unlikely to support this species.	**None.**
Coastal whiptail *Aspidoscelis tigris stejnegeri*	--	SSC	Generally found in open habitats ranging from deserts, woodlands, and riparian areas	**Unlikely to occur.** The previously disced, disturbed habitat present at the Project Site is unlikely to support this species.	**None.**
Southern rubber boa *Charina umbratical*	--	--	Woodlands and coniferous forest | Typically within several hundred meters of water. 5,000-9,200 elev.	**Unlikely to occur.** Habitat present at the Project Site would not support this species and outside of its elevation range.	**None.**
Red-diamond rattlesnake *Crotalus ruber*	--	SSC	Chaparral | Mojavean desert scrub | Sonoran desert scrub	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion[2]	Recommendations
	Federal	State			
San Bernardino ringneck snake *Diadophis punctatus modestus*	--	--	Open, relatively rocky areas | Moist microhabitats near intermittent streams.	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Western pond turtle *Emys marmorata*	--	SSC	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland	**Unlikely to occur.** Habitat present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Coast horned lizard *Phrynosoma blainvillii*	--	SSC	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland	**Unlikely to occur.** The previously disced, disturbed habitat present at the Project Site is unlikely to support this species.	**None.**
Two-striped gartersnake *Thamnophis hammondii*	--	SSC	Marsh & swamp | Riparian scrub | Riparian woodland | Wetland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
BIRDS					
Cooper's hawk *Accipiter cooperii*	--	WL	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest | Open areas during nesting season	**Moderate Potential to Occur.** Habitats present at the Project Site may support this species for foraging.	**Yes. See Recommendation BIO-1**
Tricolored blackbird	--	SSC CE	Wetlands | Flooded land and along edges of ponds	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	--	WL	Chaparral | Coastal sage scrub	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Golden eagle *Aquila chrysaetos*	FP	WL	Various | Prefers secluded cliffs with overhanging ledges and large tree for nesting | Hilly or mountainous with canyons	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Bell's sage sparrow *Artemisiospiza belli belli*	--	WL	Chaparral | Coastal sage scrub	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Burrowing owl *Athene cunicularia*	--	SSC	Open, annual or perennial grasslands, deserts, and scrublands	**Low to Moderate Potential to Occur.** Habitat present at the Project	**Yes. See Recommendation BIO-2**

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion[2]	Recommendations
	Federal	State			
			characterized by low-growing vegetation | Disturbed habitat with roosting areas and suitable burrows	Site may support this species. The project site provides line-of sight opportunities favored by burrowing owls with suitable burrows (>4 inches) for roosting and nesting were observed; however routine disturbance (discing) are generally not conducive to establishment.	
Ferruginous hawk *Buteo regalis*	--	WL	Open grassland & fields| Desert scrub | Pinyon-juniper woodland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Swainson's hawk *Buteo swainsoni*	--	ST	Great Basin grassland | Riparian forest | Riparian woodland | Valley & foothill grassland	**Low Potential to Occur.** Habitat present at the Project Site may support this species for foraging but not nesting.	**Yes. See Recommendation BIO-1**
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT	SE	Riparian forest	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
White-tailed kite *Elanus leucurus*	--	FP	Coastal estuaries | Wetlands | Ponds | Irrigation ditches | Wet fields	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Southwestern willow flycatcher *Empidonax traillii extimus*	FE	SE	Riparian woodland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
California horned lark *Eremonphila alpestris actia*	--	--	Meadows | Grasslands | Open fields | Prairie | Alkali flats	**Low Potential to Occur.** Habitat present at the Project Site may support this species for foraging but not nesting.	**Yes. See Recommendation BIO-1**
Merlin *Falco columbarius*	--	WL	Estuary | Great Basin grassland | Valley & foothill grassland | Open forest	**Low Potential to Occur.** Habitat present at the Project Site may support this species for foraging but not nesting.	**Yes. See Recommendation BIO-1**
Bald eagle *Haliaeetus leucocephalus*	Delisted	SE	Seacoasts | Rivers | Swamps | Large lakes	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Yellow-breasted chat *Icteria virens*	--	SSC	Riparian forest | Riparian scrub | Riparian woodland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Loggerhead shrike *Lanius ludovicianus*	--	SSC	Woodlands | Shrublands | Open with perches for hunting and brush for nesting	**Low Potential to Occur.** Habitat present at the Project Site may support this species for foraging but	**Yes. See Recommendation BIO-1**

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion[2]	Recommendations
	Federal	State			
				not nesting.	
California black rail *Laterallus jamaicensis coturniculus*	--	ST, FP	Brackish marsh | Freshwater marsh | Marsh & swamp | Salt marsh | Wetland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Coastal California gnatcatcher *Polioptila californica californica*	FT	SSC	Coastal bluff scrub | Coastal sage scrub	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Yellow warbler *Setophaga petechia*	--	SSC	Riparian forest | Riparian scrub | Riparian woodland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Lawrence's goldfinch *Spinus lawrenceo*	--	--	Valley foothill hardwood | Desert riparian | Palm oasis | pinyon-juniper | Lower montane | oak woodland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	Riparian forest | Riparian scrub | Riparian woodland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
MAMMALS					
Pallid bat *Antrozous pallidus*	--	SSC	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
San Bernardino kangaroo rat *Dipodomys merriami parvus*	FE	SSC	Riversidian alluvial fan sage scrub and sandy loam soils | alluvial fans | Riversidian upland sage scrub, chaparral and grassland in proximity to Riversidian alluvial fan sage scrub habitats. and flood plains, and along washes with nearby sage scrub.	**Unlikely to occur.** Disturbed (disked) Habitat present at the Project Site would not likely support this species.	**None.**
Stephens' kangaroo rat *Dipodomys stephensi*	FE	CT	Open habitats with less than 50% protective cover | soft, well-drained substrate typically with sandy soil | Grasslands and sagescrub	**Unlikely to occur.** Disturbed (disked) Habitat present at the Project Site would not likely support this species.	**None.**
Western mastiff bat *Eumops perotis californicus*	--	SSC	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland | Desert washes | Flood plains	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
San Bernardino flying squirrel	--	SSC	White fir (Abies concolor) and	**Unlikely to occur.** Habitat present at	**None.**

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements¹	Discussion²	Recommendations
	Federal	State			
Glaucomys oregonensis californicus			Jeffrey pine (*Pinus jeffreyi*) mixed conifer forests with black oak (Quercus kelloggii) components at higher elevations.	the Project Site would not support this species.	
Western yellow bat *Lasiurus xanthinus*	--	SSC	Foothill riparian | Desert wash | Palm Oasis with access to water for foraging	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Lesser long-nosed bat *Leptonycteris yerbabuenae*	FE	--	Desert grasslands and shrub land. Suitable day roosts (caves and mines) and suitable concentrations of food plants (columnar cacti and agaves) are critical resources. Caves and mines are used as day roosts and caves, mines, rock crevices, trees, shrubs, and abandoned buildings are used as night roosts for digesting meals.	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
San Diego black-tailed jack rabbit *Lepus californicus bennettii*	--	SCP	Shortgrass | Open scrub and chaparral	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
lodgepole chipmunk *Neotamias speciosus speciosus*	--	--	Habitat is usually lodgepole pine forests in the San Bernardino Mts & chinquapin slopes in the San Jacinto Mts.	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
San Diego desert woodrat *Neotoma lepida intermedia*	--	SSC	Coastal scrub | Ricky outcrops	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
Pocketed free-tailed bat *Nyctinomops femorosaccus*	--	SSC	Joshua tree woodland | Pinon & juniper woodlands | Riparian scrub | Sonoran desert scrub	**Unlikely to occur.** Habitat present at the Project Site would not support this species.	**None.**
White-eared pocket mouse *Perognathus alticola alticola*	--	SSC	Endemic to the San Bernadino and Tehachapi Mountains | Montane habitat | Sometimes mixed chaparral and sagebrush	**Unlikely to occur.** Habitat present at the Project Site would not support this species due to discing and lower elevation.	**None.**
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	--	SSC	Grasslands | Coastal sage scrub| Open ground with fine sandy soil | Refuge under weeds and dead leaves	**Unlikely to occur.** Habitat present at the Project Site would not support this species due to discing.	**None.**
American badger *Taxidea taxus*	--	SSC	Various habitats	**Unlikely to occur.** While this species can thrive in many habitats, the Project Site is too close to urban	**None.**

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion[2]	Recommendations
	Federal	State			
				development and associated noise, and this species would not be expected in areas with this level of disturbance.	

STATUS KEY:
Federal
FE: Federally-listed Endangered
FT: Federally-listed Threatened
FD: Federally-delisted
FC: Federal Candidate for ESA Listing

State
SE: State-listed Endangered
ST: State-listed Threatened
SSC: Species of Special Concern, CDFW
WL: State Watch List
FP: Fully Protected List

SOURCES:
[1] Excerpted from CNDDB (2023)
[2] The potential for occurrence is based on occurrences recorded in the CNDDB (2023) and CNPS (2023), knowledge of species requirements, and site inspections during 2023 field survey

Appendix D
Floral and Faunal Compendium

Floral and Faunal Compendium

Note: This is a list of species observed as part of the site visit on May 19, 2023. This species list does not represent a comprehensive study consisting of multiple visits and does not constitute a protocol-level or focused survey for plants or animals.

Kingdom Plantae	
DICOTS	
AMARANTHACEAE	
Amaranthus albus	Tumbleweed*
ASTERACEAE	
Ambrosia acanthicarpa	Annual bur-sage
Erigeron bonariensis	Hairy fleabane
Erigeron canadensis	Horseweed
Heterotheca grandiflora	Telegraphweed
Oncosiphon piluliferum	Stinknet*
BORAGINACEACE	
Amsinckia menziesii	Menzies fiddleneck
BRASSICACEAE	
Hirschfeldia incana	Shortpod mustard*
Sisymbrium irio	London rocket*
CHENOPODIACEAE	
Chenopodium album	Lamb’s quarters*
Salsola tragus	Russian thistle*
Salsola Kali; Kali collina	Slender Russian thistle*
FABACEAE	
Melilotus indicus	Annual yellow sweetclover*
GERANIACEAE	
Erodium cicutarium	Redstem storksbill*
ONAGRACEAE	
Camissonia strigulosa	Sandysoil suncup
Oenothera laciniata	Cutleaf
MONOCOTS	
POACEAE	
Avena fatua	Wild oats*
Bromus diandrus	Ripgut brome*
Bromus rubens	Red brome*
Hordeum murinum	Foxtail barley*
ZYGOPHYLLACEACE	
Tribulus terrestris	Puncture vine*

Kingdom Animalia	
LIZARDS	
PHYRONOSOMATIDAE	
Sceloporus occidentalis	Western fence lizard
BIRDS	
ACCIPITRIDAE	
Buteo jamaicensis	Red-tailed Hawk
AEGITHALIDAE	
Psaltriparus minimus	Bushtit
COLUMBIDAE	
Zenaida macroura	Mourning dove
CORVIDAE	
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
FALCONIDAE	
Falco sparverius	American kestrel
FRINGILLIDAE	
Haemorhous mexicanus	House Finch
Spinus psaltria	Lesser Goldfinch
HIRUNDINIDAE	
Petrochelidon pyrrhonota	Cliff swallow
MIMIDAE	
Mimus polyglottos	Northern mockingbird
STURNIDAE	
Sturnus vulgaris	European starling
TYRANNIDAE	
Sayornis nigricans	Black Phoebe
Sayornis saya	Say’s Phoebe
Tyrannus verticalis	Western Kingbird
INSECTS	
HESPERIDAE	
Pyrgus albescens	White checkered skipper
MAMMALS	
CANIDAE	
Canis latrans	Domestic dog (scat)*
GEOMYIDAE	
Thomomys bottae	Botta’s pocket gopher
LEPORIDAE	
Sylvilagus bachmani	Brush rabbit
MUSTELIDAE	

Mustela frenata	Long-tailed weasel
SCIURIDAE	
Otospermophilus beecheyi	California ground squirrel
Asterisk (*) denotes non-native or invasive species.	

Appendix **C Burrowing Owl Survey Report**

This Page Intentionally Left Blank.

Burrowing Owl Survey Report

Tennessee Village Project
City of Redlands, San Bernardino County, California

Prepared for:
City of Redlands
35 Cajon St. Ste. 20
P.O. Box 3005
Redlands, CA 92373

Prepared by:
MIG, Inc.
1650 Spruce Street, Suite 106
Riverside, California 92507
Contact: Todd Easley
teasley@migcom.com
July 2023

TABLE OF CONTENTS

List of Figures

List of Abbreviated Terms

AMSL	Above Mean Sea Level
APN	Assessor Parcel Number
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
GIS	Geographic Information Systems
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NOAA	National Oceanic Atmospheric Administration
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	United States Army Corps Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

This report presents the results of MIG's surveys for burrowing owl (*Athene cunicularia*) at the 13.48-acre Tennessee Village Development Project property (project site). The purpose of this report is to verify the type, location, and extent of potential sensitive burrowing owl within the project site and vicinity. This report provides a thorough description of the biological setting of the project site and surrounding area, a description of the general vegetation communities and wildlife observed at the project site, and an evaluation of the potential for burrowing owl to occur at the site. An assessment of the Project impacts and recommendations for Conditions of Approval for to avoid potential adverse impacts to burrowing owl is also included in the report. The evaluation of potential project impacts follows the checklist items from Appendix G of the California Environmental Quality Act (CEQA) guidelines and has been prepared in a format suitable to support CEQA review and to submit with any future regulatory application packages.

1.1 Project Location

The project site is located west of the 210 freeway and immediately east of Tennessee Street and south of Pennsylvania Avenue in the City of Redlands, San Bernardino County, California (Figure 1, *Regional Map)*. The project is specifically located within the south half of the northeast quarter of Section 21, Township 1 South, Range 3, west of San Bernardino meridian, within the United States Geological Survey (USGS) 7.5' series Redlands quadrangle, (Figure 2, *USGS Topographic Map*), and includes portions of Assessor Parcel Numbers (APN) 0167-171-007, and 014 (Figure 3, *Project Site Map*).

The Project Site is located at just northeast of the intersection of Tennessee Street and Lugonia Avenue in a vacant lot that comprises approximately 13.48 acres. Residential properties and Texonia Park are east of the Project site, commercial properties to the south (Home Depot, 7-Eleven, and Jack in the box), the 210 freeway to the west and an additional vacant lot to the north (Figure 3).

1.2 Project Description

The City is proposing to construct a mixed-use development of 460 apartment units and approximately 18,000 square feet for commercial space. The project will require the approval of a tentative parcel map, a site plan approval, and a change of zone for a portion of the project site. The project site is primarily undeveloped; however, historically the site appeared to be disked and recently mowed. A narrow concrete channel, pipe, and small concrete pad were observed on the site. Most of the vegetation on site is non-native vegetation, generally classified as disturbed or ruderal. The project site is flat with an elevation of 1404.80 feet above mean sea level (AMSL) (Figure 2, *USGS Topographic Map*).

The Project Site comprises 4 lots and easements of approximately 13.48 acres consisting mainly of disturbed habitat just north of Tennessee Street at its intersection with Pennsylvania Avenue to the north and Lugonia Avenue to the south. In addition, the Project site and adjacent vacant lots to the north contain evidence of historical agricultural use and drainage channels (rock and concrete). The Project would result in the removal of all existing vegetation within the entire 13.48-acre site.

Access. A paved access road would be graded and maintained along the north of the site (Pennsylvania Ave). Additional public and utility access would be constructed throughout the development.

2.0 REGULATORY SETTING

The following discussion identifies federal, state, and local environmental regulations and policies that serve to protect burrowing owl relevant to the proposed project site and any subsequent CEQA review process.

2.1 Federal

2.1.1 The Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." Previously, under MBTA it was illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. In 2017, the USFWS issued a memorandum stating that the MBTA does not prohibit incidental take; therefore, the MBTA is currently limited to purposeful actions, such as hunting and poaching.

2.2 State

2.2.1 California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. CEQA (Public Resources Code Sections 21000 et. seq.) requires public agencies to review activities which may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an Initial Study and Negative Declaration (or Mitigated Negative Declaration) or with an Environmental Impact Report. Certain classes of projects are exempt from detailed analysis under CEQA. CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of CEQA and clarifies that CEQA review extends to other species that are not formally listed under the CESA or FESA but that meet specified criteria.

2.2.2 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW Fish and Game Commission 1998) although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

Species of special concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or they historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during project review.

2.2.3 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 prohibits the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW.

2.3 Local

2.3.1 City of Redlands General Plan

The City of Redlands General Plan 2035 (adopted in 2017) contains policies for the protection and preservation of biological resources. The plan dictates several principles and actions that should be taken to preserve and protect sensitive species, wildlife habitats, and waterways. Principles specifically pertaining to burrowing owl include the following (excerpted from page 6-12 of the General Plan):

Principle 6-P.7 Protect environmentally sensitive lands, wildlife habitats, and rare, threatened, or endangered plant and animal communities, and

Principle 6-P.8 Minimize disruption of wildlife and valued habitat throughout the Planning Area and emphasize that open space is for more than just human use, but also serves as habitat for biological resources.

3.0 METHODS

3.1 Literature Review

Prior to conducting field surveys, MIG biologists reviewed available background information pertaining to the biological resources on and in the vicinity of the project. Available literature and resource mapping reviewed included the occurrence records for special-status species and sensitive natural communities and numerous other information sources listed below:

- California Natural Diversity Data Base (CNDDB) record search for State and Federally Listed Endangered, Threatened, and Wildlife and Rare Plants of California within the Redlands and surrounding eight USGS quadrangles: Yucaipa, San Bernardino South, San Bernardino North, Harrison Mtn., Keller Peak, Sunnymead, El Casco, and Riverside East (CDFW CNDDB 2023; Appendix A).
- eBird, Cornell Lab of Ornithology. Available at: http://www.ebird.org.
- iNaturalist. Available at: https://www.inaturalist.org/

3.2 Field Surveys

Surveys were conducted in accordance with the *Staff Report on Burrowing Owl* (CDFG 2012). Based on the results of the Habitat Assessment, burrows and potential burrow surrogates were located throughout or adjacent to the project site. 100% visual coverage was obtained and transects were less than 20m apart. At the start of each transect and, at least, every 100 m, the entire visible project area was scanned for burrowing owls using binoculars. The buffer area around the project site was also scanned with binoculars as part of the survey; however, due to private ownership no transects were performed outside of the project site. During the survey, the area was searched for burrowing owls, new burrows, burrow surrogates, calls, pellets, prey remains, whitewash, or decoration. Surveys were conducted under conditions that would be ideal for detecting burrowing owl or sign thereof and were consistent with the requirements of *Staff Report on Burrowing Owl* (CDFG 2012). Surveys were conducted by qualified biologists with over a decade of burrowing owl survey experience.

Survey Visit	Date	Time of Survey	Weather	Surveyor
1	May 19, 2023	7:00 AM – 10:00 AM	58-65 F, 0-8 mph, overcast 100% to 50% cloud cover, 0% rain.	Todd Easley, MA
2	June 9, 2023	7:30 AM - 10:00 AM	58-68 F, 0-5 mph, overcast 100% cloud cover, 0% rain.	Todd Easley, MA
3	July 3, 2023	7:15 AM - 7:55 AM	70-75 F, 0-5 mph, clear, 0% rain.	Elizabeth Kempton, PhD

4	July 21, 2023	7:10 AM - 8:45 AM	75-84 F, 0-5 mph, clear, 0% rain.	Todd Easley, MA

4.0 EXISTING CONDITIONS

The following provides a description of the soils, vegetation communities, wildlife, and wildlife movement corridors present on the project site.

4.1 Physical Characteristics

The project is located within the United States Geological Survey (USGS) 7.5’ series Redlands quadrangle (Figure 1, Regional Map, Figure 2, USGS Topographic Map). The project site is flat with an elevation of 1404.80 feet above mean sea level (AMSL) (Figure 2, *USGS Topographic Map*). The project area consists entirely of a vacant lot. The project area is highly disturbed due to previous disking and mowing. Remnant vegetation that was identified on the site consisted primarily of ruderal non-native plants.

4.2 Soils

Soils within the proposed project site have been mechanically disturbed (i.e., disked). The USDA Web Soil Survey reports three soil units within the boundary of the project site (USDA NRCS 2023), and none of these are classified as hydric soils (see Figure 5):

HbA	Hanford, sandy loam, 0 to 2 percent slopes
TuB	Tujunga, loamy sand, 0 to 5 percent slopes

The “Hanford sandy loam, 0 to 2 percent slopes” soil type is generally comprised of alluvium derived from granite and can be found in alluvial fans. Overall slopes associated with this soil type are 0 to 2 percent, and this soil type is rarely flooded, well drained, and would not be considered hydric soil that would typically support wetlands. Conditions present at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

The “Tujunga loamy sand, 0 to 5 percent slopes” soil type is generally comprised of alluvium derived from granite and can be found in alluvial fans. Overall slopes associated with this soil type are 0 to 5 percent, and this soil type is rarely flooded, somewhat excessively drained, and would not be considered hydric soil that would typically support wetlands. The minor component (10%) was Tujunga, gravelly loamy sand. This also would not be considered hydric soil that would typically support wetlands and does not have a hydric soil rating. Conditions present at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

4.3 General Plants and Plant Communities

Plant communities on-site and were evaluated to determine if they are considered sensitive under federal, state, or local regulations or policies. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations. The majority of the 13.48 gross-acre project site is located within an urban area that is characterized by disturbed by land uses. The landcover type observed during the field survey is described in more detail below.

*Disturbed and/or Developed (*13.48 acres*)*

The entire Project Area has been historically altered by mowing and disking; all the landcover at the Project Area can be classified as Disturbed and/or Developed. Disturbed habitat type is composed primarily of early successional /ruderal plant species. Much of the vegetation present at the Project Area is non-native, and the site receives regular clearing to maintain compliance with fire code. Dominant plants included shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), Russian thistle (*Salsola tragus*), tumbleweed (*Amaranthis albus*), redstem storksbill (*Erodium cicutarium*), puncture vine (*Tribulus terrestris*), red brome (*Bromus rubens*), and foxtail barley (*Hordeum murinum*). Note: This list of species is not intended to exhaustive or representative of a protocol survey or inventory.

4.4 General Wildlife

Wildlife species that were observed on the project site during multiple biological field surveys (May 19, 2023; June 9, 2023; July 3, 2023, and July 21 2023) include: Red-tailed Hawk (*Buteo jamaicensis),* Bushtit (*Psaltriparus minimus)*, Mourning dove (*Zenaida macroura)*, American Crow (*Corvus brachyrhynchos)*, Common Raven (*Corvus corax),* American kestrel *(Falco sparverius)*, House Finch (*Haemorhous mexicanus)*, Lesser Goldfinch (*Spinus psaltria*), Cliff swallow (*Petrochelidon pyrrhonota),* Northern mockingbird (*Mimus polyglottos)*, European starling *(Sturnus vulgaris),* Black Phoebe (*Sayornis nigricans)*, Say's Phoebe (*Sayornis saya),* Western kingbird *(Tyrannus verticalis),* White checkered skipper (*Pyrgus albescens),* domestic dog *(Canis latrans), Botta's* pocket gopher (*Thomomys bottae)*, Brush rabbit *(Sylvilagus bachmani),* Long-tailed weasel *(Mustela frenata)*, and California ground squirrel (*Otospermophilus beecheyi).*

The possible burrowing owl predators present on site were dog, long-tailed weasel, raven, and red-tail hawk. There was no evidence of owl predation. (Note: This list of species is not intended to exhaustive or representative of a protocol survey or inventory). The site is located adjacent to busy streets with high levels of noise and human disturbance that may preclude high levels of wildlife activity, which is assumed to be the cause of the limited wildlife activity observed during the visits.

4.5 Burrowing Owl

Burrowing Owl

No burrowing owl or sign thereof were observed on the project site; nonetheless, the project site contains suitable habitat for burrowing owl with burrows (greater than 11cm in diameter). Burrowing owl are commonly found in disturbed sites like the project site and can also be found in a wide variety of other open habitats such as grassland or deserts with sparse vegetation. Although no burrowing owl were found during these surveys, it is possible for burrowing owls to encroach upon the project-site at anytime. The nearest occurrences (CNDDB 2023, Occurrence Numbers 1784 and 314) are approximately 5 miles from the project site. Potential impacts and recommendations to reduce them to a less than significant level are discussed in the following sections.

5.0 ENVIRONMENTAL IMPACTS

This section describes potential impacts to burrowing owl that may occur in the project site. Each impact discussion includes recommendations that would be implemented for Conditions of Approval to avoid and/or reduce the potential for and/or level of impacts to each resource. With the implementation of the recommendations for Conditions of Approval, all impacts to biological resources are anticipated to be reduced to less than significant pursuant to CEQA.

5.1 Thresholds of Significance

This section describes potential impacts to biological resources that may occur as a result of the construction of the proposed project. CEQA Guidelines provide guidance in evaluating project impacts and determining whether impacts may be significant. CEQA defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” In accordance with Appendix G of the CEQA Guidelines, a project could have a significant environmental impact on biological resources if it would:

- 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 CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plant (NCCP), or other approved local, regional, or state HCP

5.2 Impacts and Recommendations for Conditions of Approval

Consistent with the requirements of CEQA and local regulations, the significance of potential impacts is evaluated through the application of the significance criteria described above. The objective of the biological resources analysis is to identify potential adverse effects and/or significant impacts on biological resources. Avoidance is often the preferred approach for the management of biological resources; however, it is not always possible to completely avoid impacts. Recommendations to avoid or minimize impacts are identified, as appropriate, including procedures to be followed if significant biological resources are identified prior to the initiation of construction.

Impact BIO-1: Nesting Birds (including burrowing owl)

Native and non-native vegetation, as well as various other substrates on the project site, have the potential to provide nesting habitat for bird species protected by the CDFGC Sections 3503 and 3513.There is potential for ground- and shrub-nesting birds to establish nests on the project site prior to any project-related construction. Construction activities including site mobilization, vegetation clearing, grubbing, grading, and noise and vibration from the operation of heavy equipment have the potential to result in significant direct (i.e., death or physical harm) and/or indirect (i.e., nest abandonment) impacts to nesting birds. The loss of an active nest of common or special-status bird species and/or their eggs or young as a result of project construction would be considered a violation of the CDFGC, Section 3503, 3503.5, 3513 and therefore, would be considered a potentially significant impact. Implementation of Recommendation BIO-1 would be required to reduce impacts to nesting birds to a less than significant level.

Impact BIO-2: Burrowing Owl

Suitable habitat type (Disturbed and/or Developed) for burrowing owl was determined to be present on-site, and burrowing owl are known to occur in the vicinity of the site. Construction activities may impact burrowing owl in a manner like those already described under Impact-Bio-1 for nesting birds. Recommendation BIO-2 would be required to reduce impacts to burrowing owl to a less than significant level.

Recommendations for Conditions of Approval

BIO-1 Pre-construction Surveys for Nesting Birds. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Bernardino County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than 5 days prior to the initiation of any site disturbance activities and equipment mobilization, vegetation removal, fence installation, grading, etc. If project activities are delayed by more than 5 days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all vegetation and other potential nesting habitats (e.g., shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

BIO-2 Pre-construction Surveys for Burrowing Owl. No more than 14 days prior to ground disturbance a focused survey for burrowing owl will be required to ensure take avoidance. Even though burrowing owls were not located as part of the general biological survey, a pre-construction survey for burrowing owl is required because burrowing owls may encroach or migrate to the property at any time, and therefore steps should be taken to ensure avoidance, including reevaluating the locations/presence of burrowing owl or burrows. Pre-construction surveys shall be conducted in accordance with the survey requirements outlined in Appendix D of the CDFW's *Staff Report on Burrowing Owl*, dated March 7, 2012. If burrowing owl are found on the project site during pre-construction surveys, the biologist conducting surveys shall immediately contact the CDFW to develop a plan for avoidance and/or translocation prior to construction crews initiating any ground disturbance on the project site.

.

6.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken [editors]. 2012. The Jepson Manual: Vascular Plants of California. 2nd edition, thoroughly revised and expanded. University of California Press, Berkeley, CA.

CDFW. 2022. State and Federally Listed Endangered and Threatened Animals and Plants of California, Updated July 2022. Biogeographic Data Branch, CNDDB.

CDFW CNDDB. 2022. Sensitive Element Record Search. California Department of Fish and Wildlife. Sacramento, California. Accessed March 30, 2023.

CNPS, 2022. A Manual of California Vegetation, Online Edition. Available online at http://www.vegetation.cnps.org Accessed May 2023.

eBird, Cornell Lab of Ornithology. Available at: http://www.ebird.org.

iNaturalist. Available at: https://www.inaturalist.org/

USDA NRCS. 2022. SSURGO Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed May 2023.

USFWS. 2022a. IPAC: Information for Planning and Conservation. Available online at: https://ecos.fws.gov/ipac/. Accessed May 2023.

7.0 FIGURES

Figure 1: Vicinity Map

Source: ESRI, San Bernardino County, MIG, 2023

Figure 1. Project Vicinity Map
Tennessee Village
City of Redlands, CA

Figure 2: USGS Topographic Map

Source: ESRI, San Bernardino County, USGS, MIG, 2023

Figure 2. USGS Topographic Map
Tennessee Village
City of Redlands, CA

Figure 3: Project Site Map

Source: ESRI, San Bernardino County, MIG, 2023

Figure 4: SSURGO Soils Map

Source: ESRI, USDA-NRCS, San Bernardino County, MIG 2021

Figure 4. Soils Map
Tennessee Village
City of Redlands, CA

Figure 5: Project Site Photographs

Photo 1. View south from the site toward the intersection of W. Lugonia Ave and Tennessee St.

Photo 2. View southeast of a rock/debris pile from the northern edge of the project site near dirt access rd.

Photo 3. Burrow observed on the project site.

Photo 4. View west from near center of project site of small concrete pad with utility wire.

Appendix A
Special Status Species Database Search Results

Query Criteria: Species IS (Athene cunicularia)
 AND Quad IS (Redlands (3411712))

Map Index Number:	40533	**EO Index:**	35540
Key Quad:	Redlands (3411712)	**Element Code:**	ABNSB10010
Occurrence Number:	314	**Occurrence Last Updated:**	1999-01-07

Scientific Name: *Athene cunicularia*

Common Name: burrowing owl

Listing Status:	**Federal:**	None	**Rare Plant Rank:**	
	State:	None	**Other Lists:**	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern
CNDDB Element Ranks:	**Global:**	G4		
	State:	S3		

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed:	1983-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1983-XX-XX	**Occurrence Rank:**	Good
Owner/Manager:	DOD-USAF	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

EAST END OF THE MAIN RUNWAY, NORTON AIR FORCE BASE.

Detailed Location:

BURROWS WERE LOCATED EAST OF THE ROAD THAT SKIRTS THE RUNWAY.

Ecological:

HABITAT CONSISTS OF AN OPEN, SANDY FIELD.

Threats:

MAY BE THREATENED BY DEVELOPMENT DUE TO BASE CLOSURE (IN THE EARLY 1990'S).

General:

AN UNDETERMINED NUMBER OF OWLS UTILIZED THIS BURROW SITE IN 1983.

PLSS:	T01S, R03W, Sec. 08 (S)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N3773482 E480206	**Latitude/Longitude:**	34.10196 / -117.21459	**Elevation (feet):**	1,170

County Summary:	**Quad Summary:**
San Bernardino	Redlands (3411712)

Sources:

NOS83F0001	NOSAL, T. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA (BURROW SITE) 1983-XX-XX

Map Index Number:	81883	**EO Index:**	82856
Key Quad:	Redlands (3411712)	**Element Code:**	ABNSB10010
Occurrence Number:	1784	**Occurrence Last Updated:**	2011-02-28

Scientific Name: *Athene cunicularia*

Common Name: burrowing owl

Listing Status:	**Federal:**	None	**Rare Plant Rank:**	
	State:	None	**Other Lists:**	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern
CNDDB Element Ranks:	**Global:**	G4		
	State:	S3		

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed:	2006-05-26	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2006-05-26	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST E OF STERLING AVE AT E 3RD ST, N EDGE OF SAN BERNARDINO INTERNATIONAL AIRPORT.

Detailed Location:

ALONG CITY CREEK. BLOCK CODE 3770-475 - LOCATION CODE A. MAPPED TO PROVIDED COORDINATES.

Ecological:

UPLAND ELEVATION SUBREGION. GROUND SQUIRRELS DETECTED WITHIN 100 M OF BREEDING LOCATION.

Threats:

General:

6 ADULTS AND 3 JUVENILES DETECTED ON 26 MAY 2006; THE 3 PAIRS WERE LOCATED WITHIN 1/4 MI OF EACH OTHER AT THIS LOCATION.

PLSS:	T01S, R03W, Sec. 06, SW (S)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N3773996 E477727	**Latitude/Longitude:**	34.10655 / -117.24148	**Elevation (feet):**	1,110

County Summary:	**Quad Summary:**
San Bernardino	Redlands (3411712)

Sources:

WIL09D0003	WILKERSON, R. & R. SIEGEL (THE INSTITUTE FOR BIRD POPULATIONS) - DATABASE AND DATA DICTIONARY FOR IBP'S 2006-2007 STATEWIDE BURROWING OWL SURVEY 2009-09-29

Cultural Resources Inventory and Evaluation Report for the Tennessee Village Project

San Bernardino County, California

Prepared For:

Diversified Pacific
10621 Civic Center Drive
Rancho Cucamonga, California 91730

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
215 North 5th Avenue
Redlands, California 92374

November 2022

***Revised March 2024**

MANAGEMENT SUMMARY

Diversified Pacific, Inc. retained ECORP Consulting, Inc. in 2022 to conduct a cultural resources inventory for the Tennessee Village Project in Redlands, San Bernardino County, California. The project proponent is to construct a mixed-use residential and commercial complex on currently vacant land.

The inventory included a records search, literature review, historical society outreach, and field survey. The records search results indicated that one previous cultural resources study has been conducted within the Project Area, but only 5 percent of the Project Area had been surveyed. As a result of those studies, no resources have previously been recorded within the Project Area.

As a result of the field survey, ECORP recorded one resource inside the Project Area, LPA-003, a historic water conveyance system consisting of six features **REDACTED**.

This resource has been evaluated using the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and City of Redlands Historic Resource list eligibility criteria. This resource does not meet the requirements for eligibility for inclusion in the NRHP, CRHR, or as a City of Redlands Historic Resource and is, therefore, not considered a historical resource under the California Environmental Quality Act. Recommendations for the management of unanticipated discoveries are also provided.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
APN	Assessor's Parcel Number
BERD	Built Environment Resource Directory
BLM	Bureau of Land Management
BP	Before present

Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
DPR	Department of Parks and Recreation
GLO	General Land Office
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
PRC	Public Resources Code
Project	Tennessee Village Project
RPA	Registered Professional Archaeologist
SCCIC	South Central Coastal Information Center
SHPO	State Historic Preservation Officer
TCRs	Tribal Cultural Resources
USC	U.S. Code
USGS	U.S. Geological Survey

1.0 INTRODUCTION

Diversified Pacific retained ECORP Consulting, Inc. in 2022 to conduct a cultural resources inventory of the Proposed Project Area located in the City of Redlands in San Bernardino County, California. A survey of the property was required to identify potentially eligible cultural resources (i.e., archaeological sites and historic buildings, structures, and objects) that could be affected by the Project.

1.1 Project Location and Project Description

The Project Area consists of approximately 13.65 acres of property located in the southern half of the northeastern quarter of Section 21 of Township 1 South, Range 3 West, San Bernardino Base and Meridian as depicted on the 1988 (photorevised 1996) Redlands, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1). It is also known as Assessor's Parcel Number (APN) 0167-171-150-000. The parcel is east of Tennessee Street, and is surrounded by undeveloped land between Lugonia Avenue, Karon Street, and San Bernardino Avenue. The Proposed Project entails the construction of a mixed-use residential and commercial development located at Lugonia Avenue and Tennessee Street.

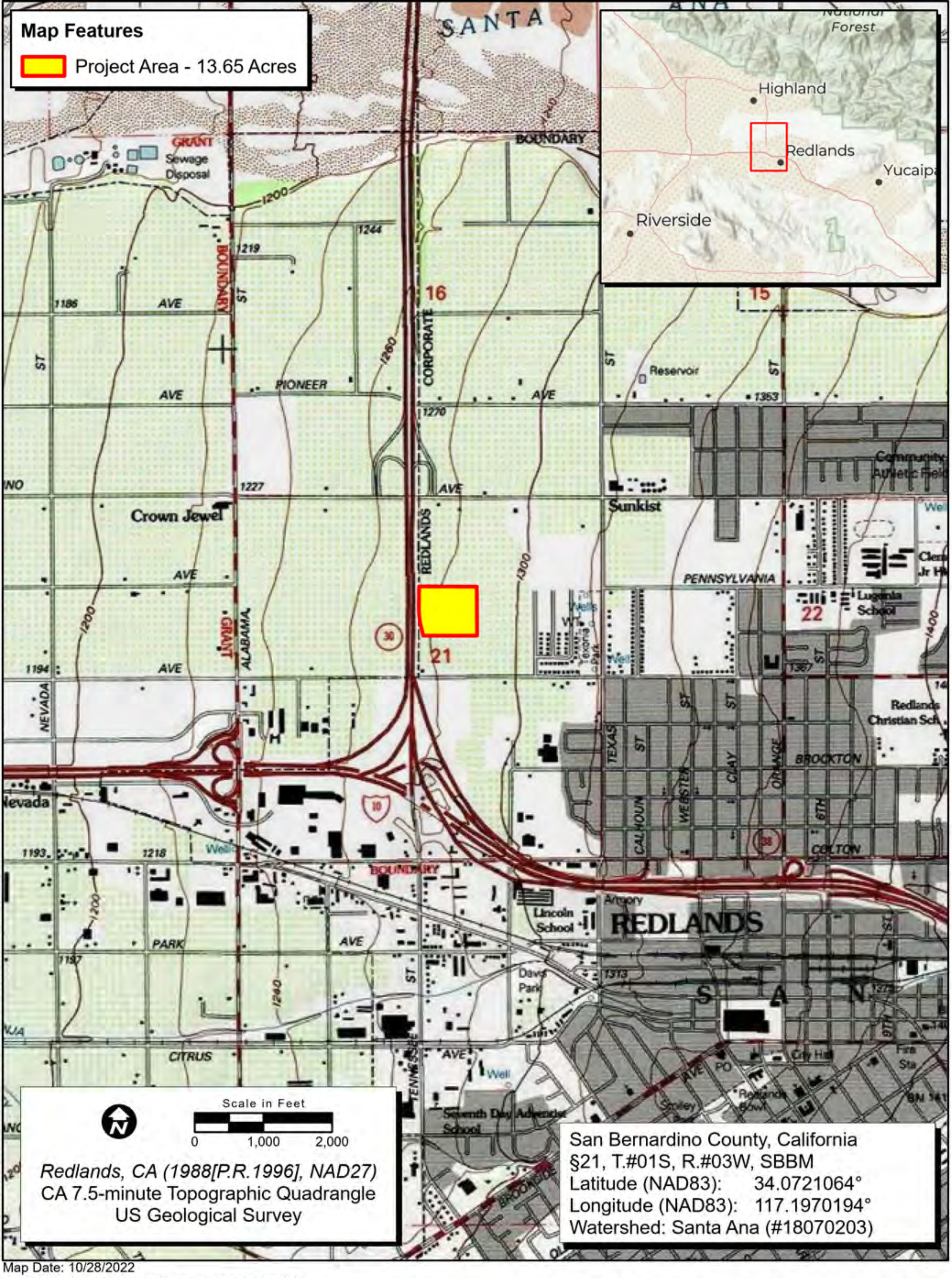
1.2 Area of Potential Effects

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of a project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the California Environmental Quality Act (CEQA) review, the term Project Area is used rather than APE. The terms Project Area and APE are interchangeable for the purpose of this document.

The horizontal APE consists of all areas where activities associated with a project are proposed and, in the case of this Project, equals the Project Area subject to environmental review under the National Environmental Policy Act (NEPA) and CEQA. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements in the official Project description. The horizontal APE is illustrated on Figure 1. It measures approximately 884 feet in length by 724 feet in width.

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE for this Project includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project, and therefore, a review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface. This study assumes ground disturbance will not exceed 20 feet below surface.

The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. This study assumes the above-surface vertical APE is 50 feet.



Map Features

🟨 Project Area - 13.65 Acres

N

Scale in Feet

0 1,000 2,000

Redlands, CA (1988[P.R.1996], NAD27)
CA 7.5-minute Topographic Quadrangle
US Geological Survey

San Bernardino County, California
§21, T.#01S, R.#03W, SBBM
Latitude (NAD83): 34.0721064°
Longitude (NAD83): 117.1970194°
Watershed: Santa Ana (#18070203)

Location: N:\2021\2021-286.01 Diversified Pacific - LPA Property\MAPS\location_vicinity\LPA_Location.aprx - LPA_LnV (trotellini - 10/28/2022)

Map Date: 10/28/2022

Esri, CGIAR, USGS, Copyright:© 2013 National Geographic Society, i-cubed, Loma Linda University, City of Redlands, County of Riverside, California State Parks, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2021-286.01 Diversified Pacific - LPA Property

1.3 Regulatory Context

A review of the regulatory context is provided below; however, the inclusion of any of these laws and regulations in this report does not make a law or regulation apply when it otherwise would not. Similarly, the omission of any other laws and regulations from this section does not mean that they do not apply. Rather, the purpose of this section is to provide context in explaining why the study was carried out in the manner documented herein. Although both federal and state regulatory contexts are provided, it should be noted that the Project is currently subject only to the state regulatory framework with the City of Redlands serving as Lead Agency.

1.3.1 National Environmental Policy Act

National policy for the protection and enhancement of the environment is established by NEPA. Part of the function of the federal government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." Cultural resources need not be determined eligible for the National Register of Historic Places (NRHP) through the National Historic Preservation Act (NHPA) of 1966 (as amended) to receive consideration under NEPA. Regulations of the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1500-1508) implement NEPA.

The definition of *effects* in the NEPA regulations includes adverse and beneficial effects on historic and cultural resources (40 CFR 1508.8). Therefore, the *Environmental Consequences* section of an Environmental Impact Statement [40 CFR 1502.16(f))] must analyze potential effects to historic or cultural resources that could result from the proposed action and each alternative. In considering whether an alternative may "significantly affect the quality of the human environment," a federal agency must consider, among other things:

- Unique characteristics of the geographic area, such as proximity to historic or cultural resources (40 CFR 1508.27(b)(3)), and
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP (40 CFR 1508.27(b)(8)).

Therefore, because historic properties are a subset of *cultural resources*, they are one aspect of the *human environment* defined by NEPA regulations.

1.3.2 National Historic Preservation Act

The federal law that covers cultural resources that could be affected by federal undertakings is the NHPA of 1966, as amended. Section 106 of the NHPA requires that federal agencies take into account the effects of a federal undertaking on properties listed in or eligible for the NRHP. The agencies must afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking. A federal undertaking is defined in 36 CFR 800.16(y):

> "A federal undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by

> or on behalf of a federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval."

The regulations that stipulate the procedures for complying with Section 106 are in 36 CFR 800. The Section 106 regulations require:

- definition of the APE;
- identification of cultural resources within the APE;
- evaluation of the identified resources in the APE using NRHP eligibility criteria;
- determination of whether the effects of the undertaking or project on eligible resources will be adverse; and
- agreement on and implementation of efforts to resolve adverse effects, if necessary.

The federal agency must seek comment from the State Historic Preservation Officer (SHPO) and, in some cases, the ACHP, for its determinations of eligibility, effects, and proposed mitigation measures. Section 106 procedures for a specific project can be modified by negotiation of a Memorandum of Agreement or Programmatic Agreement between the federal agency, the SHPO, and, in some cases, the project proponent.

Effects to a cultural resource are potentially adverse if the lead federal agency, with the SHPO's concurrence, determines the resource eligible for the NRHP, making it a Historic Property, and if application of the Criteria of Adverse Effects (36 CFR 800.5[a][2] et seq.) results in the conclusion that the effects will be adverse. The NRHP eligibility criteria, contained in 36 CFR 63, are as follows:

> "The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that 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
>
> D. that have yielded, or may be likely to yield, information important in prehistory.

In addition, the resource must be at least 50 years old, barring exceptional circumstances (36 CFR 60.4). Resources that are eligible for, or listed on, the NRHP are *historic properties*."

Regulations implementing Section 106 of the NHPA (36 CFR 800.5) require that the federal agency, in consultation with the SHPO, apply the Criteria of Adverse Effect to historic properties within the APE. According to 36 CFR 800.5(a)(1):

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association."

1.3.3 California Environmental Quality Act

The state law that applies to a project's impacts on cultural resources is CEQA. A project is an activity that may cause a direct or indirect physical change in the environment and that is undertaken or funded by a state or local agency, or requires a permit, license, or lease from a state or local agency. A requirement of CEQA is that impacts to Historical Resources be identified and, if the impacts will be significant, then apply mitigation measures to reduce the impacts.

A Historical Resource is a resource that 1) is listed in or has been determined eligible for listing in the California Register of Historical Resources (CRHR) by the State Historical Resources Commission, or has been determined historically significant by the CEQA lead agency because it meets the eligibility criteria for the CRHR; 2) is included in a local register of historical resources, as defined in Public Resources Code (PRC) 5020.1(k); or 3) has been identified as significant in a historical resources survey, as defined in PRC 5024.1(g) (California Code of Regulations [CCR] Title 14, Section 15064.5(a)).

The eligibility criteria for the CRHR are as follows (CCR Title 14, Section 4852(b)):

(1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;

(2) It is associated with the lives of persons important to local, California, or national history;

(3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity, which is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (CCR Title 14, Section 4852I). Resources that have been determined eligible for the NRHP are automatically eligible for the CRHR.

Impacts to a Historical Resource, as defined by CEQA (listed in an official historic inventory or survey or eligible for the CRHR), are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired (CCR Title 14, Section 15064.5(b)). Demolition or alteration of eligible buildings, structures, and features that they would no longer be eligible would result in a significant impact. Whole or partial destruction of eligible archaeological sites would result in a significant impact. In addition to impacts from construction resulting in destruction or physical alteration of an eligible resource, impacts to the integrity of setting (sometimes termed *visual impacts*) of physical features in the Project Area could also result in significant impacts.

Tribal Cultural Resources (TCRs) are defined in Section 21074 of the California PRC as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the CRHR, or are included in a local register of historical resources as defined in subdivision (k) of Section 5020.1, or are 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 Section 5024.1. Section 1(b)(4) of Assembly Bill (AB) 52 established that only California Native American tribes, as defined in Section 21073 of the California PRC, are experts in the identification of TCRs and impacts thereto. Because ECORP does not meet the definition of a California Native American tribe, it only addresses information in this report for which it is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate TCRs. Should California Native American tribes ascribe additional importance to or interpretation of archaeological resources described herein, or provide information about non-archeological TCRs, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and lead agency and summarized in the TCRs section of the CEQA document, if applicable.

1.3.4 Redlands Historic Resources Designation

Redlands City Municipal Code Section 2.62.170 establishes the City's criteria for historic significance.

The criteria, any one of which may be used to determine such designation, are as follows:

A. It has significant character, interest, or value as part of the development, heritage or cultural characteristics of the city of Redlands, state of California, or the United States;

B. It is the site of a significant historic event;

C. It is strongly identified with a person or persons who significantly contributed to the culture, history or development of the city;

D. It is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type or specimen;

E. It is a notable work of an architect or master builder whose individual work has significantly influenced the development of the city;

F. It embodies elements of architectural design, detail, materials, or craftsmanship that represents a significant architectural innovation;

G. It has a unique location or singular physical characteristics representing an established and familiar visual feature of a neighborhood, community, or the city;

H. It has unique design or detailing;

I. It is a particularly good example of a period or style;

J. It contributes to the historical or scenic heritage or historical or scenic properties of the city (to include, but not be limited to, landscaping, light standards, trees, curbings, and signs);

K. It is located within a historic and scenic or urban conservation district, being a geographically definable area possessing a concentration of historic or scenic properties which contribute to each other and are unified aesthetically by plan or physical development. (Ord. 1954 Section 8(a), 1986)

1.4 Report Organization

The following report documents the study and its findings and was prepared in conformance with the California Office of Historic Preservation's (OHP) *Archaeological Resource Management Reports: Recommended Contents and Format*. Appendix A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS), a copy of the historic properties located in Redlands on the San Bernardino County Built Environment Resource Directory (BERD), and historical society coordination. Appendix B contains documentation of a search of the Sacred Lands File. Appendix C presents photographs of the Project Area.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code Section 6250 et seq.) and California's open meeting laws (The Brown Act, Government Code Section 54950 et seq.) protect the confidentiality of Native American cultural place information. Because the disclosure of information about the location of cultural resources is prohibited by the Archaeological Resources Protection Act of 1979 (16 U.S. Code [USC] 552 470hh) and Section 307103 of the NHPA, it is exempted from disclosure under Exemption 3 of the federal Freedom of Information Act (5 USC 552) Likewise, the Information Centers of the CHRIS maintained by the OHP prohibit public dissemination of records search information. In compliance with these requirements, the results of this cultural resource investigation were prepared as a non-confidential document, which is intended for public distribution in either paper or electronic format. Confidential archaeological site records have been removed from this version.

2.0 SETTING

2.1 Environmental Setting

The Project Area is located approximately 1.5 miles south of the Santa Ana River on the southern side of the greater Santa Ana Wash, and approximately 3 miles southwest of the San Bernardino Mountains in the San Bernardino Basin. The ground slopes slightly down to the west. Elevations range from 1,275 to 1,309 feet above mean sea level.

2.2 Geology and Soils

Morton and Miller (2006) describe the geology of the Project Area as young axial-Channel deposits, Unit 3, a Holocene alluvial deposit that likely does not extend more than 2 to 5 meters below the surface. It is extensively developed in the area in which the Project Area is located.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey website (NRCS 2022), two soil types are located within the Project Area. Hanford sandy loam, 0- to 2-percent slopes, is a rarely/never flooded well-drained soil, primarily found in alluvial fans. It is alluvium derived from granite, and the top 12 inches is sandy loam, and a fine sandy loam extends from 12 to 60 inches below surface. Tujunga loamy sand, 0- to 5-percent slopes, is a rarely flooded, somewhat excessively drained soil, primarily found in alluvial fans. It is alluvium derived from granite, and the top 6 inches is loamy sand (*A* horizon), 6 to 18 inches is loamy sand (*C1* horizon), and 18 to 60 inches is loamy sand (*C2* horizon).

The potential exists for buried pre-contact archaeological sites in the Project Area due to the presence of Holocene alluvium within the Project Area and the likelihood of pre-contact archaeological sites located along perennial waterways. This potential is low, due to the presence of previous disturbances and historical-period developments.

2.3 Vegetation and Wildlife

The dominant plant community within the Project Area includes California croton (*Croton californica*), vinegarweed (*Trichostema lanceolatum*), filaree (*Erodium* sp.), rattail sixweeks grass (*Festuca myuros*), red brome (*Bromus madritensis rubens*), cheatgrass (*Bromus tectorum*), telegraph weed (*Heterotheca grandiflorum*), dove weed (*Croton setiger*), mustard (*Brassica* sp.), and fiddleneck (*Amsinckia* sp.) (ECORP 2020).

Wildlife species that may occur in the Project Area include Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus californica*), American crow (*Corvus brachyrhynchos*), rock pigeon (*Columba livia*), and mourning dove (*Zenaida macroura*) (ECORP 2020).

3.0 CULTURAL CONTEXT

3.1 Regional Pre-Contact History

3.1.1 Paleo-Indian Period/Terminal Pleistocene (12,000 to 10,000 BP)

The first inhabitants of southern California were big game hunters and gatherers exploiting extinct species of Pleistocene megafauna (e.g., mammoth and other Rancholabrean fauna). Local fluted point assemblages comprised of large spear points or knives are stylistically and technologically similar to the Clovis Paleo-Indian cultural tradition dated to this period elsewhere in North America (Moratto 1984). Archaeological evidence for this period in southern California is limited to a few small temporary camps with fluted points found around late Pleistocene lake margins in the Mojave Desert and around Tulare Lake in the southern San Joaquin Valley. Single points are reported from Ocotillo Wells and Cuyamaca Pass in eastern San Diego County and from the Yuha Desert in Imperial County (Rondeau et al. 2007).

3.1.2 Early Archaic Period/Early Holocene (10,000 to 8,500 BP)

Approximately 10,000 years ago, at the beginning of the Holocene, warming temperatures, and the extinction of the megafauna resulted in changing subsistence strategies with an emphasis hunting smaller game and increasing reliance on plant gathering. Previously, Early Holocene sites were represented by only a few sites and isolates from the Lake Mojave and San Dieguito complexes found along former lakebeds and grasslands of the Mojave Desert and in inland San Diego County. More recently, southern California Early Holocene sites have been found along the Santa Barbara Channel (Erlandson 1994), in western Riverside County (Goldberg 2001; Grenda 1997), and along the San Diego County coast (Gallegos 1991; Koerper et al. 1991; Warren 1967).

The San Dieguito Complex was defined based on material found at the Harris site (CA-SDI-149) on the San Dieguito River near Lake Hodges in San Diego County. San Dieguito artifacts include large leaf-shaped points; leaf-shaped knives; large ovoid, domed, and rectangular end and side scrapers; engraving tools; and crescentics (Koerper et al. 1991). The San Dieguito Complex at the Harris site dates to 9,000 to 7,500 BP (Gallegos 1991). However, sites from this time period in coastal San Diego County have yielded artifacts and subsistence remains characteristic of the succeeding Encinitas Tradition, including manos, metates, core-cobble tools, and marine shell (Gallegos 1991; Koerper et al. 1991).

3.1.3 Encinitas Tradition or Milling Stone Period/Middle Holocene (8,500 to 1,250 BP)

The Encinitas Tradition (Warren 1968) and the Milling Stone Period (Wallace 1955) refer to a long period of time during which small mobile bands of people who spoke an early Hokan language foraged for a wide variety of resources including hard seeds, berries, and roots/tubers (yucca in inland areas), rabbits and other small animals, and shellfish and fish in coastal areas. Sites from the Encinitas Tradition consist of residential bases and resource acquisition locations with no evidence for overnight stays. Residential bases have hearths and fire-affected rock indicating overnight stays and food preparation. Residential bases along the coast have large amounts of shell and are often termed shell middens.

The Encinitas Tradition as originally defined (Warren 1968) applied to all of the non-desert areas of southern California. Recently, four patterns within the Encinitas Tradition have been proposed which apply to different regions of southern California (Sutton and Gardner 2010). The Topanga Pattern includes archaeological material from the Los Angeles Basin and Orange County. The Greven Knoll Pattern pertains to southwestern San Bernardino County and western Riverside County (Sutton and Gardner 2010). Each of the patterns is divided into temporal phases. The Topanga Pattern included the Los Angeles Basin and Orange County. The Topanga I phase extends from 8,500 to 5,000 BP and Topanga II runs from 5,000 to 3,500 BP. The Topanga Pattern ended about 3,500 BP with the arrival of Takic speakers, except in the Santa Monica Mountains where the Topanga III phase lasted until about 2,000 BP.

The Encinitas Tradition in inland areas east of the Topanga Pattern (southwestern San Bernardino County and western Riverside County) is the Greven Knoll Pattern (Sutton and Gardner 2010). Greven Knoll I (9,400 to 4,000 BP) has abundant manos and metates. Projectile points are few and are mostly Pinto points. Greven Knoll II (4,000 to 3,000 BP) has abundant manos, metates, and core tools. Projectile points are mostly Elko points. The Elsinore site on the east shore of Lake Elsinore was occupied during Greven Knoll I and Greven Knoll II. During Greven Knoll I faunal processing (butchering) took place at the lakeshore and floral processing (seed grinding), cooking, and eating took place farther from the shore. The primary foods were rabbit meat and seeds from grasses, sage, and ragweed. A few deer, waterfowl, and reptiles were consumed. The recovered archaeological material suggests that a highly mobile population visited the site at a specific time each year. It is possible that their seasonal round included the ocean coast at other times of the year. These people had an unspecialized technology as exemplified by the numerous crescents, a multi-purpose tool. The few projectile points suggest that most of the small game was trapped using nets and snares (Grenda 1997). During Greven Knoll II, which included a warmer drier climatic episode known as the Altithermal, it is thought that populations in interior southern California concentrated at oases and that Lake Elsinore was one of them. The Elsinore site (CA-RIV-2798) is one of five known Middle Holocene residential sites around Lake Elsinore. Tools were mostly manos, metates, and hammerstones. Scraper planes were absent. Flaked-stone tools consisted mostly of utilized flakes used as scrapers. The Elsinore site during the Middle Holocene was a “recurrent extended encampment” that could have been occupied during much of the year.

The Encinitas Tradition lasted longer in inland areas because Takic speakers did not move east into these areas until circa 1,000 BP. Greven Knoll III (3,000 to 1,000 BP) is present at the Liberty Grove site in Cucamonga (Salls 1983) and at sites in Cajon Pass that were defined as part of the Sayles Complex (Kowta 1969). Greven Knoll III sites have a large proportion of manos and metates and core tools as well as scraper planes. Kowta (1969) suggested the scraper planes may have been used to process yucca and agave. The faunal assemblage consists of large quantities of lagomorphs (rabbits and hares) and lesser quantities of deer, rodents, birds, carnivores, and reptiles.

3.1.4 Palomar Tradition (1,250 to 150 BP)

The material culture of the inland areas where Takic languages, which form a branch or subfamily of the Uto-Aztecan language family, were spoken at the time of Spanish contact is part of the Palomar Tradition (Sutton 2011). San Luis Rey I Phase (1,000 BP to 500 BP) and San Luis Rey II Phase (500 BP to 150 BP) pertain to the area occupied by the Luiseño at the time of Spanish contact. The Peninsular I (1,000 BP to 750 BP), Peninsular II (750 BP to 300 BP), and Peninsular III (300 to 150 BP) phases are used in the areas occupied by the Cahuilla and Serrano (Sutton 2011).

San Luis Rey I is characterized by Cottonwood Triangular arrow points, use of bedrock mortars, stone pendants, shell beads, quartz crystals, and bone tools. San Luis Rey II sees the addition of ceramics, including ceramic cremation urns, red pictographs on boulders in village sites, and steatite arrow straighteners. San Luis Rey II represents the archaeological manifestation of the antecedents of the historically known Luiseño (Goldberg 2001). During San Luis Rey I there were a series of small permanent residential bases at water sources, each occupied by a kin group (probably a lineage). During San Luis Rey II people from several related residential bases moved into a large village located at the most reliable water source (Waugh 1986). Each village had a territory that included acorn harvesting camps at higher elevations. Villages have numerous bedrock mortars, large dense midden areas with a full range of flaked and ground stone tools, rock art, and a cemetery.

3.2 Ethnography

The Project Area is within the traditional territorial boundaries of the Serrano group of Native Americans. However, territorial boundaries were not static, often expanding and contracting over time. The Project Area, although within the traditional boundaries of Serrano territory, is situated near the edge of that boundary, and near the territorial boundaries of two additional Native American groups who likely occupied this area periodically throughout time. These groups are the Cahuilla and Gabrieliño groups of Native Americans. Ethnographic information pertaining to these three Native American groups with traditional ties to the area are provided below.

3.2.1 Cahuilla

Prior to the arrival of European-Americans in the region, Indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber (1925, 1936), and others (i.e., Driver 1961; Murdock 1960), recognized the uniqueness of California's Indigenous groups and classified them as belonging to the California culture area. Kroeber (1925) further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central.

Ethnographic accounts of Native Americans indicate that the Project Area is located predominantly within the original territory of the Cahuilla. The Cahuilla spoke a Takic language. The Takic group of languages is part of the Uto-Aztecan language family. The Cahuilla occupied a territory ranging from the San Bernardino Mountains in the north to the Chocolate Mountains and Borrego Springs in the south, and from the Colorado Desert in the east to Palomar Mountain in the west. They engaged in trade, marriage, shared rituals, and war with other groups of Native Americans whose territories they overlapped, primarily the Serrano and Gabrielino (Bean 1978, 1972; Kroeber 1925).

Cahuilla subsistence consisted of hunting, gathering, and fishing. Villages were often located near water sources, most commonly in canyons or near drainages on alluvial fans. Major villages were fully occupied during the winter, but during other seasons task groups made periodic forays to collect various plant foods, with larger groupings from several villages organizing for the annual acorn harvest (Bean and Saubel 1972). Bean and Saubel (1972) have recorded the use of several hundred species of plants used for food, building/artifact materials, and medicines. The major plant foods included acorns, pinyon nuts, and various seed-producing legumes. These were complemented by agave, wild fruits and berries, tubers, cactus bulbs, roots and greens, and seeds.

Hunting focused on both small to medium-sized mammals, such as rodents and rabbits, and large mammals, such as pronghorn sheep, mountain sheep, and mule deer. Hunting was done using the throwing stick or the bow and arrow, though nets and traps were also used for small animals (Bean 1972).

Cahuilla buildings consisted of dome-shaped or rectangular houses, constructed of poles covered with brush and above-ground granaries (Bean 1978; Strong 1929). Other material culture included baskets, pottery, and grinding implements; stone tools, arrow shaft straighteners and bows; clothing (loincloths, blankets, rope, sandals, skirts, and diapers); and various ceremonial objects made from mineral, plant, and animal substances (Bean 1972).

As many as 10,000 Cahuilla may have existed at the time of European contact in the 18th century (Bean 1978). Circa 1900, Cahuilla lived in the settlements of La Mesa, Toro, and Martinez on the Augustin and Toro Indian reservations east and southeast of the Project Area (USGS 1904). As of 1974, approximately 900 people claimed Cahuilla ancestry (Bean 1978).

3.2.2 Serrano

The Project Area is located within the territory known to have been occupied by the Serrano group of Native Americans at the time of contact with Europeans, around 1769. The Serrano occupied an area in and around the San Bernardino Mountains and northward into the Mojave Desert. Their territory also extended west along the north slope of the San Gabriel Mountains, east as far as Twentynine Palms, north into the Victorville and Lucerne Valley areas, and south to the Yucaipa Valley and San Jacinto Valley (Cultural Systems Research 2005). The Serrano speakers in the Mojave Desert who lived along the Mojave River were known as Vanyume. Serrano is a language within the Takic family of the Uto-Aztecan language stock.

The Serrano were mainly hunters and gatherers who occasionally fished. Game hunted included mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Vegetable staples consisted of acorns, pinyon nuts, bulbs and tubers, shoots and roots, juniper berries, mesquite, barrel cacti, and Joshua tree (Bean and Smith 1978).

A variety of materials were used for hunting, gathering, and processing food, as well as for shelter, clothing, and luxury items. Shells, wood, bone, stone, plant materials, and animal skins and feathers were used for making baskets, pottery, blankets, mats, nets, bags and pouches, cordage, awls, bows, arrows, drills, stone pipes, musical instruments, and clothing (Bean and Smith 1978).

Settlement locations were determined by water availability, and most Serranos lived in villages near water sources. Houses and ramadas were round and constructed of poles covered with bark and tule mats (Kroeber 1925). Most Serrano villages also had a ceremonial house used as a religious center. Other structures within the village might include granaries and sweathouses (Bean and Smith 1978).

Serrano social and political units were clans, patrilineal exogamous territorial groups. Each clan was led by a chief who had both political and ceremonial roles. The chief lived in a principal village within the clan’s territory. The clans were part of a moiety system such that each clan was either a wildcat or coyote clan and marriages could only occur between members of opposite moieties (Earle 2004). On the north side of the San Bernardino Mountains, clan villages were located along the desert-mountain interface on Deep Creek, on the upper Mojave River, in Summit Valley, and in Cajon Pass. The principal plant food available near these villages was juniper berries. These villages also had access to mountain resources, such as acorns and pinyon nuts.

Partly due to their mountainous and desert inland territory, contact between Serrano and European-Americans was minimal prior to the early 1800s. In 1819, an *asistencia* (mission outpost) was established near present-day Redlands and was used to help relocate many Serrano to Mission San Gabriel. However, small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture. Today, most Serrano live either on the Morongo or San Manuel reservations (Bean and Smith 1978).

3.2.3 Gabrieliño

Ethnographic accounts of Native Americans indicate that the Gabrieliño (also known as Gabrieleno, or Tongva) once occupied the region that encompasses the Project Area. At the time of contact with Europeans, the Gabrieliño were the main occupants of the southern Channel Islands, the Los Angeles Basin, much of Orange County, and extended as far east as the western San Bernardino Valley. The term *Gabrieliño* came from the group's association with Mission San Gabriel Arcángel, established in 1771. The Gabrieliño are believed to have been one of the most populous and wealthy Native American tribes in southern California prior to European contact (Bean and Smith 1978; McCawley 1996; Moratto 1984) and spoke a Takic language. The Takic group of languages is part of the Uto-Aztecan language family.

The Gabrieliño occupied villages located along rivers and at the mouths of canyons. Populations ranged from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. Gabrieliño society was organized by kinship groups, with each group composed of several related families who together owned hunting and gathering territories. Settlement patterns varied according to the availability of floral and faunal resources (Bean and Smith 1978; McCawley 1996; Miller 1991).

Vegetal staples consisted of acorns, chia, seeds, pinyon nuts, sage, cacti, roots, and bulbs. Animals hunted included deer, antelope, coyote, rabbits, squirrels, rodents, birds, and snakes. The Gabrieliño also fished and collected marine shellfish (Bean and Smith 1978; McCawley 1996; Miller 1991).

By the late 18th century, Gabrieliño population had significantly dwindled due to introduced European diseases and dietary deficiencies. Gabrieliño communities disintegrated as families were taken to the missions (Bean and Smith 1978; McCawley 1996; Miller 1991). However, current descendants of the Gabrieliño are preserving Gabrieliño culture.

3.3 Project Area History

The City of Redlands is situated on a portion of the land known during the Mexican Period as Rancho San Bernardino, which was acquired from the Mexican government by Don Antonio Maria Lugo and his three sons in 1842. Around 1830, prior to the establishment of Rancho San Bernardino, a small a*sistencia*, or outpost chapel of the San Gabriel Mission, was constructed in what is now the western outskirts of Redlands, and a small Mexican settlement called San Bernardino existed west of the chapel. The Lugos sold Rancho San Bernardino to Mormon settlers in 1851, who founded the modern City of San Bernardino at its present site (Cleland 1941; Moore 1987; Richards 1966).

The arrival in the San Bernardino area of the Southern Pacific Railroad in the late 1870s and the Atchison, Topeka, and Santa Fe Railway in the mid-1880s increased communications, travel, and shipping between the region and Los Angeles, as well as other parts of the country. A land boom brought about by inexpensive rail fares and aggressive real estate promotions was in progress by the late 1880s. Many new families began to arrive and numerous small towns, including Redlands, were founded. The Redlands

Colony was formed in 1881 by Frank E. Brown, a civil engineer from Connecticut, and Edward G. Judson, a businessman from New York. The original settlement comprised 160 acres around the present-day intersection of Center Street and Cypress Avenue. By 1888, the business center of Redlands was established at its present location surrounding the intersection of Orange and State streets, and the community had grown to encompass several thousand acres with citrus agriculture as its primary industry. The City of Redlands was incorporated that same year (Burgess 1981; Kupfer 1979; F. Moore 1987; W. Moore 1983).

The new City of Redlands was subdivided from the beginning in anticipation of a quickly growing population, but the economic depression of the 1890s resulted in most early 20th century residential development, prior to World War II, taking place in the area south and west of present-day Redlands Boulevard (the road curves as it passes through the community, changing from an east-west to a northwest-southeast alignment).

Citrus farming in San Bernardino Valley soon became centered in the growing community of Redlands. In 1883, Brown, always looking for a better source of water, and Hiram Barton, Dr. Barton’s son and a prominent Redlands grower and rancher, set out on a camping trip up the Santa Ana River Canyon to assess Bear Valley as a site for a dam and reservoir for Redlands’ increasing irrigation needs. Brown returned to Redlands in a fever of excitement over the possibilities he and Barton had seen. He immediately bought a 20-day option on the valley from its two principal owners, Los Angeles banker J. S. Slauson and the Southern Pacific Railroad. Within those 20 days, Brown managed to raise $360,000 from investors and incorporate the Bear Valley Land and Water Company to purchase the valley’s land, as well as its water rights (Robinson 1989). By November of 1884, a 240-foot-long, 52-foot-high dam had been completed, at a cost of $75,000. By the following spring, a 1,500-acre, 45-foot-deep reservoir had formed—the beginnings of Big Bear Lake. Irrigation water from the lake reached Redlands for the first time on July 10, 1885 (Hinckley 1956; Richards 1966; Robinson 1989).

By the early 20th century, Redlands had a population of more than 5,000, and had gained the reputation of being the navel orange capital of the world, with over 15,000 acres planted in citrus and more than two dozen packing houses. The greatest disaster in the city’s early decades came in 1913, when a three-day freeze destroyed most of the citrus crop and killed thousands of orange trees. Many farmers were left bankrupt, but the community worked together and slowly recovered. New trees were planted, and Redlands regained its leadership as a navel orange center. The citrus industry continued to thrive until after World War II, when land values began to make it more financially worthwhile to sell to developers than to continue to farm (Burgess and Gonzales 2004).

During the post-World War II period, Redlands, like the rest of Southern California, saw significant population growth and development. New population, particularly veterans, flooded into California in pursuit of opportunities in new businesses that sprang from wartime military labor, new residences made feasible by Veterans Administration loans, and GI Bill-funded education. Redlands had a variety of amenities, including a neighboring military post, the University of Redlands, and former orange groves that developed into single-family houses. The city's population rose from 14,300 in 1940 to 18,400 in 1950, 27,000 in 1960, 36,000 in 1970, and 43,000 in 1980. This caused significant changes in the city's character and architectural environment (City of Redlands 2017).

With the economic prosperity and need for new housing immediately after World War II, citrus groves began to give way to housing tracts, and construction of large apartment complexes began in the early 1960s. The local citrus industry never regained the prominence it had enjoyed before the Great Depression. Florida orange producers dominated the canned orange concentrate industry, first for the military and then for civilians. Following the war, these goods grew even more popular due to their low cost and long shelf life, while demand for whole fresh oranges decreased. Redlands producers found themselves packaging fruit for a rapidly diminishing market. Furthermore, the increasing Southern California smog proved problematic for orange groves. During the 1950s and 1960s, dwindling revenues prompted growers to sell more and more of their land for subdivision construction. Packing houses dwindled in number, leaving only a handful functioning (City of Redlands 2017).

This trend of increasing residential and commercial development has continued to the present day and very little of the agricultural setting of early Redlands remains. By 1980, Redlands had changed dramatically from its early days of cottages, mansions, and brick commercial blocks to Ranch, Modern, and Minimal Traditional buildings from the postwar boom. The population had increased to 43,000. The agricultural business was just a minor part of the local economy, with large orange groves reduced to a few acres here and there, and the majority of the remaining packing houses set to be dismantled to make way for even more commercial and industrial development. Redlands citizens have been commonly employed in manufacturing, aerospace research, and high-tech industries. (City of Redlands 2017). As its citrus agriculture gradually fades into history, Redlands continues to prosper while maintaining its downtown core and surrounding neighborhoods reminiscent of a small early 20th century city (City of Redlands 2022).

The Legacy of Irrigation Channels in California

Irrigation canal construction techniques have varied greatly throughout California's history, from the relatively short, hand-dug, early masonry and tile ditches, to horse-scraped and hand-dug earthen irrigation ditches, to the large concrete-lined, machine-formed irrigation channels of the middle decades of the 20th century. The remaining physical resources on the landscape today bear witness to these shifts in scale, building methods, and engineering understanding. There is significant geographical diversity in the adoption and distribution of new technology, such as where and when concrete replaced wood in large irrigation canal engineering projects. These regional variances can be explained in part by cultural traditions about water management, ownership of water rights, and natural considerations, but economics, politics, and the establishment of various types of irrigation institutions all played important roles.

Older channels were frequently subject to significant alterations over time. A frequent move was to enlarge the system to service larger areas. Unless pumps are utilized, irrigation channels rely on gravity to convey water, and they can only service land below the channel's water level. As irrigated area increased, water corporations generally combined smaller ditch systems, relocated the source of diversion upstream, and constructed a high-line channel to serve new land. Pioneer channels were regularly absorbed into bigger networks, most commonly by irrigation districts, in order to draw in additional potentially irrigable area. Segments of previous irrigation systems may stay substantially intact within the wider framework of a new irrigation system, or the alterations may be such that the old distinct irrigation system becomes, in effect, a standard component of a new 1920s irrigation district channel (California Department of Transportation [Caltrans] 2000).

Open Channels

Irrigation channels, like LPA-003, are perhaps the most frequent channel type in California. These conduits supply water for pastures, row crops, orchards, and vineyards and come in a variety of sizes, shapes, and materials. Like other channels, they are usually part of a larger system. Water is routed from a storage dam or diversion into a main channel, then into laterals, and finally into individual farm distribution ditches via outlet gates or other control structures. In regions like Southern California, much of the distribution system is underground, with just the main channels, or trunk lines, remaining above ground. In many regions, the main channels remain unlined, although in others, intensive channel lining schemes have been implemented this century to reduce seepage losses.

The cross section or profile of open channels varies depending on the conduit's material and construction style. When built in rock, the channel was more rectangular but the channel shape changed to trapezoidal, depending on the material used. Early scraper-built channels in the Central Valley's alluvial soils featured rounded bottoms and lengthy side slopes, with rounded berms mounded up on each side of the cut. In comparable places, irrigation channels cut with contemporary technology and blades are V-shaped, with steep side slopes and flat wide berms.

In terms of width-to-depth ratio, the most hydraulically efficient channel would have a hydraulic radius that is half the depth of the water. Thus, the channel's breadth would be double its depth. However, in sidehill areas, it is more cost-effective to build a smaller, deeper channel, and channel builders frequently chose an inexpensive design over the most hydraulically efficient one. According to a 1934 research, the hydraulic radius of hydroelectric channels in California ranged from 0.5 to 0.8 times the water depth, with an average of 0.6. The figures for hydraulic mining and irrigation channels appear to be comparable. The reason for any significant deviation from this ratio should be examined. In a cold environment, narrow, deep channels are less likely to freeze over than wide, shallow ones of the same capacity, hence a different ratio may be utilized to decrease ice formation.

In every dry or semi-arid region, water system operators and management strive to reduce losses due to evaporation and seepage. In California, hundreds of miles of originally earthen ditches have been coated with a less permeable surface or buried in pipe. Lined channels may also transport more water by moving it quicker, and they can protect the banks and bottom from scouring caused by high-velocity water.

Channels were bordered in the 19th century with irregularly coursed stone pavement or cobblestone, which was normally dry placed and 12 to 18 inches thick. Concrete and shotcrete (gunite) linings averaging 2 to 4.5 inches thick were used throughout the 20th century. Concrete channels have a higher carrying capacity than rough stone or clay channels, holding almost twice as much water in the same space. Lining channels with concrete can reduce maintenance costs, reduce seepage loss, and boost carrying capacity for irrigation companies and agencies with appropriate money (Caltrans 2000).

3.4 Personnel Qualifications

Registered Professional Archaeologist (RPA) Sonia Sifuentes, who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeology, supervised this cultural resource investigation. Associate Archaeologist Evelyn Hildebrand, RPA and Steve Wintergerst conducted the fieldwork. Staff Archaeologist Michael M. DeGiovine, RPA, Associate Archaeologist Julian E. Acuña, RPA, and Associate Archaeologists Nicholas Bizzell, Evelyn Hildebrand, RPA and Steve Wintergerst prepared the technical report. Architectural historian Andrew Bursan, MCRP provided the built environment evaluation. Lisa Westwood, RPA provided technical report review and quality assurance.

Sonia Sifuentes is a Senior Archaeologist at ECORP and has more than 14 years of experience in cultural resources management, primarily in southern California. Ms. Sifuentes holds an M.S. in Archaeology and meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. She has participated in and supervised numerous surveys, test programs, data recovery excavations, and construction monitoring compliance for both prehistoric and historical sites; and has cataloged, identified, and curated thousands of artifacts. She has conducted evaluations of cultural resources for eligibility for the NRHP and CRHR. Ms. Sifuentes is experienced in the organization and execution of field projects in compliance with Section 106 of the NHPA and CEQA. She has contributed to and authored numerous cultural resources technical reports, research designs, and cultural resources management plans.

Evelyn Hildebrand, RPA is an Associate Archaeologist with over five years of experience working in cultural resource management across California. She holds an M.A. in Applied Archaeology and a B.A. in Anthropology with a focused curriculum in archaeology. She meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. She has participated in various aspects of archaeological fieldwork including survey, test excavation, data recovery, artifact analysis, construction monitoring, both as an archaeological monitor and field lead, and the recording and recovery of pre-contact and historic-period archaeological sites.

Julian E. Acuña, RPA is an Associate Archaeologist with over six years of experience in cultural resources management. Mr. Acuña holds an M.A. in Applied Archaeology and a B.A. Cum Laude in Anthropology from California State University-San Bernardino. He meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. He has participated in various aspects of archaeological fieldwork including survey, test excavations, construction monitoring, the recording of both pre-contact and historic-period archaeological sites, and laboratory work for the analysis and cataloging of artifacts from multi-component sites.

Michael M. DeGiovine, RPA is a Staff Archaeologist with over 15 years of experience in cultural resources management. He meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. Mr. DeGiovine holds an M.A. in Anthropology from California State University, Fullerton in addition to a B.A in Anthropology from the University of California, San Diego. He has prepared or contributed to environmental documents, such as Environmental Impact Reports/Environmental Impact Statements or Cultural Resource studies that deal with CEQA and NHPA Sections 106 and 110. Mr. DeGiovine has coordinated and cooperated with primary contractors, clients, and other environmental stakeholders to ensure that projects meet environmental compliance and are completed expeditiously.

Nicholas Bizzell is an Associate Archaeologist with ECORP and has over 11 years of experience in cultural resources management. He holds a B.A. in Anthropology from Sonoma State University in Rohnert Park, California. Mr. Bizzell has participated in numerous archaeological projects throughout California, experience that includes working with clients in both public and private sectors. Mr. Bizzell has substantial archaeological experience with cultural resources monitoring, inventory surveys, excavation and subsurface testing, and laboratory analysis for projects in northern and southern California. Additionally, Mr. Bizzell is cross trained as a paleontological monitor for projects requiring both archaeological and paleontological monitoring.

Steven Wintergerst is an Associate Archaeologist with 14 years of experience in cultural resources management, and has been cross-trained in Paleontology for 12 years. Mr. Wintergerst holds a B.A. in Anthropology. He has participated in all aspects of the archaeological field and laboratory process. Although he has worked throughout western Arizona and California, the majority of his experience is in Riverside, San Bernardino, San Diego, Kern, Inyo, and Los Angeles counties of southern California. His experience has involved working as an archaeological crew chief, archaeological technician, archaeological monitor, paleontological monitor, and paleontological preparator. He is experienced in the organization and execution of field projects in compliance with CEQA. He has conducted evaluations of cultural resources for eligibility for the NRHP and CRHR.

Andrew Bursan is an Architectural Historian with 16 years of experience in historic preservation and land planning. He has worked on a variety of projects with organizations like Caltrans, LA County Metro, and several city governments, including Pasadena, Santa Monica, San Francisco, and Los Angeles. Andrew's expertise covers project management, architectural surveys, historical assessments, and extensive historical research. He has contributed to historic context statements, technical reports, and impact analyses for cultural resources.

Lisa Westwood, RPA has 27 years of experience and meets the Secretary of the Interior’s Professional Qualifications Standards for prehistoric and historical archaeology. She holds a B.A. in Anthropology and an M.A. in Anthropology (Archaeology). She is the Director of Cultural Resources for ECORP.

3.5 Records Search Methods

ECORP staff conducted and completed a records search for the Project Area at the South Central Coastal Information Center (SCCIC) of the CHRIS at California State University-Fullerton, on September 7, 2022 (Appendix A). The purpose of the records search was to determine the extent of previous surveys within a 1-mile (1,600-meter) radius of the Proposed Project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in San Bernardino County, the following historic references were also reviewed: BERD (OHP 2022a); the National Register Information System (National Park Service [NPS] 2022); OHP California Historical Landmarks (CHL; OHP 2022b); CHL

(OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Caltrans Local Bridge Survey (Caltrans 2020); Caltrans State Bridge Survey (Caltrans 2019), and *Historic Spots in California* (Kyle 2002).

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2022). Historic maps reviewed include:

- the 1899 USGS Redlands, California topographic quadrangle map (1:62,500 scale);
- the 1954 USGS Redlands, California topographic quadrangle map (1:24,000 scale);
- the 1967 USGS Redlands, California topographic quadrangle map (1:24,000 scale); and
- the 1975 USGS Redlands, California topographic quadrangle map (1:24,000 scale).

ECORP reviewed historic aerial photos for any indications of property usage and built environments taken in the years 1938, 1959, 1966, 1968, 1980, 1984, 1985, and 1994.

3.6 Sacred Lands File Coordination Methods

In addition to the records search, ECORP contacted the California Native American Heritage Commission (NAHC) on August 9, 2022 to request a search of the Sacred Lands File for the Project Area (Appendix B). This search will determine whether or not the California Native American tribes within the Project Area have recorded Sacred Lands, because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding TCRs, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The lead agencies have not delegated authority to ECORP to conduct tribal consultation.

3.7 Other Interested Party Consultation Methods

ECORP mailed letters to the Redlands Area Historical Society on August 24, 2022 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area (Appendix A).

3.8 Field Methods

ECORP subjected the APE to an intensive pedestrian survey on September 21 to 22, 2022 and October 5, 2022 under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using 15-meter transects (Figure 2). ECORP expended two person-days in the field. At the time, the ground surface was examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

Standard professional practice requires that all cultural resources encountered during the survey be recorded using Department of Parks and Recreation (DPR) 523-series forms approved by the California OHP. The resources are usually photographed, mapped using a handheld Global Positioning System receiver, and sketched as necessary to document their presence using appropriate DPR forms.

4.0 RESULTS

4.1 Records Search

The records search consisted of a review of previous research and literature, records on file with the SCCIC for previously recorded resources, and historical aerial photographs and maps of the vicinity.

4.1.1 Previous Research

Forty previous cultural resource investigations have been conducted in or within 1 mile of the property, covering approximately 5 percent of the total area surrounding the property within the records search radius. One of the 40 studies was conducted within the Project Area (Table 1) and the other 39 were within the 1-mile radius. These studies revealed the presence of a single pre-contact habitation site, and historical sites including rock walls and sites associated with historic mining activities. The previous studies were conducted between 1985 and 2014.

Table 1. Previous Cultural Studies within the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
SB-01490	Lerch Michael K and Weil, Edward B.	Cultural Resource Survey: Mission Zanja Creek Flood Control Project, Redlands, California	1985	No
SB-01521	Brock, James	Archaeological Field Reconnaissance of the Proposed Lugonia Postal Station Site in Redlands, California	1985	No
SB-01783	Hornbeck, David and Botts, Howard	Seven Oaks Dam Project: Water Systems	1988	No
SB-01810	Ross, Lester A.	Archaeological Monitoring of the Glaze Auto Center Project Site at the Southeast Corner of Oriental and Texas Streets, Redlands, San Bernardino County, California	1988	No
SB-02466	Lerch, Michael K.	Cultural Resources Assessment of Tentative tract 15304. City of Redlands, San Bernardino County, California	1991	No
SB-02762	Weaver, Richard A.	Richmond Road 4-Lane Project	1992	No

Table 1. Previous Cultural Studies within the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
SB-02938	Alexandrowicz, J. Stephen, Alexandrowicz, Susan R. and Taskiran, Alyse	Historic Preservation Investigations for the Redlands Theatre Project, City of Redlands, County of San Bernardino, California: The Archival Research Program	1994	No
SB-03064	White, Laurie and White, Robert S.	An Archaeological Assessment of the 124+/- Acre Concept Plan 5 Citrus Plaza Project, Redlands, California	1995	No
SB-03137	Grenda, Donn R. and Gray, Deborah W.	Historic resources Field Survey of A Parcel on the Southwest corner of Orange & Pearl Streets in Redlands, California	1996	No
SB-03675	Padon, Beth and Swope, Karen K.	Redlands Chinatown Archaeological Investigations for Krikorian Premier Theater Project, Redlands, San Bernardino County, California	1997	No
SB-03742	Budinger, Fred	An Archaeological Assessment of the Proposed Verizon Buckeye Unmanned Cellular Telecommunication Site to be Located at 27630 W Pioneer Ave, Redlands California	2001	No
SB-03748	Waugh, Rebecca and Johnson, Greg S.	Archaeological Monitoring & Testing: The Boston Market Parcel, Redlands, California	1998	No
SB-03750	Love, Bruce	Westside Landfill Expansion Project. 29PP	2000	No
SB-04053	Mclean, Deborah K.B.	Archaeological Assessment: Redland I & II, Former Manufactured Gas Plant Sites, City of Redlands, San Bernardino County, California	2002	No
SB-04058	Dice, Michael	Revised Records Search Results for Sprint PCS Telecommunications Facility SB38xc926b (Stow-Away Storage), 1519 W. Lugonia, Redlands, San Bernardino County, California	2002	No
SB-04061	Grenda, Donn R.	612 Lawton, Redlands, California, Archaeological Monitoring Results.	2003	No
SB-04104	Mckenna, Jeanette A	An Archaeological Review of Standing Structures Located Within the Proposed Redlands Unified School District's Proposed New School Site, Redlands, San Bernardino County, California	2004	No

Table 1. Previous Cultural Studies within the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
SB-04859	Budinger, Fred E.	An Archaeological Resource Survey of 8.6 Acres for the Nevada Street Project Northwest of the Intersection of Redlands Boulevard and Nevada Street, (APN's 0292-063-12-13-17 and-41) In the City of Redlands, County of San Bernardino, California, 92373.	2004	No
SB-04590	Grant, Martyn	Cultural Resource Assessment: Record Search and Site Visit Results Cingular Site SB-519-01, San Bernardino County, California	2004	No
SB-04593	Tang, Bai "Tom", Hogan, Michael, Tibbett, Casey and Eddy, John J.	Historical/Archaeological Resource Survey Report: Assessor's Parcel Number 0169-271-44, City of Redlands, San Bernardino County, California	2005	No
SB-04594	Billat, Lorna	Hwy 30/ CA-8817A	2005	No
SB-04597	Goodwin, Riordan	Cultural Resource Assessment: Tract 16359 (APNs 0167-071-032 and 0167-071-034), City of Redlands, San Bernardino County, California	2004	No
SB-04629	Lerch, Michael K	Cultural Resource Assessment of Tentative Tract 16390, City of Redlands, San Bernardino County, California	2003	No
SB-04811	McKenna, Jeanette A.	Supplemental Research and Documentation of 1042 Pioneer Ave. and 1074 Pioneer Ave., Redlands, San Bernardino Co., California.	2006	No
SB-05163	Tang, Bai, Hogan, Michael, Wetherbee, Matthew, Daniel Ballester and/or Terri Jacquemain	Historical/Archaeological Resources Survey Report Krikorian Theatre Expansion and Retail addition project Eureka Street and Stuart Avenue, City of Redlands, San Bernardino County, California	2005	No
SB-05164	White, Robert and White, Laura	A Cultural Resource Assessment of A 17.86 Acre Parcel Located Northeast of the Intersection of Pioneer Avenue and Nevada Street, Near Redlands, San Bernardino County	2005	No
SB-05166	Tang, Bai and Hogan, Michael	Historical/Archaeological Resources Survey Report Redlands Commons Project Assessor's Parcel Nos. 0167-091-02,04,-04, and -08, City of Redlands, San Bernardino County, California	2006	No

Table 1. Previous Cultural Studies within the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
SB-05167	Hogan, Michael	Historical/Archaeological Resources Survey: Trojan Groves, Assessor's Parcel Nos. 0167-091-09 through-12, City of Redlands, San Bernardino County, California.	2006	No
SB-05788	Sanka, Jennifer M.	Phase I Cultural Resource Assessment and Paleontological Records Review, Redlands Commerce Center Project, Redlands, San Bernardino County, California	2006	No
SB-05856	Sanka, Jennifer	Phase I Cultural Resource Assessment and Paleontological Records Review, Almond Plaza Project, Redlands, San Bernardino County, California	2008	No
SB-05857	Sanka, Jennifer M.	Phase I Cultural Resource Assessment and Paleontological Records Review, Holy Name of Jesus Catholic Church Project, Redlands, San Bernardino County, California	2008	No
SB-06435	Tang, Bai "Tom", Jacquemain, Terri and Smallwood, Josh	Historic Building Adaptive Use Study: The Historic Redlands AT&SF Railway Station, 351 Orange Street, City Of Redlands, San Bernardino County, California	2009	No
SB-07044	Goodwin, Riordan and Marvin, Judith	Cultural Resources Assessment: House Land Development Parcels APNs: 0292-055-01 and 0292-055-05 through-10, Vicinity of Redlands, San Bernardino County, California	2004	No
SB-07658	Lev-Tov, Justin E.	Archaeological Monitoring at the 424 West Stuart Ave., Redlands, California	2013	No
SB-07659	Stanton, Patrick B.	Archaeological Monitoring at the 6007 West Stuart Ave., Redlands, California	2014	No
SB-07663	McKenna, Jeanette A.	A Phase I Cultural Resources Investigation for the Newland Homes 30.94 Acre Property in the City of Redlands, San Bernardino County, California	2014	No
SB-07822	Willis, Carrie and Williams, Sarah A.	Cultural resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate IE 24763A (IE763 Orange Center), 15500 Orange St., Redlands, San Bernardino County, California	2014	No

Table 1. Previous Cultural Studies within the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
SB-08097	Long, Shelly	Archaeological Survey Report State Route 210 Mixed Flow Lane addition From Highland Avenue to San Bernardino Avenue, Cities of Highland, San Bernardino, Redlands and Portions of San Bernardino County, California	2014	No
SB-02792	Mason, Roger D. and McKenna, Jeanette A.	Cultural Resources Survey for the Cities Pavilion Project, Redlands, California	1993	Yes

The results of the records search indicate that less than 5 percent of the property has been previously surveyed for cultural resources and, therefore, a pedestrian survey was warranted.

The records search also determined that 129 previously recorded historic-era cultural resources are located within 1 mile of the Project Area. These resources are a mixture of historic-period houses and agricultural features such as water conveyance systems typical of the area's orchard agricultural period.

Table 2. Previously Recorded Cultural Resources Adjacent to or in Proximity of the Project Area REDACTED

Site Number CA-SBR-	Primary Number P-36-	Recorder and Year	Age/ Period	Site Description	Within Project Area?

4.1.2 Records

The OHP's BERD for San Bernardino County included multiple properties within 1 mile of the Project Area (OHP 2022a), as Redlands is a city that has been established since the late 1800s. There are no properties included within the Project Area. A copy of the historic properties located in Redlands on the San Bernardino County BERD is included in Appendix A.

The National Register Information System (NPS 2022) failed to reveal any eligible or listed properties within the Project Area. The nearest National Register property is located 1.3 miles southeast of the Project Area; it is the Redlands Santa Fe Depot District.

ECORP reviewed resources listed as CHL (OHP 1996) by the OHP (2022b) on October 5, 2022. CHL #42, the Asistencia, is 1.75 miles southwest of the Project Area. CHL #43; The Zanja is 0.95 mile south of the Project Area. CHL #95, Guachama Rancheria, is 2.5 miles southwest of the Project Area. CHL #994; the A. K. Smiley Public Library is 1.45 miles southeast of the Project Area. CHL #1019 the Kimberly Crest Mansion is 2.75 miles southeast of the Project Area. All of these are located within the City of Redlands. CHL #1019, the Kimberly Crest Mansion, is mentioned in *Historic Spots in California* (Kyle 2002). Kyle describes the

Kimberly Crest House as an example of architecture built during Redland's Resort Era, a time when this area was a highly desirable area for winter homes.

Historic GLO land patent records from the BLM's patent information database (BLM 2022) revealed that the southern half of the northeastern quarter of Section 21 was warranted to John F. Miller and James Forsee on July 20, 1878, under the Scrip Warrant Act of 1855 (10 Stat. 701). This warrant also included the southern half of the northwestern quarter of Section 21, totaling 160 acres, and was granted due to Forsee's service in Captain Cook's Company Virginia Militia in the War of 1812.

On the outset of the Project, the Project Area was divided into two separate parcels: APNs 0167-171-140-000 and 0167-171-070-00. After a lot alignment adjustment, these two parcels were combined into APN 0167-171-150-000. Prior to this lot alignment adjustment, ECORP conducted a RealQuest online property search for the original two separate parcels. A RealQuest online property search for the two APN are as follows: 0167-171-140-000 described the parcel as 7.52 acres of vacant land. APN 0167-171-070-00 described the parcel as 6.62 acres of vacant land.

The Caltrans Bridge State Inventory (Caltrans 2019) lists four historic-period bridges within 1 mile of the Project Area (Table 3), but none are within the Project Area. The Caltrans Bridges Local Inventory (Caltrans 2020) does not list any bridge within 1 mile of the Project Area.

Table 3. Historic-Period Bridges within 1 Mile of the Project Area

Bridge Number	Year Built	Name	Eligibility
54 0583	1962	Texas Street UC	5. Not eligible for the NRHP Criterion C
54 0591	1962	Colton & New York Avenue OC	5. Not eligible for the NRHP Criterion C
54 0592	1962	Tennessee Street OC	5. Not eligible for the NRHP Criterion C
54 0593	1962	Alabama Street OC	5. Not eligible for the NRHP Criterion C

Note: NRHP = National Register of Historic Places; OC = Overcrossing; UC = Undercrossing

The *Handbook of North American Indians* (Bean 1978) lists the nearest Native American village as *Aykat*. This village is located at the western opening of the San Gorgonio Pass just west of the town of Cabazon, approximately 21 miles southeast of the Project Area.

4.1.3 Map Review and Aerial Photographs

The review of historical aerial photographs and maps of the Project Area provide information on the past land uses of the property and potential for buried archaeological sites. This information shows the property was initially used for agriculture. Following is a summary of the review of historical maps and photographs.

- The 1899 USGS Redlands, California topographic quadrangle map (1:62,500 scale) shows the Project Area as vacant with one structure present southeast of the APE.

- The 1954 USGS Redlands, California topographic quadrangle map (1:24,000 scale) shows the Project Area as agricultural fields with the same structure visible southeast of the APE. Lugonia Street is now visible in the vicinity.
- The 1967 USGS Redlands, California topographic quadrangle map (1:24,000 scale) shows the Project Area unchanged. The nearby structure is no longer visible.
- The 1975 USGS Redlands, California topographic quadrangle map (1:24,000 scale) shows the Project Area as agricultural fields; some portions have been left fallow and others have been removed.
- A review of aerial photographs from 1938 show the Project Area as agricultural fields. What is now Lugonia Avenue is visible in the vicinity.
- Aerial photographs from 1959, 1966, and 1968 aerial photographs, the Project Area remains relatively unchanged with portions of the agricultural field left fallow.
- Aerial photographs from 1980 aerial photographs portions of the agricultural fields on the west boundary have been removed.
- Aerial photographs from 1984 and 1985 show the Project Area in the same state. Interstate 210 freeway is now visible in the vicinity.
- Aerial photographs from 1994 show Tennessee Street bounding the western portion of the Project Area. Conditions remain unchanged to present day.

In sum, the property has been historically used for agriculture and then left fallow.

4.2 Sacred Lands File Results

The results of the NAHC search of the Sacred Lands File are positive. The NAHC recommended that the lead agency to reach out to the Agua Caliente Band of Cahuilla Indians, the Augustine Band of Cahuilla Mission Indians, the Cabazon Band of Mission Indians, the Cahuilla Band of Indians, the Chemehuevi Indian Tribe, the Colorado River Indian Tribes, the Fort Mojave Indian Tribe, the Gabrieleno Band of Mission Indians-Kizh Nation, the Gabrieleno\Tongva San Gabriel Band of Mission Indians, and the Gabrielino/Tongva Nation. A record of all correspondence to date is provided in Appendix B so that the lead agency can follow up with these tribes as part of formal consultation.

4.3 Other Interested Party Consultation Results

ECORP has not received any responses to the letters sent to the Redlands Area Historical Society as of the date of the preparation of this document.

4.4 Field Survey Results

ECORP originally surveyed the Project Area for cultural resources on September 21 to 22, 2022. Surface visibility ranged from approximately less than 10 to 90 percent. Disturbances observed include discing, vegetation, homeless encampment, and modern refuse. The main vegetation types are low grasses and plants. Concrete foundations were observed within the APE but based on discernable features were determined to be modern.

Following a reconfigured Project APE that resulted in data gaps, an intensive pedestrian survey was conducted on October 5, 2022. Surface visibility was 90 percent or better. The original survey area was approximately 65 acres and was reconfigured to approximately 14 acres. Disturbances included discing, vegetation, and modern refuse. The main vegetation types observed during the visit include low grasses (i.e., Bermuda), mustard, goat head, and Russian thistle. Two historic-era concrete and brick water channels, two concrete-covered brick vaults, and two concrete tube stand pipe features were discovered. These appear connected and were designated as site LPA-003, features 1 through 6.

Figure 2. Project Area Overview from Northeastern Corner (view southwest; October 5, 2022).

Figure 3. Project Area Overview from Northwestern Corner (view southeast; October 5, 2022).

4.4.1 Cultural Resources

As a result of the previous investigation, no previously recorded resources were located within the APE. The 2022 survey by ECORP identified the one new cultural resource within the Project Area: LPA-003, a concrete and brick water conveyance system. Site description follows, and confidential DPR site record is provided in Appendix D.

4.4.1.1 LPA-003

Resource LPA-003 is a water conveyance system consisting of six features: **REDACTED**.

As components of a larger irrigation system, LPA-003 helped to sustain orange groves located immediately northwest of Redlands. For much of the 20th century, the area surrounding Redlands formed "the heart of the largest navel orange producing region in the world" (City of Redlands 2022). Groundwater pumping provided much of the area's irrigation water. Brick channels and concrete pipes and standpipes helped to distribute the water across the landscape of orange groves. Working examples of this infrastructure remain evident in historic groves preserved at the City of Redland's Prospect Park (Graham 2011).

LPA-003 was likely built in 1945, as indicated by **REDACTED**.

4.4.2 Evaluation of Cultural Resources

LPA-003 does not meet any of the criteria for listing in the NRHP, CRHR, or as a City of Redlands Historic Resource individually or as part of an existing historic district, as demonstrated below.

NRHP/CRHR Criterion A/1

To be eligible under Criterion A/1, a water conveyance system must be linked to specific major events or significant patterns of occurrences. LPA-003 was constructed circa 1945 as an irrigation system that sustained orange groves immediately northeast of Redlands and is associated with the trend of 1940s-era citrus agricultural development in Redlands. Despite the association, LPA-003 is a commonplace example of its type, and many similar brick channels and concrete standpipes exist both in Redlands and San Bernardino County. Research did not find that the construction of the resource represented a significant innovation in the development of water conveyance. Therefore, archival research indicates that LPA-003 is not associated with events that have made a significant contribution to the broad patterns of our history at the local level; therefore, it is not eligible for the NRHP/CRHR under Criteria A/1.

NRHP/CRHR Criterion B/2

For eligibility under Criterion B/2, a resource must be associated with an important person's productive life and must be the property that is most closely associated with that person. Research did not uncover any individuals directly associated with the construction or maintenance of LPA-003. Local farm crews most likely built and maintained LPA-003 over the course of its history. The resource, however, is not associated with the lives of persons significant in our past, and it is not eligible for the NRHP/CRHR under Criteria B/2.

NRHP/CRHR Criterion C/3

For water conveyance systems to be found eligible under Criterion C/3 they should exhibit engineering or design value or represent the earliest, best preserved, largest, or sole surviving example of type. Resource LPA-003 consists of **REDACTED**. These irrigation features are ubiquitous and utilitarian. Local examples include extant brick channels preserved in historic orange groves at the City of Redland's Prospect Park. The resource does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, it is not eligible for the NRHP/CRHR under Criteria C/3.

NRHP/CRHR Criterion D/4

The information potential of LPA-003 is expressed in its built form and in the historical record. It has not yielded, nor is it likely to yield, information important in history or prehistory. Foundations for irrigation systems are not associated with residential features that could provide archaeological deposits. Therefore, this site was not subjected to testing and based on other lines of evidence in the archival and material record, it is not eligible for the NRHP/CRHR under Criteria D/4.

Integrity

Resource LPA-003 possesses some integrity of location and association. It remains in its original location immediately northwest of downtown Redlands. The features remain constructed of **REDACTED** and remain associated with historic orange groves in the vicinity of Redlands. LPA-003 does not, however, possess integrity of setting, workmanship, and feeling. A suburban consumer-oriented landscape of housing tracts, freeways, and shopping centers has supplanted the rural setting of expansive orange groves. Damage to the resource's construction diminishes its craftsmanship and its ability to convey the overall aesthetic of a 20th-century irrigation system in a southern California orange grove, compromising its overall integrity.

Regardless of integrity, due to lack of historical significance, LPA-003 does not meet NRHP or CRHR eligibility criteria as an individual resource or as part of any known or suspected historic district; it is also not listed on any Certified Local Government historic property register.

City of Redlands Historic Resource Designation (Redlands City Municipal Code § 2.62.170)

A. It has significant character, interest, or value as part of the development, heritage or cultural characteristics of the city of Redlands, state of California, or the United States;

Resource LPA-003 consists of **REDACTED**. These irrigation features are ubiquitous and utilitarian. Local examples include extant brick channels preserved in historic orange groves at the City of Redland's Prospect Park. Therefore, LPA-003 does not have significant character, interest, or value as part of the development, heritage or cultural characteristics of the City of Redlands, State of California, or the United States

B. It is the site of a significant historic event;

LPA-003 was constructed circa 1945 as an irrigation system that sustained orange groves immediately northeast of Redlands and is associated with the trend of 1940s-era citrus agricultural development in Redlands. Archival research indicates that LPA-003 is not associated with events that have made a significant contribution to the broad patterns of our history at the local level and is not the site of a significant historic event.

C. It is strongly identified with a person or persons who significantly contributed to the culture, history or development of the city;

Research did not uncover any individuals directly associated with the construction or maintenance of LPA-003. Local farm crews most likely built and maintained LPA-003 over the course of its history. Therefore, LPA-003 is not strongly identified with a person or persons who significantly contributed to the culture, history or development of the city.

D. It is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type or specimen;

Irrigation features such as LPA-003 are utilitarian and **REDACTED** exist both in Redlands and San Bernardino County. Local examples include extant brick channels preserved in historic orange groves at the City of Redland's Prospect Park. Therefore, it is not one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type or specimen.

E. It is a notable work of an architect or master builder whose individual work has significantly influenced the development of the city;

LPA-003 exhibits a simplistic and utilitarian design. Based on design features and archival research, it is highly unlikely that it is a notable work of an architect or master builder whose individual work has significantly influenced the development of the city.

F. It embodies elements of architectural design, detail, materials, or craftsmanship that represents a significant architectural innovation;

Many conveyance systems like LPA-003 exist both in Redlands and San Bernardino County and research did not find that the construction of the resource represented a significant innovation in the development of water conveyance. Therefore, it does not embody elements of architectural design, detail, materials, or craftsmanship that represent a significant architectural innovation.

G. It has a unique location or singular physical characteristics representing an established and familiar visual feature of a neighborhood, community, or the city;

LPA-003 consists of **REDACTED**. It was formerly used for citrus groves but archival resources did not suggest it has a unique location or singular physical characteristics representing an established and familiar visual feature of a neighborhood, community, or the city.

H. It has unique design or detailing;

LPA-003 exhibits a simplistic and utilitarian design with no embellishment. Therefore, it does not have a unique design or detailing.

I. It is a particularly good example of a period or style;

LPA-003 was constructed circa 1945 but research did not find that the construction of the subject water conveyance system represented the work of a master. Therefore, it is not a particularly good example of a period or style.

J. It contributes to the historical or scenic heritage or historical or scenic properties of the city (to include, but not be limited to, landscaping, light standards, trees, curbings, and signs);

LPA-003 is a utilitarian water conveyance feature and is not located on a prominent street in Redlands. Due to its commonplace location, the subject property is not a primary example of scenic heritage.

K. It is located within a historic and scenic or urban conservation district, being a geographically definable area possessing a concentration of historic or scenic properties which contribute to each other and are unified aesthetically by plan or physical development. (Ord. 1954 § 8(a), 1986)

LPA-003 is in a neighborhood with a mix of property uses and architectural themes and does not have a definable area possessing a concentration of historic or scenic properties which contribute to each other and are unified aesthetically by plan or physical development.

5.0 MANAGEMENT CONSIDERATIONS

5.1 Conclusions

As a result of the field survey, ECORP identified one new historic-period resource, LPA-003. This resource has been evaluated using NRHP, CRHR, and City of Redlands Historic Resource list eligibility criteria and found not eligible for inclusion in the NRHP, CRHR, or as a City of Redlands Historic Resource. LPA-003 is not considered a historical resource under CEQA or a historic property under Section 106.

5.2 Likelihood for Subsurface Cultural Resources

The Project Area contains Holocene alluvial deposits contemporaneous with human occupation of the region. Although ECORP archaeologists did not identify pre-contact resources during the field survey, due to the presence of Holocene alluvial deposits within the Project Area and the known ephemeral waterways in the vicinity of the Project Area, a moderate potential exists for buried pre-contact archaeological sites within the Project Area.

5.3 Post-Review Discoveries

The potential always remains for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the lead agency to address any unanticipated cultural resource discoveries during Project construction. Therefore, ECORP recommends the lead agency adopt and implement the following mitigation measures to reduce potential adverse impacts to less than significant:

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

  If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.

If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

6.0 REFERENCES CITED

Bean, L. J. 1978. Cahuilla. In *Handbook of North American Indians, Volume 8, California*, edited by R. F. Heizer, pp. 575-587. Smithsonian Institution, Washington, D.C.

_____. 1972. *Mukat's People: The Cahuilla Indians of Southern California*. University of California Press, Berkeley and Los Angeles.

Bean, L. J. and K. S. Saubel. 1972. *Temalpakh (from the Earth): Cahuilla Indian Knowledge and Usage of Plants*. Malki Museum Press., Banning.

Bean, L.J. and C.R. Smith. 1978. Serrano. In: *Handbook of North American Indians, Volume 8: California*. 8: California. Robert F. Heizer, editor. p. 570-574. Published by Smithsonian Institution, Washington, D.C.

Bureau of Land Management (BLM). 2022. Bureau of Land Management, General Land Office Records, Records Automation website. http://www.glorecords.blm.gov/. Accessed August 9, 2022.

Burgess, Larry E. 1981. *Redlands: Remembrance and Reflections*. Redlands Federal Savings and Loan Association, Redlands, California.

Burgess, Larry E. and Nathan D. Gonzales. 2004. *Images of America: Redlands.* Arcadia Publishing. Charlston, South Carolina.

California Department of Transportation (Caltrans). 2020. Structure and Maintenance & Investigations, Historical Significance–Local Agency Bridges Database, Accessed August 9, 2022.

_____. 2019. Structure and Maintenance & Investigations, Historical Significance–State Agency Bridges Database, Accessed August 9, 2022.

_____. 2000. Cultural Studies Office, and JRP Historical Consulting Services, LLC. *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures*. JRP Historical Consulting Services, LLC, Davis, CA, and Caltrans. Website. Accessed February 26, 2024. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/canalsditches-a11y.pdfCity of Redlands. 2022. Citrus Heritage, https://www.cityofredlands.org/post/citrus-heritage. Accessed October 24, 2022.

_____. 2017. *Citywide Historic Context Statement*. Prepared for City of Redlands Development Services Dept, Redlands, by Architectural Resources Group, Pasadena, California.

Cleland, Robert Glass. 1941. *The Cattle on a Thousand Hills: Southern California, 1850-1870.* Huntington Library. San Marino, California.

Cultural Systems Research. 2005. *Inland Feeder Project: Final Report, Native American Ethnography and Ethnohistory*. Prepared for Metropolitan Water District of Southern California, Los Angeles. Report #RI-5088 on file at the Eastern Information Center, University of California, Riverside. Menlo Park, California.

Driver, H. 1961. *Indians of North America*. University of Chicago Press, Chicago, Illinois.

Earle, D. D. 2004. Native Population and Settlement in the Western Mojave Desert in the Eighteenth and Nineteenth Centuries. In *Proceedings of the Millennium Conference: the Human Journey and Ancient Life in California's Deserts*, *May 9-12, 2001*. Maturango Museum Press, Ridgecrest, California.

ECORP Consulting, Inc. 2020. *Results of a Biological Resources Due Diligence Assessment conducted at a 22-Acre Property in Redlands, San Bernardino County, California*.

Erlandson, J. M. 1994. *Early Hunter-Gatherers of the California Coast*. Plenum Press, New York.

Gallegos, D. 1991. Antiquity and Adaptation at Agua Hedionda, Carlsbad, California. In *Hunter-Gatherers of Early Holocene* Coastal *California*, edited by J. M. Erlandson and R. H. Colten, pp. 19-41. Perspectives in California Archaeology, Volume 1. Institute of Archaeology, University of California, Los Angeles.

Goldberg, S. 2001. *Eastside Reservoir Project: Final Report of Archaeological Investigations* (Five volumes). Applied Earthworks, Inc., Hemet, California.

Graham, Don. 2011. Prospect Park Orange Grove, 2005, https://www.flickr.com/photos/23155134@N06/6589247693/. Accessed October 24, 2022.

Grenda, D. R. 1997. *Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore: Archaeological Investigations at a Stratified Site in Southern California*. Statistical Research Technical Series No 59. Statistical Research, Inc., Tucson, Arizona.

Hinckley, Edith Parker. 1956. *Redlands' Yesterdays to 1956*. The Citrograph Press, Redlands, California.

Koerper, H. C., P. Langenwalter II, and A. Schroth. 1991. Early Holocene Adaptations and the Transition Problem: Evidence from the Allan O. Kelly Site, Agua Hedionda Lagoon. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by J. M. Erlandson and R. H. Colten, pp. 81-88. Perspectives in California Archaeology, Volume 1. Institute of Archaeology, University of California, Los Angeles.

Kowta, M. 1969. The Sayles Complex: A Late Milling Stone Assemblage from Cajon Pass and the Ecological Implications of Its Scraper Planes. *University of California Publications in Anthropology* 6. Berkeley.

Kroeber, A. L. 1936. Culture Element Distributions: III, Area and Climax. *University of California Publications in American Archaeology and Ethnology* 37(3):101-116, Berkeley, California.

_____. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington.

Kupfer, Irene Hinckley. 1979. *Growing Up In Redlands*. Arthur Commercial Press, Redlands, California.

Kyle, Douglas. 2002. *Historic Spots in California*. Stanford University Press. Stanford, California.

McCawley, William. 1996. *The First Angelinos: the Gabrielino Indians of Los Angeles*. Malki Museum Press, Ballena Press, Banning, California.

Miller, Bruce W. 1991. *The Gabrielino*. Sand River Press, Los Osos, California.

Moore, Frank E. 1987. *Redlands—Our Town*. Moore Historical Foundation, Redlands, California.

Moore, William G. 1983. *Redlands Yesterdays*. Moore Historical Foundation, Redlands, California.

Moratto, M. J. 1984. *California Archaeology*. Academic Press, Orlando.

Morton, D. M. and F. K. Miller. 2006. Geologic Map of the San Bernardino and Santa Ana 30′ x 60′ Quadrangles, California: U.S.G.S. Open-File Report 2006-1217. https://ngmdb.usgs.gov/Prodesc/proddesc_78686.htm.

Murdock, G. P. 1960. *Ethnographic Bibliography of North America,* 3rd edition. Human Relation Area Files, New Haven, Connecticut

National Park Service (NPS). 2022. National Register of Historic Places, Digital Archive on NPGallery, https://npgallery.nps.gov/NRHP/. Accessed August 9, 2022.

_____. 1983. Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. 48 FR (Federal Register) 44716-68.

Natural Resources Conservation Service (NRCS). 2022. Natural Resources Conservation Service Web Soil Survey, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed August 9, 2022.

Office of Historic Preservation (OHP). 2022a. Office of Historic Preservation's Built Environment Resource Directory (BERD), for San Bernardino County, https://ohp.parks.ca.gov/?page_id=30338. Accessed August 9, 2022.

_____. 2022b. *Office of Historic Preservation California Historical Landmarks Website*, http://ohp.parks.ca.gov/?page_id=21387. Accessed August 9, 2022.

_____. 1996. California Historical Landmarks. California Department of Parks and Recreation, Sacramento, California.

_____. 1992. California Points of Historical Interest. California Department of Parks and Recreation, Sacramento, California.

Richards, Elizabeth W. 1966. *Guideposts to History: Concerning Origins of Place and Street Names in San Bernardino County*. Santa Fe Federal Savings and Loan Association, San Bernardino, California.

Robinson, John W. 1989. *The San Bernardinos: The Mountain Country from Cajon Pass to Oak Glen: Two Centuries of Changing Use*. Big Santa Anita Historical Society, Arcadia, California.

Rondeau, M. F., J. Cassidy, and T. L. Jones. 2007. Colonization Technologies: Fluted Projectile Points and the San Clemente Island Woodworking/Microblade Complex. In *California Prehistory: Colonization, Culture, and Complexity*, edited by T. L. Jones and K. A. Klar, pp. 299-315. Altamira Press, Lanham, Maryland.

Salls, R. A. 1983. "The Liberty Grove Site: Archaeological Interpretation of a Late Milling Stone Horizon Site on the Cucamonga Plain." Master's Thesis, University of California, Los Angeles.

Strong, W. D. 1929. *Aboriginal Society in Southern California*. University of California Press, Berkeley, CA. University of California Publications in American Archaeology and Ethnology.

Sutton, M. Q. 2011. The Palomar Tradition and Its Place in the Prehistory of Southern California. *Pacific Coast Archaeological Society Quarterly* 44(4):1-74.

Sutton, M. Q. and J. K. Gardner. 2010. Reconceptualizing the Encinitas Tradition of Southern California. *Pacific Coast Archaeological Society Quarterly* 42(4):1-64.

U.S. Geological Survey (USGS). 1904. "Indio, California" 30-minute quadrangle.

Wallace, W. J. 1955. A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11:214-230.

Warren, C. N. 1968. Cultural Tradition and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams, pp. 1-14. Eastern New Mexico University Contributions in Anthropology 1. Portales, New Mexico.

_____. 1967. The San Dieguito Complex: a Review and Hypothesis. *American Antiquity* 32:168-185.

Waugh, M. G. 1986. "Intensification and Land-Use: Archaeological Indication of Transition and Transformation in a Late Prehistoric Complex in Southern California." Ph.D. diss., University of California, Davis.

LIST OF APPENDICES

APPENDIX A

Records Search Confirmation and Historical Society Coordination

California Historical Resources Information System

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: 34.00 **IC FILE NO.:**

To: South Central Coastal Information Center

Print Name: Robert J. Cunningham Date: 08/09/2022

Affiliation: ECORP Consulting, Inc.

Address: 215 North 5th Street

City: Redlands State: CA Zip: 92374

Phone: (909) 307-0046 Fax: (909) 307-0056 Email: rjcunningham@ecorpconsulting.com

Billing Address (if different than above):

Billing Email: Billing Phone:

Project Name / Reference: LPA Property Project

Project Street Address: 1325 Karon Street, Redlands, CA

County or Counties: San Bernardino

Township/Range/UTMs: T1S, R3W, Section 21 UTM 11S 482036.50mE 3770047.90mN

USGS 7.5’ Quad(s): 1996 Redlands, CA

PRIORITY RESPONSE (Additional Fee): yes ☐ / no ☐

TOTAL FEE NOT TO EXCEED: $ 1,000.00
(If blank, the Information Center will contact you if the fee is expected to exceed $1,000.00)

Special Instructions:

Information Center Use Only

Date of CHRIS Data Provided for this Request:

Confidential Data Included in Response: yes ☐ / no ☐

Notes:

California Historical Resources Information System

CHRIS Data Request Form

Mark the request form as needed. Attach a PDF of your project area (with the radius if applicable) mapped on a 7.5' USGS topographic quadrangle to scale 1:24000 ratio 1:1 neither enlarged nor reduced and include a shapefile of your project area, if available. Shapefiles are the current CHRIS standard for submitting digital spatial data for your project area or radius. **Check with the appropriate IC for current availability of digital data products.**

- Documents will be provided in PDF format. Paper copies will only be provided if PDFs are not available at the time of the request or under specially arranged circumstances.
- Location information will be provided as a digital map product (Custom Maps or GIS data) unless the area has not yet been digitized. In such circumstances, the IC may provide hand drawn maps.
- In addition to the $150/hr. staff time fee, client will be charged the Custom Map fee when GIS is required to complete the request [e.g., a map printout or map image/PDF is requested and no GIS Data is requested, or an electronic product is requested (derived from GIS data) but no mapping is requested].

For product fees, see the CHRIS IC Fee Structure on the OHP website.

1. Map Format Choice:

Select One: Custom GIS Maps ☐ GIS Data ☐ Custom GIS Maps **and** GIS Data ☒ No Maps ☐

Any selection below left unmarked will be considered a "no. "

Location Information:

	Within project area	Within 1 mi. radius
ARCHAEOLOGICAL Resource Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Locations	yes ☒ / no ☐	yes ☒ / no ☐
Report Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
"Other" Report Locations[2]	yes ☒ / no ☐	yes ☐ / no ☒

3. Database Information:

(contact the IC for product examples, or visit the SSJVIC website for examples)

	Within project area	Within 1 mi. radius
ARCHAEOLOGICAL Resource Database[1]		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☒ / no ☐	yes ☐ / no ☒
Excel Spreadsheet	yes ☐ / no ☒	yes ☐ / no ☒
NON-ARCHAEOLOGICAL Resource Database		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☐ / no ☒	yes ☐ / no ☒
Report Database[1]		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
Include "Other" Reports [2]	yes ☐ / no ☒	yes ☐ / no ☒

4. Document PDFs (paper copy only upon request):

	Within project area	Within 1 mi. radius
ARCHAEOLOGICAL Resource Records[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Records	yes ☒ / no ☐	yes ☒ / no ☐
Reports[1]	yes ☒ / no ☐	yes ☐ / no ☒
"Other" Reports[2]	yes ☒ / no ☐	yes ☐ / no ☒

CHRIS Data Request Form

5. Eligibility Listings and Documentation:

	Within project area	Within 1 mi. radius
OHP Built Environment Resources Directory[3]**:**		
Directory listing only (Excel format)	yes ☐ / no ☒	yes ☐ / no ☒
Associated documentation[4]	yes ☐ / no ☒	yes ☐ / no ☒
OHP Archaeological Resources Directory[1,5]**:**		
Directory listing only (Excel format)	yes ☒ / no ☐	yes ☐ / no ☒
Associated documentation[4]	yes ☒ / no ☐	yes ☐ / no ☒
***California Inventory of Historic Resources* (1976):**		
Directory listing only (PDF format)	yes ☒ / no ☐	yes ☐ / no ☒
Associated documentation[4]	yes ☒ / no ☐	yes ☐ / no ☒

6. Additional Information:

The following sources of information may be available through the Information Center. However, several of these sources are now available on the OHP website and can be accessed directly. The Office of Historic Preservation makes no guarantees about the availability, completeness, or accuracy of the information provided through these sources. Indicate below if the Information Center should review and provide documentation (if available) of any of the following sources as part of this request.

Caltrans Bridge Survey	yes ☐ / no ☒
Ethnographic Information	yes ☐ / no ☒
Historical Literature	yes ☐ / no ☒
Historical Maps	yes ☐ / no ☒
Local Inventories	yes ☐ / no ☒
GLO and/or Rancho Plat Maps	yes ☐ / no ☒
Shipwreck Inventory	yes ☐ / no ☒
Soil Survey Maps	yes ☐ / no ☒

---

[1] In order to receive archaeological information, requestor must meet qualifications as specified in Section III of the current version of the California Historical Resources Information System Information Center Rules of Operation Manual and be identified as an Authorized User or Conditional User under an active CHRIS Access and Use Agreement.

[2] "Other" Reports GIS layer consists of report study areas for which the report content is almost entirely non-fieldwork related (e.g., local/regional history, or overview) and/or for which the presentation of the study area boundary may or may not add value to a record search.

[3] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Includes, but not limited to, information regarding National Register of Historic Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys. Previously known as the HRI and then as the HPD, it is now known as the Built Environment Resources Directory (BERD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

[4] Associated documentation will vary by resource. Contact the IC for further details.

[5] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Previously known as the Archaeological Determinations of Eligibility, now it is known as the Archaeological Resources Directory (ARD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

Primary Nu	OTIS ID	Property N	Name	Aliases and Alias Types	St Number	St Name	City	County	Zip	Evaluation Info	District Elements	Parent Dist	Constructi	Export Date
	689622		Redlands Blvd				Redlands	San Bernardino	92373	6Y, 11/08/2019, COE_2019_1011_003			1901	3/3/2020
36-016494	482934	84561	MILL CREEK 1 POWERHOUSE	SOUTHERN CALIFORNIA EDISON^Other Name			REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1892	3/3/2020
36-016495	482939	84566	MILL CREEK 1 AND 2 COMPANY HOUSE				REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1910-1920	3/3/2020
36-016496	482933	84560	MILL CREEK 2 POWERHOUSE				REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1902	3/3/2020
36-016497	482935	84562	MILL CREEK 1 AND 2 COTTAGE				REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1910-1920	3/3/2020
36-016498	482936	84563	MILL CREEK 1 AND 2 BUNKHOUSE				REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1910-1920	3/3/2020
36-016499	482937	84564	PLANT SUPERINTENDENT HOUSE - MILL CREEK 1 AND 2				REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1910-1920	3/3/2020
36-016500	482938	84565	MILL CREEK 1 AND 2 STORAGE BARN				REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, FERC930622B			1910-1920	3/3/2020
36-016501	482940	84567	LYTLE CREEK POWERHOUSE				REDLANDS	SAN BERNARDINO		6Y, 10/19/1993, FERC930622C			1901-1904	3/3/2020
36-016503	491413	94721	SMILEY PARK HISTORIC DISTRICT				REDLANDS	San Bernardino		1S, 12/29/1994, 36-0018 | 1S, 12/29/1994, NPS-94001487-9999	463976,463978,463979,463980,463981,463982,463983,463984,463985,463986,463987,463994,463995,463996,463997,463998,463999,464000,464001,464002,464003,464004,464005,464006,464021,464022,464058,464059,464068,464069,464070,464071,464072,464073,464074,464075,464076,464077,464078,464079,464091,464092,464121,464122,464123,464124,464125,464126,464127,464128,464129,464130,464131,464132,464134,464180,464181,464182,464183,464184,464185,464186,464187,464188,464189,464199,464200,464201,464202,464203,464204,464205,464206,464207,464210,464212,464213,464214,464215,464216,464217,464219,464220,464268,464269,464270,464271,464272,464273,464274,464295,464308,464356,464357,464358,464359,464360,464361,464362,464363,464364,464365,464366,464367,464369,464377,464380,464381,464382,464383,464385,464387,464388,464389,464390,464391,464393,464394,464395,464396,464397,464398,464400,464401,464402,464413,464480,464482,464483,464484,464485,464486,464487,464488,464489,464490,464491,464492,464493,464494,464495,464497,464498,464499,464500,464501,464502,464503,464537,464541,464542,464543,464544,464545,464546,464547,464548,464555,464563,464564,464565,464566,464567,464571,464572,464573,464574,464575,464576,464577,464578,464579,464580,464581,491111,491112,491113,491114,491115,491116,491117,491118,		1887-1913	3/3/2020
36-016504	501901	108586	UNIVERSITY OF REDLANDS MEMORIAL CHAPEL				REDLANDS	SAN BERNARDINO		2S2, 08/19/1996, FEMA960603A				3/3/2020
36-016505	507329	115271	HORSE DRAWN ROAD-GRADER				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0005		507322	1898	3/3/2020
36-018759	507322	115263	SOUTHERN CA EDISON CO., SANTA ANA RIVER HYDROELECT	SOUTHERN CA EDISON CO., SANTA ANA RIVER HYDROELECTRIC SYSTEM^Other Name			REDLANDS	SAN BERNARDINO		2S2, 09/03/1987, COE870819A | 2S2, 09/03/1987, DOE-36-87-0001-9999	##		1897-1904	3/3/2020
36-018760	507324	115266	SAR 1 POWERHOUSE, BARN, AND SHOP				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0001		507322	1898	3/3/2020
36-018761	507325	115267	SAR 1 ORIGINAL SWITCHING EQUIPMENT				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0002		507322	1898	3/3/2020
36-018762	507326	115268	SAR 1 ORIGINAL UNIT				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0003		507322	1898	3/3/2020
36-018763	507327	115269	MACHINE SHOP EQUIPMENT				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0004		507322	1898	3/3/2020
36-018765	507332	115274	SAR 2 POWERHOUSE				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0007		507322	1904	3/3/2020

36-018766	507340	115282	SAR 2 UNIT AND EXCITER				REDLANDS	SAN BERNARDINO		2D2, 09/03/1997, COE870819A | 2D2, 09/03/1997, DOE-36-87-0001-0008	507322	1904	3/3/2020
36-018767	507342	115284	SAR TELEPHONE BOOTH & TELEPHONE				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0009	507322		3/3/2020
36-018769	507350	115292	SAR FLUME AND TUNNELS				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0011	507322		3/3/2020
36-018770	507353	115295	SAR 3 POWERHOUSE				REDLANDS	SAN BERNARDINO		2D2, 09/03/1987, COE870819A | 2D2, 09/03/1987, DOE-36-87-0001-0012	507322		3/3/2020
36-018771	507707	115713	MILL CREEK POWERHOUSES, REDLANDS ELECTRIC LIGHT &	MILL CREEK POWERHOUSES, REDLANDS ELECTRIC LIGHT & POWER CO.^Other Name			REDLANDS	SAN BERNARDINO		2S2, 10/19/1993, DOE-36-93-0003-9999 | 2S2, 10/19/1993, FERC930622B			3/3/2020
36-016506	464378	62086	PRESBYTERIAN CHURCH, OFFICE	36-2373-001^Survey Number	115	4TH ST	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0409-0000		1888	3/3/2020
36-016507	464377	62085	LINCOLN MEMORIAL SHRINE	36-2373-001^Survey Number	120	4TH ST	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0408-0000 | 6X, 12/29/1994, NPS-94001487-0231	491413	1932	3/3/2020
36-016508	464501	62209	MRS. W. A. HOLIDAY HOUSE	36-2373-002^Survey Number	148	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0258 | 7N, , 2373-0535-0000	491413	1888	3/3/2020
36-016509	464502	62210			152	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0259 | 7N, , 2373-0536-0000	491413	1888	3/3/2020
36-016510	464503	62211	JOHN MASON HOUSE	36-2373-002^Survey Number	154	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0260 | 7N, , 2373-0537-0000	491413	1892	3/3/2020
36-016511	464376	62084	RELIGIOUS EDUCATION CENTER	36-2373-001^Survey Number	210	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0407-0000		1915	3/3/2020
36-016512	464375	62083	SACRED HEART CONVENT	36-2373-001^Survey Number	216	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0406-0000		1915	3/3/2020
36-016513	464374	62082			242	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0405-0000		1895	3/3/2020
36-016514	464755	62465			243	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0765-0000		1920	3/3/2020
36-016515	464756	62466			245	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0403-0000 | 7N, , 2373-0766-0000		1920	3/3/2020
36-016516	464372	62080			246	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0402-0000		1895	3/3/2020
36-016517	464371	62079			247	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0401-0000		1920	3/3/2020
36-016518	464370	62078			248	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0400-0000		1900	3/3/2020
36-016519	464757	62467			249	4TH ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0767-0000		1920	3/3/2020
36-016520	464369	62077			251	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0287 | 5S2, , 2373-0399-0000	491413	1889	3/3/2020
36-016521	464402	62110			255	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0289 | 5S2, , 2373-0433-0000	491413	1892	3/3/2020
36-016522	464401	62109			303	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0292 | 5S2, , 2373-0432-0000	491413	1892	3/3/2020
36-016523	491656	95098	UNITY CHURCH	CHURCH OF THE LIVING GOD^Other Name	304	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0261	491413	1904	3/3/2020
36-016524	464400	62108			309	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0294 | 5S2, , 2373-0431-0000	491413	1898	3/3/2020
36-016525	464399	62107			310	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0430-0000		1895	3/3/2020
36-016526	491657	95099			310	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0262 | 5S2, , 2373-0430-0000	491413	1898	3/3/2020
36-016527	464398	62106			315	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0294 | 5S2, , 2373-0429-0000	491413	1888	3/3/2020
36-016528	464397	62105			316	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0263 | 5S2, , 2373-0428-0000	491413	1889	3/3/2020
36-016529	464396	62104	U.L. DIKE HOUSE	36-2373-001^Survey Number	322	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0264 | 5S2, , 2373-0427-0000	491413	1892	3/3/2020
36-016530	464395	62103			326	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0265 | 5S2, , 2373-0426-0000	491413	1890	3/3/2020
36-016531	464394	62102			330	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0266 | 5S2, , 2373-0425-0000	491413	1900	3/3/2020

36-016532	464393	62101			336	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0267 | 5S2, , 2373-0424-0000	491413	1891	3/3/2020
36-016533	464392	62100			337	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0423-0000		1920	3/3/2020
36-016534	464390	62098			342	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0268 | 5S2, , 2373-0421-0000	491413	1890	3/3/2020
36-016535	464391	62099			346	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0269 | 5S2, , 2373-0422-0000	491413	1889	3/3/2020
36-016536	491664	95106			419	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0295	491413	1904	3/3/2020
36-016537	464389	62097			420	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0420-0000 | 6X, 12/29/1994, NPS-94001487-0270	491413	1925	3/3/2020
36-016538	464388	62096			424	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0271 | 5S2, , 2373-0419-0000	491413	1904	3/3/2020
36-016539	491658	95100	J.H. KEMBLE HOUSE	NPS-94001487-0272^Historic Resources	432	4TH ST	REDLANDS	SAN BERNARDINO	92373	, ,		1910	3/3/2020
36-016540	491659	95101			438	4TH ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0273	491413	1902	3/3/2020
36-016541	464387	62095			439	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0296 | 5S2, , 2373-0418-0000	491413	1900	3/3/2020
36-016542	491660	95102			442	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0274	491413	1900	3/3/2020
36-016543	464385	62093			443	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0297 | 5S2, , 2373-0416-0000	491413	1910	3/3/2020
36-016544	464384	62092			444	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0415-0000		1910	3/3/2020
36-016545	491661	95103			444	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0275	491413	1900	3/3/2020
36-016546	464383	62091			445	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0298 | 5S2, , 2373-0414-0000	491413	1908	3/3/2020
36-016547	464382	62090			446	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0276 | 5S2, , 2373-0413-0000	491413	1910	3/3/2020
36-016548	464381	62089			451	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0299 | 5S2, , 2373-0412-0000	491413	1905	3/3/2020
36-016549	491662	95104			454	4TH ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0277	491413	1940	3/3/2020
36-016550	464380	62088			457	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0300 | 5S2, , 2373-0411-0000	491413	1900	3/3/2020
36-016551	464367	62075			502	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0278 | 5S2, , 2373-0397-0000	491413	1904	3/3/2020
36-016552	491672	95115			509	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0304	491413	1912	3/3/2020
36-016553	464366	62074			510	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0279 | 5S2, , 2373-0396-0000	491413	1904	3/3/2020
36-016554	464365	62073			516	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0280 | 5S2, , 2373-0395-0000	491413	1905	3/3/2020
36-016555	464364	62072			517	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0305 | 5S2, , 2373-0394-0000	491413	1900	3/3/2020
36-016556	464363	62071			521	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0306 | 5S2, , 2373-0393-0000	491413	1910	3/3/2020
36-016557	464362	62070			522	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0281 | 5S2, , 2373-0392-0000	491413	1920	3/3/2020
36-016558	491673	95116	WADE HOUSE		527	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0307	491413	1893	3/3/2020
36-016559	464361	62069			528	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0282 | 5S2, , 2373-0391-0000	491413	1912	3/3/2020
36-016560	464356	62064			534	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0283 | 5S2, , 2373-0386-0000	491413	1905	3/3/2020

36-016561	464357	62065			535	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0308 | 5S2, , 2373-0387-0000	491413	1900	3/3/2020
36-016562	464358	62066			541	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0309 | 5S2, , 2373-0388-0000	491413	1900	3/3/2020
36-016563	464359	62067			542	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0284 | 5S2, , 2373-0389-0000	491413	1900	3/3/2020
36-016564	464360	62068			544	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0390-0000 | 6X, 12/29/1994, NPS-94001487-0285	491413	1992	3/3/2020
36-016565	491663	95105			548	4TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0286	491413	1900	3/3/2020
36-016566	464417	62125			584	4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0450-0000		1900	3/3/2020
36-016567	464637	62345	FLETCHER PLANING MILL, TURN OF THE CENTURY	36-2373-002^Survey Number	501	5TH ST	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0672-0000		1914	3/3/2020
36-016568	464638	62346			515	5TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0673-0000		1908	3/3/2020
	541146	156489			1024	6TH ST	REDLANDS	SAN BERNARDINO	93474	6Y, 10/31/2005, HUD050801D		1895	3/3/2020
36-016569	464639	62347	REDLANDS CITRUS ASSOCIATION, ANTIQUE ARCADE	36-2373-002^Survey Number	333	6TH ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0674-0000		1903	3/3/2020
36-016570	464412	62120			903	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0445-0000		1920	3/3/2020
36-016571	464411	62119			904	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0444-0000		1915	3/3/2020
36-016572	464410	62118			908	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0443-0000		1915	3/3/2020
36-019710	575621	126497			911	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, 04/27/1978, 2373-0442-0000		1920	3/3/2020
36-016573	464409	62117			915	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0441-0000		1900	3/3/2020
36-016574	464408	62116			918	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0440-0000		1900	3/3/2020
36-016575	464407	62115			921	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0439-0000		1895	3/3/2020
36-016576	464406	62114			922	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0438-0000		1920	3/3/2020
36-016577	464405	62113			927	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0437-0000		1895	3/3/2020
36-016578	464404	62112			936	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0436-0000		1895	3/3/2020
36-016579	464403	62111			937	6TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0435-0000		1890	3/3/2020
36-016580	464631	62339	HATFIELD BUICK	36-2373-002^Survey Number		7TH ST	REDLANDS	SAN BERNARDINO		5S2, , 2373-0665-0000		1926	3/3/2020
36-016581	464640	62348			304	7TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0675-0000		1946	3/3/2020
36-016582	464641	62349			304	9TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0676-0000		1948	3/3/2020
	678272				1247	Alta St	Redlands	San Bernardino	92374	6Y, 11/06/2013, HUD_2013_1017_007		1901	3/3/2020
36-016583	491126	94805			217	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0075	491413	1904	3/3/2020
36-016584	491122	94799			224	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0062	491413	1903	3/3/2020
36-016585	491127	94806			225	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0076	491413	1905	3/3/2020
36-016586	491128	94807			225	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0077	491413	1902	3/3/2020
36-016587	491123	94800			226	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0063	491413	1903	3/3/2020
36-016588	491124	94801			232	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0064	491413	1904	3/3/2020
36-016589	491129	94808			235	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0078	491413	1908	3/3/2020
36-016590	464006	61713			238	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0065 | 5S2, , 2373-0033-0000	491413	1901	3/3/2020
36-016591	491130	94809			243	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0079	491413	1902	3/3/2020
36-016592	464005	61712			244	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0066 | 5S2, , 2373-0032-0000	491413	1901	3/3/2020
36-016593	464004	61711	WALDO O'KELLY RESIDENCE	36-2373-001^Survey Number	248	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0067 | 5S2, , 2373-0031-0000	491413	1908	3/3/2020
36-016594	491131	94810			249	ALVARADO	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0080	491413	1920	3/3/2020
36-016595	464003	61710	JEROME O BOGER HOUSE	36-2373-001^Survey Number	256	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0068 | 3S, , 2373-0030-0000	491413	1902	3/3/2020
36-016596	491132	94811			257	ALVARADO	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0081	491413	1919	3/3/2020
36-016597	464002	61709			302	ALVARADO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0069 | 5S2, , 2373-0029-0000	491413	1903	3/3/2020
36-016598	491133	94812			305	ALVARADO	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0082	491413	1924	3/3/2020

36-016599	464001	61708			308	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0070 | 5S2, , 2373-0028-0000	491413	1911	3/3/2020
36-016600	464000	61707			309	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0027-0000 | 6X, 12/29/1994, NPS-94001487-0083	491413	1917	3/3/2020
36-016601	463999	61706			315	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0084 | 5S2, , 2373-0026-0000	491413	1904	3/3/2020
36-016602	463998	61705			316	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0071 | 5S2, , 2373-0025-0000	491413	1907	3/3/2020
36-016603	463997	61704			317	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0085 | 5S2, , 2373-0024-0000	491413	1906	3/3/2020
36-016604	491134	94813			321	ALVARADC	REDLANDS	SAN BERNARDINO	92372	6X, 12/29/1994, NPS-94001487-0086	491413	1923	3/3/2020
36-016605	463996	61703			322	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0072 | 5S2, , 2373-0023-0000	491413	1908	3/3/2020
36-016606	463995	61702			327	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0087 | 5S2, , 2373-0022-0000	491413	1902	3/3/2020
36-016607	463994	61701	SHRECK HOUSE	36-2373-001^Survey Number	328	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0073 | 5S2, , 2373-0021-0000	491413	1905	3/3/2020
36-016608	491125	94804	CARRIAGE HOUSE		328	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0074	491413	1905	3/3/2020
36-016609	463993	61700			334	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0020-0000		1920	3/3/2020
36-016610	463992	61699			342	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0019-0000		1920	3/3/2020
36-016611	463991	61698	GAIR HOUSE	36-2373-001^Survey Number	346	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0018-0000		1929	3/3/2020
36-016612	463990	61697	GRAY HOUSE	36-2373-001^Survey Number	349	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0017-0000		1928	3/3/2020
36-016613	463989	61696			502	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0016-0000		1912	3/3/2020
36-016614	491497	94913			505	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0170	491413	1910	3/3/2020
36-016615	491148	94828			508	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0117	491413	1910	3/3/2020
36-016616	463988	61695			510	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0015-0000		1900	3/3/2020
36-016617	491519	94938			511	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0171	491413	1911	3/3/2020
36-016618	491149	94829			512	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0118	491413	1910	3/3/2020
36-016619	463987	61694			515	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0172 | 5S2, , 2373-0014-0000	491413	1909	3/3/2020
36-016620	491150	94830			516	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0119	491413	1911	3/3/2020
36-016621	463986	61693			519	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0173 | 5S2, , 2373-0013-0000	491413	1910	3/3/2020
36-016622	491520	94939			521	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0174	491413	1909	3/3/2020
36-016623	463985	61692	THE PINK ELEPHANT	36-2373-001^Survey Number	522	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0120 | 5S2, , 2373-0012-0000	491413	1910	3/3/2020
36-016624	491590	95028			525	ALVARADC	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0175	491413	1950	3/3/2020
36-016625	463984	61691			526	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0121 | 5S2, , 2373-0011-0000	491413	1910	3/3/2020
36-016626	463983	61690			538	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0122 | 5S2, , 2373-0010-0000	491413	1912	3/3/2020
36-016627	463982	61689			540	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0123 | 5S2, , 2373-0009-0000	491413	1910	3/3/2020
36-016628	491776	95605			602	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0124	491413	1910	3/3/2020
36-016629	463981	61688	NICKERSON HOUSE	36-2373-001^Survey Number	610	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0125 | 5S2, , 2373-0008-0000	491413	1910	3/3/2020
36-016630	463980	61687			614	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0126 | 5S2, , 2373-0007-0000	491413	1911	3/3/2020
36-016631	463979	61686			618	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0127 | 5S2, , 2373-0006-0000	491413	1910	3/3/2020

36-016632	491596	95034			621	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0184	491413	1910	3/3/2020
36-016633	463978	61685	LOVE HOUSE	36-2373-001^Survey Number	624	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0128 | 5S2, , 2373-0005-0000	491413	1906	3/3/2020
36-016634	491598	95036			627	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0185	491413	1910	3/3/2020
36-016635	463977	61684	EATON HOUSE	36-2373-001^Survey Number	628	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0004-0000		1900	3/3/2020
36-016636	491599	95037			631	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0186	491413	1910	3/3/2020
36-016637	463976	61683			632	ALVARADC	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0129 | 5S2, , 2373-0003-0000	491413	1911	3/3/2020
36-016638	463975	61682	KARAAK HOUSE	36-2373-001^Survey Number	728	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0002-0000		1922	3/3/2020
36-016639	463974	61681			832	ALVARADC	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0001-0000		1895	3/3/2020
36-016640	464415	62123	WHITE HOUSE		26849	BARTON RI	REDLANDS	SAN BERNARDINO	92373	2S, 01/01/1978, 2373-0448-0000 | 2S, 10/28/1977,			3/3/2020
36-017534	464423	62131	SAN BERNARDINO ASISTENCIA		26930	BARTON RI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0456-9999 | 3S, 10/02/1986, 619.0-84-HP-36-015 | 3S, 12/20/1988, 619.0-HP-88-36-012 | 7L, 08/01/1932, SHL-0042-0000		1927-1937	3/3/2020
36-016641	471357	69518	MARSHALL HOUSE		27297	BARTON RI	REDLANDS	SAN BERNARDINO		2S, 10/20/1978, 65000873			3/3/2020
36-017535	464416	62124	MARSHALL HOUSE		27297	BARTON RI	REDLANDS	San Bernardino	92373	2S, 01/01/1978, 2373-0449-0000 | 2S, 10/20/1978, 65000873			3/3/2020
36-016642	464010	61717			208	BELLEVUE /	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0037-0000		1910	3/3/2020
36-016643	464009	61716			302	BELLEVUE /	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0036-0000		1910	3/3/2020
36-016644	464008	61715			306	BELLEVUE /	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0035-0000		1910	3/3/2020
36-016645	464007	61714			320	BELLEVUE /	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0034-0000		1910	3/3/2020
36-016646	464012	61719			220	BOND ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0039-0000		1913	3/3/2020
36-016647	464011	61718			233	BOND ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0038-0000		1900	3/3/2020
36-016655	464013	61720			1076	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0040-0000		1888	3/3/2020
36-016656	464061	61768	THE DONALD HOUSE	36-2373-001^Survey Number	1201	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0088-0000		1892	3/3/2020
36-016648	464422	62130			201	BROOKSIDI	REDLANDS	San Bernardino	92373	1S, 01/11/1984, 2373-0455-0000 NPS-85000135-0000		1932	3/3/2020
36-016649	464019	61726			312	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0046-0000		1917	3/3/2020
36-016650	464018	61725			404	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0045-0000		1910	3/3/2020
36-016651	464017	61724			529	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0044-0000		1911	3/3/2020
36-016652	464016	61723			533	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0043-0000		1895	3/3/2020
36-016653	464015	61722	J ALBERT	36-2373-001^Survey Number | C E PATCH HOME^Other Name	611	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0042-0000		1920	3/3/2020
36-016654	464014	61721			645	BROOKSIDI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0041-0000		1895	3/3/2020
	680560		First Presbyterian Church of Redlands		100	Cajon St	Redlands	San Bernardino	92373	2S2, 01/24/2018, FCC_2017_0724_005		1969	3/3/2020
36-016701	464063	61770	CHARLES F BAILEY HOUSE	36-2373-001^Survey Number	1004	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0090-0000		1900	3/3/2020
36-016659	464618	62326	CITY FLORIST	36-2373-002^Survey Number	122	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0652-0000		1927	3/3/2020
36-016660	464095	61802	REDLANDS FOX THEATER	36-2373-001^Survey Number	123	CAJON ST	REDLANDS	SAN BERNARDINO	92373	2S3, 05/15/1989, 537.9-36-0003 | 3S, , 2373-0122-0000		1928	3/3/2020
36-016661	464619	62327	REDLANDS LODGE #300, MASONIC TEMPLE	36-2373-002^Survey Number	131	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0653-0000		1909	3/3/2020
	545177	152908	PROSPECT PARK	TRACT #6^Other Name	1402	CAJON ST	REDLANDS	SAN BERNARDINO	92373	2S2, 05/17/2004, DOE-36-04-0028-0000 | 2S2, 05/17/2004, FCC031110H		1898	3/3/2020
36-016702	464062	61769	A. S. AUCHINCLOSS HOUSE	36-2373-001^Survey Number	1403	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0089-0000		1894	3/3/2020
36-016662	464094	61801			215	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0121-0000		1906	3/3/2020
36-016663	464620	62328			229	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0654-0000		1937	3/3/2020
36-016664	464093	61800	JAMES W. BARROWS HOUSE	36-2373-001^Survey Number	243	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0120-0000 | 7J, 06/24/1994, 537.9-36-0006		1902	3/3/2020
36-016665	464092	61799			248	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0290 | 5S2, , 2373-0119-0000	491413	1899	3/3/2020
36-016666	464091	61798			256	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0291 | 5S2, , 2373-0118-0000	491413	1906	3/3/2020
36-016667	464090	61797			261	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0117-0000		1902	3/3/2020
36-016668	464621	62329			312	CAJON ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0655-0000		1949	3/3/2020
36-016669	464622	62330			317	CAJON ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0656-0000		1943	3/3/2020
36-016670	464623	62331			321	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0657-0000		1946	3/3/2020
36-016671	464624	62332			325	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0658-0000		1892	3/3/2020
36-016672	464625	62333	EL NIDO APARTMENTS	36-2373-002^Survey Number	331	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0659-0000		1928	3/3/2020
36-016673	464626	62334	DR. MARY DENISON HOUSE	36-2373-001^Survey Number | 36-2373-002^Survey Number	339	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0116-0000 | 5S2, , 2373-0660-0000		1905	3/3/2020
36-016674	464088	61795			351	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0115-0000		1905	3/3/2020
36-016675	464087	61794			403	CAJON ST	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0114-0000		1903	3/3/2020
36-016676	464086	61793			411	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0113-0000		1896	3/3/2020
36-016677	464085	61792			415	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0112-0000		1900	3/3/2020

36-016678	464084	61791	CLARENCE L. JEWELL HOUSE	36-2373-001^Survey Number	419	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0111-0000		1903	3/3/2020
36-016679	464083	61790			425	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0110-0000		1897	3/3/2020
36-016680	464082	61789			429	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0109-0000		1900	3/3/2020
36-016681	464081	61788			440	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0108-0000		1892	3/3/2020
36-016682	464080	61787			451	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0107-0000		1895	3/3/2020
36-016683	464079	61786	WASHBURN HOUSE	36-2373-001^Survey Number	454	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0311 | 5S2, , 2373-0106-0000	491413	1893	3/3/2020
36-016684	464078	61785			501	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0318 | 5S2, , 2373-0105-0000	491413	1895	3/3/2020
36-016685	464077	61784			502	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0312 | 5S2, , 2373-0104-0000	491413	1901	3/3/2020
36-016686	464076	61783			503	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0319 | 5S2, , 2373-0103-0000	491413	1899	3/3/2020
36-016687	491675	95118			508	CAJON ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0313	491413	1965	3/3/2020
36-016688	491676	95120			511	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0320	491413	1896	3/3/2020
36-016689	464075	61782			519	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0321 | 5S2, , 2373-0102-0000	491413	1900	3/3/2020
36-016690	464074	61781			523	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0322 | 5S2, , 2373-0101-0000	491413	1901	3/3/2020
36-016691	464073	61780			529	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0323 | 5S2, , 2373-0100-0000	491413	1902	3/3/2020
36-016692	464072	61779			532	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0314 | 5S2, , 2373-0099-0000	491413	1906	3/3/2020
36-016693	464071	61778			537	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0324 | 5S2, , 2373-0098-0000	491413	1897	3/3/2020
36-016694	464070	61777			538	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0315 | 5S2, , 2373-0097-0000	491413	1895	3/3/2020
36-016695	464069	61776			544	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0316 | 5S2, , 2373-0096-0000	491413	1900	3/3/2020
36-016696	464068	61775	CHAUNCEY HAYES HOUSE	36-2373-001^Survey Number	552	CAJON ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0317 | 5S2, , 2373-0095-0000	491413	1899	3/3/2020
36-016697	464067	61774			617	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0094-0000		1915	3/3/2020
36-016698	464066	61773			635	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0093-0000		1910	3/3/2020
36-016699	464065	61772			645	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0092-0000		1910	3/3/2020
36-016700	464064	61771			657	CAJON ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0091-0000		1912	3/3/2020
36-016703	464098	61805			833	CALHOUN	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0125-0000		1910	3/3/2020
36-016704	464097	61804			907	CALHOUN	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0124-0000		1910	3/3/2020
36-016705	464096	61803			922	CALHOUN	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0123-0000		1915	3/3/2020
36-016706	464099	61806			16	CAMPBELL	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0126-0000		1895	3/3/2020
36-016707	464100	61807	CASSIUS M. HALL RESIDENCE	36-2373-001^Survey Number	731	CEDAR AVE	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0127-0000		1895	3/3/2020
36-016708	464101	61808			1004	CEDAR ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0128-0000		1904	3/3/2020
36-016709	488268	91045	WELLS HOUSE			CENTER ST	REDLANDS	SAN BERNARDINO		7P, 08/07/1975, SPHI-SBR-056		1887	3/3/2020
36-016718	488271	91048	FISHER HOUSE		1227	CENTER ST	REDLANDS	SAN BERNARDINO		7P, 08/07/1975, SPHI-SBR-061		1894	3/3/2020
36-016710	464109	61816			310	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0136-0000		1925	3/3/2020
36-016711	464108	61815			330	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0135-0000		1900	3/3/2020
36-016712	464107	61814			344	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0134-0000		1920	3/3/2020
36-016713	464106	61813			516	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0133-0000		1923	3/3/2020
36-016714	464105	61812	ELON J WAITE HOUSE	36-2373-001^Survey Number	556	CENTER ST	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0132-0000		1891	3/3/2020
36-016715	464104	61811			801	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0131-0000		1906	3/3/2020
36-016716	464103	61810	VILLA LUCIA	36-2373-001^Survey Number	924	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0130-0000		1904	3/3/2020
36-016717	464102	61809			926	CENTER ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0129-0000		1904	3/3/2020
36-016726	464112	61819			1036	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0139-0000		1907	3/3/2020
36-016727	494418	99107			1046	CHESTNUT	REDLANDS	SAN BERNARDINO		6Y, 01/02/1996, HUD951117D		1930	3/3/2020
36-016728	464111	61818			1102	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0138-0000		1900	3/3/2020
36-016719	464119	61826			440	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0146-0000		1910	3/3/2020
36-016720	464118	61825	DANIEL SHEPARD HOUSE	36-2373-001^Survey Number	446	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0145-0000		1895	3/3/2020
36-016721	464117	61824	JAMES P. SQUIRES HOUSE	36-2373-001^Survey Number	711	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0144-0000		1889	3/3/2020
36-016722	464116	61823			731	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0143-0000		1912	3/3/2020
36-016723	464115	61822			757	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0142-0000		1900	3/3/2020
36-016724	464114	61821	MOSLEY HOUSE	36-2373-001^Survey Number	849	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0141-0000		1905	3/3/2020
36-016725	464113	61820			946	CHESTNUT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0140-0000		1900	3/3/2020

36-016729	487945	90996	LUGONIA SCHOOL MONUMENT			CHURCH S	REDLANDS	SAN BERNARDINO		7P, 06/22/1972, SPHI-SBR-006	1935	3/3/2020
36-016730	501787	108486	STORM DRAIN CHANNEL, REDLANDS			CHURCH S	REDLANDS	SAN BERNARDINO		6Y, 11/22/1995, DOE-36-95-0007-0000 | 6Y, 11/22/1995, FEMA951024C		3/3/2020
36-016731	491224	94493			1119	CHURCH S	REDLANDS	SAN BERNARDINO		6Y, 02/16/1995, HUD950123E		3/3/2020
36-016732	464655	62363	ACADEMY OF MUSIC BLDG	36-2373-002^Survey Number | HUBBARD BLDG, REDLANDS MINI-MALL^Other Name	5	CITRUS ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0328-0000 | 5S2, , 2373-0690-0000	1890	3/3/2020
36-016733	464027	61734			212	CLARK ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0054-0000	1900	3/3/2020
36-016734	464026	61733			216	CLARK ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0053-0000	1912	3/3/2020
36-019645	574486	124710	PROPERTY ACQUISITION AND REHABILITATION		1119	CLAY ST	REDLANDS	SAN BERNARDINO		6Y, 06/15/2000, HUD000605S	1930	3/3/2020
	568404	129463			1705	CLAY ST	REDLANDS	SAN BERNARDINO		6Y, 11/29/2001, DOE-36-01-0016-0000 | 6Y, 11/29/2001, HUD011126C	1912	3/3/2020
36-016735	464044	61751			816	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0071-0000	1900	3/3/2020
36-016736	464043	61750			820	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0070-0000	1900	3/3/2020
36-016737	464042	61749			825	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0069-0000	1895	3/3/2020
36-016738	464041	61748			826	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0068-0000	1895	3/3/2020
36-016739	464040	61747			834	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0067-0000	1925	3/3/2020
36-016740	464039	61746			837	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0066-0000	1895	3/3/2020
36-016741	464038	61745			838	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0065-0000	1895	3/3/2020
36-016742	464037	61744			904	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0064-0000	1900	3/3/2020
36-016743	464036	61743			908	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0063-0000	1915	3/3/2020
36-016744	464035	61742			911	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0062-0000	1925	3/3/2020
36-016745	464034	61741			914	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0061-0000	1900	3/3/2020
36-016746	464033	61740			917	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0060-0000	1915	3/3/2020
36-016747	464032	61739			920	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0059-0000	1895	3/3/2020
36-016748	464031	61738			924	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0058-0000	1925	3/3/2020
36-016749	464030	61737			930	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0057-0000	1900	3/3/2020
36-016750	464029	61736			936	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0056-0000	1915	3/3/2020
36-016751	464028	61735			937	CLAY ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0055-0000	1895	3/3/2020
	678064				1131	Columbia S	Redlands	San Bernardino	92374	6Y, 01/24/2013, HUD_2012_1227_003		3/3/2020
36-019646	574487	124711	PROPERTY ACQUISTION AND REHABILITATION		835	COLUMBIA	REDLANDS	SAN BERNARDINO		6Y, 06/15/2000, HUD000605T	1950	3/3/2020
36-016752	464049	61756			910	COLUMBIA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0076-0000	1910	3/3/2020
36-016753	464048	61755			913	COLUMBIA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0075-0000	1905	3/3/2020
36-016754	464047	61754			914	COLUMBIA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0074-0000	1905	3/3/2020
36-019649	574490	124714	PROPERTY ACQUISTION AND REHABILITATION		914	COLUMBIA	REDLANDS	SAN BERNARDINO		6Y, 06/15/2000, HUD000605W	1905	3/3/2020
36-016755	464046	61753			936	COLUMBIA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0073-0000	1905	3/3/2020
36-016756	464050	61757			651	CYPRESS C	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0077-0000	1915	3/3/2020
36-016757	464060	61767			1665	DWIGHT S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0087-0000	1901	3/3/2020
36-018774	514121	116441			1108	E CENTRAL	REDLANDS	SAN BERNARDINO	92374	6Y, 07/03/1998, DOE-36-98-0104-0000 | 6Y, 07/03/1998, HUD980629P	1930	3/3/2020
36-016758	467683	65511			509	E CENTRAL	REDLANDS	SAN BERNARDINO		6Y, 11/14/1988, HUD881019B		3/3/2020
36-016759	467682	65510			511	E CENTRAL	REDLANDS	SAN BERNARDINO		6Y, 11/14/1988, HUD881019A		3/3/2020
36-016760	464629	62337	W H GOODRICH FURNITURE COMPANY, COPE BUILDING	36-2373-002^Survey Number	19	E CITRUS A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0663-0000	1903	3/3/2020
36-016761	464630	62338	REDLANDS CENTRAL RAILWAY CO CAR BARN	36-2373-002^Survey Number | PACIFIC ELECTRIC RAILWY^Other Name	746	E CITRUS A	REDLANDS	San Bernardino	92373	1S, 01/03/1991, NPS-90002119-0000 | 3S, 01/03/1991, 2373-0664-0000 | 3S, 01/03/1991, 36-0004	1907	3/3/2020
36-016762	464045	61752	ADMINISTRATION BUILDING, UNIVERSITY OF REDLANDS	36-2373-001^Survey Number	1200	E COLTON	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0072-0000	1909	3/3/2020
36-016763	464053	61760			104	E CYPRESS	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0080-0000	1915	3/3/2020
36-016764	464052	61759	B. H. JACOBS HOUSE	36-2373-001^Survey Number	221	E CYPRESS	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0079-0000	1895	3/3/2020
36-016765	464051	61758			347	E CYPRESS	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0078-0000	1920	3/3/2020
36-016768	464179	61886			104	E FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0206-0000	1889	3/3/2020
36-016769	464427	62135			106	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0460-0000	1924	3/3/2020
36-016770	464428	62136	LEE AND MILDRED JOHNSON HOUSE	36-2373-002^Survey Number	107	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0461-0000	1924	3/3/2020
36-016771	464429	62137			109	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0462-0000	1906	3/3/2020
36-016772	464174	61881			112	E FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0201-0000	1895	3/3/2020
36-016773	464430	62138			116	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0463-0000	1927	3/3/2020
36-016774	464431	62139	CHARLES E GOODALE HOUSE	36-2373-002^Survey Number	120	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0464-0000	1892	3/3/2020
36-016775	464432	62140			121	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0465-0000	1905	3/3/2020
36-016776	464433	62141			123	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0466-0000	1907	3/3/2020
36-016777	464434	62142	WILLIAM HINCKLE HOUSE	36-2373-002^Survey Number	125	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0467-0000	1903	3/3/2020
36-016778	464175	61882			126	E FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0202-0000	1912	3/3/2020
36-016779	464435	62143			201	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0468-0000	1950	3/3/2020
36-016780	464176	61883			202	E FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0203-0000	1915	3/3/2020
36-016781	464436	62144			209	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0469-0000	1958	3/3/2020
36-016766	464425	62133	CLARENCE E BLANC HOUSE	36-2373-002^Survey Number	21	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0458-0000	1924	3/3/2020
36-016782	464437	62145			210	E FERN AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0470-0000	1937	3/3/2020

36-016783	464438	62146			215	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0471-0000		1911	3/3/2020
36-016784	464439	62147	A HARVEY COLLINS HOUSE	36-2373-002^Survey Number	216	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0472-0000		1911	3/3/2020
36-016785	464440	62148	HOWARD S. TROTTER HOUSE	36-2373-002^Survey Number	217	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0473-0000		1908	3/3/2020
36-016786	464441	62149			224	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0474-0000		1927	3/3/2020
36-016787	464442	62150	MACK W. H. WILLIAMS HOUSE	36-2373-002^Survey Number	225	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0475-0000		1905	3/3/2020
36-016788	464443	62151	CYRUS J WILLIS HOUSE	36-2373-002^Survey Number	230	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0476-0000		1928	3/3/2020
36-016767	464426	62134	T. S. HOLIDAY HOUSE	36-2373-002^Survey Number	25	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0459-0000		1904	3/3/2020
36-016789	464177	61884			301	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0204-0000		1900	3/3/2020
36-016790	464444	62152			304	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0477-0000		1932	3/3/2020
36-016791	464445	62153	RALPH G ROHRER HOUSE	36-2373-002^Survey Number	309	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0478-0000		1909	3/3/2020
36-016792	464446	62154			316	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0479-0000		1928	3/3/2020
36-016793	464178	61885			420	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0205-0000			3/3/2020
36-016794	464447	62155	FRED A. HILL HOUSE	36-2373-002^Survey Number	430	E FERN AVE	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0480-0000		1930	3/3/2020
36-016795	464223	61930	THE PEPPERS, EL CARMELO	36-2373-001^Survey Number	926	E HIGHLAN	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0250-0000		1904	3/3/2020
36-016796	464692	62400	REDLANDS METHODIST CHURCH EDUCATION BUILDING	36-2373-002^Survey Number	1	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0727-0000		1924	3/3/2020
36-016797	464693	62401			10	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0728-0000		1904	3/3/2020
36-016799	464695	62403			101	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0730-0000		1980	3/3/2020
36-016800	464696	62404			104	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0287-0000 | 7N, , 2373-0731-0000		1890	3/3/2020
36-016801	464697	62405			108	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0286-0000 | 7N, , 2373-0732-0000		1899	3/3/2020
36-016802	464258	61965	WINSTON HOUSE	36-2373-001^Survey Number	111	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0285-0000		1904	3/3/2020
36-016803	464698	62406			124	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0283-0000 | 7N, , 2373-0733-0000		1902	3/3/2020
36-016804	464257	61964			201	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0284-0000		1901	3/3/2020
36-016805	464699	62407			204	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0282-0000 | 7N, , 2373-0734-0000		1928	3/3/2020
36-016806	464254	61961			205	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0281-0000 | 7N, , 2373-0735-0000		1893	3/3/2020
36-016807	464253	61960			208	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0736-0000 | 7R, , 2373-0280-0000		1920	3/3/2020
36-016808	464252	61959			213	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0279-0000 | 7N, , 2373-0737-0000		1893	3/3/2020
36-016809	464703	62411	LEE WALMARTH HOUSE	36-2373-001^Survey Number | 36-2373-002^Survey Number	214	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0738-0000 | 5S2, , 2373-0278-0000		1891	3/3/2020
36-016810	464250	61957			215	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0277-0000 | 7N, , 2373-0739-0000		1904	3/3/2020
36-016811	464705	62413			219	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0740-0000		1980	3/3/2020
36-016812	464706	62414	RESDLANDS SEVENTH DAY ADVENTIST CHURCH, THE HALL	36-2373-002^Survey Number	255	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0741-0000			3/3/2020
36-016798	464694	62402	CORTNER BROTHERS FUNERAL PARLOR	36-2373-002^Survey Number	37	E OLIVE AV	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0729-0000		1910	3/3/2020
36-016813	464283	61990	CHARLES KENDALL ADAMS HOUSE	36-2373-001^Survey Number	120	E PALM AV	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0311-0000		1902	3/3/2020
36-016814	491211	94453			1	E REDLAND	REDLANDS	SAN BERNARDINO		6X, 10/29/1991, NPS-91001535-0028	464754	1960	3/3/2020
36-016815	464632	62340			14	E REDLAND	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0666-0000		1904	3/3/2020
36-016816	464633	62341			21	E REDLAND	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0667-0000		1904	3/3/2020
36-016817	464635	62343			214	E REDLAND	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0669-0000		1903	3/3/2020
36-016818	464634	62342	GOLD BANNER PACKING, PACKING HOUSE ANTIQUES	36-2373-002^Survey Number	215	E REDLAND	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0668-0000		1924	3/3/2020
36-016819	464683	62391	KEYSTONE DRUGS	36-2373-002^Survey Number	1	E STATE ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0718-0000		1959	3/3/2020
36-016823	464658	62366	FRAME N LENS	36-2373-002^Survey Number	10	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0693-0000		1889	3/3/2020
36-016834	464670	62378	J C PENNEY	36-2373-002^Survey Number	104	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0705-0000		1905	3/3/2020
36-016835	464671	62379	SLIGERS MUSIC	36-2373-002^Survey Number	109	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0706-0000		1894	3/3/2020
36-016836	464672	62380			110	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0707-0000		1887	3/3/2020
36-016837	464673	62381			112	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0708-0000		1892	3/3/2020
36-016838	464674	62382	CITROGRAPH PRINTING	36-2373-002^Survey Number	113	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0709-0000		1901	3/3/2020
36-016839	464675	62383	L AND T HOBBY	36-2373-002^Survey Number	114	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0710-0000		1903	3/3/2020
36-016840	464676	62384	WALDO BUROUGHS APPLIANCE	36-2373-002^Survey Number	117	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0711-0000		1904	3/3/2020
36-016841	464677	62385	PIZZA CHALET	36-2373-002^Survey Number	118	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0712-0000		1907	3/3/2020
36-016842	464678	62386	PIZZA CHALET	36-2373-002^Survey Number	120	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0713-0000		1907	3/3/2020
36-016843	464679	62387	BRANCH-COOCH REAL ESTATE	36-2373-002^Survey Number	122	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0714-0000		1905	3/3/2020
36-016844	464680	62388	PATIO SHOP	36-2373-002^Survey Number	127	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0715-0000		1953	3/3/2020
36-016824	464661	62369	UNDERPININGS	36-2373-002^Survey Number | COMPUTER CAFE^Other Name	14	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0696-0000		1888	3/3/2020
36-016825	464660	62368			15	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0695-0000		1888	3/3/2020
36-016826	464662	62370	McMAHAN'S	36-2373-002^Survey Number	17	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0697-0000		1903	3/3/2020
36-016827	464663	62371	STATE STREET EAST	36-2373-002^Survey Number	18	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0698-0000		1887	3/3/2020
36-016820	464656	62364	STAR GROCERY	36-2373-002^Survey Number	2	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0691-0000		1887	3/3/2020
36-016845	464681	62389	SERRS OLD BUILDING	36-2373-002^Survey Number	204	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0716-0000		1905	3/3/2020
36-016828	464664	62372	ROSE OF SHARON SALON	36-2373-002^Survey Number	22	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0699-0000		1957	3/3/2020
36-016829	464665	62373	GOODIE SHOP	36-2373-002^Survey Number	24	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0700-0000		1887	3/3/2020
36-016830	464666	62374	CHILDRENS CAROUSEL	36-2373-002^Survey Number	25	E STATE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0701-0000		1900	3/3/2020
36-016831	464667	62375			27	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0702-0000		1887	3/3/2020
36-016832	464668	62376			28	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0703-0000		1887	3/3/2020
36-016846	464758	62468			430	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0768-0000		1925	3/3/2020
36-016821	464657	62365	REDLANDS PHOTOGRAPHERS	36-2373-002^Survey Number	6	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0692-0000		1908	3/3/2020

36-016847	464292	61999			609	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0320-0000		1893	3/3/2020
36-016822	464659	62367			7	E STATE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0694-0000		1891	3/3/2020
36-016848	464627	62335	MEDICAL ARTS BUILDING, COURTYARD	36-2373-002^Survey Number	147	E VINE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0661-0000		1927	3/3/2020
36-016849	464628	62336	REDLANDS MOTORCYCLE CLUB, REDLANDS COPIES AND CARD	36-2373-002^Survey Number | REDLANDS MOTORCYCLE CLUB, REDLANDS COPIES AND CARDS^Other Name	150	E VINE ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0662-0000		1911	3/3/2020
36-016857	464555	62263	MISSION GABLES APARTMENTS	36-2373-002^Survey Number	168	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0193 | 7N, 03/26/1985, 2373-0589-0000	491413	1898	3/3/2020
36-016858	464556	62264	DOW-BOWMAN HOUSE	36-2373-002^Survey Number	172	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0590-0000		1900	3/3/2020
36-016859	464557	62265	E D DONHAM	36-2373-002^Survey Number	179	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0591-0000		1891	3/3/2020
36-016851	464549	62257			18	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0583-0000		1899	3/3/2020
36-016860	464558	62266	S R THORNE HOUSE	36-2373-002^Survey Number	180	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0592-0000		1900	3/3/2020
36-016861	464559	62267			183	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0593-0000		1904	3/3/2020
36-016862	464560	62268	WALTER LYNN HOUSE	36-2373-002^Survey Number	184	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0594-0000		1887	3/3/2020
36-016863	464561	62269	DANIEL COTCHER HOUSE	36-2373-002^Survey Number	185	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0595-0000		1904	3/3/2020
36-016864	464562	62270	DR. M. M. HORTON HOUSE	36-2373-002^Survey Number	188	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0596-0000		1898	3/3/2020
36-016865	464173	61880			222	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0200-0000		1895	3/3/2020
36-016866	464172	61879			226	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0199-0000		1895	3/3/2020
36-016867	464171	61878			230	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0198-0000		1895	3/3/2020
36-016868	464170	61877			234	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0197-0000		1895	3/3/2020
36-016869	464169	61876			238	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0196-0000		1895	3/3/2020
36-016852	464550	62258			24	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0584-0000		1890	3/3/2020
36-016870	464168	61875			241	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0195-0000		1895	3/3/2020
36-016871	464167	61874			244	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0194-0000		1895	3/3/2020
36-016872	464165	61872			247	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0192-0000		1895	3/3/2020
36-016873	464166	61873			248	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0193-0000		1895	3/3/2020
36-016874	464164	61871			253	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0191-0000		1920	3/3/2020
36-016875	464163	61870			255	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0190-0000		1920	3/3/2020
36-016876	464162	61869			256	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0189-0000		1895	3/3/2020
36-016853	464551	62259			28	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0585-0000		1896	3/3/2020
36-016877	464161	61868			301	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0188-0000		1895	3/3/2020
36-016878	464160	61867			305	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0187-0000		1895	3/3/2020
36-016879	464159	61866			311	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0186-0000		1895	3/3/2020
36-016880	464158	61865			317	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0185-0000		1895	3/3/2020
36-016881	464157	61864			318	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0184-0000		4189	3/3/2020
36-016854	464552	62260	W. S. WARREN HOUSE	36-2373-002^Survey Number	32	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0586-0000		1893	3/3/2020
36-016882	464156	61863			321	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0183-0000		1895	3/3/2020
36-016883	464155	61862			324	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0182-0000		1910	3/3/2020
36-016884	464154	61861			325	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0181-0000		1895	3/3/2020
36-016885	464153	61860			328	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0180-0000		1900	3/3/2020
36-016886	464152	61859			331	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0179-0000		1895	3/3/2020
36-016887	464151	61858			332	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0178-0000		1890	3/3/2020
36-016888	464150	61857			335	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0177-0000		1895	3/3/2020
36-016889	464149	61856			337	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0176-0000		1895	3/3/2020
36-016890	464148	61855			338	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0175-0000		1895	3/3/2020
36-016891	464147	61854			344	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0174-0000		1895	3/3/2020
36-016892	464146	61853			350	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0173-0000		1895	3/3/2020
36-016855	464553	62261			36	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0587-0000		1897	3/3/2020
36-016856	464554	62262	L. B. BEAN HOUSE	36-2373-002^Survey Number	40	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0588-0000		1897	3/3/2020
36-016893	464145	61852			417	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0172-0000		1895	3/3/2020
36-016894	464144	61851			420	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0171-0000		1925	3/3/2020
36-016895	464143	61850			424	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0170-0000		1895	3/3/2020
36-016896	464142	61849			425	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0169-0000		1915	3/3/2020
36-016897	464141	61848			429	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0168-0000		1900	3/3/2020
36-016898	464140	61847			430	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0167-0000		1920	3/3/2020
36-016899	464139	61846			434	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0166-0000		1920	3/3/2020
36-016900	464138	61845			437	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0165-0000		1895	3/3/2020
36-016901	464137	61844			439	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0164-0000		1920	3/3/2020
36-016902	464136	61843			440	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0163-0000		1920	3/3/2020
36-016903	464135	61842			444	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0162-0000		1920	3/3/2020
36-016905	464133	61840			455	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0160-0000		1920	3/3/2020
36-016906	464132	61839			502	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0221 | 5S2, , 2373-0159-0000	491413	1909	3/3/2020
36-016907	464131	61838			503	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0252 | 5S2, , 2373-0158-0000	491413	1911	3/3/2020
36-016908	464130	61837			507	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0253 | 5S2, , 2373-0157-0000	491413	1911	3/3/2020
36-016909	464129	61836			508	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0222 | 5S2, , 2373-0156-0000	491413	1909	3/3/2020

36-016910	464128	61835			510	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0223 | 5S2, , 2373-0155-0000	491413	1909	3/3/2020
36-016911	464127	61834			511	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0254 | 5S2, , 2373-0154-0000	491413	1911	3/3/2020
36-016912	464126	61833			514	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0224 | 5S2, , 2373-0153-0000	491413	1910	3/3/2020
36-016913	464125	61832			515	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0255 | 5S2, , 2373-0152-0000	491413	1911	3/3/2020
36-016914	464124	61831			518	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0225 | 5S2, , 2373-0151-0000	491413	1910	3/3/2020
36-016915	464123	61830			519	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0256 | 5S2, , 2373-0150-0000	491413	1911	3/3/2020
36-016916	464122	61829			521	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0257 | 5S2, , 2373-0149-0000	491413	1911	3/3/2020
36-016917	464121	61828			522	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0226 | 5S2, , 2373-0148-0000	491413	1911	3/3/2020
36-016918	464120	61827			525	EUREKA ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0147-0000		1920	3/3/2020
	671487		Robert J. Dunn House	NPS-SG100001336^National Register	1621	Garden St	Redlands	San Bernardino	92373	1S, 07/24/2017, NRHP_2017_Dunn,_Robert_J._0001		1912	3/3/2020
	671488		Robert J. Dunn House carport	NPS-SG100001336^National Register	1621	Garden St	Redlands	San Bernardino	92373	6X, 07/24/2017, NRHP_2017_Dunn,_Robert_J._0001		1990	3/3/2020
	566647	131425			1034	GLENN CT	REDLANDS	SAN BERNARDINO		6Y, 10/29/2001, DOE-36-01-0020-0000 | 6Y, 10/29/2001, HUD010926D		1951	3/3/2020
36-017086	464295	62002	PROSELLIS, REDLANDS BOWL	36-2373-001^Survey Number		GRANT ST	REDLANDS	SAN BERNARDINO		3S, , 2373-0323-0000 | 6X, 12/29/1994, NPS-94001487-0136	491413	1930	3/3/2020
36-016924	464566	62274	JAY D CLARK HOUSE	36-2373-002^Survey Number	11	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0134 | 7N, , 2373-0600-0000	491413	1893	3/3/2020
36-016930	464572	62280	PARK PLACE BOARDING HOUSE	36-2373-002^Survey Number	126	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0089 | 7N, , 2373-0606-0000	491413	1905	3/3/2020
36-016931	464573	62281	J. E. FAIRCHILD HOUSE	36-2373-002^Survey Number	128	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0090 | 7N, , 2373-0607-0000	491413	1906	3/3/2020
36-016932	464574	62282	FERGUSON HOUSE	36-2373-002^Survey Number	129	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0137 | 7N, , 2373-0608-0000	491413	1899	3/3/2020
36-016925	464567	62275	TRUESDELL HOUSE	36-2373-002^Survey Number	13	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0135 | 7N, , 2373-0601-0000	491413	1887	3/3/2020
36-016933	464575	62283	FRANK C PRESCOTT HOUSE	36-2373-002^Survey Number	130	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0091 | 7N, , 2373-0609-0000	491413	1898	3/3/2020
36-016934	464576	62284			132	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0092 | 7N, , 2373-0610-0000	491413	1901	3/3/2020
36-016935	464577	62285			133	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0138 | 7N, , 2373-0611-0000	491413	1898	3/3/2020
36-016936	464578	62286	JOHN ALBRIGHT HOUSE	36-2373-002^Survey Number	134	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0093 | 7N, , 2373-0612-0000	491413	1903	3/3/2020
36-016937	464579	62287	WILLIAM M SMITH HOUSE	36-2373-002^Survey Number	135	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0139 | 7N, , 2373-0613-0000	491413	1898	3/3/2020
36-016938	464580	62288	J J THAMANN HOUSE	36-2373-002^Survey Number	136	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0094 | 7N, , 2373-0614-0000	491413	1901	3/3/2020
36-016939	464581	62289	ROBERT HORNBECK HOUSE	36-2373-002^Survey Number	137	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0140 | 7N, , 2373-0615-0000	491413	1899	3/3/2020
36-016926	464568	62276			16	GRANT ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0602-0000		1926	3/3/2020
36-016927	464569	62277			18	GRANT ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0603-0000		1925	3/3/2020
36-016928	464570	62278			20	GRANT ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0604-0000		1925	3/3/2020

36-016940	491135	94815			218	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0095	491413	1902	3/3/2020
36-016941	491167	94864			219	GRANT ST	REDLANDS	SAN BERNARDINO		1D, 12/29/1994, NPS-94001487-0141	491413	1902	3/3/2020
36-016942	491136	94816			220	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0096	491413	1901	3/3/2020
36-016943	491137	94817			222	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0097	491413	1902	3/3/2020
36-016944	491456	94865			225	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0142	491413	1903	3/3/2020
36-016945	491138	94818			226	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0098	491413	1923	3/3/2020
36-016946	491457	94866			231	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0143	491413	1903	3/3/2020
36-016947	491458	94868			233	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0144	491413	1901	3/3/2020
36-016948	491139	94819			234	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0099	491413	1901	3/3/2020
36-016949	491140	94820			236	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0100	491413	1903	3/3/2020
36-016950	491462	94872			239	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0145	491413	1903	3/3/2020
36-016929	464571	62279	PROSELLIS APARTMENTS	36-2373-002^Survey Number	24	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0088 | 7N, , 2373-0605-0000	491413	1905	3/3/2020
36-016951	491464	94874			245	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0146	491413	1901	3/3/2020
36-016952	491141	94821			246	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0101	491413	1905	3/3/2020
36-016953	491466	94876			247	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0147	491413	1909	3/3/2020
36-016954	491142	94822			250	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0102	491413	1902	3/3/2020
36-016955	491143	94823			254	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0103	491413	1903	3/3/2020
36-016956	491471	94882			301	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0150	491413	1904	3/3/2020
36-016957	491473	94884			307	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0151	491413	1950	3/3/2020
36-016958	464199	61906	JOSE RIVERA HOUSE	36-2373-001^Survey Number	308	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0104 | 5S2, , 2373-0226-0000	491413	1895	3/3/2020
36-016959	491144	94824			314	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0105	491413	1892	3/3/2020
36-016960	491478	94890			315	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0152	491413	1900	3/3/2020
36-016961	491145	94825			316	GRANT ST	REDLANDS	SAN BERNARDINO	92372	6X, 12/29/1994, NPS-94001487-0106	491413	1950	3/3/2020
36-016962	491479	94893			319	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0153	491413	1909	3/3/2020
36-016963	464200	61907			320	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0107 | 5S2, , 2373-0227-0000	491413	1892	3/3/2020
36-016964	464201	61908			323	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0154 | 5S2, , 2373-0228-0000	491413	1900	3/3/2020
36-016965	464202	61909			327	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0155 | 5S2, , 2373-0229-0000	491413	1900	3/3/2020
36-016966	464203	61910			333	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0156 | 5S2, , 2373-0230-0000	491413	1909	3/3/2020
36-016967	464204	61911			337	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0157 | 5S2, , 2373-0231-0000	491413	1892	3/3/2020
36-016968	464205	61912			338	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0108 | 5S2, , 2373-0232-0000	491413	1892	3/3/2020
36-016969	464206	61913			343	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0158 | 5S2, , 2373-0233-0000	491413	1891	3/3/2020
36-016970	491482	94898			351	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0159	491413	1925	3/3/2020
36-016971	464207	61914			417	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0160 | 5S2, , 2373-0234-0000	491413	1900	3/3/2020
36-016972	464208	61915			420	GRANT ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0235-0000		1900	3/3/2020

36-016973	464209	61916			424	GRANT ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0236-0000		1900	3/3/2020
36-016974	491487	94903			425	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0161	491413	1950	3/3/2020
36-016975	464210	61917			429	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0162 | 5S2, , 2373-0237-0000	491413	1910	3/3/2020
36-016976	464211	61918			430	GRANT ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0238-0000		1900	3/3/2020
36-016977	464212	61919			433	GRANT ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0239-0000 | 6X, 12/29/1994, NPS-94001487-0163	491413	1920	3/3/2020
36-016978	464213	61920			434	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0112 | 5S2, , 2373-0240-0000	491413	1907	3/3/2020
36-016979	464214	61921			437	GRANT ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0241-0000 | 6X, 12/29/1994, NPS-94001487-0164	491413	1920	3/3/2020
36-016980	464215	61922			440	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0113 | 5S2, , 2373-0242-0000	491413	1904	3/3/2020
36-016981	464216	61923			444	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0114 | 5S2, , 2373-0243-0000	491413	1895	3/3/2020
36-016982	464217	61924			447	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0165 | 5S2, , 2373-0244-0000	491413	1912	3/3/2020
36-016983	491146	94826			450	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0115	491413	1904	3/3/2020
36-016984	464219	61926			451	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0166 | 5S2, , 2373-0245-0000	491413	1910	3/3/2020
36-016985	491147	94827			454	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0116	491413	1904	3/3/2020
36-016986	464220	61927			455	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0167 | 5S2, , 2373-0247-0000	491413	1912	3/3/2020
36-016920	464563	62271			5	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0130 | 7N, , 2373-0597-0000	491413	1892	3/3/2020
36-016921	464564	62272			7	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0131 | 7N, , 2373-0598-0000	491413	1893	3/3/2020
36-016922	491155	94851			7	GRANT ST	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0132	491413	1970	3/3/2020
36-016923	464565	62273			9	GRANT ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0133 | 7N, , 2373-0599-0000	491413	1892	3/3/2020
36-016987	464420	62128	BRIDGE #54C-368			GREENSPO	REDLANDS	SAN BERNARDINO		2S, 12/24/1985, 65000682 | 2S, 12/24/1985, FHWA850823A | 3S, , 2373-0453-0000		1912	3/3/2020
36-019647	574488	124712	PROPERTY ACQUISITION AND REHABILITATION		1141	HERALD ST	REDLANDS	SAN BERNARDINO		6Y, 06/15/2000, HUD000605U		1930	3/3/2020
36-016988	464685	62393			402	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0720-0000		1906	3/3/2020
36-016989	464686	62394			408	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0721-0000		1900	3/3/2020
36-016990	464687	62395			412	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0722-0000		1905	3/3/2020
36-016991	464688	62396			416	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0723-0000		1904	3/3/2020
36-016992	464689	62397			420	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0724-0000		1906	3/3/2020
36-016993	464690	62398			424	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0725-0000		1908	3/3/2020
36-016994	464691	62399			504	HIGH AVE	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0726-0000		1926	3/3/2020
36-016995	464222	61929	I. N. HOUG HOUSE	36-2373-001^Survey Number	816	HIGH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0249-0000		1888	3/3/2020
36-016996	464233	61940	OLIVER HICKS HOUSE	36-2373-001^Survey Number	1321	KNOLL RD	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0260-0000		1905	3/3/2020
36-016997	464237	61944			417	LA VERNE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0264-0000		1895	3/3/2020
36-016998	464238	61945			421	LA VERNE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0265-0000		1890	3/3/2020
36-016999	464239	61946			429	LA VERNE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0266-0000		1890	3/3/2020
36-017000	464240	61947			435	LA VERNE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0267-0000		1895	3/3/2020
36-017001	464241	61948			451	LA VERNE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0268-0000		1895	3/3/2020
36-017002	464249	61956	SPENCE-STEWART HOUSE	36-2373-001^Survey Number	1507	LAUREL ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0276-0000			3/3/2020
36-017003	464234	61941	SPENCER HOUSE	36-2373-001^Survey Number	1515	LAUREL ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0261-0000			3/3/2020
36-017004	464235	61942			1619	LAUREL ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0262-0000			3/3/2020
36-017005	464236	61943	TOWERS-FORD HOUSE	36-2373-001^Survey Number	1623	LAUREL ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0263-0000			3/3/2020
36-017006	464642	62350	HOUSE OF NEIGHBORLY SERVICE, BOYS	36-2373-002^Survey Number | GIRLS CLUB OF REDLANDS^Other Name	612	LAWTON S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0677-0000		1927	3/3/2020
36-017007	464242	61949			914	LAWTON S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0269-0000		1895	3/3/2020
36-017008	505045	112534			123	LUGONIA A	REDLANDS	SAN BERNARDINO	92374	6Y, 10/21/1997, DOE-36-97-0005-0000 | 6Y, 10/21/1997, HUD970902AN		1942	3/3/2020

36-017009	491414	94723			221	MICHIGAN	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0001	491413	1902	3/3/2020
36-017010	491415	94724			225	MICHIGAN	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0002	491413	1907	3/3/2020
36-017011	491416	94725			229	MICHIGAN	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0003	491413	1903	3/3/2020
36-017012	491417	94726			233	MICHIGAN	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0004	491413	1905	3/3/2020
36-017013	491419	94735			241	MICHIGAN	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0005	491413	1908	3/3/2020
36-017014	491420	94736			253	MICHIGAN	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0006	491413	1905	3/3/2020
36-017016	464245	61952			1121	MONTERE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0272-0000		1904	3/3/2020
36-017017	464707	62415			214	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0742-0000		1927	3/3/2020
36-017018	464708	62416			218	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0743-0000		1925	3/3/2020
36-017019	464709	62417			226	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0744-0000		1894	3/3/2020
36-017020	464710	62418			232	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0745-0000		1898	3/3/2020
36-017021	464711	62419			238	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0746-0000		1904	3/3/2020
36-017022	464713	62421			240	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0747-0000		1892	3/3/2020
36-017023	464714	62422			246	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0748-0000		1955	3/3/2020
36-017024	464715	62423	UNDERWOOD HOUSE	36-2373-002^Survey Number	249	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0749-0000		1892	3/3/2020
36-017025	464716	62424			250	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0750-0000		1893	3/3/2020
36-017026	464717	62425			253	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0751-0000		1892	3/3/2020
36-017027	464718	62426			254	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0752-0000		1906	3/3/2020
36-017028	464719	62427			257	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0753-0000		1894	3/3/2020
36-017029	464720	62428			260	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0754-0000		1892	3/3/2020
36-017030	464721	62429			305	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0755-0000		1909	3/3/2020
36-017031	464722	62430			309	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0756-0000		1903	3/3/2020
36-017032	464723	62431			313	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0757-0000		1908	3/3/2020
36-017033	464724	62432			317	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0758-0000		1909	3/3/2020
36-017034	464725	62433			321	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0759-0000		1904	3/3/2020
36-017035	471798	70113			321	MYRTLE ST	REDLANDS	SAN BERNARDINO		6Y, 03/25/1991, HUD910227C		1904	3/3/2020
36-017036	464726	62434			325	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0760-0000		1905	3/3/2020
36-017037	464727	62435			328	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0761-0000		1917	3/3/2020
36-017038	464728	62436			329	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0762-0000		1905	3/3/2020
36-017039	464729	62437			330	MYRTLE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0763-0000		1925	3/3/2020
36-017040	464733	62441	J. J. PRENDERGAST PACKING HOUSE	36-2373-002^Survey Number	301	N 3RD ST	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0003 | 3D, 11/17/1989, 2373-0764-0004	464754	1903	3/3/2020
36-017041	464730	62438	REDLANDS MUTUAL ORANGE COMPANY	36-2373-002^Survey Number | 39241^NPS DOE	330	N 4TH ST	REDLANDS	San Bernardino	92373	1D, 10/29/1991, NPS-91001535-0001 | 2S3, 10/11/2018, 5379-36-0015 | 3D, 11/17/1989, 2373-0764-0001	464754	1906	3/3/2020
36-017043	464636	62344			113	N 5TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0671-0000		1905	3/3/2020
36-017042	461199	58900			14	N 5TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0670-0000		1905	3/3/2020
36-017044	464751	62459	REDLANDS HALL OF JUSTICE	36-2373-002^Survey Number	215	N 5TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0021 | 3D, 11/17/1989, 2373-0764-0023	464754	1935	3/3/2020
36-017045	464752	62460	H JACOBSONS WAREHOUSE	36-2373-002^Survey Number	215	N 5TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0022 | 3D, 11/17/1989, 2373-0764-0024	464754	1898	3/3/2020
36-017046	464750	62458	HAIGHT PACKING HOUSE	36-2373-002^Survey Number | MITTEN DISPLAY SIGN^Other Name	345	N 5TH ST	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0020 | 3B, 11/17/1989, 2373-0764-0022	464754	1890	3/3/2020
36-017047	464221	61928	PRESIDENT'S MANSION, UNIVERSITY OF REDLANDS	36-2373-001^Survey Number	625	N GROVE S	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0248-0000		1910	3/3/2020
	681867		North Lincoln Street Bridge			N Lincoln S	Redlands	San Bernardino	92374	6Y, 11/20/2018, COE_2018_1109_001			3/3/2020
36-017048	501308	107956	BARTON VILLA WOOD-FRAME STABLE		11245	NEVADA S	REDLANDS	SAN BERNARDINO	92373	6X, 10/24/1996, NPS-96001176-0003		1950	3/3/2020
36-017049	501306	107954	BARTON VILLA		11245	NEVADA S	REDLANDS	SAN BERNARDINO	92373	1D, 10/24/1996, NPS-96001176-0001		1866	3/3/2020
36-017050	501307	107955	BARTON VILLA BRICK MASONRY OUTBUILDING		11245	NEVADA S	REDLANDS	SAN BERNARDINO	92373	1D, 10/24/1996, NPS-96001176-0002		1866	3/3/2020
36-017051	495984	100985	BARTON VILLA|BARTON HOUSE|BARTON RANCH	BARTON HOUSE^Other Name | BARTON RANCH^Other Name | BARTON VILLA^Official Historic Name | NPS-96001176-0000^National Register	11245	NEVADA S	REDLANDS	San Bernardino	92373	1S, 10/24/1996, NPS-96001176-9999 | 3S, 02/28/1996, 36-0034		1866	3/3/2020
36-017052	464448	62156			215	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0481-0000		1905	3/3/2020
36-017053	464449	62157			219	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0482-0000		1891	3/3/2020
36-017054	464450	62158			220	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0483-0000		1894	3/3/2020
36-017055	464452	62160			223	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0485-0000		1907	3/3/2020
36-017056	464451	62159			223	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0484-0000		1897	3/3/2020
36-017057	464453	62161	HENRY NORRIS HOUSE	36-2373-002^Survey Number	226	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0486-0000		1897	3/3/2020
36-017058	464454	62162	EMMA M HALL HOUSE	36-2373-002^Survey Number	229	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0487-0000		1900	3/3/2020

36-017059	464455	62163	AVIS ASHBY HOUSE	36-2373-002^Survey Number	235	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0488-0000			1899	3/3/2020
36-017060	464456	62164			239	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0489-0000			1898	3/3/2020
36-017061	464457	62165	LOUISA E WELLMAN HOUSE	36-2373-002^Survey Number	240	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0490-0000			1902	3/3/2020
36-017062	464458	62166	J O STEWARD HOUSE	36-2373-002^Survey Number	243	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0491-0000			1899	3/3/2020
36-017063	464459	62167	J J REEVES HOUSE	36-2373-002^Survey Number	247	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0492-0000			1899	3/3/2020
36-017064	464460	62168			250	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0493-0000			1899	3/3/2020
36-017065	464461	62169	LYDIA J PRATT HOUSE	36-2373-002^Survey Number	251	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0494-0000			1904	3/3/2020
36-017066	464462	62170			255	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0495-0000			1941	3/3/2020
36-017067	464463	62171			256	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0496-0000			1894	3/3/2020
36-017068	487756	90363			257	NORDINA S	REDLANDS	SAN BERNARDINO	92373	3S, 01/01/1986,			1891	3/3/2020
36-017069	464464	62172			260	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0498-0000			1894	3/3/2020
36-017070	464465	62173	ROBBINS RETREAT RETIREMENT CENTER	36-2373-002^Survey Number	302	NORDINA S	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0499-0000			1904	3/3/2020
36-017071	464466	62174	ERNEST K CAREY HOUSE	36-2373-002^Survey Number	303	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0500-0000			1903	3/3/2020
36-017072	464467	62175			305	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0501-0000			1912	3/3/2020
36-017073	464468	62176			309	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0502-0000			1903	3/3/2020
36-017074	464469	62177			314	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0503-0000			1903	3/3/2020
36-017075	464470	62178			315	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0504-0000			1903	3/3/2020
36-017076	464471	62179			317	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0505-0000			1903	3/3/2020
36-017077	464472	62180			318	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0506-0000			1909	3/3/2020
36-017078	464473	62181			322	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0507-0000			1904	3/3/2020
36-017079	464474	62182			323	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0508-0000				3/3/2020
36-017080	464475	62183			325	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0509-0000			1910	3/3/2020
36-017081	464476	62184			326	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0510-0000			1905	3/3/2020
36-017082	464477	62185			330	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0511-0000			1904	3/3/2020
36-017083	464246	61953			331	NORDINA S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0273-0000			1904	3/3/2020
36-017084	464478	62186			333	NORDINA S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0512-0000			1903	3/3/2020
36-017085	491694	95139			314	OLIVE AVE	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0337		491413	1901	3/3/2020
	515540	183187	LUGONIA AVENUE PROJECT (33 RES BUILDINGS & COMMUNI	LUGONIA AVENUE PROJECT (33 RES BUILDINGS & COMMUNITY CENTER)^Other Name		ORANGE A	REDLANDS	SAN BERNARDINO		6Y, 07/01/2011, HUD110609H			1943	3/3/2020
	566034	132252	BUILDING BETWEEN 337 & 351 ORANGE ST			ORANGE S	REDLANDS	SAN BERNARDINO		6X, 10/29/1991, NPS-91001535-0030		464754	1991	3/3/2020
36-017088	464754	62464	REDLANDS SANTA FE DEPOT HISTORIC DISTRICT	36-2373-002^Survey Number | REDLANDS SANTA FE DEPOT HISTORIC DISTRICT, REDLANDS DEPOT HI^Official Historic Name		ORANGE S	REDLANDS	San Bernardino		1S, 10/29/1991, 36-0011 | 1S, 10/29/1991, NPS-91001535-9999 | 3S, 11/17/1989, 2373-0764-9999	###		1888-1946	3/3/2020
36-017121	464279	61986			1001	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0306-0000			1895	3/3/2020
36-017089	464643	62351	MESERVE SANBORN BUILDING	36-2373-002^Survey Number	108	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0678-0000			1891	3/3/2020
36-017122	464278	61985			1101	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0305-0000			1890	3/3/2020
36-017123	464277	61984	JEROME E. SEYMOUR HOUSE	36-2373-001^Survey Number	1157	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0304-0000			1890	3/3/2020
36-017090	464644	62352	McLEAN WAGON SHOP	36-2373-002^Survey Number	118	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0679-0000			1891	3/3/2020
36-017091	464645	62353	WALTER C HARGRAVE BLOCK	36-2373-002^Survey Number	120	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0680-0000			1894	3/3/2020
36-017092	464646	62354	A C CHITTENDEN BUILDING	36-2373-002^Survey Number	122	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0681-0000			1894	3/3/2020
36-017124	464276	61983			1234	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0303-0000			1900	3/3/2020
36-017125	473436	72410			1407	ORANGE S	REDLANDS	SAN BERNARDINO		6Y, 07/11/1991, HUD910614S			1938	3/3/2020
	568669	129085			1609	ORANGE S	REDLANDS	SAN BERNARDINO		6Y, 11/02/2001, DOE-36-01-0007-0000 | 6Y, 11/02/2001, HUD011003G			1920	3/3/2020
36-017093	464749	62457	HAMILTON BLOCK	36-2373-002^Survey Number	206	ORANGE S	REDLANDS	SAN BERNARDINO	92373	6X, 10/29/1991, NPS-91001535-0019 | 6Z, 11/17/1989, 2373-0764-0021		464754	1888	3/3/2020
36-017094	464748	62456	LEVINES, CALEBS	36-2373-002^Survey Number	208	ORANGE S	REDLANDS	SAN BERNARDINO	92373	6X, 10/29/1991, NPS-91001535-0018 | 6Z, 11/17/1989, 2373-0764-0020		464754	1894	3/3/2020
36-017095	464747	62455	GREGG BLOCK	36-2373-002^Survey Number	216	ORANGE S	REDLANDS	SAN BERNARDINO	92373	6X, 10/29/1991, NPS-91001535-0017 | 6Z, 11/17/1989, 2373-0764-0019		464754	1888	3/3/2020
36-017096	464746	62454	PHINNEY BLOCK	36-2373-002^Survey Number | JOE GREENSLEEVES^Other Name	220	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0016 | 3B, 11/17/1989, 2373-0764-0018		464754	1892	3/3/2020
36-017097	464745	62453	E. I. MARTIN HOME AND NURSERY	36-2373-002^Survey Number | VIDEO GENESIS^Other Name	328	ORANGE S	REDLANDS	SAN BERNARDINO	92373	6X, 10/29/1991, NPS-91001535-0015 | 6X, 11/17/1989, 2373-0764-0017		464754	1902	3/3/2020
36-017098	464744	62452	HAMILTON BLOCK	36-2373-002^Survey Number | CARLSON HARDWARE^Other Name	330	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0014 | 7N, 11/17/1989, 2373-0764-0016		464754	1888	3/3/2020
36-017099	491212	94454			333	ORANGE S	REDLANDS	SAN BERNARDINO		6X, 10/29/1991, NPS-91001535-0029		464754	1980	3/3/2020
36-017100	464743	62451	BEACON PRINTERY	36-2373-002^Survey Number	336	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0013 | 7N, 11/17/1989, 2373-0764-0015		464754	1902	3/3/2020
36-017101	464737	62445	REDLANDS BOARD OF TRADE, REDLANDS CHAMBER OF COMME	36-2373-002^Survey Number | REDLANDS BOARD OF TRADE, REDLANDS CHAMBER OF COMMERCE^Other Name	337	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0006 | 3D, 11/17/1989, 2373-0764-0008		464754	1912	3/3/2020

36-017102	464742	62450	THE WORLEY BUILDING	36-2373-002^Survey Number	338	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0012 | 3D, 11/17/1989, 2373-0764-0014	464754	1892	3/3/2020
36-017103	464741	62449	THE POUNDSTONE AND HAMILTON BUILDING	36-2373-002^Survey Number | RALPH'S ANTIQUES^Other Name	342	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0011 | 3D, 11/17/1989, 2373-0764-0013	464754	1898	3/3/2020
36-017104	464712	62420	LIVERY AND FEED PALACE, REDLANDS AUTO BODY	36-2373-002^Survey Number	346	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0010 | 3D, 11/17/1989, 2373-0746-0012	464754	1908	3/3/2020
36-017105	464740	62448	PIONEER TRANSFER	36-2373-002^Survey Number | PALACE LIVERY, REDLANDS FLOOR COVERINGS^Other Name	348	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0009 | 3D, 11/17/1989, 2373-0764-0011	464754	1897	3/3/2020
36-017106	464738	62446	AT&SF RR-REDLANDS Station|Santa Fe Railway	36-2373-002^Survey Number | 39969^NPS DOE | AT&SF RR-REDLANDS Station^Other Name | ATCHISON, TOPEKA, AND SANTA FE RAILWAY-REDLANDS STATION^Other Name	351	ORANGE S	REDLANDS	San Bernardino	92373	1D, 10/29/1991, NPS-91001535-0007 | 2S3, 03/14/2019, 537.9-36-0016 | 3B, 11/17/1989, 2373-0764-0009 | 7P, 10/29/1976, SPHI-SBR-089	464754	1909	3/3/2020
36-017107	464739	62447	REDLANDS CITY TRANSFER LITE, LITE HOUSE ANTIQUE	36-2373-002^Survey Number	360	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0008 | 3D, 11/17/1989, 2373-0764-0010	464754	1906	3/3/2020
36-017109	464736	62444	PACKARD MOTOR COMPANY SALES OFFICE, COAST FEDERAL	36-2373-002^Survey Number | PACKARD MOTOR COMPANY SALES OFFICE, COAST FEDERAL SAVINGS^Other Name	415	ORANGE S	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0005 | 6X, 11/17/1989, 2373-0764-0007	464754	1923	3/3/2020
36-017110	464648	62356			418	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0683-0000		1919	3/3/2020
36-017111	464649	62357	E F EDWARDS PHOTOGRAPHY SHOP	36-2373-002^Survey Number	501	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0684-0000		1898	3/3/2020
36-017112	464650	62358			508	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0685-0000		1893	3/3/2020
36-017113	464651	62359	LINSLEY FURNITURE COMAPANY, REDLANDS GLASS HOUSE	36-2373-002^Survey Number	510	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0686-0000		1902	3/3/2020
36-017114	464652	62360	DURANT BUILDING, SAN BERNARDINO COUNTY BUILDING	36-2373-002^Survey Number	515	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0687-0000		1923	3/3/2020
36-017115	464653	62361	DEMING BUILDING	36-2373-002^Survey Number	526	ORANGE S	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0688-0000		1913	3/3/2020
36-017116	464654	62362			527	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0689-0000		1894	3/3/2020
36-017117	468229	66078			921	ORANGE S	REDLANDS	SAN BERNARDINO		6Y, 08/28/1989, HUD890731C			3/3/2020
36-017118	464282	61989			928	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0309-0000		1900	3/3/2020
36-017119	464281	61988			930	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0308-0000		1900	3/3/2020
36-017120	464280	61987			931	ORANGE S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0307-0000		1895	3/3/2020
36-017126	464732	62440	GREGORY PACKING HOUSE	36-2373-002^Survey Number		ORIENTAL	REDLANDS	SAN BERNARDINO		3D, 11/17/1989, 2373-0764-0003 | 6X, 10/29/1991, NPS-91001535-0023	464754	1903	3/3/2020
36-017127	464753	62461	202-204-208 ORIENTAL AVE	36-2373-002^Survey Number | THREE WAREHOUSES^Other Name	202	ORIENTAL	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0025 | 3B, 11/17/1989, 2373-0764-0025	464754	1907	3/3/2020
36-017128	491210	94452	203 ORIENTAL AVE		203	ORIENTAL	REDLANDS	SAN BERNARDINO		6X, 10/29/1991, NPS-91001535-0027	464754	1950	3/3/2020
36-017129	464735	62443	QUALITY SLACKS OF CALIFORNIA	36-2373-002^Survey Number	225	ORIENTAL	REDLANDS	SAN BERNARDINO	92373	3D, 11/17/1989, 2373-0764-0006 | 6X, 10/29/1991, NPS-91001535-0024	464754	1946	3/3/2020
36-017130	491209	94451	REDLAND FRUIT ASSOCIATION WAREHOUSE		241	ORIENTAL	REDLANDS	SAN BERNARDINO		1D, 10/29/1991, NPS-91001535-0026	464754	1908	3/3/2020
36-017132	464684	62392	City Transfer and Storage Company Warehouse	36-2373-002^Survey Number	440	ORIENTAL	REDLANDS	San Bernardino	92373	2S3, 03/29/2019, 537.9-36-0017 | 5S2, , 2373-0719-0000		1906	3/3/2020
36-017131	464421	62129	ORIENTAL STREET			ORIENTAL	REDLANDS	SAN BERNARDINO		7R, , 2373-0454-0000		1880	3/3/2020
36-017134	464247	61954	NORDOFF HOME	36-2373-001^Survey Number	1124	PACIFIC ST	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0274-0000 | 7P, 08/07/1975, SPHI-SBR-057		1899	3/3/2020
36-017133	464248	61955			808	PACIFIC ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0275-0000		1898	3/3/2020
36-017135	464540	62248			100	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94000148-0053 | 7N, , 2373-0574-0000		1901	3/3/2020
36-017136	464541	62249			114	PARKWOO	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0054 | 7N, , 2373-0575-0000	491413	1927	3/3/2020
36-017137	464542	62250			116	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0055 | 7N, , 2373-0576-0000	491413	1903	3/3/2020
36-017138	464543	62251	WILLARD AND ALICE CANNADY HOUSE	36-2373-002^Survey Number	118	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0056 | 7N, , 2373-0577-0000	491413	1901	3/3/2020
36-017139	464544	62252	ADA E WHITE HOUSE	36-2373-002^Survey Number	124	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0057 | 7N, , 2373-0578-0000	491413	1901	3/3/2020
36-017140	464545	62253	THE HERMOSA	36-2373-002^Survey Number	128	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0058 | 7N, , 2373-0579-0000	491413	1902	3/3/2020

36-017141	464546	62254	WILLIAM E WILLIS HOUSE	36-2373-002^Survey Number	134	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0059 | 7N, , 2373-0580-0000	491413	1902	3/3/2020
36-017142	464547	62255			138	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0060 | 7N, , 2373-0581-0000	491413	1903	3/3/2020
36-017143	464548	62256	MARGARET CARMICHAEL HOUSE	36-2373-002^Survey Number	144	PARKWOO	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0061 | 7N, , 2373-0582-0000	491413	1901	3/3/2020
36-017144	464424	62132	KIMBERLY CREST		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	1CL, 08/24/1995, 36-0032 | 1CL, 12/08/1995, SHL-1019-0001 | 1D, 03/28/1996, NPS-96000328-0001 | 3S, , 2373-0457-0000 | 3S, 12/20/1988, 619.0-HP-88-36-011		1897	3/3/2020
36-017145	497418	103098	PERGOLA		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	6X, 03/28/1996, NPS-96000328-0008			3/3/2020
36-017146	497417	103097	SEMI-CIRCULAR PERGOLA		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	1CL, 12/08/1995, SHL-1019-0007 | 1D, 03/28/1996, NPS-96000328-0007			3/3/2020
36-017147	497416	103096	CAST-IRON FOUNTAIN 'VENUS RISING FROM THE SEA'		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	1CL, 12/08/1995, SHL-1019-0006 | 1D, 03/28/1996, NPS-96000328-0006		1897	3/3/2020
36-017148	497415	103095	RECESSED WATER FOUNTAIN		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	1CL, 12/08/1995, SHL-1019-0005 | 1D, 03/28/1996, NPS-96000328-0005		1909	3/3/2020
36-017149	497412	103092	CARRIAGE HOUSE		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	1CL, 12/08/1995, SHL-1019-0002 | 1D, 03/28/1996, NPS-96000328-0002		1897	3/3/2020
36-017150	497411	103091	KIMBERLY CREST	NPS-96000328-0000^National Register	1325	PROSPECT	REDLANDS	San Bernardino	92373	1CL, 12/08/1995, SHL-1019-9999 | 1S, 03/28/1996, NPS-96000328-9999 | 3S, 03/28/1996, 36-0033		1896-1945	3/3/2020
36-017151	497414	103094	PERGOLA		1325	PROSPECT	REDLANDS	SAN BERNARDINO	92373	1CL, 12/08/1995, SHL-1019-0004 | 1D, 03/28/1996, NPS-96000328-0004		1909	3/3/2020
36-017153	464368	62076	J.H. KEMBLE HOUSE	36-2373-001^Survey Number	432	S 4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0398-0000		1900	3/3/2020
36-017154	464379	62087			438	S 4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0410-0000		1902	3/3/2020
36-017155	464386	62094			442	S 4TH ST	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0417-0000		1900	3/3/2020
36-017156	491421	94738			102	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0007	491413	1901	3/3/2020
36-017157	491445	94768			103	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0031	491413	1901	3/3/2020
36-017158	491446	94770			107	S BUENA V	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0032	491413	1902	3/3/2020
36-017159	491422	94739			108	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0008	491413	1902	3/3/2020
36-017160	491447	94771			113	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0033	491413	1901	3/3/2020
36-017161	491423	94740			114	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0009	491413	1901	3/3/2020
36-017162	491424	94741			118	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0010	491413	1901	3/3/2020
36-017163	491448	94772			119	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0034	491413	1901	3/3/2020
36-017164	491449	94773			121	S BUENA V	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0035	491413	1950	3/3/2020
36-017165	491425	94743			124	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0011	491413	1902	3/3/2020
36-017166	491426	94744			126	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0012	491413	1901	3/3/2020
36-017167	491450	94774			127	S BUENA V	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0036	491413	1950	3/3/2020
36-017168	491427	94745			128	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0013	491413	1902	3/3/2020
36-017169	491451	94775			133	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0037	491413	1901	3/3/2020
36-017170	491452	94776			137	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0038	491413	1901	3/3/2020
36-017171	491428	94747			142	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0014	491413	1901	3/3/2020
36-017172	491453	94777			143	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0039	491413	1901	3/3/2020
36-017173	464025	61732			220	S BUENA V	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0052-0000		1890	3/3/2020
36-017174	491429	94748			220	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0015	491413	1902	3/3/2020

36-017175	491454	94778		221	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0040	491413	1902	3/3/2020
36-017176	464024	61731		222	S BUENA V	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0051-0000		1895	3/3/2020
36-017177	491430	94749		222	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0016	491413	1895	3/3/2020
36-017178	491431	94750		224	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0017	491413	1905	3/3/2020
36-017179	491455	94779		225	S BUENA V	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0041	491413	1905	3/3/2020
36-017180	464023	61730		226	S BUENA V	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0050-0000		1904	3/3/2020
36-017181	491432	94751		226	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0018	491413	1908	3/3/2020
36-017182	491433	94752		230	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0019	491413	1910	3/3/2020
36-017183	491111	94780		231	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0042	491413	1903	3/3/2020
36-017184	491112	94781		239	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0043	491413	1902	3/3/2020
36-017185	491113	94782	EWING NEWTON RESIDENCE	243	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0044	491413	1902-1909	3/3/2020
36-017186	491114	94783		249	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0045	491413	1903	3/3/2020
36-017187	491434	94753		250	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0020	491413	1909	3/3/2020
36-017188	491115	94784		255	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0046	491413	1902	3/3/2020
36-017189	491435	94754		256	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0021	491413	1902	3/3/2020
36-017190	491437	94758		304	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0023	491413	1902	3/3/2020
36-017191	464022	61729		305	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0048 | 5S2, , 2373-0049-0000	491413	1910	3/3/2020
36-017192	464021	61728		307	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0049 | 5S2, , 2373-0048-0000	491413	1910	3/3/2020
36-017193	491117	94788		311	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0050	491413	1910	3/3/2020
36-017194	491438	94759		314	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0024	491413	1903	3/3/2020
36-017195	491118	94789		319	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0051	491413	1911	3/3/2020
36-017196	491439	94761		320	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0025	491413	1912	3/3/2020
36-017197	491440	94762		324	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0026	491413	1912	3/3/2020
36-017198	491119	94790		325	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0052	491413	1906	3/3/2020
36-017199	491441	94763		330	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0027	491413	1902	3/3/2020
36-017200	491442	94764		332	S BUENA V	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0028	491413	1905	3/3/2020
36-017201	464020	61727		335	S BUENA V	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0047-0000		1913	3/3/2020
36-017202	464110	61817		236	S CENTER S	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0137-0000		1905	3/3/2020
36-017210	491606	95045	DOW-BOWMAN HOUSE	172	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0194	491413	1900	3/3/2020
36-017203	491600	95038		18	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0187	491413	1899	3/3/2020
36-017211	491607	95046	S.R. THORNE HOUSE	180	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0195	491413	1900	3/3/2020
36-017212	491636	95078		183	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0232	491413	1904	3/3/2020
36-017213	491608	95047	WALTER LYNN HOME	184	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0196	491413	1887	3/3/2020
36-017214	491637	95079		185	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0233	491413	1904	3/3/2020
36-017215	491609	95048	DR. M.M. HOOTEN HOME	188	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0197	491413	1898	3/3/2020
36-017216	491610	95049		226	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0198	491413	1895	3/3/2020
36-017217	491611	95050		230	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0199	491413	1896-1897	3/3/2020
36-017218	491612	95051		234	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0200	491413	1895	3/3/2020
36-017219	491613	95052		238	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0201	491413	1887	3/3/2020

36-017204	491601	95039		24	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0188	491413	1890	3/3/2020
36-017220	491614	95053	COUSIN HOME	244	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0202	491413	1896	3/3/2020
36-017221	491615	95054		248	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0203	491413	1892	3/3/2020
36-017222	491638	95080		255	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0234	491413	1896	3/3/2020
36-017223	491616	95055		256	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0204	491413	1898	3/3/2020
36-017205	491602	95040		28	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0189	491413	1896	3/3/2020
36-017224	491639	95081		301	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0235	491413	1899	3/3/2020
36-017225	491618	95058		304	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0206	491413	1891	3/3/2020
36-017226	491640	95082		305	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0236	491413	1901	3/3/2020
36-017227	491619	95059		310	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0207	491413	1960	3/3/2020
36-017228	491641	95083		311	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0237	491413	1901	3/3/2020
36-017229	491642	95084		317	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0238	491413	1902	3/3/2020
36-017230	491620	95060	SIMPSON HOME	318	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0208	491413	1892	3/3/2020
36-017206	491603	95041	W.S. WARREN HOUSE	32	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0190	491413	1893	3/3/2020
36-017231	491643	95085		321	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0239	491413	1901	3/3/2020
36-017232	491621	95061	WOLCOTT RESIDENCE	324	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0209	491413	1888	3/3/2020
36-017233	491644	95086		325	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0240	491413	1901	3/3/2020
36-017234	491622	95062		328	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0210	491413	1983	3/3/2020
36-017235	491645	95087		331	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0241	491413	1903	3/3/2020
36-017236	491623	95063		332	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0211	491413	1889	3/3/2020
36-017237	491646	95088		335	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0242	491413	1891	3/3/2020
36-017238	491647	95089		337	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0243	491413	1899	3/3/2020
36-017239	491624	95064		338	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0212	491413	1889	3/3/2020
36-017240	491625	95066		344	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0288	491413	1894	3/3/2020
36-017241	491626	95067		350	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0301	491413	1895	3/3/2020
36-017207	491604	95042		36	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0191	491413	1897	3/3/2020
36-017208	491605	95043		40	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0192	491413	1897	3/3/2020
36-017242	491648	95090		417	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0244	491413	1895	3/3/2020
36-017243	491627	95068		420	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0302	491413	1925	3/3/2020
36-017244	491628	95069		424	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0213	491413	1895	3/3/2020
36-017245	491649	95091		425	S EUREKA S	REDLANDS	SAN BERNARDINO		1D, 12/29/1994, NPS-94001487-0245	491413	1903	3/3/2020
36-017246	491650	95092		429	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0246	491413	1900	3/3/2020
36-017247	491629	95070		430	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0214	491413	1920	3/3/2020
36-017248	491651	95093		433	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0247	491413	1926	3/3/2020
36-017249	491630	95071		434	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0215	491413		3/3/2020
36-017250	491652	95094		437	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0248	491413	1910	3/3/2020
36-017251	491653	95095		439	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0249	491413	1910	3/3/2020
36-017252	491631	95072		440	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0216	491413	1908	3/3/2020

36-017253	491632	95073			444	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0217	491413	1910	3/3/2020
36-016904	464134	61841			448	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0218 | 5S2, , 2373-0161-0000	491413	1910	3/3/2020
36-017254	491654	95096			449	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0250	491413	1927	3/3/2020
36-017255	491655	95097			455	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0251	491413	1910	3/3/2020
36-017256	491633	95074			456	S EUREKA S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0219	491413	1906	3/3/2020
36-017257	464293	62000	S.C. HAVER HOUSE, SHILOH HOUSE	36-2373-001^Survey Number	1056	SAN JACINT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0321-0000		1888	3/3/2020
36-017258	464294	62001			214	SAN MATE	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0322-0000		1889	3/3/2020
36-017259	464300	62008	CHINESE BUNKHOUSE	36-2373-001^Survey Number		SAN TIMET	REDLANDS	SAN BERNARDINO		3S, , 2373-0330-0000		1888	3/3/2020
36-017260	464299	62007	BROOKSIDE WINERY, CREATIVE EDUCATIONAL CENTER	36-2373-001^Survey Number		SAN TIMET	REDLANDS	SAN BERNARDINO		3S, , 2373-0329-0000		1888	3/3/2020
	513357	184687	AUERBACKER HOME		121	SIERRA VIS	REDLANDS	SAN BERNARDINO	92373	1S, 08/01/2012, NPS-12000442-0000 | 3S, 10/28/2011, 36-0105		1952	3/3/2020
36-017261	464582	62290			214	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0616-0000		1903	3/3/2020
36-017262	464583	62291			215	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0617-0000		1924	3/3/2020
36-017263	464584	62292			219	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0618-0000		1925	3/3/2020
36-017264	464585	62293	L O HAMMOND HOUSE	36-2373-002^Survey Number	220	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0619-0000		1893	3/3/2020
36-017265	464586	62294	ALEXANDER M FOSTER HOUSE	36-2373-002^Survey Number	221	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0620-0000		1892	3/3/2020
36-017266	464587	62295			224	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0621-0000		1893	3/3/2020
36-017267	464588	62296			227	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0622-0000		1925	3/3/2020
36-017268	464589	62297	BERNARD H. JACOBS HOUSE	36-2373-002^Survey Number	228	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0623-0000		1894	3/3/2020
36-017269	464590	62298	JOHN T TOLLE HOUSE	36-2373-002^Survey Number	231	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0624-0000		1892	3/3/2020
36-017270	464591	62299	J H DUTRO HOUSE	36-2373-002^Survey Number	238	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0625-0000		1893	3/3/2020
36-017271	464592	62300			239	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0626-0000			3/3/2020
36-017272	464593	62301			240	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0627-0000			3/3/2020
36-017273	464594	62302			241	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0628-0000			3/3/2020
36-017274	464595	62303			243	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0629-0000		1899	3/3/2020
36-017275	464596	62304	J C BINGHAM HOUSE	36-2373-002^Survey Number	244	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0630-0000		1893	3/3/2020
36-017276	464597	62305	ROBERT C AVERY HOUSE	36-2373-002^Survey Number	247	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0631-0000		1893	3/3/2020
36-017277	464598	62306	ALEXANDER M FOSTER HOUSE	36-2373-002^Survey Number	250	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0632-0000		1903	3/3/2020
36-017278	464599	62307	EZRA STRONG HOUSE	36-2373-002^Survey Number	252	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0633-0000		1904	3/3/2020
36-017279	464600	62308			255	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0634-0000		1960	3/3/2020
36-017280	464601	62309			259	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0635-0000		1895	3/3/2020
36-017281	464602	62310			260	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0636-0000		1950	3/3/2020
36-017282	464603	62311	FANNIE WOLFENBERGER HOUSE	36-2373-002^Survey Number	302	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0637-0000		1904	3/3/2020
36-017283	464604	62312	G. W. HOLLIDAY HOUSE	36-2373-002^Survey Number	303	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0638-0000		1905	3/3/2020
36-017284	464605	62313	ALEX FLETCHER HOUSE	36-2373-002^Survey Number	305	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0639-0000		1904	3/3/2020
36-017285	464606	62314			310	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0640-0000		1908	3/3/2020
36-017286	464607	62315			315	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0641-0000		1908	3/3/2020
36-017287	464608	62316			318	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0642-0000		1908	3/3/2020
36-017288	464609	62317			319	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7R, , 2373-0643-0000		1960	3/3/2020
36-017289	464610	62318			321	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0644-0000		1904	3/3/2020
36-017290	464611	62319			322	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0645-0000		1910	3/3/2020
36-017291	464612	62320			325	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0646-0000		1907	3/3/2020
36-017292	472046	70382			326	SONORA ST	REDLANDS	SAN BERNARDINO		6Y, 05/21/1991, HUD910424A		1939	3/3/2020
36-017293	464613	62321			326	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0647-0000		1903	3/3/2020
36-017294	464614	62322			328	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0648-0000		1911	3/3/2020
36-017295	464615	62323			329	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0649-0000		1912	3/3/2020
36-017296	464616	62324			336	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0650-0000		1903	3/3/2020
36-017297	464617	62325			340	SONORA ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0651-0000		1903	3/3/2020
36-017536	464418	62126	BRIDGE #54-341			SR 30	REDLANDS	SAN BERNARDINO		7R, , 2373-0451-0000		1916	3/3/2020
36-017537	464419	62127	BRIDGE #54-342			SR 30	REDLANDS	SAN BERNARDINO		7R, , 2373-0452-0000		1932	3/3/2020
	520334	177749			812	STILLMAN	REDLANDS	SAN BERNARDINO	92374	6Y, 12/15/2009, HUD091116A		1930	3/3/2020
36-017299	464297	62004			134	SUMMIT A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0325-0000		1888	3/3/2020
36-017300	464296	62003	TALL TREES, C. H.MEIGS, SAMUEL SEWALL HOUSE	36-2373-001^Survey Number	419	SUMMIT A	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0324-0000		1897	3/3/2020
36-017298	464298	62005	BENTON JOHNSON HOME	36-2373-001^Survey Number	52	SUMMIT A	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0326-0000		1889	3/3/2020
36-017301	464414	62122	MILL CREEK ZANJA			SYLVAN BL	REDLANDS	SAN BERNARDINO		1S, 05/12/1977, 2373-0447-0000 | 1S, 05/12/1977, NPS-77000329-0000 | 2S2, 06/17/1996, DOE-36-96-0019-0000 | 2S2, 06/17/1996, FEMA960107A | 7L, 08/01/1932, SHL-0043-0000		1819	3/3/2020
36-017302	464307	62015	MOREY HOUSE	36-2373-001^Survey Number | MOREY-CHENEY HOUSE^Other Name	190	TERRACINA	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0337-0000 | 7P, 08/07/1975, SPHI-SBR-064		1890	3/3/2020
36-017303	464306	62014	MOORE HOUSE	36-2373-001^Survey Number	220	TERRACINA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0336-0000		1890	3/3/2020
36-017304	464305	62013			244	TERRACINA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0335-0000		1900	3/3/2020
36-017305	464304	62012	HILLIARD HOUSE	36-2373-001^Survey Number	543	TERRACINA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0334-0000		1901	3/3/2020
36-017306	464303	62011	GRIGSBY HOUSE	36-2373-001^Survey Number	560	TERRACINA	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0333-0000		1902	3/3/2020

36-017307	464302	62010	B. W. CAVE RESIDENCE	36-2373-001^Survey Number	122	THE TERRA	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0332-0000		1890	3/3/2020
36-017308	464301	62009	CLARK HOUSE	36-2373-001^Survey Number	162	THE TERRA	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0331-0000		1890	3/3/2020
	526444	171758			921	TRIBUNE S	REDLANDS	SAN BERNARDINO	92374	6Y, 06/13/2008, HUD080527D		1892	3/3/2020
	568541	129360			527	UNIVERSIT	REDLANDS	SAN BERNARDINO		6Y, 12/11/2001, DOE-36-01-0011-0000 | 6Y, 12/11/2001, HUD011206A		1925	3/3/2020
36-017309	491617	95057			212	W CLARK S	REDLANDS	SAN BERNARDINO	95057	1D, 12/29/1994, NPS-94001487-0205	491413	1900	3/3/2020
36-017310	491469	94880			216	W CLARK S	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0149	491413	1912	3/3/2020
36-017311	491467	94877			222	W CLARK S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0148	491413	1936	3/3/2020
36-017312	491116	94786			416	W CLARK S	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0047	491413	1909	3/3/2020
36-017313	491436	94756			514	W CLARK S	REDLANDS	SAN BERNARDINO		6X, 12/29/1994, NPS-94001487-0022	491413	1919	3/3/2020
36-017314	476879	76959			107	W COLTON	REDLANDS	SAN BERNARDINO		6Y, 05/27/1992, HUD920429B		1929	3/3/2020
36-017315	471797	70112			206	W COLTON	REDLANDS	SAN BERNARDINO		6Y, 03/25/1991, HUD910227B		1910	3/3/2020
36-017316	469246	67112	PROPERTY REHABILITATION		208	W COLTON	REDLANDS	SAN BERNARDINO		6Y, 02/15/1990, HUD900123A			3/3/2020
36-017317	464054	61761	LA CASADA, EDWARD C STERLING MANSION	36-2373-001^Survey Number	1115	W CRESCE	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0081-0000		1897	3/3/2020
36-017318	488277	91054	A. C. BURRAGE MANSION		1205	W CRESCE	REDLANDS	SAN BERNARDINO		7P, 08/07/1975, SPHI-SBR-068		1901	3/3/2020
36-017329	464055	61762			1478	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0082-0000		1901	3/3/2020
36-017319	491594	95032			202	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0180	491413	1910	3/3/2020
36-017320	491593	95031			210	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0179	491413	1920	3/3/2020
36-017321	491592	95030			214	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0178	491413	1905	3/3/2020
36-017322	491595	95033			217	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0181	491413	1910	3/3/2020
36-017323	491591	95029			220	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0177	491413	1910	3/3/2020
36-017324	491597	95035			325	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	6X, 12/24/1994, NPS-94001487-0182	491413	1920	3/3/2020
36-017325	464059	61766			329	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0183 | 5S2, , 2373-0086-0000	491413	1912	3/3/2020
36-017326	464058	61765			330	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0176 | 5S2, , 2373-0085-0000	491413	1911	3/3/2020
36-017327	464057	61764	FRANK E BROWN HOUSE	36-2373-001^Survey Number	815	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0084-0000		1882	3/3/2020
36-017328	464056	61763			921	W CYPRESS	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0083-0000		1890	3/3/2020
36-017330	474502	73652			110	W DELAWA	REDLANDS	SAN BERNARDINO		6Y, 11/01/1991, HUD911008B		1910	3/3/2020
36-017331	492058	95461			101	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0378	491413	1901	3/3/2020
36-017332	492052	95455			108	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0367	491413	1912	3/3/2020
36-017333	464180	61887			109	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0379 | 5S2, , 2373-0207-0000	491413	1901	3/3/2020
36-017334	464181	61888			115	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0380 | 5S2, , 2373-0208-0000	491413	1903	3/3/2020
36-017335	492053	95456			116	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0368	491413	1908	3/3/2020
36-017336	464182	61889			118	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0369 | 5S2, , 2373-0209-0000	491413	1898	3/3/2020
36-017337	464183	61890			119	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0381 | 5S2, , 2373-0210-0000	491413	1903	3/3/2020
36-017338	464184	61891			121	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0382 | 5S2, , 2373-0211-0000	491413	1909	3/3/2020
36-017339	492054	95457			124	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0370	491413	1908	3/3/2020
36-017340	492059	95462			201	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0383	491413	1903	3/3/2020
36-017341	492055	95458			202	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0371	491413	1910	3/3/2020
36-017342	492060	95463			205	W FERN AV	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0384	491413	1940	3/3/2020
36-017343	492061	95464			211	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0385	491413	1908	3/3/2020

36-017344	492062	95465			217	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0386	491413	1910	3/3/2020
36-017345	464185	61892			218	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0372 | 5S2, , 2373-0212-0000	491413	1895	3/3/2020
36-017346	492063	95466			223	W FERN AV	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0387	491413	1924	3/3/2020
36-017347	492064	95467			227	W FERN AV	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0388	491413	1915	3/3/2020
36-017348	492056	95459			228	W FERN AV	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0373	491413	1940	3/3/2020
36-017349	492065	95468			301	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0389	491413	1903	3/3/2020
36-017350	492057	95460			302	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0374	491413	1904	3/3/2020
36-017351	464186	61893			305	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0390 | 5S2, , 2373-0213-0000	491413	1908	3/3/2020
36-017352	464187	61894			308	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0375 | 5S2, , 2373-0214-0000	491413	1902	3/3/2020
36-017353	464188	61895			314	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0376 | 5S2, , 2373-0215-0000	491413	1900	3/3/2020
36-017354	464189	61896			316	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0377 | 5S2, , 2373-0216-0000	491413	1895	3/3/2020
36-017355	464190	61897			412	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0217-0000		1910	3/3/2020
36-017356	464191	61898			424	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0218-0000		1900	3/3/2020
36-017357	464192	61899			428	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0219-0000		1924	3/3/2020
36-017358	491443	94765			504	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0029	491413	1903	3/3/2020
36-017359	491444	94767			504	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0030	491413	1903	3/3/2020
36-017360	464193	61900			519	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0220-0000		1907	3/3/2020
36-017361	464194	61901			611	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0221-0000		1910	3/3/2020
36-017362	464195	61902			615	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0222-0000		1915	3/3/2020
36-017363	464196	61903			635	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0223-0000		1910	3/3/2020
36-017364	464197	61904	C. S. LOMBARD HOUSE	36-2373-001^Survey Number	702	W FERN AV	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0224-0000		1890	3/3/2020
	552449	145856	BEVERLY RANCH CARPORT		923	W FERN AV	REDLANDS	SAN BERNARDINO	92373	6X, 02/11/2004, NPS-04000018-0001		1962	3/3/2020
	552450	145857	BEVERLY RANCH SPA	HOT TUB^Other Name	923	W FERN AV	REDLANDS	SAN BERNARDINO	92373	6X, 02/11/2004, NPS-04000018-0002		2002	3/3/2020
	552451	145858	BEVERLY RANCH FLUME IRRIGATION SYSTEM		923	W FERN AV	REDLANDS	SAN BERNARDINO	92373	1D, 02/11/2004, NPS-04000018-0003		1911	3/3/2020
36-017365	464198	61905	BEVERLY RANCH|FISK-BURGESS HOUSE	36-2373-001^Survey Number | BEVERLY RANCH^Official Historic Name | FISK-BURGESS HOUSE^Other Name | NPS-04000018-0000^National Register	923	W FERN AV	REDLANDS	San Bernardino	92373	1S, 02/11/2004, NPS-04000018-9999 | 3S, 08/27/2003, 36-0077 | 3S, 10/01/1977, 2373-0225-0000		1890	3/3/2020
36-017394	464524	62232	HOTCHKISS HOUSE	36-2373-002^Survey Number	1003	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0558-0000		1910	3/3/2020
36-017395	464525	62233			1012	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0559-0000		1898	3/3/2020
36-017396	464526	62234			1021	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0560-0000		1897	3/3/2020
36-017397	464527	62235			1039	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0561-0000		1904	3/3/2020
36-017398	464528	62236			1055	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0562-0000		1927	3/3/2020
36-017399	464529	62237	BRIER HOUSE	36-2373-002^Survey Number	1106	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0563-0000		1902	3/3/2020
36-017400	464530	62238	FRANK BROWN BARN	36-2373-002^Survey Number	1121	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0564-0000		1890	3/3/2020
36-017401	464531	62239	DR. STILLMAN BERRY HOUSE	36-2373-002^Survey Number	1145	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0565-0000		1899	3/3/2020
36-017403	464533	62241			1165	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0567-0000		1913	3/3/2020
36-017404	464534	62242			1205	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0568-0000		1911	3/3/2020
36-017405	464535	62243	LEFFERTS HOUSE	36-2373-002^Survey Number	1210	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0569-0000		1910	3/3/2020
36-017406	464536	62244			1216	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0570-0000		1891	3/3/2020
36-017407	464232	61939	LEON BENSON HOUSE	36-2373-001^Survey Number	1217	W HIGHLAI	REDLANDS	SAN BERNARDINO		5S2, , 2373-0259-0000		1890	3/3/2020
36-017366	464504	62212	CRAWFORD HOUSE	36-2373-002^Survey Number	16	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0538-0000		1895	3/3/2020
36-017369	464507	62215			160	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0541-0000		1914	3/3/2020
36-017370	464508	62216			178	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0542-0000		1889	3/3/2020
36-017367	464505	62213			28	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0539-0000		1914	3/3/2020
36-017368	464506	62214			38	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0540-0000		1887	3/3/2020
36-017371	464509	62217			380	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0543-0000		1905	3/3/2020
36-017372	464510	62218			404	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0544-0000		1902	3/3/2020
36-017373	464224	61931	ROBERT RESOR HOUSE	36-2373-001^Survey Number	430	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0251-0000		1901	3/3/2020
36-017374	464511	62219	MARY A. K. HAMILTON HOUSE, ODELL HOUSE	36-2373-002^Survey Number	440	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0545-0000		1908	3/3/2020
36-017375	464225	61932			460	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0252-0000		1910	3/3/2020
36-017376	464512	62220	L. L. SEAMAN HOUSE, FRANCES E. WILLIS HOUSE	36-2373-002^Survey Number	503	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0546-0000		1908	3/3/2020
36-017377	464513	62221	WEBSTER HOUSE	36-2373-002^Survey Number	516	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0547-0000		1901	3/3/2020

36-017378	464514	62222	THE HIGHLANDER, WISSAHICKON INN	36-2373-002^Survey Number	534	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0548-0000		1897	3/3/2020
36-017379	464515	62223	PERCY HARLEY HOUSE	36-2373-002^Survey Number	635	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0549-0000		1911	3/3/2020
36-017380	464226	61933	JUDSON HOUSE	36-2373-001^Survey Number	653	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0253-0000		1888	3/3/2020
36-017381	464227	61934	WILLIAM ROGGENKAMP RESIDENCE	36-2373-001^Survey Number	704	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0254-0000		1891	3/3/2020
36-017382	464516	62224	THE PARTRIDGE HOUSE, PAUL F ALLEN HOUSE	36-2373-002^Survey Number	705	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0550-0000 | 7P, 08/07/1975, SPHI-SBR-058		1905	3/3/2020
36-017383	464517	62225	C. A. WITTER HOUSE	36-2373-002^Survey Number	722	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0551-0000		1887	3/3/2020
36-017384	464518	62226			731	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0552-0000		1929	3/3/2020
36-017385	464228	61935	MYRALEE COTTAGE, FIELD HOUSE	36-2373-001^Survey Number	734	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0255-0000		1890	3/3/2020
36-017386	464519	62227	MYRALEE COTTAGE	36-2373-002^Survey Number	834	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0553-0000		1890	3/3/2020
36-017387	464229	61936	MIRAFLORES	36-2373-001^Survey Number	851	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0256-0000		1904	3/3/2020
36-017388	464520	62228			905	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0554-0000		1896	3/3/2020
36-017389	464230	61937	MARY CURTIS HOUSE	36-2373-001^Survey Number	914	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0257-0000		1899	3/3/2020
36-017390	464231	61938			925	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0258-0000		1897	3/3/2020
36-017391	464521	62229			942	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0555-0000		1897	3/3/2020
36-017392	464522	62230			945	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0556-0000		1911	3/3/2020
36-017393	464523	62231	THE HOPPOCK HOUSE	36-2373-002^Survey Number	954	W HIGHLAI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0557-0000		1896	3/3/2020
36-017408	491674	95117			14	W HOME P	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0310	491413	1900	3/3/2020
36-017409	491671	95114			20	W HOME P	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0303	491413	1900	3/3/2020
36-017410	491634	95075			215	W HOME P	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0220	491413	1940	3/3/2020
36-017411	491494	94910			219	W HOME P	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0168	491413	1910	3/3/2020
36-017412	491496	94912			221	W HOME P	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0169	491413	1910	3/3/2020
36-017413	464243	61950			106	W LUGONI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0270-0000		1895	3/3/2020
	533448	164813			313	W LUGONI	REDLANDS	SAN BERNARDINO	92374	6Y, 02/21/2007, HUD070213B		1890	3/3/2020
36-017414	464244	61951			706	W LUGONI	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0271-0000		1895	3/3/2020
36-017417	464274	61981			104	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0325 | 5S2, , 2373-0301-0000	491413	1887	3/3/2020
36-017418	464273	61980			108	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0326 | 5S2, , 2373-0300-0000	491413	1902	3/3/2020
36-017419	464480	62188			112	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0327 | 7N, , 2373-0514-0000	491413	1901	3/3/2020
36-017420	464481	62189	O H NORRIS HOUSE	36-2373-002^Survey Number	120	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0515-0000		1895	3/3/2020
36-017421	464482	62190			126	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0328 | 7N, , 2373-0516-0000	491413	1898	3/3/2020
36-017466	464261	61968			1617	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0288-0000		1885	3/3/2020
36-017415	464275	61982	FIRST CONGREGATIONAL CHURCH	36-2373-001^Survey Number	2	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0302-0000		1899	3/3/2020
36-017422	464483	62191			203	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0348 | 7N, , 2373-0517-0000	491413	1906	3/3/2020
36-017423	464484	62192			206	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0329 | 7N, , 2373-0518-0000	491413	1898	3/3/2020
36-017424	464272	61979			208	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0330 | 5S2, , 2373-0299-0000	491413	1898	3/3/2020
36-017425	464485	62193			211	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0349 | 7N, , 2373-0519-0000	491413	1900	3/3/2020
36-017426	464486	62194	WILLIAM PYLE HOUSE	36-2373-002^Survey Number	214	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0331 | 7N, , 2373-0520-0000	491413	1900	3/3/2020
36-017427	464271	61978			215	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0350 | 5S2, , 2373-0298-0000	491413	1904	3/3/2020
36-017428	464487	62195			218	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0332 | 7R, , 2373-0521-0000	491413	1953	3/3/2020
36-017429	464488	62196			219	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0351 | 7N, , 2373-0522-0000	491413	1902	3/3/2020
36-017430	464489	62197	LUCIA APARTMENTS	36-2373-002^Survey Number	223	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0352 | 7N, , 2373-0523-0000	491413	1902	3/3/2020
36-017431	464490	62198	MORTON APARTMENTS	36-2373-002^Survey Number	224	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0333 | 7N, , 2373-0524-0000	491413	1891	3/3/2020

36-017432	464491	62199	W T FERGUSON HOUSE	36-2373-002^Survey Number	232	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0334 | 7N, , 2373-0525-0000	491413	1898	3/3/2020
36-017416	464479	62187	OLIVE APARTMENTS	36-2373-002^Survey Number	24	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0513-0000		1898	3/3/2020
36-017433	464492	62200	EDWARD E. ROESSLER HOUSE	36-2373-002^Survey Number	304	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0335 | 7N, , 2373-0526-0000	491413	1900	3/3/2020
36-017434	464493	62201	EL HOGAR	36-2373-002^Survey Number	305	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0353 | 3S, , 2373-0527-0000	491413	1901	3/3/2020
36-017435	464494	62202	THERON HAYWARD HOUSE	36-2373-002^Survey Number	310	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0336 | 7N, , 2373-0528-0000	491413	1901	3/3/2020
36-017436	464495	62203	MISS ZONNA PRICKETT RESIDENCE	36-2373-002^Survey Number	311	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0354 | 7N, , 2373-0529-0000	491413	1901	3/3/2020
36-017437	464496	62204			314	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0530-0000		1901	3/3/2020
36-017438	464497	62205	B P FESSLER HOUSE	36-2373-002^Survey Number	317	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0355 | 7N, , 2373-0531-0000	491413	1903	3/3/2020
36-017439	464498	62206	ABRAM S. FOX HOUSE	36-2373-002^Survey Number	320	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0338 | 7N, , 2373-0532-0000	491413	1900	3/3/2020
36-017440	464499	62207	ALBERT G SIMONDS HOUSE	36-2373-002^Survey Number	324	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0339 | 7N, , 2373-0533-0000	491413	1900	3/3/2020
36-017441	464500	62208	CHARLES MILTON BROWN HOUSE	36-2373-002^Survey Number	325	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0356 | 7N, , 2373-0534-0000	491413	1907	3/3/2020
36-017442	464270	61977	W F HOLT HOUSE	36-2373-001^Survey Number	405	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0357 | 3S, , 2373-0297-0000	491413	1903	3/3/2020
36-017443	491695	95141			408	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0340	491413	1908	3/3/2020
36-017444	492045	95447			409	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0358	491413	1909	3/3/2020
36-017445	491696	95142			416	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0341	491413	1900	3/3/2020
36-017446	491697	95143			424	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0342	491413	1909	3/3/2020
36-017447	492046	95448			425	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0359	491413	1903	3/3/2020
36-017448	491698	95144	COLONIAL INN		426	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0343	491413	1900	3/3/2020
36-017449	491699	95145	DOLE OR SKINNER RESIDENCE		432	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0344	491413	1902	3/3/2020
36-017450	492048	95450			433	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 06/15/1994, NPS-94001487-0361	491413	1905	3/3/2020
36-017451	492047	95449			433	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0360	491413	1905	3/3/2020
36-017452	492049	95451			501	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	6X, 12/29/1994, NPS-94001487-0362	491413	1920	3/3/2020
36-017453	491700	95146			504	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0345	491413	1900	3/3/2020
36-017454	464269	61976			509	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0363 | 5S2, , 2373-0296-0000	491413	1901	3/3/2020
36-017455	491701	95147			510	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0346	491413	1905	3/3/2020
36-017456	464268	61975			511	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0364 | 5S2, , 2373-0295-0000	491413	1903	3/3/2020
36-017457	491702	95148	LAFFERTY HOUSE		518	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0347	491413	1904	3/3/2020
36-017458	492050	95452			519	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0365	491413	1903	3/3/2020
36-017459	492051	95453	WELCH HOUSE		527	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0366	491413	1903	3/3/2020
36-017460	464267	61974			701	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0294-0000		1903	3/3/2020
36-017461	464266	61973			703	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0293-0000		1898	3/3/2020
36-017462	464265	61972			705	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0292-0000		1910	3/3/2020
36-017463	464264	61971			723	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0291-0000		1905	3/3/2020
36-017464	464263	61970			901	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0290-0000		1919	3/3/2020
36-017465	464262	61969			909	W OLIVE A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0289-0000		1915	3/3/2020
36-017474	464291	61998			1015	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0319-0000		1892	3/3/2020
36-017475	488269	91046	CRAFTS HOUSE		1108	W PALM A	REDLANDS	SAN BERNARDINO		7P, 08/07/1975, SPHI-SBR-059			3/3/2020

36-017467	464284	61991			511	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0312-0000		1895	3/3/2020
36-017468	464285	61992			635	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0313-0000		1895	3/3/2020
36-017469	464286	61993			645	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0314-0000		1895	3/3/2020
36-017470	464287	61994	B. O. JOHNSON HOUSE	36-2373-001^Survey Number	709	W PALM A	REDLANDS	SAN BERNARDINO	92373	3S, , 2373-0315-0000		1887	3/3/2020
36-017471	464288	61995	SUESS HOME	36-2373-001^Survey Number	840	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0316-0000		1895	3/3/2020
36-017472	464289	61996	GLASS HOUSE	36-2373-001^Survey Number	850	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0317-0000		1889	3/3/2020
36-017473	464290	61997			911	W PALM A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0318-0000		1928	3/3/2020
	544906	153183			1660	W SAN BE	REDLANDS	SAN BERNARDINO		6Y, 04/21/2005, FCC041026D		1901	3/3/2020
36-017476	464682	62390	McKENZIE BUILDING	36-2373-002^Survey Number	329	W STATE S	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0717-0000		1894	3/3/2020
36-017478	464731	62439	RETTING MACHINE SHOP	36-2373-002^Survey Number	205	W STUART	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0002 | 3D, 11/17/1989, 2373-0764-0002	464754	1941	3/3/2020
36-017477	464734	62442	COPE COMMERCIAL CO. WAREHOUSE, GRIGSBY PEST CONTRO	36-2373-002^Survey Number | COPE COMMERCIAL CO. WAREHOUSE, GRIGSBY PEST CONTROL^Other Name	21	W STUART	REDLANDS	SAN BERNARDINO	92373	1D, 10/29/1991, NPS-91001535-0004 | 3D, 11/17/1989, 2373-0764-0005	464754	1889	3/3/2020
36-017479	468793	66655	ADDI TO IMPACT PRESBYTERIAN CH		320	W UNION S	REDLANDS	SAN BERNARDINO		6Y, 06/01/1988, HUD880506A			3/3/2020
36-017480	464308	62016	FAMILY SERVICE CENTER	36-2373-001^Survey Number	114	W VINE ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0228 | 3S, , 2373-0338-0000	491413	1902	3/3/2020
36-017481	464537	62245	DR. WILLIAM J. MORRIS HOUSE	36-2373-002^Survey Number	120	W VINE ST	REDLANDS	SAN BERNARDINO	92373	1D, 12/29/1994, NPS-94001487-0227 | 7N, , 2373-0571-0000	491413	1902	3/3/2020
36-017482	464538	62246			124	W VINE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0572-0000		1901	3/3/2020
36-017483	464413	62121	A. K. SMILEY PUBLIC LIBRARY		125	W VINE ST	REDLANDS	San Bernardino	92373	1CL, 08/17/1990, 36-0007 | 1CL, 08/17/1990, SHL-0994-0000 | 1D, 12/29/1994, NPS-94001487-0229 | 1S, 12/12/1976, NPS-76000513-0000 | 3S, 01/25/1982, 2373-0446-0000 | 3S, 12/20/1988, 619.0-HP-88-36-010 | 3S, 12/28/1984, 619.0-84-HP-36-002	491413	1878-1898	3/3/2020
36-017485	464539	62247			130	W VINE ST	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0573-0000		1926	3/3/2020
36-017486	464314	62022			736	WALNUT A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0344-0000		1900	3/3/2020
36-017487	464313	62021	HOTCHKISS	36-2373-001^Survey Number	837	WALNUT A	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0343-0000		1886	3/3/2020
36-017488	464312	62020			844	WALNUT A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0342-0000		1898	3/3/2020
36-017489	464311	62019	KINGSLEY-RHODES	36-2373-001^Survey Number	907	WALNUT A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0341-0000		1891	3/3/2020
36-017490	464310	62018	PATRIDGE-GREEN-MILLER	36-2373-001^Survey Number	910	WALNUT A	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0340-0000		1911	3/3/2020
36-017491	464309	62017			933	WALNUT A	REDLANDS	SAN BERNARDINO	92373	7N, , 2373-0339-0000		1900	3/3/2020
36-017512	464335	62043			1033	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0365-0000		1895	3/3/2020
36-017513	464334	62042			1101	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0364-0000		1920	3/3/2020
36-017514	464333	62041			1102	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0363-0000		1895	3/3/2020
36-017515	464332	62040			1107	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0362-0000		1900	3/3/2020
36-017516	464331	62039			1108	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0361-0000		1920	3/3/2020
36-017517	464330	62038			1114	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0360-0000		1895	3/3/2020
36-017518	464329	62037			1115	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0359-0000		1915	3/3/2020
36-017519	464328	62036			1117	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0358-0000		1910	3/3/2020
36-017520	464327	62035			1118	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0357-0000		1900	3/3/2020
36-017521	464326	62034			1121	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0356-0000		1920	3/3/2020
36-017522	464325	62033			1122	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0355-0000		1900	3/3/2020
36-017523	464324	62032			1126	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0354-0000		1920	3/3/2020
36-017524	464323	62031			1127	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0353-0000		1920	3/3/2020
36-017525	464322	62030			1131	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0352-0000		1910	3/3/2020
36-017526	464321	62029			1136	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0351-0000		1915	3/3/2020
36-017527	464320	62028			1140	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0350-0000		1915	3/3/2020
36-017528	464319	62027			1141	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0349-0000		1900	3/3/2020
36-017529	464318	62026			1144	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0348-0000		1900	3/3/2020
36-017530	464317	62025			1145	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0347-0000		1900	3/3/2020
36-017531	464316	62024			1155	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0346-0000		1925	3/3/2020
36-017532	464315	62023			1211	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0345-0000		1900	3/3/2020
36-017492	464355	62063			805	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0385-0000		1920	3/3/2020
36-017493	464354	62062			824	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0384-0000		1895	3/3/2020
36-017494	464353	62061			825	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0383-0000		1895	3/3/2020
36-017495	464352	62060			832	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0382-0000		1895	3/3/2020
36-017496	464351	62059			835	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0381-0000		1915	3/3/2020
36-017497	464350	62058			836	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0380-0000		1895	3/3/2020
36-017498	464349	62057			901	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0379-0000		1910	3/3/2020
36-017499	464348	62056			902	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0378-0000 | 6Y, 03/06/1989, HUD890206A		1900	3/3/2020
36-017500	464347	62055			907	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0377-0000		1900	3/3/2020
36-017501	464346	62054			908	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0376-0000		1900	3/3/2020
36-017502	464345	62053			910	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0375-0000		1900	3/3/2020
36-017503	464344	62052			911	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0374-0000		1895	3/3/2020
36-019648	574489	124713	PROPERTY ACQUISTION AND REHABILITATION		911	WASHINGT	REDLANDS	SAN BERNARDINO		6Y, 06/15/2000, HUD000605V		1895	3/3/2020

36-017504	464343	62051	917	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0373-0000	1895	3/3/2020
36-017505	464342	62050	922	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0372-0000	1895	3/3/2020
36-017506	464341	62049	923	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0371-0000	1895	3/3/2020
36-017507	464340	62048	926	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0370-0000	1895	3/3/2020
36-017508	464339	62047	927	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0369-0000	1895	3/3/2020
36-017509	464338	62046	929	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0368-0000	1900	3/3/2020
36-017510	464337	62045	937	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0367-0000	1900	3/3/2020
36-017511	464336	62044	940	WASHINGT	REDLANDS	SAN BERNARDINO	92373	5S2, , 2373-0366-0000	1900	3/3/2020
	559791	138165	837	WEBSTER S	REDLANDS	SAN BERNARDINO	92374	6Y, 03/26/2003, DOE-36-03-0015-0000 | 6Y, 03/26/2003, HUD030319D	1901	3/3/2020

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

August 24, 2022

Redlands Area Historical Society
P.O. Box 8775
Redlands, CA 92375
Sent via Contact RAHS Form: https://rahs.org/contact/

RE: Cultural Resources Identification Effort for the Diversified Pacific- LPA Property Cultural Project, San Bernardino County, California

Dear Redlands Area Historical Society:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the project indicated above. The proposed project consists of approximately 65 acres located at Lugonia Avenue and Tennessee Street in the City of Redlands. The project would develop a mixed residential and commercial complex on a total of four parcels, also known as Assessor's Parcel Numbers (APNs) 0167-171-007, 0167-171-014, 0167-171-11-0-000, and 0167-171-12-0-000. The City of Redlands will serve as the lead agency for environmental compliance review. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect or may provide additional information about the project area beyond what is available in state and federal databases.

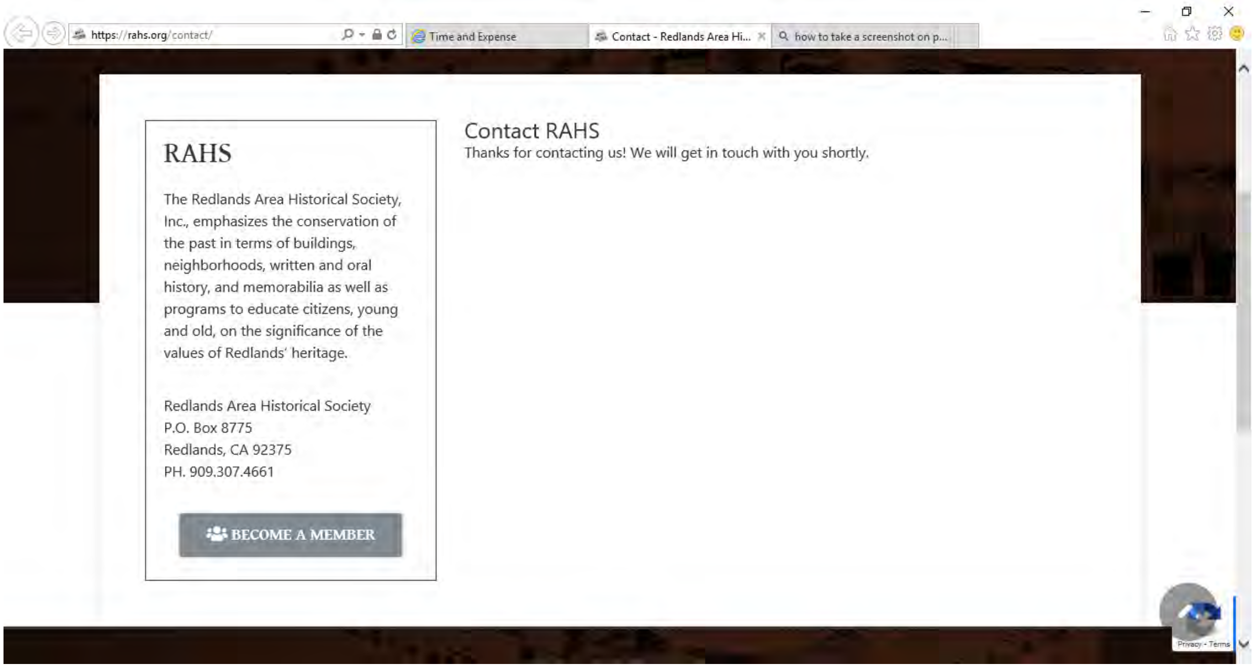
We would appreciate input on this undertaking from the Redlands Area Historical Society with any concerns about possible cultural properties or potential impacts within or adjacent to the area of potential effect. If you have any questions, please contact me at (909) 307-0046 or ssifuentes@ecorpconsulting.com.

Commented [RC1]: Incorrect phone for Redlands office

Thank you in advance for your assistance in our cultural resource management study.

Sincerely,

Sonia Sifuentes
Senior Archaeologist



RAHS

The Redlands Area Historical Society, Inc., emphasizes the conservation of the past in terms of buildings, neighborhoods, written and oral history, and memorabilia as well as programs to educate citizens, young and old, on the significance of the values of Redlands' heritage.

Redlands Area Historical Society
P.O. Box 8775
Redlands, CA 92375
PH. 909.307.4661

BECOME A MEMBER

Contact RAHS

Thanks for contacting us! We will get in touch with you shortly.

APPENDIX B

Sacred Lands File Coordination

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: LPA Property Project **DATE: August 9, 2022**

County: San Bernardino

USGS Quadrangle Name: 1996 Redlands, CA

Township: 1 South **Range: 3 West** **Section(s): 21 (S ½ of NE ¼)**

Company/Firm/Agency: ECORP Consulting, Inc.

Street Address: 215 North 5th Street

City: Redlands **Zip: 92374**

Phone: (909) 307-0046

Fax: (909) 307-0056

Email: rjcunningham@ecorpconsulting.com

Project Description: Client proposes to develop the parcels into mixed-use residential and commercial space.

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

October 13, 2022

Robert Cunningham
ECORP Consulting, Inc.

Via Email to: rjcunningham@ecorpconsulting.com

Re: LPA Property Project, San Bernardino County

Dear Mr. Cunningham:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Tribes on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

Native American Heritage Commission
Native American Contact List
San Bernardino County
10/13/2022

Agua Caliente Band of Cahuilla Indians
Reid Milanovich, Chairperson
5401 Dinah Shore Drive   Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919
laviles@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive   Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
84-001 Avenue 54   Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway   Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371   Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Chemehuevi Indian Tribe
Sierra Pencille, Chairperson
P.O. Box 1976 1990 Palo Verde Drive   Chemehuevi
Havasu Lake, CA, 92363
Phone: (760) 858 - 4219
Fax: (760) 858-5400
chairman@cit-nsn.gov

Colorado River Indian Tribes
Rebecca Loudbear, Attorney General
26600 Mohave Road   Chemehuevi
Parker, AZ, 85344   Mojave
Phone: (928) 669 - 1271
Fax: (928) 669-5675
rloudbear@critdoj.com

Fort Mojave Indian Tribe
Timothy Williams, Chairperson
500 Merriman Ave   Mojave
Needles, CA, 92363
Phone: (760) 629 - 4591
Fax: (760) 629-5767
lindaotero@fortmojave.com

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393   Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693   Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231   Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed LPA Property Project, San Bernardino County.

Native American Heritage Commission
Native American Contact List
San Bernardino County
10/13/2022

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu
Gabrielino

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com
Gabrielino

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com
Juaneno

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com
Juaneno

Juaneno Band of Mission Indians Acjachemen Nation 84A
Heidi Lucero, Chairperson
31411-A La Matanza Street
San Juan Capistrano, CA, 92675
Phone: (562) 879 - 2884
hllucero105@gmail.com
Juaneno

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010
Lake Isabella, CA, 93240
Phone: (760) 378 - 2915
bbutterbredt@gmail.com
Kawaiisu
Tubatulabal
Koso

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA, 93240
Phone: (661) 340 - 0032
Kawaiisu
Tubatulabal
Koso

Kern Valley Indian Community
Brandy Kendricks,
30741 Foxridge Court
Tehachapi, CA, 93561
Phone: (661) 821 - 1733
krazykendricks@hotmail.com
Kawaiisu
Tubatulabal
Koso

Los Coyotes Band of Cahuilla and Cupeño Indians
Ray Chapparosa, Chairperson
P.O. Box 189
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712
Cahuilla

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road
Banning, CA, 92220
Phone: (951) 755 - 5110
Fax: (951) 755-5177
abrierty@morongo-nsn.gov
Cahuilla
Serrano

Morongo Band of Mission Indians
Ann Brierty, THPO
12700 Pumarra Road
Banning, CA, 92220
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov
Cahuilla
Serrano

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed LPA Property Project, San Bernardino County.

Native American Heritage Commission
Native American Contact List
San Bernardino County
10/13/2022

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd.
Cupeno
Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pechanga Band of Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477
Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Pechanga Band of Indians
Mark Macarro, Chairperson
P.O. Box 1477
Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899
Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

Quechan Tribe of the Fort Yuma Reservation
Manfred Scott, Acting Chairman Kw'ts'an Cultural Committee
P.O. Box 1899
Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

Ramona Band of Cahuilla
John Gomez, Environmental Coordinator
P. O. Box 391670
Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramona-nsn.gov

Ramona Band of Cahuilla
Joseph Hamilton, Chairperson
P.O. Box 391670
Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramona-nsn.gov

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane
Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane
Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838
Kitanemuk
Vanyume
Tataviam
Newhall, CA, 91322
Phone: (503) 539 - 0933
Fax: (503) 574-3308
ddyocum@comcast.net

San Manuel Band of Mission Indians
Jessica Mauck, Director of Cultural Resources
26569 Community Center Drive
Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Jessica.Mauck@sanmanuel-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed LPA Property Project, San Bernardino County.

Native American Heritage Commission
Native American Contact List
San Bernardino County
10/13/2022

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov
Cahuilla

Serrano Nation of Mission Indians
Wayne Walker, Co-Chairperson
P. O. Box 343
Patton, CA, 92369
Phone: (253) 370 - 0167
serranonation1@gmail.com
Serrano

Serrano Nation of Mission Indians
Mark Cochrane, Co-Chairperson
P. O. Box 343
Patton, CA, 92369
Phone: (909) 528 - 9032
serranonation1@gmail.com
Serrano

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov
Cahuilla
Luiseno

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487
San Jacinto, CA, 92581
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov
Cahuilla
Luiseno

Torres-Martinez Desert Cahuilla Indians
Cultural Committee,
P.O. Box 1160
Thermal, CA, 92274
Phone: (760) 397 - 0300
Fax: (760) 397-8146
Cultural-Committee@torresmartinez-nsn.gov
Cahuilla

Twenty-Nine Palms Band of Mission Indians
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov
Chemehuevi

Twenty-Nine Palms Band of Mission Indians
Darrell Mike, Chairperson
46-200 Harrison Place
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov
Chemehuevi

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed LPA Property Project, San Bernardino County.

APPENDIX C

Project Area Photographs

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PHOTOGRAPH RECORD

Primary#
HRI#
Trinomial

Page 1 **of** __ **Project Name:** Diversified Pacific 2021-286.01 **Year**: 2022
Camera Format: Samsung Lens Size: Digital Film Type and Speed: Digital
Negatives Kept at: ECORP Consulting, Inc. 215 North 5th Street, Redlands, CA 92374

Mo.	Day	Time	Exp./Frame	Subject/Description	View Toward	Accession #
9	21	730	1	Project Area overview at northeast corner	W	073002
9	21	730	2	Project Area overview at northeast corner	S	073006
9	21	750	3	Project Area overview at northwest corner	E	075047
9	21	750	4	Project Area overview at northwest corner	S	075055
9	22	1055	18	Project Area Overview southeast corner	N	105548
9	22	1055	19	Project Area Overview southeast corner	W	105553
9	22	1154	26	Project Area Overview southwest corner	N	115437
9	22	1154	27	Project Area Overview southwest corner	E	115442


20220921_073006.jpg


20220921_075047.jpg


20220921_075055.jpg


20220922_105548.jpg


20220922_105553.jpg


20220922_115437.jpg


20220922_115442.jpg


20220921_073002.jpg




This Page Intentionally Left Blank.

Technical Appendix: Energy Consumption Estimates
Tennesee Village Mixed-Use Project
Energy Calculations
Prepared by: MIG, Inc.
February 2024

Contents:

Note: Sheet 3 is available electronically on request only.

Sheet 1: Summary of Energy Consumption

Table 1-1: Operational Vehicle Fuel Consumption

Operational Estimates	Diesel Fuel Consumed (Gal)	Gasoline Fuel Consumed (Gal)	Electricity Consumed (kW)
Mobile Sources	19,752	257,711	119,905

Based on Annual VMT of:	7,131,868

Table 1-2: Operational Energy Consumption (Building)

Land Use	Electricity (kWh/yr)	Natural Gas (kBTU/yr)
Apartments Low Rise	632,576	2,248,635
Apartments Mid Rise	1,402,753	3,587,083
Regional Shopping Center	172,814	104,727
Parking Lot	113,713	0
Total	2,321,856	5,940,445

Table 1-3: Total Operational Energy Consumption

Source	Diesel Fuel Consumed (Gal)	Gasoline Fuel Consumed (Gal)	Electricity Consumed (kW)	Natural Gas (kBTU/yr)
Mobile Source	19,752	257,711	119,905	0
Building	0	0	2,321,856	5,940,445
Total	19,752	257,711	2,441,761	5,940,445

Sheet 2: Average Fuel Efficiency - San Bernardino County

EMFAC2021 San Bernardino County Fuel Efficiency Estimates for 2025 with Project-Adjusted Fleet Mix

Table 1: 2025 San Bernardino County Average Vehicle Fuel Efficiency (Gasoline)

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	0.73	11.04	2.79	3.96
LDA	804,539.66	33,917,884.49	1,125,150.28	30.15
LDT1	70,269.53	2,412,766.98	97,190.17	24.83
LDT2	340,851.80	14,001,965.95	566,572.88	24.71
LHDT1	29,713.02	1,108,490.99	80,885.44	13.70
LHDT2	4,518.55	161,855.80	13,341.50	12.13
MCY	38,855.32	226,907.56	5,449.13	41.64
MDV	253,257.94	9,969,714.42	500,283.50	19.93
MH	6,121.22	53,536.53	11,082.61	4.83
MHDT	2,309.45	140,687.60	26,865.25	5.24
OBUS	0.00	30,637.71	5,983.24	5.12
SBUS	0.00	20,420.72	2,250.48	9.07
UBUS	0.00	10,540.08	1,799.71	5.86
TOTAL	1,550,437.22	62,055,419.85	2,436,856.97	25.47

Table 2: 2025 San Bernardino County Average Vehicle Fuel Efficiency (Diesel)

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	3,369.00	141,781.05	22,855.10	6.20
LDA	1,991.78	67,127.86	1,577.75	42.55
LDT1	23.99	327.75	13.75	23.83
LDT2	1,014.18	44,885.53	1,344.00	33.40
LHDT1	22,260.03	835,207.04	40,595.20	20.57
LHDT2	9,589.89	365,990.37	21,292.69	17.19
MCY	0.00	0.00	0.00	0.00
MDV	3,599.10	143,983.94	6,032.42	23.87
MH	2,582.96	22,618.03	2,187.61	10.34
MHDT	18,129.38	820,207.06	90,874.86	9.03
OBUS	0.00	0.00	0.00	0.00
SBUS	0.00	0.00	0.00	0.00
UBUS	0.00	0.00	0.00	0.00
TOTAL	62560.32	2,442,128.63	186773.39	13.08

Table 3: 2025 San Bernardino County Average Vehicle Fuel Efficiency (Electricity)

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Energy Consumption (kWh/day)	Miles Per kWh
HHDT	22.01	760.21	1,368.89	0.56
LDA	62,759.19	2,550,571.09	984,730.95	2.59
LDT1	270.25	10,771.73	3,850.97	2.80
LDT2	5,914.92	184,710.57	64,009.27	2.89
LHDT1	246.32	17,258.91	9,738.84	1.77
LHDT2	62.92	4,191.42	2,366.46	1.77
MCY	0.00	0.00	0.00	0.00
MDV	5,065.25	162,389.56	58,066.56	2.80
MH	0.00	0.00	0.00	0.00
MHDT	161.88	9,182.49	9,660.06	0.95
OBUS	0.00	0.00	0.00	0.00
SBUS	0.00	0.00	0.00	0.00
UBUS	0.00	0.00	0.00	0.00
TOTAL	74,502.74	2,939,835.97	1,133,792.01	2.59

This Page Intentionally Left Blank.

PETRA GEOSCIENCES INC.

SOLID AS A ROCK

ENGINEERS + GEOLOGISTS + ENVIRONMENTAL SCIENTISTS

REVISED PHASE I ENVIRONMENTAL SITE ASSESSMENT AND LIMITED PHASE II SITE ASSESSMENT

LPA REDLANDS RESIDENTIAL PROJECT, NEAR NORTHEAST CORNER OF
S. TENNESSEE STREET AND W. LUGONIA AVENUE
A PORTION OF ASSESSOR PARCEL NUMBERS (APN'S) 0167-171-07, -11, -12, AND -14
CITY OF REDLANDS, SAN BERNARDINO COUNTY, CALIFORNIA 92374

DIVERSIFIED PACIFIC COMMUNITIES

June 20, 2022
J.N. 21-458
Revision 1

PETRA
GEOSCIENCES INC.
SOLID AS A ROCK

ENGINEERS + GEOLOGISTS + ENVIRONMENTAL SCIENTISTS

June 20, 2022
J.N. 21-458
Revision 1

DIVERSIFIED PACIFIC COMMUNITIES
10621 Civic Center Drive
Rancho Cucamonga, California 91730

Attention: Mr. Nolan C. Leggio

Subject: **Revised Phase I Environmental Site Assessment and Limited Phase II Site Assessment; *LPA Redlands Residential Project*, Near Northeast Corner of S. Tennessee Street and W. Lugonia Avenue, a Portion of Assessor's Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14, City of Redlands, San Bernardino County, California 92374**

Dear Mr. Leggio:

Petra Geosciences, Inc. (Petra) is presenting herein our revised Phase I Environmental Site Assessment and Limited Phase II Site Assessment for the subject property. This assessment has been conducted in accordance with our revised Proposal No. 21-458P, dated December 21, 2021, and in general conformance with the scope and limitations of the standards set forth in the American Society for Testing and Materials (ASTM) Practice E 1527-13 and the EPA's All Appropriate Inquiry (AAI) regulations 40 CFR Part 312.

This opportunity to be of service to you is sincerely appreciated. Please do not hesitate to call this office if you have questions pertaining to this report.

Respectfully submitted,

PETRA GEOSCIENCES, INC.

Edward Lump
Associate Geologist

Siamak Jafroudi, PhD
Senior Principal Engineer

EXECUTIVE SUMMARY

REVISED PHASE I ENVIRONMENTAL SITE ASSESSMENT AND LIMITED PHASE II ASSESSMENT

LPA Redlands Residential Project, Near Northeast Corner of
S. Tennessee Street and W. Lugonia Avenue
a Portion of Assessor's Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14
City of Redlands, San Bernardino County, California 92374

INTRODUCTION

The information presented in this report includes the results of our recent site reconnaissance, a review of pertinent literature, and recent federal, state, and local government agency records. Our field reconnaissance, data gathering, and compilation performed by Mr. Edward Lump, Associate Geologist, with oversight by Dr. Siamak Jafroudi, President and Principal Engineer.

SITE DESCRIPTION AND GENERAL INFORMATION

1. The subject property consists of the residential portion of the *LPA Redlands Project* located at the northeast corner of S. Tennessee Street and W. Lugonia Avenue in the city of Redlands, San Bernardino County, California. Overall, the *LPA Redlands Project* consists of approximately 16-acres of residential development on the north and approximately 8-acres of commercial development on the south. No physical markers differentiated the site boundary. A site location map is included as Figure 1.

2. The subject site is comprised of vacant land within a portion of contiguous Assessor Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14. The site slopes gently to the west with existing elevations on the order of approximately 1,280± feet above mean sea level (msl) along the west portion of the site, to 1,290± feet above msl along the east portion of the site.

3. Vehicular access to the subject property is via S. Tennessee Street, which is an improved road along the western boundary of the site. A drainage bounds the western edge of S. Tennessee Street, with the 210 Freeway easement beyond. Secondary access is via a dirt road along the northern boundary of the subject property, with vacant land beyond. South of the subject property is vacant land and the commercial portion of the LPA Redlands Project (which is not a part of this assessment), with W. Lugonia Avenue and a commercial development beyond. To the east is a dirt road, with vacant land and a residential tract beyond. The surface of the subject property is slightly hummocky, consisting of loose silty sands and sandy silts with a sparse growth of weeds. Minor surface cobbles and concrete fragments were observed. Vehicle tire ruts were observed near Tennessee Street, at or near the northwest and southwest corners of the subject property.

4. Based on information obtained during this assessment, the site appears to have been developed as an orchard since at least 1930 until sometime between/during 1975 and 1985. Infrared aerial photographs suggest that sometime between/during 1975 and 1985 the orchards were removed from the subject property and some sort of irrigated vegetation was present over portions of the subject site. Irrigated vegetation areas decreased between the 1985 and 1989 photographs. Some sort of managed vegetation was noted within the southern portion of the subject property in the black and white aerial photograph from 1994. Sometime between/during 1994 and 2002, the subject site appeared to be fallow land and has remained vacant land to present day. Historical information reviewed during this assessment includes aerial photographs (dating back to 1930), USGS topographical maps (dating back to 1899), environmental lien search and interviews. EDR indicates that fire insurance maps covering the target property were not found.

5. Minor debris was observed along the northern and western portions of the subject property, consisting mostly of windblown trash, a car bumper, and remnants of a reclining chair. One area of plywood fragments and plastic sheeting was observed in the central portion of the subject property. A concrete irrigation valve riser located in the northwest corner of the subject site contained dumped trash and plastic bags. There were no visible signs of this trash containing hazardous substances; however, the trash was not disturbed.

6. No water wells were observed within the subject property. Two concrete irrigation valve risers were observed along the northern boundary of the subject property, within the proposed Pennsylvania Avenue extension. Remnants of north-south orientated concrete and brick irrigation channels were observed north of the proposed Pennsylvania Avenue extension and near the east property boundary. There are no current visual signs that these channels extended into the subject property. In addition, remnants of a concrete and brick irrigation valve box with exposed concrete pipe trending east-west along the north side of the dirt road at the northern boundary of the subject property was observed. The concrete pipe is estimated to connect with the two concrete irrigation valve risers.

7. No wooden power poles, pole-mounted transformers, or ground mounted transformers are located within or adjacent to the subject property.

8. There was no evidence of drums, sumps, pits, pools, or lagoons identified during our site reconnaissance.

9. No sites were identified in our search of various government agency database records, which appear to have adversely impacted the soils, groundwater or soil vapor beneath the subject parcels at this time, except the former Lockheed Martin facility (1500 Crafton Avenue), in northeast Redlands (approximately 4.5 miles east-northeast of the subject property). A recent comprehensive groundwater monitoring report for the former facility by Tetra Tech, Inc. (dated November 22, 2021) depicts monitoring wells approximately 1,700 feet east (Texas Street), approximately 2,600 feet west (Alhambra Street), and approximately 2,700 feet north-northeast (San Bernardino Avenue) of the subject property. Based upon groundwater monitoring results, the subject property is located within the Crafton-Redlands Plume boundary, a groundwater plume with known synthetic perchlorate and trichloroethylene (TCE) contamination. Although the boundary of the plume varies in publications, groundwater monitoring wells associated with the plume extends from the former Lockheed Martin facility in northeast Redlands west to near the Waterman Avenue/Interstate 10 interchange (Tetra Tech, 2019).

   Groundwater monitoring wells associated with the Crafton-Redlands Groundwater Plume are mapped throughout the Redlands area. The closest monitoring wells to the subject property, COR#30-A, COR#31-A, and COR#32, are situated east in Texonia Park on Texas Street. Spring 2021 monitoring results indicate the groundwater flow direction in a west direction and a groundwater elevation of approximately 1,080 feet above mean sea level (msl) under the subject site (Tetra Tech, 2021). Considering a ground surface elevation of approximately 1,280 feet (Google Earth, 2021) above msl for the subject property, groundwater is approximately 200 feet below the ground surface. Groundwater depths measured in the offsite wells measured approximately 195 feet in Spring 2021.

   The TCE concentration 6.0 micrograms per liter (μg/L) plume, mapped from the proximity of Alhambra Avenue to the west, is not currently depicted underlying the subject property. Well COR#31-A reported a TCE concentration of 0.22J μg/L (J-flagged estimated result below laboratory detection limit). The synthetic perchlorate concentration 6.0 micrograms per liter (μg/L) plume, mapped from just beyond the eastern subject property boundary to the west and northwest, is currently depicted underlying the subject property (Tetra Tech, 2021). Well COR#31-A reported a TCE concentration of 6.15 µg/L. For comparison purposes, the Maximum Contaminant Level (MCL) for perchlorate is 6 µg/L. For TCE the MCL is 5 µg/L.

Although groundwater beneath the site has been impacted, based on the 2021 measured depths to groundwater (approximately 195 feet below grade [fbg]), the concentrations of TCE are reported to be sufficiently low (below MCL in proximity to the subject site) as to not present a health risk to future residents. By comparison, synthetic perchlorate concentrations are slightly above the MCL in proximity to the subject property with concentrations reportedly decreasing with time. Further, because of the known presence of groundwater contamination, the Regional Water Quality Control Board will more than likely not identify future site owners as Responsible Parties. Strict definition of the Crafton-Redlands plume warrants it to be labeled as a Controlled Recognized Environmental Condition (see definition below); however, depth to groundwater and decreasing contamination levels slightly above or below drinking water MCLs, the plume underlying the site is considered as a de minimis condition for the subject property.

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

Based upon the property developed as an orchard from at least 1930 to sometime before/during 1985, Petra conducted a Limited Phase II Site Assessment to evaluate shallow, near surface, site soils for detectable pesticide residues.

To evaluate pesticide soil residues within the site, soil samples were collected from the three percolation test borings (P-1, P-2, and P-3) and the four geotechnical borings (B-1, B-2, B-3, and B-4) recently completed within the subject property utilizing a truck-mounted hollow-stem auger drill rig. Soil samples were collected from depths of approximately 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet. All 0 to 1-foot samples were discretely analyzed for Organochlorine Pesticides (OCPs) according to Environmental Protection Agency (EPA) Test Method 8081A, and arsenic and lead according to EPA Method 6010B. Three of the samples were analyzed for Title 22 Metals, including arsenic and lead, according to EPA Method 6010B/7471A, one sample was tested for Chlorinated Herbicides using EPA Method 8151A, and four of the 0 to 1-foot samples were analyzed for Total Petroleum Hydrocarbons using EPA Method 8015B. The remaining deeper soil samples were placed on hold by the laboratory for future testing in the event elevated levels of the agricultural chemical residues mentioned above were detected.

All soil samples analyzed during this assessment were analyzed by Enviro-Chem, Inc. (ECI) in Pomona, California. ECI is accredited by the California Environmental Protection Agency, Department of Health Services Environmental Laboratory Accreditation Program (ELAP). Analyses were requested on a chain-of-custody record. Below is a discussion of the laboratory results.

Organochlorinated Pesticides

Seven discreet and one duplicate soil samples collected at a depth of 0 to 1 foot were tested for Organochlorinated Pesticides (OCPs) according to EPA Method 8081A. Six samples contained concentrations of 4-4'DDE that ranged from 0.044 milligrams per kilograms (mg/kg) to 0.135 (mg/kg). Two of the samples reported a non-detect result, or below the Actual Detection Limit (ADL) of the test method of 0.001 mg/kg. All detectable concentrations of DDE were found to be below the USEPA Region 9 Regional Screening Level (RSL) of 2.0 mg/kg for DDE residential use soils.

The eight samples reported non-detect results for residual concentrations of 4,4'-DDT and 4,4'-DDD with an ADL of 0.01 mg/kg. The residential use soil USEPA Region 9 RSL (USEPA, 2021) for DDT and DDD is 1.9 mg/kg.

No other OCP analytes were reported at concentrations above the ADL. The laboratory test results are listed within Table 1 and copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Chlorinate Herbicides

One of the samples collected from a depth of 0 to 1 foot was also analyzed for Chlorinated Herbicides. No detectable levels of Chlorinated Herbicides were present in the sample analyzed. Laboratory test results are listed within Table 1 and copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Title 22 Metals

Seven discrete soil samples and one duplicate sample collected at a depth of 0 to 1 foot were analyzed for arsenic and lead using EPA Method 6010B based upon their historical use as pesticides. In addition, three discrete soil samples collected at a depth of 0 to 1 foot were tested for CAM Title 22 Metals using EPA Method 6010B/7471 including arsenic and lead. Detected levels of barium, total chromium, cobalt, copper, mercury, nickel, vanadium, and zinc were reported below their respective Regional Screening Levels (RSLs) for residential use soil (US EPA, 2021).

Arsenic

A total of eleven tests were conducted for residual arsenic levels from the eight discrete samples collected from a depth of 0 to 1 foot on the subject property (including one duplicate). Arsenic residues were reported as non-detect, or below the ADL for the test method of 0.3 mg/kg in four sample tests. Arsenic was reported in five of the sample tests (and one duplicate) analyzed ranging from 0.503 milligrams per kilogram (mg/kg) to 0.662 mg/kg. Arsenic was reported in two of the sample tests at 1.05 mg/kg and 1.07 mg/kg. The residential soil RSL for inorganic arsenic is listed as 0.68 mg/kg (USEPA, 2021). Results indicate nine of the eleven sample tests (including one duplicate) reporting arsenic levels below the residential soil RSL.

Generally accepted research by California EPA Department of Toxic Substances Control (DTSC) scientists (Chernoff, Bosan and Oudiz, 2008), reported a concentration of 12.0 mg/kg is considered a useful screening tool for background levels of arsenic. The "term" background collectively refers to both naturally occurring and anthropogenic concentrations in shallow soils. Arsenic levels detected onsite are well under concentrations and considered background levels. As a result of screening near-surface soils onsite for elevated arsenic residues, concentrations are highly likely related to background levels and not associated with historic pesticide usage. A summary of test results is provided in Table II. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

A total of eleven tests were ran for lead levels. Lead residues was reported in the ten discrete sample tests and one duplicate sample analyzed ranging from 2.39 mg/kg to 21.0 mg/kg. The USEPA RSLs were evaluated for lead residues in soil pertaining to residential land use. An RSL of 400 mg/kg was listed for lead and compounds (USEPA, 2021). For comparison, the Department of Toxic Substances Control (DTSC)-Recommended Screening Levels (SLs) were evaluated for lead residues in soil pertaining to residential land use. A SL of 80 mg/kg was listed for lead and compounds (DTSC, 2019). A summary of test results is provided in Table II. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Total Petroleum Hydrocarbons

Since petroleum hydrocarbons may have been historically used for weed abatement or dust control in the orchards, three discrete soil samples collected at a depth of 0 to 1 foot were analyzed for total petroleum hydrocarbons (TPH) - carbon chain using EPA Method 8015B. None of the three samples reported detected residue concentrations of TPH-gasoline chain and TPH-diesel chain, and TPH-motor oil chain. A summary of test results is provided in Table III. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

RECOGNIZED ENVIRONMENTAL CONDITIONS

Recognized environmental conditions (REC's) are defined by the American Society of Testing and Materials (ASTM) as any hazardous substance or petroleum product under conditions that indicate an existing, past, or material threat of release into the structures, ground, groundwater, or surface water at the subject site. If the presences of recognized environmental conditions are identified on a subject site, it may warrant additional research, site evaluation, and/or action.

- No REC's have been identified within or affecting the subject property.

Controlled recognized environmental conditions (CREC's) are defined by the American Society of Testing and Materials (ASTM) Practice E 1527-13 as a recognized environmental condition resulting from the past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority (i.e., as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with *hazardous substances* or *petroleum products* allowed to remain in place subject to the implementation of required controls. For example, if a leaking underground storage tank has been cleaned up to a commercial use standard but does not meet unrestricted residential cleanup criteria; this would be considered a controlled recognized environmental condition. The "control" is represented by the (inferred) restriction that the property remains commercial. For the purpose of this Phase I Environmental Site Assessment (ESA), ASTM Standard E1527-13 dictates that a CREC is considered a REC.

- One CREC (former Lockheed Martin Facility), related to a groundwater plume containing TCE and synthetic perchlorate, has been identified underlying the subject property. The former Lockheed Martin Facility is mapped approximately 4.5 mile east-northeast of the subject property.

Historical recognized environmental conditions (HREC's) are defined by the American Society of Testing and Materials (ASTM) Practice E 1527-13 as a past release of any *hazardous substances or petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory agency, without subjecting the *property* to any required controls (i.e., *property* use restrictions, *activity and use limitations*, *institutional controls* or *engineering controls*).

- No HREC'S have been identified within or affecting the subject property.

We have performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 for the residential portion of the *LPA Redlands Project*, near the northeast corner of S. Tennessee Street and W. Lugonia Avenue, a portion of Assessor's Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14, City of Redlands, San Bernardino County, California. Any exceptions to, or deletions from, this practice are described in the section titled *Data Failures and Data*

Gaps of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:

- The subject property is located within the Crafton-Redlands Plume boundary, a groundwater plume with known trichloroethylene (TCE) contamination. Strict definition of the Crafton-Redlands plume warrants it to be labeled as a Controlled Recognized Environmental Condition; however, based on 2021 measured depths to groundwater (approximately 195 feet below grade [fbg]), the concentrations of TCE are reported to be sufficiently low (below MCLs in close proximity to the site) as to not present a health risk to future residents. Additionally, synthetic perchlorate concentrations are slightly above the MCL and decreasing in close proximity to the subject property. Further, because of the known presence of groundwater contamination and the source, the Regional Water Quality Control Board will more than likely not identify future property owners as Responsible Parties. As a result, the plume underlying the site is considered a de minimis condition.

SITE CONSIDERATIONS

Items, if presented below, are not considered recognized environmental conditions in accordance with ASTM 1527-13. Although these items may warrant consideration in conjunction with any planned development activities, they are not recognized environmental conditions. The information regarding possible actions relative to these items has been provided as guidance.

- With re-development of any abandoned agricultural property and existing open vacant land, a certain amount of unknown subsurface conditions may be anticipated. Any discolored soils, noxious odors, buried pipelines or irrigation channels, and/or other buried objects/debris encountered during clearing and grubbing, or future grading and development should be left in place until an experienced environmental professional (such as Petra) has had the opportunity to evaluate the conditions and provide recommendations if needed.

- A damaged brick and concrete irrigation distribution box, a brick and concrete irrigation channel, and two irrigation valve risers were observed along the northern property boundary during our site reconnaissance. It appears that the irrigation channel extended through the subject property toward Lugonia Avenue; however, the channel is no longer visible at the surface. The irrigation distribution box likely received water from an offsite source and then distributed the water to the irrigation channel, which likely distributes water to underground (concrete?) irrigation lines. If these concrete irrigation lines are encountered during clearing and grubbing or future grading and development, they should be left in place until an experienced environmental professional (such as Petra) has had the opportunity to evaluate the conditions and provide recommendations if needed. In the event concrete irrigation lines are encountered, caution should be taken to not crush the lines until it can be ascertained that they do not contain asbestos.

- It is unlikely that there are any septic tanks or leach fields on the subject site. If any are encountered during site development, it is recommended that they be removed in accordance with current regulations.

- It is recommended that all vegetation, debris and trash encountered on the site be removed and disposed of offsite in accordance with current local regulations.

TABLE OF CONTENTS

Page

TABLE OF CONTENTS

Page

ATTACHMENTS

REVISED PHASE I ENVIRONMENTAL SITE ASSESSMENT
AND LIMITED PHASE II ASSESSMENT

LPA Redlands Residential Project, Near Northeast Corner of
S. Tennessee Street and W. Lugonia Avenue
a Portion of Assessor's Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14
City of Redlands, San Bernardino County, California 92374

INTRODUCTION

The information presented in this report includes the results of our recent field reconnaissance, a review of various federal, state, and local government agency records, and a review of historic aerial photographs and topographic maps for the site vicinity. This report includes a summary of our findings, our opinion as to the current environmental condition of the site, and recommendations for additional work, if needed.

Purpose

This Phase I Environmental Site Assessment (ESA) was conducted to determine if any recognized environmental conditions exist on the subject site. Recognized environmental conditions are defined by the American Society for Testing and Materials (ASTM) as any hazardous substance or petroleum product under conditions that indicate an existing, past, or material threat of release into the structures, ground, groundwater, or surface water at the subject site.

This assessment is also intended to satisfy the requirement for conducting all appropriate inquiries into the previous ownership and uses of a property for the purposes of meeting the all appropriate inquiries provisions necessary to qualify for certain landowner liability protections under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

We have performed this assessment in conformance with the scope and limitations of the standards set forth in the ASTM Practice E 1527-13 and the EPA's All Appropriate Inquiry (AAI) regulations 40 CFR Part 312.

Involved Parties

This report was prepared by Petra Geosciences, Inc. (Petra), at the request of Diversified Pacific Communities for their exclusive use. Use of this report or reliance thereon by other parties or projects is not authorized. The report may not be suitable for other parties or other purposes.

SCOPE OF ASSESSMENT

The scope of this assessment included the following:

1. Performing a site reconnaissance to identify the current conditions and land use of the subject site and adjoining properties, which included noting the visual evidence of prior uses of the subject site and adjoining properties. The site reconnaissance included an observation of the site surface, building and structure interiors, and the site perimeter.

2. Researching historical land use of the subject site and vicinity by reviewing available historical aerial photographs, United States Geologic Survey (USGS) topographic maps, fire insurance maps, city directories, local building department records, local planning department records and other reasonably ascertainable maps and data.

3. Performing a limited literature review of local and regional geological conditions as they pertain solely to commenting on recognized environmental conditions for the site.

4. Conducting a search for environmental liens and Activities and Use Limitations (AULs) for the property.

5. Obtaining and reviewing a search of pertinent federal, state, and local regulatory agency databases concerning environmental conditions on and in the vicinity of the site. As specified in the ASTM and AAI standards, the following databases were searched using, at a minimum, the recommended search radius:

   - *Federal National Priority List (NPL) site list,*
   - *Federal Delisted NPL site list,*
   - *Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) site list,*
   - *Federal CERCLIS- No Further Remedial Action Planned (CERC-NFRAP) site list,*
   - *Federal Resource Conservation and Recovery Act Information (RCRA) Corrective Action Report (CORRACTS) facilities list,*
   - *Federal RCRA non-CORRACTS Treat, Store and Dispose (RCRA-TSD) facilities list,*
   - *Federal RCRA generators list,*
   - *Federal institutional control/engineering control registries,*
   - *Federal Emergency Response Notification System (ERNS) list,*
   - *State and tribal lists of hazardous waste sites identified for investigation or remediation including: State- and tribal-equivalent NPL, State, and tribal-equivalent CERCLIS lists,*
   - *State and tribal landfill and/or solid waste disposal site lists,*
   - *State and tribal leaking storage tank lists,*
   - *State and tribal registered storage tank lists,*
   - *State and tribal institutional control/engineering control registries,*
   - *State and tribal voluntary cleanup sites, and*
   - *State and tribal Brownfield sites.*

   In the interest of thoroughness, numerous non-ASTM and non-AAI required databases were also searched. These databases are listed and discussed in the database search included within this report.

6. Contacting and interviewing knowledgeable persons, such as property owners, managers, and representatives of local government agencies regarding historical site use and current site conditions, if possible.

7. Evaluating the presence of recognized environmental conditions at the subject site through observation and research of reasonably ascertainable records. Recognized environmental conditions may include the presence of hazardous materials, petroleum products, underground storage tanks, above ground storage tanks, drums, chemical containers, polychlorinated biphenyls (PCB's), liquid or solid wastes, oil wells, and areas indicative of potential contamination including stained soils and/or pavement, stressed vegetation, monitoring wells, drains, sumps, pits, ponds, lagoons, and odors.

8. Preparing a report presenting the results of our Phase I ESA.

Unless listed above, this assessment does not include any testing or sampling of materials (such as an assessment for the potential presence of methane or radon, asbestos, lead-based paint, or the sampling and testing of soil, air, soil vapor, surface water, or groundwater). This assessment does not include evaluating the site for the presence of wetlands, regulatory compliance, or other items beyond the scope of ASTM E 1527-13 or 40 CFR Part 312, nor is it an assessment for vapor intrusion as defined by ASTM E 2600-15.

SITE OVERVIEW

The subject property is located approximately 570 feet north of the northeast corner of S. Tennessee Street and W. Lugonia Avenue, in the city of Redlands, San Bernardino County, California. According to the California Department of Conservation, Geologic Energy Management Division (CalGEM) Online Mapping System (2021), the site is located within Township 01 South, Range 03 West, Section 21, San Bernardino Base and Meridian. A site location map is included as Figure 1.

Overall, the *LPA Redlands Project* consists of approximately 16-acres of proposed residential development on the north (i.e., subject property) and approximately 8-acres of proposed commercial development on the south (i.e., not a part of this assessment). No physical markers differentiated the site boundary. A site location map is included as Figure 1.

The subject site is comprised of vacant land within a portion of contiguous Assessor Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14. The site slopes gently to the west with existing elevations on the order of approximately 1,280± feet above mean sea level (msl) along the west portion of the site, to 1,290± feet above msl along the east portion of the site.

The subject property is bounded by S. Tennessee Street, which is an improved road, along the western boundary of the site; however, curb and gutter and sidewalks are not present. A well-traveled dirt road comprises the northern boundary of the subject property, with abandoned agricultural land beyond. South of the subject property is abandoned agricultural land where the commercial portion of the *LPA Redlands Project* is proposed (which is not a part of this assessment), with W. Lugonia Avenue and a commercial development beyond. To the east is a less-traveled dirt road, with abandoned agricultural land and a residential tract beyond. The surface of the subject property is slightly hummocky, consisting of loose silty sands and sandy silts with a sparse growth of weeds. Remnants of abandoned irrigation structures were observed within the proposed Pennsylvania Avenue extension on the north edge of the site and east of the dirt road along the west boundary of the subject property. A plan showing the configuration of the subject property is included as Figure 2.

PREVIOUS LAND USE

Based on information obtained during this assessment, the site appears to have been developed as an orchard since at least 1930 until sometime between/during 1975 and 1985. Infrared aerial photographs suggest that sometime between/during 1975 and 1985 the orchards were removed from the subject property and some sort of irrigated vegetation was present over portions of the subject site. Irrigated vegetation areas decreased between the 1985 and 1989 photographs. Some sort of managed vegetation was noted within the southern portion of the subject property in the black and white aerial photograph from 1994. Sometime between/during 1994 and 2002, the subject site appeared to be fallow land and has remained vacant land to present day. Historical information reviewed during this assessment includes aerial photographs (dating back to 1930), USGS topographical maps (dating back to 1899), environmental lien search and interviews. EDR indicates that fire insurance maps covering the target property were not found.

PREVIOUS REPORTS

No previous environmental reports for the subject site were provided to Petra for review during this assessment. However, during Petra's review of potential environmental concerns associated with facilities in proximity to the subject property, it was noted that three groundwater monitoring wells associated with the Crafton-Redlands Groundwater Plume were mapped on the State Regional Water Resources Control Board's GeoTracker website in the vicinity of Texonia Park on Texas Street (approximately 1,750 feet east). In addition to these wells, multiple monitoring wells were mapped throughout the Redlands area. Data has shown that the source of the groundwater plume is the Lockheed Environmental Systems Tech Company (formerly Lockheed Martin Facility at 1500 Crafton Avenue, Redlands, California). This facility is mapped approximately 4.5 miles east-northeast of the subject property. A summary of reports by Tetra Tech, Inc. are provided below.

Tetra Tech, Inc., 2015

This document presents a revision to the ongoing groundwater monitoring of trichloroethene (TCE) and synthetic perchlorate associated with the Crafton-Redlands plume, located in the eastern and central portion of the Bunker Hill Groundwater Basin in San Bernardino, California. There are three monitoring wells in the vicinity of the subject property: COR#31-A (Texas Street south of San Bernardino Avenue). Well COR#31-A is screened for groundwater sampling at a depth of 480-700 feet below the ground surface. Data from COR#30-A and COR#32 was not provided.

In Well COR#31-A, the maximum concentration of perchlorate was listed as 25 µg/L and the average as 15 µg/L. The average concentration for TCE was reported as 0.56 µg/L and 1.4 µg/L as the maximum level. Statistical trends reported that perchlorate concentrations are decreasing in COR#31-A. For comparison purposes, the Maximum Contaminant Level (MCL) for perchlorate is 6 µg/L. For TCE the MCL is 5 µg/L.

Lockheed Martin Corporation, 2017

This report summarizes activities performed in the fourth quarter 2016. Groundwater monitoring activities associated with the Crafton-Redlands plume project are performed in accordance with the Regional Water Quality Control Board (RWQCB)-approved 2015 groundwater management plan (GMP). The 2015 GMP describes the approach to monitor the trichloroethene (TCE) and perchlorate plumes in the eastern and central portions of the Bunker Hill Groundwater Basin. The 2015 GMP is designed to monitor groundwater quality at potable, agricultural and monitoring well locations.

In accordance with the Plume Characterization Monitoring Plan, monitoring well sampling included collection of groundwater samples from the above identified wells located in the central portion of the Bunker Hill Groundwater Basin. Samples were analyzed for perchlorate and Volatile Organic Compounds (VOC's) including TCE. Results are provided in the data report by Tetra Tech, Inc. (dated January 17, 2017) summarized below.

Tetra Tech, Inc., 2017

The purpose of this water supply monitoring plan is to monitor groundwater quality, specifically trichloroethene (TCE) and perchlorate concentrations at water supply wells owner by water purveyors in the Bunker Hill Groundwater Basin.

Well COR#31-A, with a reported depth of groundwater as 228 feet below the ground surface, was not required to be sampled for this quarterly monitoring report (semi-annual sampling).

Petra reviewed monitoring reports from 2018 and found no new data for Well COR#31-A.

Tetra Tech, Inc., 2021

This Comprehensive Groundwater Sampling Report is submitted in support of Cleanup and Abatement Orders 94-37, 97-58, and 01-56 issued to Lockheed Martin Corporation by the State of California Regional Water Quality Control Board (RWQCB) Santa Ana Region. The data presented in the report were collected according to the 2015 Groundwater Monitoring Program sampling plan submitted to the RWQCB on September 15, 2015 by Lockheed Martin Corporation and approved by the RWQCB on September 24, 2015. Lockheed Martin Corporation will initiate implementation of the RWQCB-approved 2020 Groundwater Monitoring Program sampling plan in December 2021.

On behalf of Lockheed Martin Corporation, Tetra Tech, Inc. performed the 2021 Comprehensive Groundwater Sampling Event for Crafton-Redlands project in San Bernardino County, California. Groundwater monitoring of the Crafton-Redlands plume is being performed in support of Cleanup and Abatement Orders 94-37 and 97-58, as amended by 01-56 issued to Lockheed Martin Corporation by the California Regional Water Quality Control Board, Santa Ana Region (RWQCB).

This report provides an annual update of the groundwater monitoring activities conducted by Lockheed Martin Corporation to evaluate the occurrence of trichloroethene and synthetic (industrial) perchlorate in groundwater in the eastern and central portions of the Bunker Hill Basin, referred to as the Crafton-Redlands plume. The Comprehensive Groundwater Sampling Event is conducted annually in the summer months (third quarter), when most of the production wells are active and the collection of water quality samples are more readily obtained.

Groundwater samples were collected from both the water production wells and monitoring wells and analyzed for perchlorate and volatile organic compounds including trichloroethene. The findings of the 2021 Comprehensive Groundwater Sampling Event are summarized below.

- The areal extent of the Crafton-Redlands synthetic perchlorate plume decreased over the past year and continues to decrease over time.

- The extent of Crafton-Redlands trichloroethene plume has been decreasing over time. Over the past year, the extent of the trichloroethene plume increased slightly due to a slight increase in trichloroethene concentration in one well (on Alhambra Avenue), located at the trailing edge of the plume. The slight increase in the trichloroethene concentration may be a result of groundwater elevation changes causing the concentration fluctuation in the well.

- The synthetic perchlorate and trichloroethene plumes continue to be captured along the Gage well field in the central portion of the Bunker Hill Basin, where groundwater is extracted from the wells and treated at the City of Riverside Tippecanoe treatment plant and the City of Riverside Gage 46-1R treatment plant (perchlorate treatment) for potable use.

- Perchlorate concentrations in monitoring wells at the former Lockheed Propulsion Company Site in Mentone ranged from non-detect (below method detection limits) to 3.8 J µg/L. Perchlorate was detected only in monitoring wells located in the north side of the site. These trace concentrations of perchlorate may have an offsite source. Based on previous perchlorate stable isotopic analysis of a groundwater sample from one well located in the northern portion of the site, the source of perchlorate detected in this area of the site is likely agriculturally sourced and originated from agricultural areas upgradient of the former Lockheed Propulsion Company site. No volatile organic compounds were detected in the samples collected from the former Lockheed Propulsion Company site monitoring wells.

- As the drought conditions persist, some production wells and monitoring wells in the Bunker Hill Basin have gone dry due to declining groundwater levels. Over the past year, the groundwater elevation in the central portion of the Bunker Hill Basin decreased by approximately 6 feet to as much as 50 feet, depending on the well location. In the undifferentiated aquifer area of the Bunker Hill Basin east of California Street, the groundwater elevation change varied from an increase of approximately 13 feet to a decrease of approximately 86 feet, over the past year. The groundwater elevations have varied from season to season depending on the extent of groundwater pumping, precipitation, and groundwater recharge activities at the Santa Ana River and Mill Creek spreading grounds located along the northeast side of the Bunker Hill Basin.

ENVIRONMENTAL SETTING

The following section provides an overview of the regional and local geologic setting and includes information pertaining to groundwater conditions in the vicinity of the subject site. Geotechnical hazard information (faults, landslides, etc.) is not part of this assessment. This section does not constitute a geotechnical evaluation of the subject site and should not be taken as such.

Geology

Geologically, the site lies within the northern portion of the Peninsular Ranges Geomorphic Province (CGS, 2002). The Peninsular Range Province extends from the tip of Baja California north to the Transverse Ranges Geomorphic Province and is characterized by northwest trending mountain ranges separated by subparallel fault zones. The San Bernardino Mountains, located north of the site, provides the boundary between the Peninsula Range Province and the Transverse Ranges Province. In general, the province is underlain primarily of plutonic rock of the Southern California Batholith. The Peninsular Range Geomorphic Province is generally characterized by alluviated basins and elevated erosion surfaces.

Published geologic maps of the area indicate that the site and surrounding alluvial areas are underlain by Middle Holocene-age Young axial-valley deposits – Unit 3 (Matti, J.C., et al, 2003). These soils are described as slightly too moderately consolidated silt, sand and gravel deposits.

Surface Water

No surface water was observed within the property during our site reconnaissance.

The subject property is depicted in Zone X (FEMA, 2008) on Map Number 06071C8794H (dated August 28, 2008). This zone is defined as “0.2% Annual Chance Flood Hazard. Areas of 1% annual chance flood with average depths less than one foot r with drainage areas of less than one square mile.”

Groundwater

The site is located within the Bunker Hill (8-002.06) Groundwater Basin. The site and vicinity is located within the upper Santa Ana Valley Basin of the South Coast Hydrologic Region (California Department of Water Resources, [CDWR], 2003). In general, groundwater depth varies within the area and though flow direction specifically beneath the subject property is unknown, it is reasonable to estimate flow to follow regional topography from east to the west – northwest. The high groundwater depth within the site vicinity, between 1973 and 1983, is reported approximately 95 feet below the ground surface (Matti and Carson, 1991).

Groundwater depths in wells located in the vicinity of the subject property were reviewed on the California Department of Water Resources website (DWR, 2021). There appears to be no wells mapped within the property. The closest well in alluvial areas is located west of the property, and reports depths of greater than 100 feet since 1987. The memorandum documenting this inquiry is included in Appendix B.

Data from groundwater measured in Spring 2021 (Tetra Tech, 2021) reported a depth of approximately 194 feet below the ground surface in two monitoring well approximately 1,700 feet east of the subject property.

Groundwater in the central portion of the Bunker Hill Groundwater Basin occurs under unconfined water table conditions; however, groundwater along the western portion occurs under confined conditions (Tetra Tech, 2015). The basin contains three hydro stratigraphic units defined as containing productive water-bearing units. In the central basin (where the subject site is located), groundwater flow within the middle aquifer is in a west to southwesterly direction towards Colton Narrows. The Basin boundary between the Bunker Hill and Colton-Rialto is the San Jacinto Fault. Colton Narrows is an alluvium and gouge filled notch within the fault zone that allows surface water and shallow groundwater to exit the Bunker Hill Basin and enter the Colton-Rialto Basin. Deeper groundwater is inhibited from flowing through the fault zone.

RESULTS OF ASSESSMENT

The results of our site reconnaissance and observation of adjacent sites, agency database review, and historical land use study are presented in the following sections.

Site Observation

Petra conducted a reconnaissance of the subject site on December 22, 2021. Site photographs are included in Appendix A. Our site observations are summarized below.

Site Description

1. The subject property consists of the residential portion of the *LPA Redlands Project* located at the northeast corner of S. Tennessee Street and W. Lugonia Avenue in the city of Redlands, San Bernardino County, California. Overall, the *LPA Redlands Project* consists of approximately 16-acres of residential development on the north and approximately 8-acres of commercial development on the south. No physical markers differentiated the site boundary. A site location map is included as Figure 1.

2. The subject site is comprised of vacant land within a portion of contiguous Assessor Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14. The site slopes gently to the west with existing elevations on the order of approximately 1,280± feet above mean sea level (msl) along the west portion of the site, to 1,290± feet above msl along the east portion of the site.

3. Vehicular access to the subject property is via S. Tennessee Street, which is an improved road along the western boundary of the site. A drainage bounds the western edge of S. Tennessee Street, with the 210 Freeway easement beyond. Secondary access is via a dirt road along the northern boundary of the subject property, with vacant land beyond. South of the subject property is vacant land and the commercial portion of the LPA Redlands Project (which is not a part of this assessment), with W. Lugonia Avenue and a commercial development beyond. To the east is a dirt road, with vacant land and a residential tract beyond. The surface of the subject property is slightly hummocky, consisting of loose silty sands and sandy silts with a sparse growth of weeds. Minor surface cobbles and concrete fragments were observed. Vehicle tire ruts were observed near Tennessee Street, at or near the northwest and southwest corners of the subject property.

4. Minor debris was observed along the northern and western portions of the subject property, consisting mostly of windblown trash, a car bumper, and remnants of a reclining chair. One area of plywood fragments and plastic sheeting was observed in the central portion of the subject property. A concrete irrigation valve riser located in the northwest corner of the subject site contained dumped trash and plastic bags. There were no visible signs of this trash containing hazardous substances; however, the trash was not disturbed.

5. No water wells were observed within the subject property. Two concrete irrigation valve risers were observed along the northern boundary of the subject property, within the proposed Pennsylvania Avenue extension. Remnants of north-south orientated concrete and brick irrigation channels were observed north of the proposed Pennsylvania Avenue extension and near the east property boundary. There are no current visual signs that these channels extended into the subject property. In addition, remnants of a concrete and brick irrigation valve box with exposed concrete pipe trending east-west along the north side of the dirt road at the northern boundary of the subject property was observed. The concrete pipe is estimated to connect with the two concrete irrigation valve risers.

6. No wooden power poles, pole-mounted transformers, or ground mounted transformers are located within or adjacent to the subject property.

7. There was no evidence of drums, sumps, pits, pools, or lagoons identified during our site reconnaissance.

Adjacent Site and Vicinity Observations

The property is situated in an area of residential, commercial and open space/undeveloped land use. Our observations are noted below:

North	To the north of the subject site is a dirt road that represents the future extension of Pennsylvania Avenue, with abandoned agricultural fields beyond.
West	To the west of the site is Tennessee Street with a drainage channel, 210 Foothill Freeway, and commercial development beyond.
South	To the south of the subject site is vacant land associated with the commercial portion of the LPA Redlands project, with W. Lugonia Avenue and commercial development beyond.
East	To the east of the subject site is vacant land, with residential development, Texonia Park, and Texas Street beyond.

Limited Phase II Environmental Site Assessment

Based upon the property developed as an orchard from at least 1930 to sometime before/during 1985, Petra conducted a Limited Phase II Site Assessment to evaluate shallow, near surface, site soils for detectable pesticide residues.

On January 6, 2022, soil samples were collected from the three percolation test borings (P-1, P-2, and P-3) and the four geotechnical borings (B-1, B-2, B-3, and B-4) recently completed within the subject property utilizing a truck-mounted hollow-stem auger drill rig. Soil samples were collected from depths of approximately 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet. All 0 to 1-foot samples were discretely analyzed for Organochlorine Pesticides (OCPs) according to Environmental Protection Agency (EPA) Test Method 8081A, plus arsenic and lead according to EPA Method 6010B. Three of the samples were analyzed for Title 22 Metals according to EPA Method 6010B/7471A, one sample was tested for Chlorinated Herbicides using EPA Method 8151A, and four of the 0 to 1-foot samples were analyzed for Total Petroleum Hydrocarbons using EPA Method 8015B. The remaining deeper soil samples were placed on hold by the laboratory for future testing in the event elevated levels of the agricultural chemical residues mentioned above were detected. A site plan detailing the approximate location of the sample borings is included as Figure 2.

All soil samples were analyzed by Enviro-Chem, Inc. (ECI) in Pomona, California. ECI is accredited by the California Environmental Protection Agency, Department of Health Services Environmental Laboratory Accreditation Program (ELAP). Sample security was maintained and documented using sample labels and chain-of-custody records. A summary of analytical test results is provided later in this report and in the attached Tables, I, II, and III. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Government Agency Database Research

A search of federal, state, and local government listings was performed by Environmental Data Resources, Inc. (EDR) for the purposes of this report. The search radius used for all government databases meets or exceeds the standard search distance adopted by ASTM and AAI.

Results of Agency Records Search

A data search of the various government agency records listed in Appendix B revealed no listings for the subject site. The EDR report shows 34 surrounding sites at 14 addresses within the requested search radii. Three leaking underground storage tank (LUST) cases at two addresses were identified within the search radii, mapped approximately 1,786 feet east and 1,801 feet southeast of the subject property. Eight orphan sites (sites with inadequate address information to be mapped by EDR) were identified during the agency database search. Refer to the EDR Report in Appendix C for the search radii completed for this assessment.

The linear distance and groundwater gradient guidelines provided in ASTM E2600-15 (Tier 1 Areas of Concern) are used as a reasonable screening tool for groundwater and vapor migration to identify a recognized environmental condition (REC) associated with the subject site (ASTM, 2015; Buonicore, 2014). For contaminated sources (such as a dry cleaner with a PCE release or a gas station with a leaking underground storage tank releasing BTEX) located up-gradient of the Target Property (TP), the focus would be on those contaminated sites within the AOC distance of 1,760 feet. The AOC search distance in the cross-gradient quadrant is reduced from 1,760 feet to 365 feet and the AOC for contaminated sites down-gradient from the TP is reduced from 1,760 feet to 100 feet. A copy of the plan showing the AOC boundaries can be found in Appendix B. A brief description of the sites listed in the EDR report, which are of potential concern due to the nature of the listing or their proximity to the site (within the AOC), is provided below:

<u>Sites A1 & A2: The Home Depot #1013, 1151 W. Lugonia Ave., Redlands, CA 92374</u>: This site is listed less than 1/8-mile south of and at a higher elevation than the subject site. This facility is listed on the CalEPA's Regulated Site Portal (CERS HAZ WASTE), CalEPA Regulated Site Portal (CERS), Resource Conservation and Recovery Act – Small Quantity Generator (RCRA-SQG), CalEPA's Facility and Manifest Data (HAZNET), Department of Toxic Substances Control's (DTSC's) Hazardous Waste Tracking System (HWTS), and San Bernardino County Fire Department Hazardous Materials Division's Hazardous Material Permits (San Bern Co. Permit) databases.

The disposal method of hazardous materials/waste (including hydrocarbon solvents, waste oil/mixed oil, alkaline solutions with pH>12.5, without metals, liquids with pH<2 with metals, and unspecified solvents) is reported as "storage, bulking and/or transfer offsite – no treatment or recovery." General administrative violations were reported; however, none of these listing report a spill or unauthorized release of hazardous materials to the environment. Based on the lack of recorded violations or evaluations, this listing does not currently appear to represent a recognized environmental condition with regards to the subject site at this time.

<u>Sites A2 & A3: 7-Eleven Inc. #33292, 1161 W. Lugonia Ave., Redlands, CA 92374</u>: This site is listed less than 1/8-mile south of and at a lower elevation than the subject site. This facility is listed on the CERS, CERS HAZ WASTE, CalEPA's California Environmental Reporting System Tanks (CERS TANKS), San Bern Co. Permit, State Water Resources Control Board's Active Underground Storage Tank Facilities (UST), and RCRA's Non Generator/No Longer Regulated (RCRA NonGen/NLR) databases.

Under the CERS database, one 2017 violation listed as "Failure of the UST system to be designed and constructed with a monitoring system capable of detecting the entry of the hazardous substance into the secondary containment" was reported. This violation was reported as reinspected and "a complete monitoring certification was completed." Compliance evaluation inspections were conducted by San Bernardino Fire Department. General administrative violations were reported; however, none of these listing report a spill or unauthorized release of hazardous materials to the environment. Based on the lack of recorded violations or evaluations, this listing does not currently appear to represent a recognized environmental condition with regards to the subject site at this time.

Sites F25, F26 & F27: Well 31-A & Texas Street Pumping Plant, 1401 Texas St., Redlands, CA 92374: This site is listed between ¼- and ½-mile (1,786 feet) east of and at a higher elevation than the subject site. This facility is listed on the CERS, San Bern Co. Permit, State Water Resources Control Board's Leaking Underground Storage Tank (LUST), State Water Resources Control Board's Statewide Environmental Evaluation and Planning System (SWEEPS UST), State Water Resources Control Board's Hazardous Substance Storage Container (HIST UST), CalEPA's Facility Inventory (CA FID UST), DTSC's Hazardous Waste and Substance Historic Site List (HIST CORTESE), Cal EPA's Hazardous Waste and Substances Sites List (CORTESE), and California Air Resources Board's Emissions Inventory Data (EMI) databases.

Under the LUST database for Texas Street Pumping Plant, the case type is listed as "LUST Cleanup Case." The potential media affected is reported as "Soil." The Potential Contaminants of Concern (PCOC's) are listed as "waste oil/motor/hydraulic/lubricating." The leak discovery date is September 1, 1991. The leak reported date is reported as September 1, 1991 and May 18, 1993. Soil remediation (December 2002) was reported as "Ex Situ Physical/Chemical Treatment (other than P&Y, SVE, or excavation)." The case status is reported as "Completed - Case Closed" as of July 16, 2004. Based upon the soil cleanup completed under oversight by the Regional Water Quality Control Board, Santa Ana Region (RWQCB, SA) and that no groundwater was reportedly impacted, this listing does not currently appear to represent a recognized environmental condition with regards to the subject site at this time.

Under LUST Region 8 (LUST REG 8), the enter date was listed as June 22, 1993 (different from above). The case type was reported as "Soil only." The substance was listed as "motor oil." The date of remediation action underway was listed as December 16, 2002. Close date was reported as July 16, 2004 (same as above).

Under HIST UST, the Texas Street Pumping Plant was reported as a "water pumping plant." One UST was reported for "product" but the type of fuel was not reported. The EMI database listed for the Texas Street Pumping Plant was for emissions permits in 1995 and 1996, where emissions were listed as "total organic hydrocarbon gases, reactive organic gases, carbon monoxide, and oxides of nitrogen." The CERS database description was reported as "Leaking Underground Storage Tank Cleanup Site" under the oversight of the RWQCB, SA. The CORTESE database listing reported the cleanup status as "Completed-Case Closed."

The SWEEPS database for Well 31-A reported one, 250-gallon UST with a created date of February 29, 1988. Under HIST UST and HIST CORTESE, no information was reported. The CA FID UST listing reported the status as "active." Under the San Bern. Co. Permit database for Well #31-A, the owner was identified as "City of Redlands Wastewater." The facility status is listed as "inactive" as of May 31, 2012.

Based upon the soil cleanup completed under oversight by the Regional Water Quality Control Board, Santa Ana Region (RWQCB, SA) and that no groundwater was reportedly impacted, this listing does not currently appear to represent a recognized environmental condition with regards to the subject site at this time.

All site listings in the EDR report do not currently appear to represent a recognized environmental condition with regards to the subject site, due to the nature of the listings, the oversight agency having granted Completed-Case Closed" status (i.e., no further action), the site(s) being outside the AOC from the subject site, their distance from the subject site and/or depth to contamination.

Orphan Sites

Orphan sites are those that the database search was not able to locate due to lack of complete address information. Eight orphan site was listed in the EDR report. Seven of the eight orphan site are located at a cross- or down-groundwater gradient from the subject property. The eighth Orphan listing was reported as the Crofton-Redlands Area Bunker Hill Ground Water Sub-B, listed under the California Department of Health Services Bond Expenditure Plan. The Crafton-Redlands Plume is discussed above under the heading for Groundwater. None of the orphan sites as considered a recognized environmental condition to the subject property at this time.

Local Agencies

Petra reviewed information held by the agencies listed below during the course of this assessment.

San Bernardino County

The San Bernardino County Fire Department, Environmental Health Division maintains environmental case listings related to hazardous waste permits, underground storage tanks and tank cleanup sites. Records held by this agency were accessed by EDR during the government database search. No listings for the subject site were reported by EDR.

California Regional Water Quality Control Board

The California Regional Water Quality Control Board-Santa Ana Region (RWQCB) maintains records of leaking underground storage tank sites and groundwater cleanups for sites in the Santa Ana Region. Records held by the RWQCB were accessed by EDR during the government database search. No listings for the subject site were reported by EDR.

GeoTracker

The GeoTracker website maintains a record of environmental data for regulated facilities in California. Based upon our internal review, no database listings for the subject site were reported on GeoTracker. The Crafton-Redlands Groundwater Plume was mapped underlying the subject property. This plume is discussed in the *Previous Reports* section above. The memorandum documenting this inquiry is included in Appendix B.

California Department of Conservation, Geologic Energy Management Division (CalGEM)

According to the California Department of Conservation, Geologic Energy Management Division (CalGEM, 2021), there are no active or abandoned oil, or gas wells located on the subject site, and the subject site is not within the boundaries of an oil field. Further, there were no indications of any such wells found during our reconnaissance of the subject site. A copy of the review is included in Appendix B.

Department of Toxic Substances Control

The online database EnviroStor (DTSC, 2021), which provides records on LUSTs, SLICs, Priority cleanup sites and states sites, is maintained by the Department of Toxic Substances Control (DTSC). No database listings for the subject site were reported on EnviroStor. The memorandum documenting this inquiry is included in Appendix B.

The Crafton-Redlands Area was identified on the Envirostor database map, at a distance of approximately 4.5 miles east of the subject property. Although not within a typical radius distance search area, this facility has affected groundwater in the Bunker Hill sub-basin which underlies the subject property. The site is an area of groundwater contamination consisting of approximately 19 square miles. In the past 6 years, the city of Redlands has taken 6 domestic wells offline due to TCE, tetrachloroethane (PCE) and dibromochloropropane (DCBP) contamination. There is no known exposure at this time. The RWQCB and Lockheed Martin have conducted investigations in an effort to identify the source of contamination. One source may be an old burn pit at the Lockheed Martin facility. Additional information regarding this plume is discussed in the *Previous Reports* section above. The memorandum documenting this inquiry is included in Appendix B.

Department of Toxic Substances Control – Land Use Covenants

Petra reviewed the DTSC's Permitting Land Use Covenants Web App for land use covenants (LUCs) affecting the subject property. None were found for the subject property. The memorandum documenting this inquiry is included in Appendix B.

National Pipeline Mapping System

Petra reviewed the National Pipeline Mapping System (NPMS, 2021) public viewer website for gas transmission pipelines and hazardous liquid trunklines on or close to the subject property. Due to security purposes, close-up map views are not available. According to the information reviewed, no pipelines appear to be located on the subject property or immediately adjacent. A copy of this map is included in Appendix B.

California Division of Dam Safety

Petra reviewed the California Division of Dam Safety (CDODS) Dam Breach Inundation Map Web Publisher (CDODS, 2021). No dams were identified in the vicinity of the subject property. The closest dam identified by CDODS is the Seven Oaks situated in the foothills above Mentone. Breaches from these dams would not affect the subject property. A copy of this information is included in Appendix B.

California Department of Conservation

The California Department of Conservation, Division of Mine Reclamation's "Mines Online" interactive map was queried regarding mines in proximity to the subject property. The map depicted no mines within the subject property or within a one mile of the subject property. The memorandum documenting this inquiry is included in Appendix B.

Vapor Migration

Standard revisions presented in ASTM E1527-13, considers the assessment of vapor migration similar to that of groundwater contamination. As a result, Petra reviewed documentation regarding surrounding sites near the subject property with known soil and groundwater contamination to preliminarily evaluate potential areas of concern for vapor migration/encroachment onto the subject property. An area of concern typically includes active or abandoned gas stations and dry cleaners, industrial facilities, and hazardous waste disposal and landfill facilities with known or suspected soil and/or groundwater contamination.

In the absence of specific criteria within ASTM Standard E1527-13, Petra considered the linear distance and groundwater gradient guidelines provided in ASTM E2600-15 (Tier 1 Areas of Concern) as a reasonable screening tool for vapor migration to identify a recognized environmental condition (REC) associated with the subject site (ASTM, 2010; Buonicore, 2014).

For vapor encroachment to represent a potential for vapor intrusion to structures within the subject property, vapors must have a pathway to create an indoor air quality condition (i.e., Recognized Environmental Condition). Petra assessed the potential for vapor migration onto the subject property from the Crafton-Redlands Groundwater Plume, currently associated with the former Lockheed Martin facility (1500 Crafton Avenue), in northeast Redlands (approximately 4.5 miles east-northeast of the subject property). A recent comprehensive groundwater monitoring report for the former facility by Tetra Tech, Inc. (dated November 22, 2021) depicts monitoring wells in the vicinity of the subject property. Based upon groundwater monitoring results, the subject property is located within the Crafton-Redlands Plume boundary, a groundwater plume with known synthetic perchlorate and trichloroethylene (TCE) contamination. Although the boundary of the plume varies in publications, groundwater monitoring wells associated with the plume extends from the former Lockheed Martin facility in northeast Redlands west to near the Waterman Avenue/Interstate 10 interchange (Tetra Tech, 2019).

Groundwater monitoring wells associated with the Crafton-Redlands Groundwater Plume are mapped throughout the Redlands area. The closest Monitoring Wells to the subject property, COR#30-A, COR#31-A, and COR#32, are situated east in Texonia Park on Texas Street. Spring 2021 monitoring results indicate the groundwater flow direction in a west direction and a groundwater depth on the order of 200 feet bgs underlying the subject site (Tetra Tech, 2021).

Maps within the Tetra Tech 2021 report depicts The TCE concentration 6.0 micrograms per liter (μg/L) plume, mapped west-northwest from near Alhambra Avenue to the west, is not currently depicted underlying the subject property. Well COR#31-A, mapped in Texonia Park to the east, reported a TCE concentration of 0.22J μg/L (J-flagged estimated result below laboratory detection limit). The synthetic perchlorate concentration 6.0 micrograms per liter (μg/L) plume, mapped from just beyond the eastern subject property boundary extending to the west and northwest, is currently depicted underlying the subject property (Tetra Tech, 2021). Well COR#31-A reported a synthetic perchlorate concentration of 6.15 μg/L. For comparison purposes, the Maximum Contaminant Level (MCL) for perchlorate is 6 μg/L. For TCE the MCL is 5 μg/L.

Although groundwater beneath the site has been impacted, based on the 2021 measured depths to groundwater (approximately 200 feet below grade [fbg]), the concentrations of TCE are reported to be sufficiently low (below MCL in proximity to the subject site) as to not present a health risk to future residents. By comparison, synthetic perchlorate concentrations are slightly above the MCL underlying the subject property. Further, because of the known presence of groundwater contamination, the Regional Water Quality Control Board will more than likely not identify future subject property owners as Responsible Parties.

Strict definition of the Crafton-Redlands plume warrants it to be labeled as a Controlled Recognized Environmental Condition (see definition below); however, depth to groundwater and decreasing contamination levels slightly above or below drinking water MCLs, the plume underlying the site is considered as a de minimis condition. The Crafton-Redlands Plume is not considered to represent a concern in regard to vapor encroachment on to the subject site at this time.

No other surrounding sites have been identified during this assessment which would appear to represent a concern in regard to vapor encroachment on to the subject site at this time.

Evaluation of Records Search Results

In summary, no sites were identified in our search of various government agency database records, which appear to have impacted the soils beneath the subject site at this time. The subject site, however, is geographically located within the Crafton-Redlands Plume boundary, a trichloroethylene (TCE) and synthetic perchlorate groundwater plume. The Crafton-Redlands plume is located in the eastern and central portion of the Bunker Hill Groundwater Basin in San Bernardino County, California. Although groundwater beneath the subject property has been reportedly impacted by known contaminants, the depth to groundwater (approximately 200 feet below the ground surface), and the concentrations of contaminants are slightly above the MCL or sufficiently low as to not present a health risk to future residents. As a result, the Crafton-Redlands plume represents a de minimis condition to the subject property at this time.

Results of Aerial Photo Analysis

Although aerial photographs can often be a valuable source of information in the assessment of historical land usage, it should be understood that information extrapolated from photographic images is strictly interpretation and not necessarily fact. For this reason, it may not be appropriate to draw conclusions regarding previous site activities based solely upon aerial photographic analysis.

In order to provide a complete updated assessment of historical land usage on and in the vicinity of the subject site, aerial photographs with coverage of the subject site and vicinity were obtained from EDR and viewed by a representative of this firm. Photographs from the years 1930, 1938, 1949, 1953, 1959, 1966, 1968, 1975, 1985, 1989, 1994, 2002, 2006, 2009, 2012, and 2016 were provided by EDR. Also, aerial photographs (i.e., Google Earth®) from 2017 to 2021 have been reviewed for this assessment. A summary of the information obtained during the aerial photograph review follows. Copies of the aerial photographs obtained from EDR are included in Appendix C.

1930, 1938, 1949, 1953, 1959, 1966, 1968, and 1975 Photographs

In these black and white and infrared aerial photographs the subject site and vicinity was developed as cultivated orchards. Structures are not visible within the subject property. Isolated farmhouses and/or barns are noted in the area including two located fronting Lugonia Avenue southwest of the subject property. Linear dirt roads (and possibly irrigation channels) are observed along the eastern subject site boundaries and through the west central portion of the subject site. A dirt road is also observed along the northern site boundary. These dirt roads connect to other roads in the area. By 1959, tract homes are observed in the vicinity to the southeast and a large aboveground water tank is noted to the east approximately 1,700 feet (Texonia Park?). The (improved?) alignment of Lugonia Avenue is visible south of the subject property in 1930. By 1938 Lugonia Avenue was obviously improved. Variable orchard tree size or shape within the subject property is noted from photograph to photograph. The 1966 and 1968 aerial photographs depict a rectangular area in the east central portion of the subject site, where new tree planting is visible. Photographs from 1938 suggests pole-mounted wind machines are present within the southeasterly and northwesterly portions of subject property boundary; however, this has not been verified during our assessment.

1985, 1989, and 1994 Photographs

In the 1985 photograph, orchard trees have been removed within the subject site, and what appears to be some sort of irrigated vegetation was visible over portions of the subject property. The surrounding areas also appear generally the same as in the prior photographs with the exception of some orchards locally removed/abandoned. Also in 1985, land to the east is vacant, and a drainage swale and the 210 Freeway are observed west of the subject property. Orchard trees remain to the north. By 1989, approximately half of the subject property appears to have some sort of irrigated vegetation. Tennessee Street is not observed along the western subject property boundary until 1994. In the 1989 photograph, what appears to be a tractor trailer is noted near the south-central boundary of the subject site. Multiple faint dirt road activity is noted in this area in 1994. Also in the black and white 1994 photograph, tonal changes noted within the subject property suggest some sort of irrigated vegetation within the southern portion of the subject site.

2002 and 2006 Photographs

In the 2002 photograph, the subject property appears to be fallow land. Adjacent land to the south, east, northeast and northwest also appears fallow. The small shopping center to the south, across Lugonia Avenue, is visible in 2002. A strip of orchards trees remains north of the subject property. What appears to be remnants of the irrigation channel is visible in the west central portion of the subject property in 2006; however, a dirt road is not visible. No readily detectable changes to the subject property are noted in the 2006 color aerial photograph.

2009, 2012, and 2016 Photograph

In the 2009 photograph, the abandoned irrigation channel is no longer visible within subject site. The subject property remains fallow in the 2012 and 2016 aerial photographs.

Google Earth Imagery 2016 and 2021

The subject site appears generally the same as in the previous photograph, except for what appears to be a homeless encampment in the west central portion of the subject property in October 2016. A diagonal dirt path cuts through the western portion of the subject property. Other trails are noted within the north and southeasterly portion of the subject property, connecting to offsite streets or land. By February 2018, the homeless encampment appears with less tents or tarp covers; however, ground disturbance remains. Also in 2018, northwest to southeast orientated, faint surface drainage patterns are visible within a few areas of the subject property. Brush management is observed within the subject property in August 2018. Also in August 2018, the homeless encampment is no longer visible. In March 2019 and April 2020, concentrated green vegetation along what may be the former irrigation channel is present. In August 2021, the subject property and adjacent land appears similar to conditions described previously.

Historical USGS Topographic Maps

Petra reviewed the historical USGS topographic maps of the site and vicinity (Redlands Quadrangle) provided by EDR (Target Quad's: 1899, 1901, 1954, 1967, 1973, 1975, 1980, 1988, 1996, 2012, 2015, and 2018). No land use is shown for the subject site and no structures are located on or in proximity on the historical topographic maps for 1899, 1901, 2012, 2015, and 2018. The site was depicted as developed with orchards in historical topographic maps from 1954 through 1996 (aerial photographs indicate the grove was removed from the subject site sometime between/during 1975 and 1985). These maps generally support observations made from the aerial photographs reviewed. Copies of the maps reviewed are provided in Appendix C.

Environmental Liens & Activity and Use Limitations

Environmental Liens and Activity and Use Limitations (AULs) indicate restrictions on a property, which may represent a recognized environmental condition for the property. The subject property consists of a northern portion of four parcels within Riverside County having Assessor Parcel Number's (APN's) 0167-171-07, -11, -12, and -14.

An Environmental Liens and AUL Search 1980 was conducted by EDR as part of this assessment using these APN's, which incorporates adjacent land to the south adjacent to W. Lugonia Avenue. Public records of San Bernardino County, California were searched from January 1, 1980 to December 16, 2021, and no other deeds vesting title in the subject property were found or recorded during the period searched. Research sources included the San Bernardino County Recorder's Office, San Bernardino County Assessor's Office, the California Environmental Protection Agency (CA EPA) and the United States Environmental Protection Agency (US EPA*)*. DUE TO COVID-19 CONTAINMENT PROTOCOL, THE RECORDER OFFICE IS CLOSED FOR THE FORESEEABLE FUTURE. PROPERTY AND/OR ENCUMBRANCE HISTORY, TO THE EXTENT DATA AND DOCUMENTS WERE AVAILABLE ONLINE, WAS REVIEWED AND DOCUMENTED IN THE REPORT BACK TO 1980. RESEARCH OF HARDCOPY, ORIGINAL DEEDS, AND RECORDED DOCUMENTS PRIOR TO THIS DATE ARE NOT AVAILABLE NOR REASONABLY ASCERTAINABLE AT THIS TIME. Judicial records are not reviewed. The law or custom in this jurisdiction at issue does not require a search for judicial records in order to identify environmental liens.

The results from this search indicated that there were no recorded Environmental Liens or AULs listed for the APN, of which the subject property is a part. A complete Environmental Liens and AUL Search 1980 report is provided in Appendix C. A summary is provided in the table below.

Summary of Most Recent Grant Deeds for Subject Property

Assessor Parcel Number	Grantor	Grantee	Recorded Date
0167-171-07	1. James Seino and Kent Semo 2. Noni S. Patchhett, Trustee of the Revocable 3. Rosemarie Emori, Trustee of the Morikone Family 4. Dorothy Morikone, Trustee of the Morikone Family 5. Yuma Tsuchiya, an 1.25% undivided 6. Yuma Tsuchiya, a widower, James A. Sadoyama	Lugonia Holdings, LLC (1)	12-26-2019
0167-171-11	1. Laura Ann Ramirez, Trustee of J.J. Ramirez, Amedlia Ramirez and Laura Ann Ramirez Trust	Laura Ann Ramirez, an unmarried woman	6-21-2012
0167-171-12	1. James Seino and Kent Semo 2. Noni S. Patchhett, Trustee of the Revocable 3. Rosemarie Emori, Trustee of the Morikone Family 4. Dorothy Morikone, Trustee of the Morikone Family 5. Yuma Tsuchiya, an 1.25% undivided 6. Yuma Tsuchiya, a widower, James A. Sadoyama	Lugonia Holdings, LLC (1)	12-26-2019
0167-171-14	1. James Seino and Kent Semo 2. Noni S. Patchhett, Trustee of the Revocable 3. Rosemarie Emori, Trustee of the Morikone Family 4. Dorothy Morikone, Trustee of the Morikone Family 5. Yuma Tsuchiya, an 1.25% undivided 6. Yuma Tsuchiya, a widower, James A. Sadoyama	Lugonia Holdings, LLC (1)	12-26-2019

Note: (1) Lugonia Holdings, LLC, an Undivided 25% Interest; Canyon Ranch Associates, an Undivided 10% Interest and Lugonia Park Associates, an Undivided 65% Interest

Fire Insurance Maps

Fire Insurance Maps provide information on structure locations and operations, which were present at the time of the survey. These maps were completed for most major cities and metropolitan areas, dating from 1867, and provide information into past usage of buildings and how commercial and industrial zoning has changed over time. Sanborn™ Fire Insurance maps were requested for this assessment. EDR reports that fire insurance maps covering the target property were not found. The memorandum documenting this inquiry is included in Appendix C.

City Directory Abstract

City Directories provide information for a specific address at a specific time. A search of city directories, dating from 1965 to 2017 was conducted by EDR for this assessment. The search was conducted for the target property street and cross street. No listings, which would indicate a potential concern for the subject site based on the name of the listing or direction and distance from the subject property was included in the EDR-City Directory Image Report. A copy of this search is presented in Appendix C.

EDR Property Tax Map Report

Petra reviewed EDR's Property Tax Map report which includes information on boundaries for the parcels within the site along with parcel identification numbers. A copy of the EDR report is provided in Appendix C.

Building Permits

Building Permit data provides information to identify current and/or former operations and structures/features which may represent a recognized environmental condition for the subject site. A search of building permits at the City of Redlands Building and Safety Department (2006-2021) and San Bernardino County Land Use, Building and Safety (1970-2021) was conducted by EDR for this assessment. There were no permits found for the target property and no permits found for the adjoining property which would indicate a potential environmental concern for the subject site based on the name of the listing. A copy of this search is presented in Appendix C.

Interviews

Petra provided an owner interview questionnaire to Mr. Nolan Leggio, with Diversified Pacific Communities. The Interview Questionnaire was forwarded to Mr. Daniel Kunihira General Partner and Manager for the property owner, regarding his knowledge of the subject site. A summary of the response to questions (dated January 30, 2022) is provided below.

1. According to Mr. Kunihira, he does have a good knowledge regarding the uses and physical characteristics of the property and does have good knowledge regarding the activities/processes conducted at the property.

2. Mr. Kunihira stated that, to the best of his knowledge, the site was previously developed as a citrusa grove up to the early 1980's.

3. Mr. Kunihira indicated that, to the best of his knowledge, there are no hazardous substances present on the site. He added that there are no petroleum products present on the site.

4. Mr. Kunihira indicated that he is not aware of the presence of any current or previous potential recognized environmental conditions (such as hazardous substances, chemicals, asbestos-containing materials (ACMs), lead-based paint (LBP), USTs, ASTs, oil wells, and sumps within or adjacent to the site. He noted that probable spraying of citrus trees as part of grove care prior to our purchasing the property.

5. According to Mr. Kunihira, there are no utility corridors, clarifiers, disposal wells, or underground irrigation systems on the property. Mr. Kunihira noted that an inactive well is located south of the subject property, within the commercial portion of the development.

6. Mr. Kunihira noted that no pertinent environmental or geotechnical documents/reports exist with respect to the subject property.

7. According to Mr. Kunihira, based on his knowledge and experience related to the property, there are no notices or other correspondence from any government agency relating to past or current violations of environmental laws.

8. According to Mr. Kunihira, there are no notices or other correspondence from any governmental agency relating to environmental liens encumbering the property.

9. According to Mr. Kunihira, there are no pending, threatened, or past litigation or administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.

10. According to Mr. Kunihira, there are no notices from any governmental entity regarding any possible violations of environmental laws, or possible liability relating to hazardous substances or petroleum products.

A copy of the complete Owner Questionnaire is provided in Appendix D.

<u>Client Knowledge</u>

In compliance with AAI, Petra sent a Client Questionnaire form to Mr. Nolan Leggio, with Diversified Pacific Communities, regarding his knowledge of the subject site. A summary of the pertinent questions (dated January 31, 2022) is provided below.

1. According to Mr. Leggio, the Phase I ESA is required for development (of the subject property) as a residential parcel. He indicated he does not have reports for this project.

2. Mr. Leggio indicated that he is not aware of any environmental clean-up liens against the property that are filed or recorded under federal, tribal, state of local law. Mr. Leggio indicated that a title report was provided to Petra, and that he has or will conduct a search for any environmental cleanup liens against the property that are filed or recorded in a registry. Mr. Leggio requires Petra to determine if there are any environmental cleanup liens recorded.

3. According to Mr. Leggio, he is not aware of any activity and land use limitations (AULs), such as engineering controls, land use restrictions, or institutional controls that are in place on or for the site, and/or have been filed or that environmental cleanup liens against the property that are filed or recorded under federal, tribal, state of local law. Mr. Leggio indicated that Petra is to determine if there are any AULs related to the subject property.

4. According to Mr. Leggio, he does not have any specialized knowledge or experience related to the property or nearby properties.

5. Mr. Leggio indicated that the price being paid for this property reasonably reflect the fair market value of the property.

6. According to Mr. Leggio, he is not aware of commonly known or reasonably ascertainable information about the property that would help identify conditions indicative of hazardous

materials/chemical releases or threatened releases. Additionally, he noted that the property was last used as a grove in the early (19)80's.

7. According to Mr. Leggio, he is not aware of specific chemicals that are present or once were present on the property.
8. According to Mr. Leggio, he is not aware of spills or other chemical releases that have taken place at the property.
9. According to Mr. Leggio, he is not aware of any environmental cleanups that have taken place on the property or adjacent property.
10. According to Mr. Leggio, based on his knowledge and experience related to the property, there are no obvious indicators that point to the presence of likely presence of contamination at the property.

A copy of the complete client questionnaire is provided in Appendix D.

Data Failures and Data Gaps

In the event that data failures and/or data gaps are identified, the Environmental Professional (EP) will endeavor to comment on the significance of those data gaps. However, the EP cannot, and does not warrant or guarantee that no significant events, releases, or conditions arose, during periods such as data gaps.

Petra reviewed several sources for historical information regarding the subject site. These sources included a government agency database search, a city directory search, a review of historical aerial photographs and historical USGS topographic maps, fire insurance maps and interviews with people knowledgeable about the site. The client provided a preliminary Title Report by Chicago Title Company, dated October 1, 2021 (Appendix D).

Some of the gaps between aerial photographs and topographic maps exceeded 10 years and EDR reports that fire insurance maps covering the target property were not found.

Data failures/data gaps exist in the historic information reviewed. These gaps are due to the limited resources available, which are reasonably ascertainable and practically reviewable in the local area. It is our opinion, however, that if additional historic information were to become available, it is not likely to change the conclusions or recommendations of this assessment.

DISCUSSION OF POTENTIAL ENVIRONMENTAL CONCERNS

The following discussions of potential environmental concerns are presented to inform the client as to the existence, or lack thereof, of recognized environmental conditions present on the subject site.

Regulatory Actions

Based upon a search of available federal, state, and local records, no known current regulatory action is pending with respect to the subject site at this time.

Adjacent and Nearby Properties

In summary, no sites were identified in our search of various government agency database records, which appear to have impacted the soils beneath the subject site at this time. The subject site, however, is geographically located within the Crafton-Redlands Plume boundary, a trichloroethylene (TCE) and synthetic perchlorate groundwater plume. The Crafton-Redlands plume is located in the eastern and central portion of the Bunker Hill Groundwater Basin in San Bernardino County, California. Although groundwater beneath the subject property has been impacted, the depth to groundwater (currently 195± feet below grade [fbg]), and the concentrations of contaminants are sufficiently low as to not present a health risk to future residents. The Crafton-Redlands plume represents a de minimis condition to the subject site at this time.

Polychlorinated Biphenyls (PCB's)

Polychlorinated biphenyls (PCB's) are historically linked to electrical equipment, such as capacitors and transformers, due to their physical and chemical characteristics. PCB's, persistent in the environment, are known to accumulate in organisms and the food chain.

Any electrical equipment (i.e., transformers, capacitors, and fluorescent light fittings) containing dielectric insulating fluids or coolants, manufactured prior to 1976, should be considered to potentially contain PCB's. PCB's may also be found in older lubricating oils, cutting oils, hydraulic fluids, paints, sealants, and flame retardants (UNEP, 2002).

No wooden power poles or pole-mounted transformers were observed on the subject property during our recent site walk. No information has been obtained during this assessment, which would indicate transformers were reportedly located on the subject site in the past. Further, no surface indications of transformers were observed on the subject site during the site reconnaissance.

Underground Fuel Storage Tanks

No information has been obtained during this assessment, which would indicate fuel underground storage tanks (UST's) were reportedly located on the subject site in the past. Further, no surface indications of UST's were observed on the subject site during the site reconnaissance.

Aboveground Fuel Storage Tanks

No information has been obtained during this assessment, which would indicate above ground fuel storage tanks (ASTs) were reportedly located on the subject site in the past. Further, no surface indications of UST's were observed on the subject site during the site reconnaissance.

Storm Water/Waste Water Discharge

At this time, storm water discharge from the site appears to be limited to surface water runoff. No obvious sign of waste water discharge was observed during the site reconnaissance.

Pesticide and Herbicide Residues

Based upon the property developed as an orchard from at least 1930 to sometime before/during 1985, the potential exists for restricted agricultural chemicals (i.e., pesticides) to have been legally applied to the subject property. This legal application may have resulted in pesticide residues to be detectable within the subject site. As a result of the proposed land-use change to residential, Petra conducted a Limited Phase II Soil Residue Survey to evaluate shallow, near surface site soils.

To evaluate soil residues within the subject property, a total of 23 soil samples were collected from three percolation test borings and four geotechnical borings advanced on January 6, 2022 utilizing a hollow-stem auger drill rig. Soil samples were collected from depths of 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet from each of the seven borings. All soil samples collected from a dept of 0 to1-foot bgs were analyzed discretely for Organochlorine Pesticides (OCPs) according to Environmental Protection Agency (EPA) Method 8081A, plus lead and arsenic by EPA Test Method 6010B. One of the samples was analyzed for Chlorinated Herbicides using EPA Method 8151A. Three of the initial samples were tested for Title 22 CAM Metals by EPA Test Method 6010B/7471A. Four of the initial seven samples will also be analyzed for Total Petroleum Hydrocarbons (TPH) – extend carbon range by EPA Test Method 8015B. The remaining soil samples were placed on hold by the laboratory for future testing in the event elevated levels of agricultural chemical analytes are detected in the 0 to 1 foot samples.

Results of our limited agricultural soil residue survey are provided later in this text and in the attached Table I. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Asbestos-Containing Materials

No potential asbestos-containing materials were observed on the site and no information was found which indicated the use, storage, or disposal of asbestos-containing materials on the site. However, a damaged brick and concrete irrigation distribution box, a brick and concrete irrigation channel, and two irrigation valve riser pipes were observed along the northern property boundary during our site reconnaissance. Typically, the irrigation distribution box receives water from an offsite source and then distributes the water to the irrigation channel, which likely distributes water to underground (concrete?) irrigation lines. If these concrete irrigation lines are encountered during clearing and grubbing or future grading and development, they should be left in place until an experienced environmental professional (such as Petra) has had the opportunity to evaluate the conditions and provide recommendations if needed. In the event concrete irrigation lines are encountered, caution should be taken to not crush the lines until it can be ascertained that they do not contain asbestos.

Lead-Based Paints

No potential lead-based materials were observed on the site and no information was found which indicated the use, storage, or disposal of lead-based paint on the subject site.

Landfills

The EDR report has one orphan site listing for the Church Street Landfill, identified as north end of Church Street - north of Pioneer Avenue in Redlands. This site is listed on the Solid Waste Information System (SWF/LF) database. Orphan sites are those that the database search was not able to locate due to lack of complete address information.

The Church Street Landfill is over 1.5 miles northeast of and down gradient of the subject site. Therefore, landfills do not appear to represent a recognized environmental condition with regards to the subject site.

Water Supplies

No water wells were observed within the boundary of the subject property, however, abandoned irrigation valve risers and irrigation distribution channels were observed within or adjacent to the subject property.

The proposed residential development will use municipal water.

Waste Generation and Storage

No significant, readily detectable waste generation and storage was observed onsite during our site reconnaissance. There was a dumped pile of soils, concrete, asphalt, and rock observed along the northern boundary of the subject property. A rubber tire was near the dumped pile. In addition, there was dumped household trash in the concrete irrigation valve riser located at the northwest corner of the subject property.

Trash, waste concrete, and asphalt fragments should be removed from the subject property and disposed of offsite.

FINDINGS

General Site Information

1. The subject property consists of the residential portion of the *LPA Redlands Project* located at the northeast corner of S. Tennessee Street and W. Lugonia Avenue in the city of Redlands, San Bernardino County, California. Overall, the *LPA Redlands Project* consists of approximately 16-acres of residential development on the north and approximately 8-acres of commercial development on the south. No physical markers differentiated the site boundary. A site location map is included as Figure 1.

2. The subject site is comprised of vacant land within a portion of contiguous Assessor Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14. The site slopes gently to the west with existing elevations on the order of approximately 1,280± feet above mean sea level (msl) along the west portion of the site, to 1,290± feet above msl along the east portion of the site.

3. Vehicular access to the subject property is via S. Tennessee Street, which is an improved road along the western boundary of the site. A drainage bounds the western edge of S. Tennessee Street, with the 210 Freeway easement beyond. Secondary access is via a dirt road along the northern boundary of the subject property, with vacant land beyond. South of the subject property is vacant land and the commercial portion of the LPA Redlands Project (which is not a part of this assessment), with W. Lugonia Avenue and a commercial development beyond. To the east is a dirt road, with vacant land and a residential tract beyond. The surface of the subject property is slightly hummocky, consisting of loose silty sands and sandy silts with a sparse growth of weeds. Minor surface cobbles and concrete fragments were observed. Vehicle tire ruts were observed near Tennessee Street, at or near the northwest and southwest corners of the subject property.

4. Based on information obtained during this assessment, the site appears to have been developed as an orchard since at least 1930 until sometime between/during 1975 and 1985. Infrared aerial photographs suggest that sometime between/during 1975 and 1985 the orchards were removed from the subject property and some sort of irrigated vegetation was present over portions of the subject site. Irrigated vegetation areas decreased between the 1985 and 1989 photographs. Some sort of managed vegetation was noted within the southern portion of the subject property in the black and white aerial photograph from 1994. Sometime between/during 1994 and 2002, the subject site appeared to be fallow land and has remained vacant land to present day. Historical information reviewed during this assessment includes aerial photographs (dating back to 1930), USGS topographical maps (dating back to 1899), environmental lien search and interviews. EDR indicates that fire insurance maps covering the target property were not found.

5. Minor debris was observed along the northern and western portions of the subject property, consisting mostly of windblown trash, a car bumper, and remnants of a reclining chair. One area of plywood fragments and plastic sheeting was observed in the central portion of the subject property. A concrete irrigation valve riser located in the northwest corner of the subject site contained dumped trash and plastic bags. There were no visible signs of this trash containing hazardous substances; however, the trash was not disturbed.

6. No water wells were observed within the subject property. Two concrete irrigation valve risers were observed along the northern boundary of the subject property, within the proposed Pennsylvania Avenue extension. Remnants of north-south orientated concrete and brick irrigation channels were observed north of the proposed Pennsylvania Avenue extension and near the east property boundary. There are no current visual signs that these channels extended into the subject property. In addition, remnants of a concrete and brick irrigation valve box with exposed concrete pipe trending east-west along the north side of the dirt road at the northern boundary of the subject property was observed. The concrete pipe is estimated to connect with the two concrete irrigation valve risers.

7. No wooden power poles, pole-mounted transformers, or ground mounted transformers are located within or adjacent to the subject property.

8. There was no evidence of drums, sumps, pits, pools, or lagoons identified during our site reconnaissance.

9. No sites were identified in our search of various government agency database records, which appear to have adversely impacted the soils, groundwater or soil vapor beneath the subject parcels at this time, except the former Lockheed Martin facility (1500 Crafton Avenue), in northeast Redlands (approximately 4.5 miles east-northeast of the subject property). A recent comprehensive groundwater monitoring report for the former facility by Tetra Tech, Inc. (dated November 22, 2021) depicts monitoring wells approximately 1,700 feet east (Texas Street), approximately 2,600 feet west (Alhambra Street), and approximately 2,700 feet north-northeast (San Bernardino Avenue) of the subject property. Based upon groundwater monitoring results, the subject property is located within the Crafton-Redlands Plume boundary, a groundwater plume with known synthetic perchlorate and trichloroethylene (TCE) contamination. Although the boundary of the plume varies in publications, groundwater monitoring wells associated with the plume extends from the former Lockheed Martin facility in northeast Redlands west to near the Waterman Avenue/Interstate 10 interchange (Tetra Tech, 2019).

   Groundwater monitoring wells associated with the Crafton-Redlands Groundwater Plume are mapped throughout the Redlands area. The closest monitoring wells to the subject property, COR#30-A, COR#31-A, and COR#32, are situated east in Texonia Park on Texas Street. Spring 2021 monitoring results indicate the groundwater flow direction in a west direction and a groundwater elevation of approximately 1,080 feet above mean sea level (msl) under the subject site (Tetra Tech, 2021). Considering a ground surface elevation of approximately 1,280 feet (Google Earth, 2021) above msl for the subject property, groundwater is approximately 200 feet below the ground surface. Groundwater depths measured in the offsite wells measured approximately 195 feet in Spring 2021.

   The TCE concentration 6.0 micrograms per liter (µg/L) plume, mapped from the proximity of Alhambra Avenue to the west, is not currently depicted underlying the subject property. Well COR#31-A reported a TCE concentration of 0.22J µg/L (J-flagged estimated result below laboratory detection limit). The synthetic perchlorate concentration 6.0 micrograms per liter (µg/L) plume, mapped from just beyond the eastern subject property boundary to the west and northwest, is currently depicted underlying the subject property (Tetra Tech, 2021). Well COR#31-A reported a TCE concentration of 6.15 µg/L. For comparison purposes, the Maximum Contaminant Level (MCL) for perchlorate is 6 µg/L. For TCE the MCL is 5 µg/L.

   Although groundwater beneath the site has been impacted, based on the 2021 measured depths to groundwater (approximately 195 feet below grade [fbg]), the concentrations of TCE are reported to be sufficiently low (below MCL in proximity to the subject site) as to not present a health risk to future residents. By comparison, synthetic perchlorate concentrations are slightly above the MCL in proximity to the subject property with concentrations reportedly decreasing with time. Further, because of the known presence of groundwater contamination, the Regional Water Quality Control Board will more than likely not identify future site owners as Responsible Parties. Strict definition of the Crafton-Redlands plume warrants it to be labeled as a Controlled Recognized Environmental Condition (see definition below); however, depth to groundwater and decreasing contamination levels slightly above or below drinking water MCLs, the plume underlying the site is considered as a de minimis condition for the subject property.

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

Based upon the property developed as an orchard from at least 1930 to sometime before/during 1985, Petra conducted a Limited Phase II Site Assessment to evaluate shallow, near surface, site soils.

On January 6, 2022, soil samples were collected from the three percolation test borings (P-1, P-2, and P-3) and the four geotechnical borings (B-1, B-2, B-3, and B-4) recently completed within the subject property utilizing a truck-mounted hollow-stem auger drill rig. Soil samples were collected from depths of approximately 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet. All 0 to 1-foot samples were discretely analyzed for Organochlorine Pesticides (OCPs) according to Environmental Protection Agency (EPA) Test Method 8081A, plus arsenic and lead according to EPA Method 6010B. Three of the samples were analyzed for Title 22 Metals according to EPA Method 6010B/7471A, one sample was tested for Chlorinated Herbicides using EPA Method 8151A, and four of the 0 to 1-foot samples were analyzed for Total Petroleum Hydrocarbons using EPA Method 8015B. The remaining deeper soil samples were placed on hold by the laboratory for future testing in the event elevated levels of the agricultural chemical residues mentioned above were detected. Soil samples were chilled overnight in a cooler and delivered to the testing laboratory on January 7, 2022.

All soil samples analyzed during this assessment were analyzed by Enviro-Chem, Inc. (ECI) in Pomona, California. ECI is accredited by the California Environmental Protection Agency, Department of Health Services Environmental Laboratory Accreditation Program (ELAP). Analyses were requested on a chain-of-custody record. Below is a discussion of the laboratory results.

Organochlorinated Pesticides

Seven discreet and one duplicate soil samples collected at a depth of 0 to 1 foot were tested for Organochlorinated Pesticides (OCPs) according to EPA Method 8081A. Six samples contained concentrations of 4-4'-DDE that ranged from 0.044 milligrams per kilograms (mg/kg) to 0.135 (mg/kg). Two of the samples reported a non-detect result, or below the Actual Detection Limit (ADL) of the test method of 0.001 mg/kg. All detectable concentrations of DDE were found to be below the USEPA Region 9 Regional Screening Level (RSL) of 2.0 mg/kg for DDE residential use soils.

The eight samples reported non-detect results for residual concentrations of 4,4'-DDT and 4,4'-DDE with an ADL of 0.01 mg/kg. The residential use soil USEPA Region 9 RSL (USEPA, 2021) for DDT and DDD is 1.9 mg/kg.

No other OCP analytes were reported at concentrations above their respective ADL. The laboratory test results are listed within Table 1 and copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Based upon these results, soil containing OCPs residues, including 4,4'-DDE, are not considered a recognized environmental condition (REC). No further action is warranted. Near surface soils may be re-used as fill materials during grading of the proposed residential property.

Chlorinate Herbicides

One of the samples collected from a depth of 0 to 1 foot was also analyzed for Chlorinated Herbicides. No detectable levels of Chlorinated Herbicides were present in the sample analyzed. Laboratory test results are listed within Table 1 and copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Based upon these results, soil containing chlorinated herbicide residues were not detected above the ADL and are not considered a recognized environmental condition (REC). No further action is warranted. Near surface soils may be re-used as fill materials during grading of the proposed residential property.

Title 22 Metals

Seven discrete soil samples and one duplicate sample collected at a depth of 0 to 1 foot were analyzed for arsenic and lead using EPA Method 6010B based upon their historical use as pesticides. In addition, three discrete soil samples collected at a depth of 0 to 1 foot were tested for CAM Title 22 Metals using EPA Method 6010B/7471. Detected levels of barium, chromium, cobalt, copper, lead, mercury, nickel, vanadium and zinc were reported below their respective Regional Screening Levels (RSLs) for residential use soil (US EPA, 2021).

Arsenic

A total of eleven tests were ran for residual arsenic levels on eight discrete samples collected from a depth of 0 to 1 foot on the subject property (including one duplicate). Arsenic residues were reported as non-detect, or below the ADL for the test method of 0.3 mg/kg in four test samples. Arsenic was reported in five of the sample tests (and one duplicate) analyzed ranging from 0.503 milligrams per kilogram (mg/kg) to 0.662 mg/kg. Arsenic was reported in two of the sample tests at 1.05 mg/kg and 1.07 mg/kg. The residential soil RSL for inorganic arsenic is listed as 0.68 mg/kg (USEPA, 2021). Results indicate nine of the eleven sample tests (including one duplicate) reporting arsenic levels below the residential soil RSL

Generally accepted research by California EPA Department of Toxic Substances Control (DTSC) scientists (Chernoff, Bosan and Oudiz, 2008), reported a concentration of 12.0 mg/kg is considered a useful screening tool for background levels of arsenic. The “term” background collectively refers to both naturally occurring and anthropogenic concentrations in shallow soils. Arsenic levels detected onsite are well under concentrations and considered background levels. As a result of screening near-surface soils onsite for elevated arsenic residues, concentrations are highly likely related to background levels and not associated with historic pesticide usage. A summary of test results is provided in Table II. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Lead

Lead residues was reported in the seven discrete samples and one duplicate sample analyzed ranging from 2.38 mg/kg to 21.0 mg/kg. The USEPA RSLs were evaluated for lead residues in soil pertaining to residential land use. An RSL of 400 mg/kg was listed for lead and compounds (USEPA, 2021). For comparison, the Department of Toxic Substances Control (DTSC) Screening Levels (SLs) were evaluated for lead residues in soil pertaining to residential land use. A SL of 80 mg/kg was listed for lead and compounds (DTSC, 2019). A summary of test results is provided in Table II. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Based upon these results, soils containing Title 22 Metal residues, including arsenic and lead, were not detected above their respective residential soil RSL’s, DTSC’s SL’s, or background levels, and are not considered a recognized environmental condition (REC). No further action is warranted. Near surface soils may be re-used as fill materials during grading of the proposed residential property.

Total Petroleum Hydrocarbons

Since petroleum hydrocarbons may have been historically used for weed abatement or dust control in the orchards, three discrete soil samples collected at a depth of 0 to 1 foot were analyzed for total petroleum hydrocarbons (TPH) - carbon chain using EPA Method 8015B. None of the three samples reported TPH-gasoline chain (TPH-g), TPH-diesel chain (TPH-d), and TPH-motor oil chain (TPH-mo) concentrations above non-detect. A summary of test results is provided in Table III. Copies of the official laboratory reports and chain-of-custody records are included in Appendix E.

Based upon these results, soils containing TPH-g, TPH-d, and TPH-mo residues were not detected above the ADL and are not considered a recognized environmental condition (REC). No further action is warranted. Near surface soils may be re-used as fill materials during grading of the proposed residential property.

RECOGNIZED ENVIRONMENTAL CONDITIONS

Recognized environmental conditions (REC's) are defined by the American Society of Testing and Materials (ASTM) as any hazardous substance or petroleum product under conditions that indicate an existing, past, or material threat of release into the structures, ground, groundwater, or surface water at the subject site. If the presences of recognized environmental conditions are identified on a subject site, it may warrant additional research, site evaluation, and/or action.

- No REC's have been identified within or affecting the subject property.

Controlled recognized environmental conditions (CREC's) are defined by the American Society of Testing and Materials (ASTM) Practice E 1527-13 as a recognized environmental condition resulting from the past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority (i.e., as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with *hazardous substances* or *petroleum products* allowed to remain in place subject to the implementation of required controls. For example, if a leaking underground storage tank has been cleaned up to a commercial use standard but does not meet unrestricted residential cleanup criteria; this would be considered a controlled recognized environmental condition. The "control" is represented by the (inferred) restriction that the property remains commercial. For the purpose of this Phase I Environmental Site Assessment (ESA), ASTM Standard E1527-13 dictates that a CREC is considered a REC.

- One CREC (former Lockheed Martin Facility), related to a groundwater plume containing TCE and synthetic perchlorate, has been identified underlying the subject property. The former Lockheed Martin Facility is mapped approximately 4.5 mile east-northeast of the subject property.

Historical recognized environmental conditions (HREC's) are defined by the American Society of Testing and Materials (ASTM) Practice E 1527-13 as a past release of any *hazardous substances or petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory agency, without subjecting the *property* to any required controls (i.e., *property* use restrictions, *activity and use limitations*, *institutional controls* or *engineering controls*).

- No HREC'S have been identified within or affecting the subject property.

We have performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 for the residential portion of the *LPA Redlands Project*, near the northeast corner of S. Tennessee Street and W. Lugonia Avenue, a portion of Assessor's Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14, City of Redlands, San Bernardino County, California. Any exceptions to, or deletions from, this practice are described in the section titled *Data Failures and Data Gaps* of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:

- The subject property is located within the Crafton-Redlands Plume boundary, a groundwater plume with known trichloroethylene (TCE) contamination. Strict definition of the Crafton-Redlands plume warrants it to be labeled as a Controlled Recognized Environmental Condition; however, based on 2021 measured depths to groundwater (approximately 195 feet below grade [fbg]), the concentrations of TCE are reported to be sufficiently low (below MCLs in close proximity to the site) as to not present a health risk to future residents. Additionally, synthetic perchlorate concentrations are slightly above the MCL and decreasing in close proximity to the subject property. Further, because of the known presence of groundwater contamination and the source, the Regional Water Quality Control Board will more than likely not identify future property owners as Responsible Parties. As a result, the plume underlying the site is considered a de minimis condition.

SITE CONSIDERATIONS

Items, if presented below, are not considered recognized environmental conditions in accordance with ASTM 1527-13. Although these items may warrant consideration in conjunction with any planned development activities, they are not recognized environmental conditions. The information regarding possible actions relative to these items has been provided as guidance.

- With re-development of any abandoned agricultural property and existing open vacant land, a certain amount of unknown subsurface conditions may be anticipated. Any discolored soils, noxious odors, buried pipelines or irrigation channels, and/or other buried objects/debris encountered during clearing and grubbing, or future grading and development should be left in place until an experienced environmental professional (such as Petra) has had the opportunity to evaluate the conditions and provide recommendations if needed.

- A damaged brick and concrete irrigation distribution box, a brick and concrete irrigation channel, and two irrigation valve risers were observed along the northern property boundary during our site reconnaissance. It appears that the irrigation channel extended through the subject property toward Lugonia Avenue; however, the channel is no longer visible at the surface. The irrigation distribution box likely received water from an offsite source and then distributed the water to the irrigation channel, which likely distributes water to underground (concrete?) irrigation lines. If these concrete irrigation lines are encountered during clearing and grubbing or future grading and development, they should be left in place until an experienced environmental professional (such as Petra) has had the opportunity to evaluate the conditions and provide recommendations if needed. In the event concrete irrigation lines are encountered, caution should be taken to not crush the lines until it can be ascertained that they do not contain asbestos.

- It is unlikely that there are any septic tanks or leach fields on the subject site. If any are encountered during site development, it is recommended that they be removed in accordance with current regulations.

- It is recommended that all vegetation, debris and trash encountered on the site be removed and disposed of offsite in accordance with current local regulations.

LIMITATIONS

This assessment is based upon the project as described and the environmental data obtained from the field reconnaissance and research performed as outlined in this report. This report has not been prepared for use by parties or projects other than those named or described in this report, additional studies may be required.

Since our assessment is based upon a review of available data, visual assessment of the site, and laboratory testing, the conclusions presented herein are professional opinions. These opinions have been derived in accordance with current standards of practice, and no warranty is expressed or implied.

This firm's evaluation of previous reports and/or subconsultant reports focuses on the completeness of the information presented in the document, in accordance with applicable rules and regulations, and does not include the establishment of data sufficiency or accuracy.

QUALIFICATIONS

Resumes for the staff who contributed to this report are presented in Appendix E.

“We the undersigned declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312. We have the specific qualification based on education, training, and experience to assess a property of the nature, history, and setting of the subject site. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

Respectfully submitted,

PETRA GEOSCIENCES, INC.

6/20/22

Edward Lump
Associate Geologist
PG 5975

REGISTERED GEOLOGIST
Edward P. Lump
No. 5975
STATE OF CALIFORNIA

Siamak Jafroudi, PhD
Senior Principal Engineer
GE 2024

REGISTERED PROFESSIONAL ENGINEER
SIAMAK JAFROUDI
No. GE002024
GEOTECHNICAL
STATE OF CALIFORNIA

EL/JC/SJ/lv

W:\2020-2025\2021\400\21-458\Reports\21-458 510 Phase I and Limited Phase II report (Revision 1).docx

REFERENCES

American Society of Testing and Materials (ASTM), 2013, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM International, West Conshohocken, PA, www.astm.org.

_______, Standard E2600-15, 2015, Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions, ASTM International, West Conshohocken, PA, www.astm.org.

Bryant and Hart, E.W., W.A., 2007, Fault-rupture hazard zones in California, Alquist-Priolo earthquake fault zoning act with index to earthquake fault zones maps; California Geological Survey, Special Publication 42, interim revision.

Buonicore, Anthony J., 2014, Vapor Migration Screening for Property Transactions Using Tier 1 in ASTM E2600-10, presented in Vapor Intrusion Conference, Cary, North Carolina, January 23 and 24.

California Department of Conservation, Geologic Energy Management Division (CalGEM), 2020, CalGEM Online Mapping System, https://www.conservation.ca.gov/calgem

California Geological Survey (CGS), 2002, California Geomorphic Providences, Note 36.

California Department of Water Resources, 2004, California Groundwater - Bulletin 118.

_______, 2021, Water Data Library, http://www.water.ca.gov/waterdatalibrary/.

Department of Toxic Substances Control (DTSC), Website (http://www.envirostor.dtsc.ca.gov/public/), EnviroStor database, 2021.

______, 2019, DTSC-Recommended Screening Levels for Residential Soil, Table 1, dated April.

Environmental Data Resources, Inc., 2021a, The EDR Radius Map™ Report with GeoCheck®, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 06794904.2r), dated December 20.

_______, 2021b, Certified Sanborn Map Report, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 6794904.3), dated December 20.

_______, 2021c, EDR Historical Topo Map Report, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 6794904.4), dated December 20.

_______, 2021d, The EDR-City Directory Image Report, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 6794904.5), dated December 21.

_______, 2021e, EDR Property Tax Map Report, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 6794904.6), dated December 21.

_______, 2021f, EDR Building Permit Report, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 6794904.8), dated December 20.

_______, 2021g, The EDR Aerial Photo Decade Package, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 6794904.11), dated December 20.

_______, 2021h, EDR Environmental Lien and AUL Search 1980, LPA Redlands Project, NEC Tennessee St. and W. Lugonia Ave., Redlands, CA 92374 (Inquiry No. 06794904.13R), dated December 28.

REFERENCES

GeoTracker, 2021, http://geotracker.waterboards.ca.gov/.

Lockheed Martin Corporation, 2017, Quarterly Status Report, Groundwater Monitoring Program, Crafton-Redlands Plume, San Bernardino County, California, Regional Water Quality Control Board Cleanup and Abatement Orders 94-37 and 97-58, as amended by 01-56, dated January 31.

Matt, J.C., Morton, D.M., Cox, B.F., Kendrick, K.J., 2003, Geologic Map of the Redlands 7.5' Quadrangle, San Bernardino and Riversides, Counties, California, CGS Open-File Report 03-302, Version 1.0.

National Flood Insurance Program (NFIP).

National Pipeline Mapping System (NPMS), Public Map Viewer, 2021, Website (http://www.npms.phmsa.dot.gov/PublicViewer/).

Tetra Tech, Inc., 2019, Fourth Quarter 2018 Data Report, Water Supply Monitoring Plan, Production Well Sampling Program, Crafton-Redlands Plume Project, dated January 17.

_______2017, Fourth Quarter 2016 Data Report, Water Supply Monitoring Plan, Production Well Sampling Program, Crafton-Redlands Plume Project, dated January 18.

_______, 2015, 2015 Groundwater Monitoring Program, Crafton-Redlands Plume, San Bernardino County, California, dated August 11.

United Nations Environmental Program (UNEP), 2002, PCB Transformers and Capacitors from Management and Reclassification to Disposal.

United States Environmental Protection Agency (USEPA), 2021, "EPA Region 9 Regional Screening Levels," dated November.

United States Geological Survey (USGS), 2012, 7.5-Minute Topographic Map, Redlands, California, Quadrangle.

______, 2021, The National Map Viewer.

TABLE 1

Summary of Organochlorinated Pesticides (OCP's) and Chlorinated Herbicides

SAMPLE ID	4,4'-DDE (mg/kg)[2]	4,4'-DDT (mg/kg)	Remaining OCP's (mg/kg)	Chlorinated Herbicides (mg/kg)
P-1 @ 0 – 1'	0.004	ND[3]	ND	NT[4]
P-1 @ 1 – 2'	NT	NT	ND	NT
P-1 @ 2 – 3'	NT	NT	ND	NT
P-2 @ 0 – 1'	0.040	ND	ND	NT
P-2 @ 1 – 2'	NT	NT	ND	NT
P-2 @ 2 – 3'	NT	NT	ND	NT
P-3 @ 0 – 1'	0.059	ND	ND	NT
P-3 @ 0 – 1' (duplicate)	0.118	ND	ND	NT
P-3 @ 1 – 2'	NT	NT	ND	NT
P-3 @ 2 – 3'	NT	NT	ND	NT
B-1 @ 0 – 1'	0.135	ND	ND	ND
B-1 @ 1 – 2'	NT	NT	ND	NT
B-1 @ 2 – 3'	NT	NT	ND	NT
B-2 @ 0 – 1'	ND	ND	ND	NT
B-2 @ 1 – 2'	NT	NT	ND	NT
B-2 @ 1 – 2'' (duplicate)	NT	NT	NT	NT
B-2 @ 2 – 3'	NT	NT	ND	NT
B-3 @ 0 – 1'	ND	ND	ND	NT
B-3 @ 1 – 2'	NT	NT	ND	NT
B-3 @ 2 – 3'	NT	NT	ND	NT
B-4 @ 0 – 1'	0.057	ND	ND	NT
B-4 @ 1 – 2'	NT	NT	ND	NT
B-4 @ 2 – 3'	NT	NT	ND	NT
Residential Soil Screening Level	2.0[5]	1.9[5]	Variable	Variable

Notes:
(1) Organochlorinated Pesticides
(2) milligrams per kilogram
(3) Non-detected or below the practical quantitation limit
(4) Not tested
(5) Regional Screening Levels, RSL's (US EPA, November 2021)

TABLE 2

Summary of CAM Title 22 Metals

Boring & Sample ID	Arsenic (mg/kg)(1)	Barium (mg/kg)	Chromium Compounds (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (2) (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
P-1 @ 0 – 1’	ND(4) & ND(9)	62.5	31.5	8,88	11.5	2.77 & 2.66(9)	ND	6.34	36.8	42.5
P-1 @ 1 – 2’	NT(5)	NT	NT	NT	NT	NT	NT	NT	NT	NT
P-1 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
P-2 @ 0 – 1’	1.07	NT	NT	NT	NT	7.78	NT	NT	NT	NT
P-2 @ 1 – 2’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
P-2 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
P-3 @ 0 – 1’	0.503	NT	NT	NT	NT	6.17	NT	NT	NT	NT
P-3 @ 0 – 1’(3)	0.539	NT	NT	NT	NT	6.09	NT	NT	NT	NT
P-3 @ 1 – 2’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
P-3 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-1 @ 0 – 1’	1.05	NT	NT	NT	NT	21.0	NT	NT	NT	NT
B-1 @ 1 – 2’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-1 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-2 @ 0 – 1’	ND & 0.519(9)	57.8	28.4	8.08	9.91	2.72 & 2.42(9)	ND	4.87	34.5	38.5
B-2 @ 1 – 2’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-2 @ 1 – 2’(3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-2 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-3 @ 0 – 1’	ND	NT	NT	NT	NT	2.39	NT	NT	NT	NT
B-3 @ 1 – 2’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-3 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-4 @ 0 – 1’	0.662 & 0.658(9)	46.2	27.3	7.40	8.85	8.15 & 2.70(9)	ND	4.27	38.9	34.8
B-4 @ 1 – 2’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B-4 @ 2 – 3’	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Residential Screening Levels	12.0(6) 0.68(7)	15,000(7)	160(8)	23(7)	3,100(7)	80(10) 400(7)	23(7)	86(8)	390(7)	23,000(7)

Notes:
(1) Milligrams per kilogram
(2) Nickel Compounds
(3) Duplicate sample
(4) Non-detect or below the laboratory detection limit
(5) Not tested
(6) Chernoff, G., Bosan, W. and Oudiz, D., 2008 (DTSC)
(7) Regional Screening Levels, RSLs (US EPA, November 2021)
(8) San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESL’s) – July 2019
(9) Sample analyzed 2 times
(10) DTSC-Recommended Screening Levels for Residential Soil, April 2019

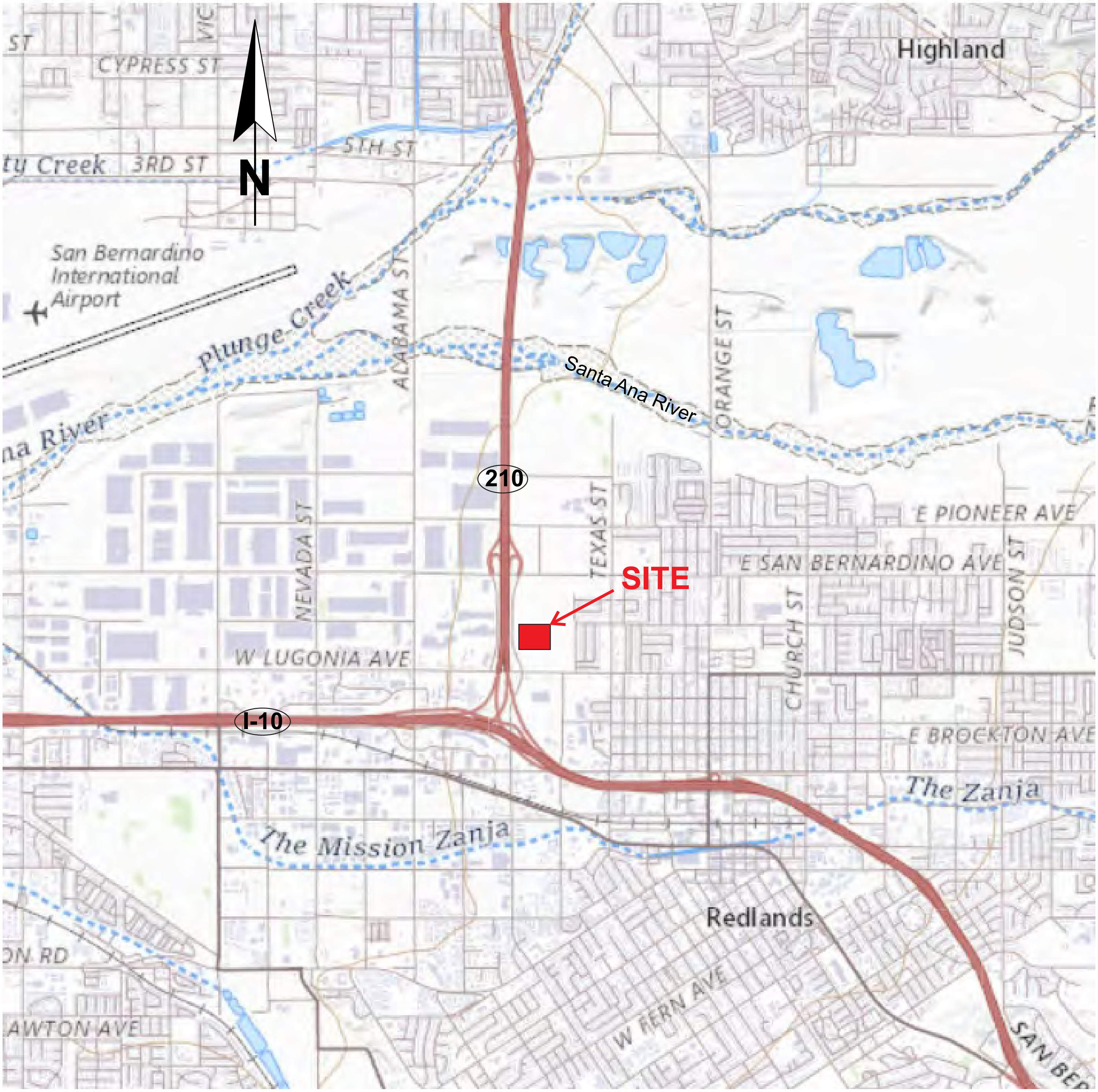
TABLE 3

Summary of Total Petroleum Hydrocarbons

Boring & Sample ID	TPH-g[(2)] (mg/kg)[(1)]	TPH-d[(3)] (mg/kg)	TPH-mo[(4)] (mg/kg)
P-2 @ 0-1’	ND[(5)]	ND	ND
B-2 @ 0-1’	ND	ND	ND
B-3 @ 0-1’	ND	ND	ND
B-4 @ 0-1’	ND	ND	ND
Residential Screening Levels [(6)]	100	260	1,600

Notes:
(1) – milligrams per kilogram
(2) – gasoline range organic
(3) – diesel range organic
(4) – motor oil range organic
(5) – non-detect or below laboratory detection limit
(6) – SF Bay RWQCB, Environmental Screening Levels (ESL’s), July 2019

FIGURES



- Reproduced from: USGS, 2021, The National Map Viewer

LEGEND

🟥 - Approximate Site Location

PETRA GEOSCIENCES, INC.
40880 COUNTY CENTER DRIVE, SUITE M
TEMECULA, CALIFORNIA 92591
PHONE: (951) 600-9271
COSTA MESA MURRIETA PALM DESERT SANTA CLARITA

Site Location Map

LPA Redlands Project: Tennessee St. & Lugonia Ave.
Redlands, San Bernardino County, California

DATE: February 2022	J.N.: 21-458	**Figure 1**
DWG BY: epl	SCALE: NTS	

LEGEND

▬ ▬ ▬ ▬ - Approximate Limits of Subject Property

P-3 ● - Approximate Location of Sample Boring (Percolation)

B-4 ● - Approximate Location of Sample Boring (Geotechnical)

Base Map Reference: Google Earth, 2021, Photograph dated August.

PETRA GEOSCIENCES, INC.
40880 County Center Drive, Suite M
Temecula, California 92591
PHONE: (714) 549-8921
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA

Boring and Sample Location Map

LPA Property, Tennessee St. & W. Lugonia Ave.
Redlands, San Bernardino County, California

PETRA GEOSCIENCES INC

DATE: February, 2022
J.N.: 21-458

Figure 2

APPENDIX A

SITE PHOTOGRAPHS

Photo #1 – north view of surface conditions along the southwest boundary of the property.

Photo # 2 – south view of surface conditions of northwest boundary of the subject property.

Photo # 3 – north view of north central portion of site. Dumped materials in background appears to be along future Pennsylvania Ave.

Photo # 4 – east view along dirt road at northern boundary of the subject property.

Photo # 5 – south view of central portion of site taken from north property boundary.

Photo # 6 – south view of a dumped recliner in the northern portion of the subject property. Note concrete and rock fragments in foreground.

Photo # 7 – south view of dirt road along the eastern property boundary. Property is in the right photo.

Photo # 8 – south view of central area of the residential portion of the subject property. W. Lugonia Ave. visible near trees in background

Photo # 9 – west view of scattered wooden trash/debris in the central portion of the subject property.

Photo #10 – south view of southwestern portion of the residential portion of the subject property.

Photo #11 – north view a small concrete platform base observed in the southeasterly portion of the site.

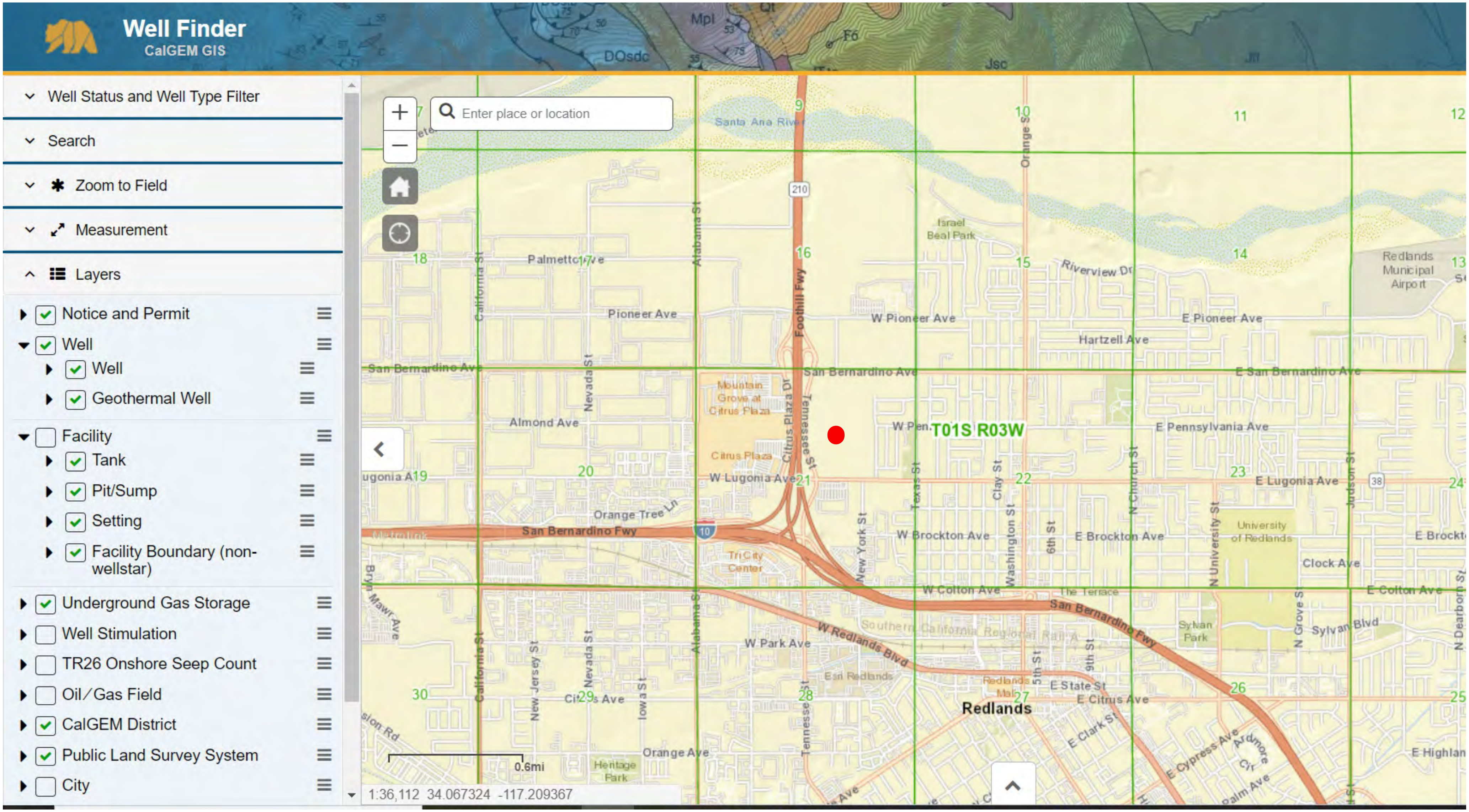
Photo #12 – west view of an irrigation valve riser at the northwest corner of the subject property. Riser is currently filled with trash. 210 Freeway visible in background.

Photo #13 – north view of surface conditions and scattered windblown trash along the west central site.

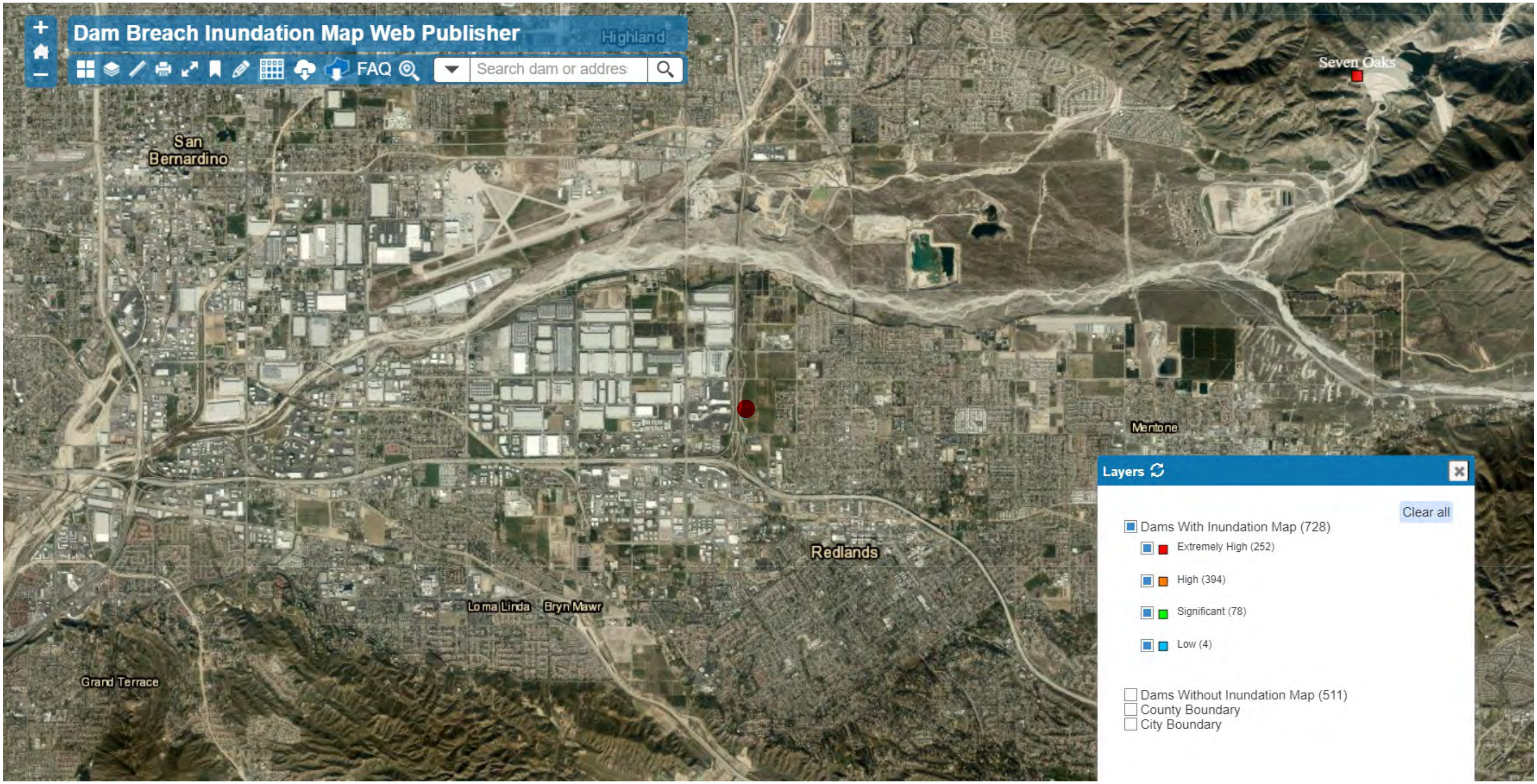
Photo #14 – easterly view of irrigation valve riser near the northeastern portion of the subject property. Irrigation line may trend east west (See Photo #12).

APPENDIX B

AGENCY SEARCH RESULTS

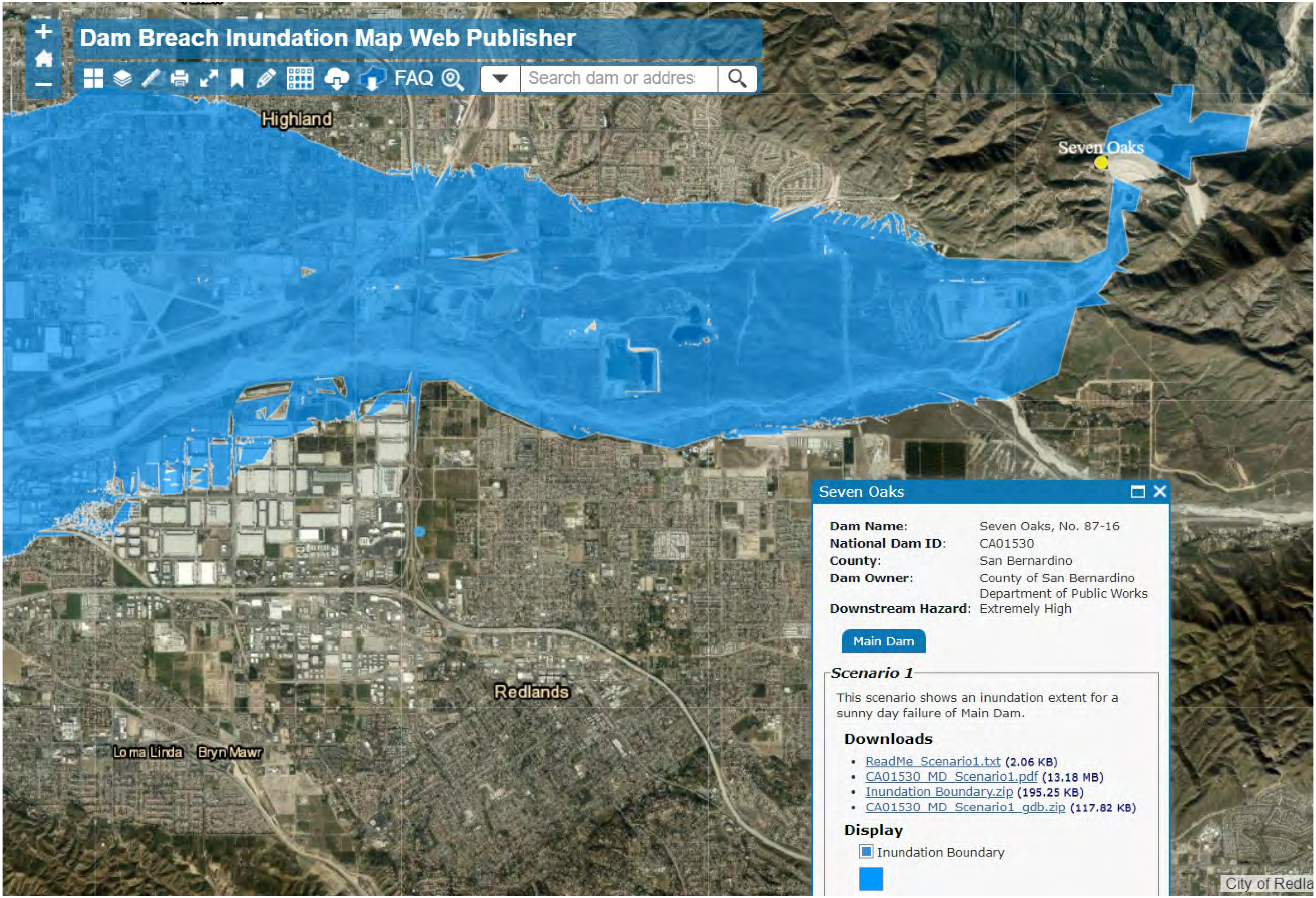


- Well Status and Well Type Filter
- Search
- Zoom to Field
- Measurement
- Layers
  - ☑ Notice and Permit
  - ☑ Well
    - ☑ Well
    - ☑ Geothermal Well
  - ☐ Facility
    - ☑ Tank
    - ☑ Pit/Sump
    - ☑ Setting
    - ☑ Facility Boundary (non-wellstar)
  - ☑ Underground Gas Storage
  - ☐ Well Stimulation
  - ☐ TR26 Onshore Seep Count
  - ☐ Oil/Gas Field
  - ☑ CalGEM District
  - ☑ Public Land Survey System
  - ☐ City



☑ Dams With Inundation Map (728)
  ☑ 🟥 Extremely High (252)
  ☑ 🟧 High (394)
  ☑ 🟩 Significant (78)
  ☑ 🟦 Low (4)

☐ Dams Without Inundation Map (511)
☐ County Boundary
☐ City Boundary



Seven Oaks

Dam Name:	Seven Oaks, No. 87-16
National Dam ID:	CA01530
County:	San Bernardino
Dam Owner:	County of San Bernardino Department of Public Works
Downstream Hazard:	Extremely High

Main Dam

Scenario 1

This scenario shows an inundation extent for a sunny day failure of Main Dam.

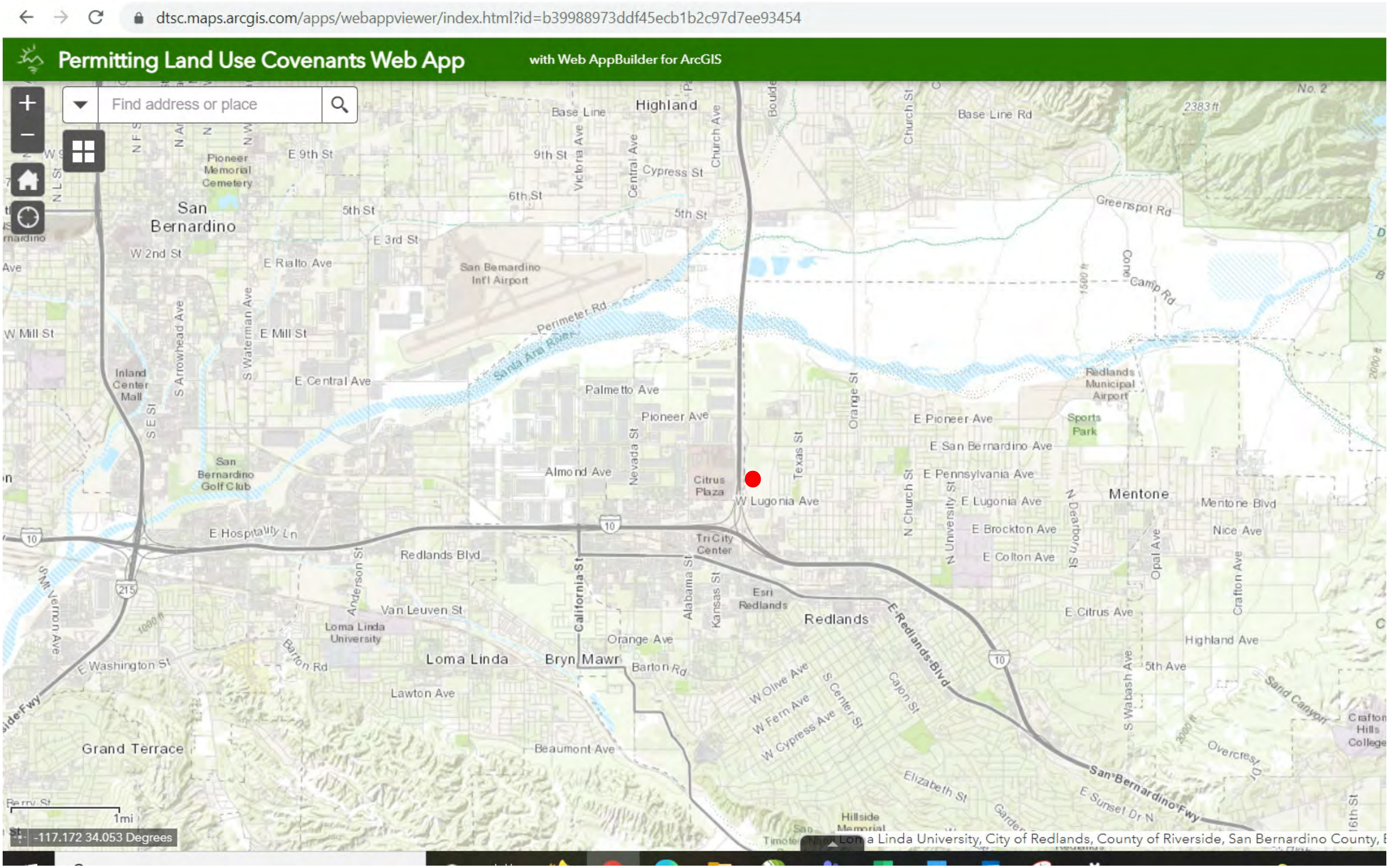
Downloads

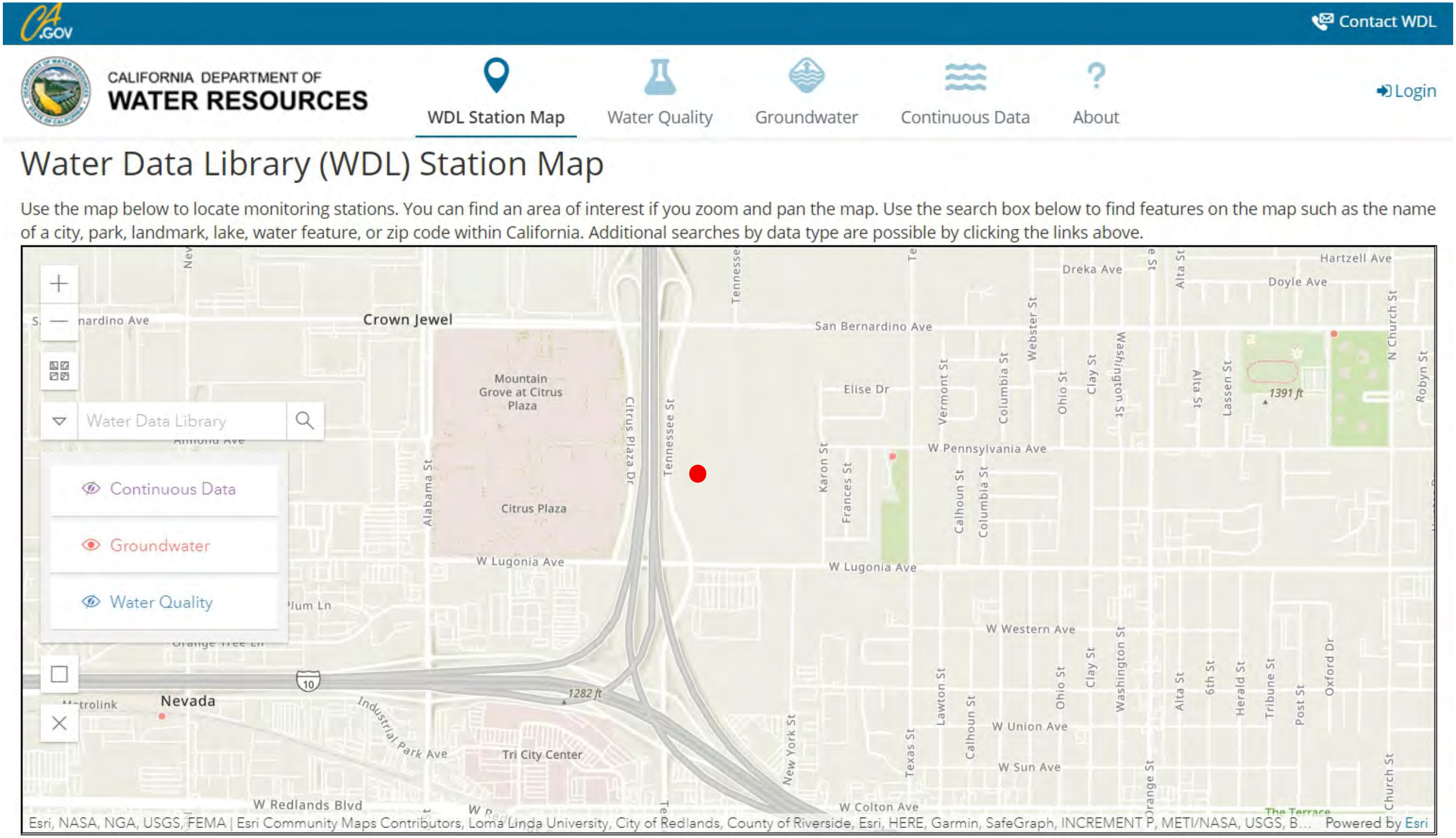
- ReadMe_Scenario1.txt (2.06 KB)
- CA01530_MD_Scenario1.pdf (13.18 MB)
- Inundation Boundary.zip (195.25 KB)
- CA01530_MD_Scenario1_gdb.zip (117.82 KB)

Display

☑ Inundation Boundary

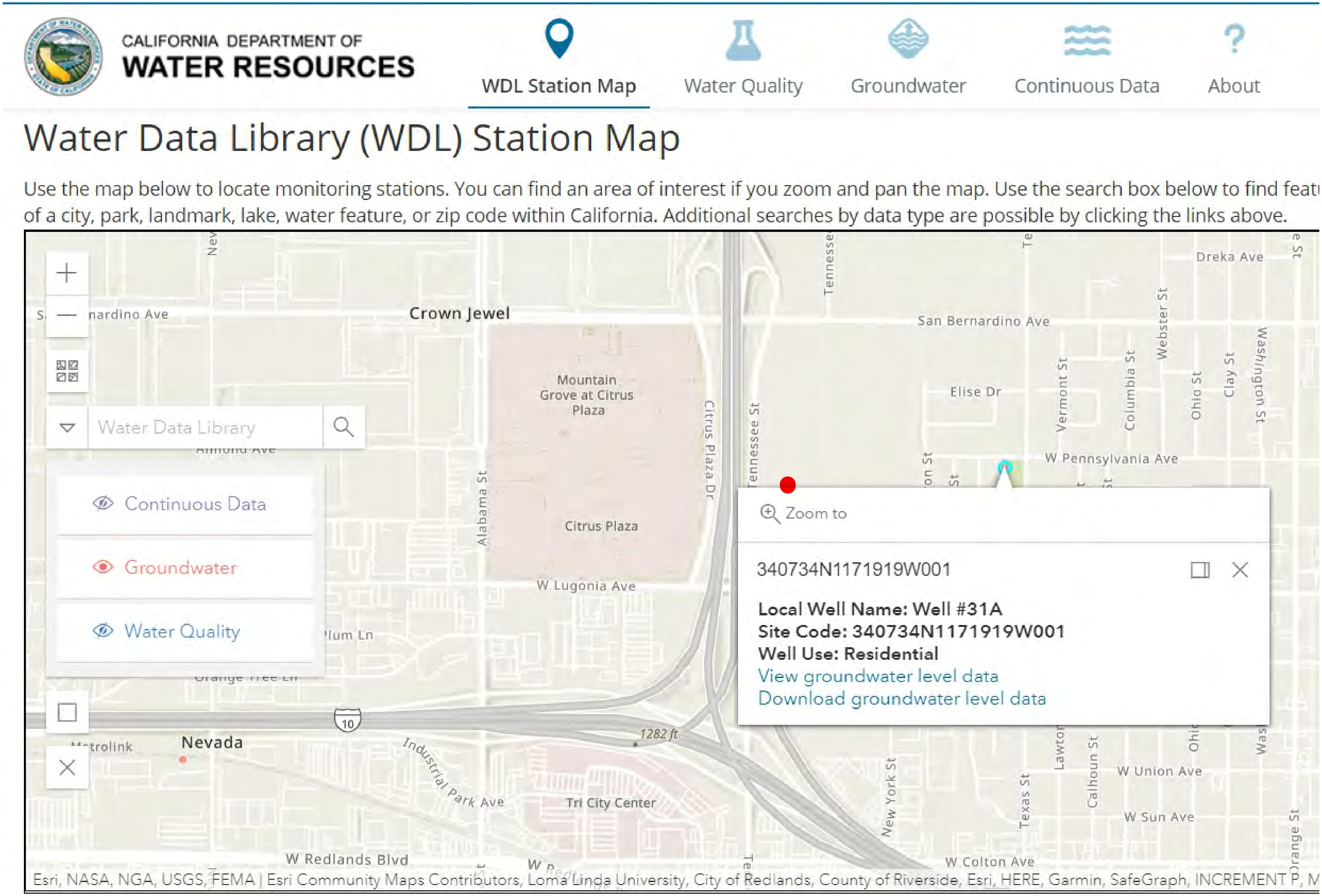
🟦


dtsc.maps.arcgis.com/apps/webappviewer/index.html?id=b39988973ddf45ecb1b2c97d7ee93454
Permitting Land Use Covenants Web App
with Web AppBuilder for ArcGIS
Find address or place
Highland
Base Line
Base Line Rd
9th St
E 9th St
Cypress St
6th St
5th St
E 3rd St
San Bernardino
W 2nd St
E Rialto Ave
San Bernardino Int'l Airport
Perimeter Rd
Santa Ana River
Greenspot Rd
Cone Camp Rd
Pioneer Memorial Cemetery
W Mill St
E Mill St
Inland Center Mall
E Central Ave
Palmetto Ave
Pioneer Ave
Redlands Municipal Airport
E Pioneer Ave
Sports Park
E San Bernardino Ave
E Pennsylvania Ave
Almond Ave
Citrus Plaza
W Lugonia Ave
E Lugonia Ave
Mentone
Mentone Blvd
Nice Ave
E Brockton Ave
E Colton Ave
San Bernardino Golf Club
E Hospitality Ln
Redlands Blvd
Tri City Center
Esri Redlands
Redlands
E Redlands Blvd
E Citrus Ave
Highland Ave
5th Ave
Van Leuven St
Loma Linda University
Loma Linda
Bryn Mawr
Orange Ave
Barton Rd
E Washington St
Lawton Ave
Grand Terrace
Beaumont Ave
W Olive Ave
W Fern Ave
W Cypress Ave
Elizabeth St
San Bernardino Fwy
E Sunset Dr N
Crafton Hills College
Sand Canyon
Hillside Memorial
10
215
1mi
-117.172 34.053 Degrees
Loma Linda University, City of Redlands, County of Riverside, San Bernardino County,



Water Data Library (WDL) Station Map

Use the map below to locate monitoring stations. You can find an area of interest if you zoom and pan the map. Use the search box below to find features on the map such as the name of a city, park, landmark, lake, water feature, or zip code within California. Additional searches by data type are possible by clicking the links above.



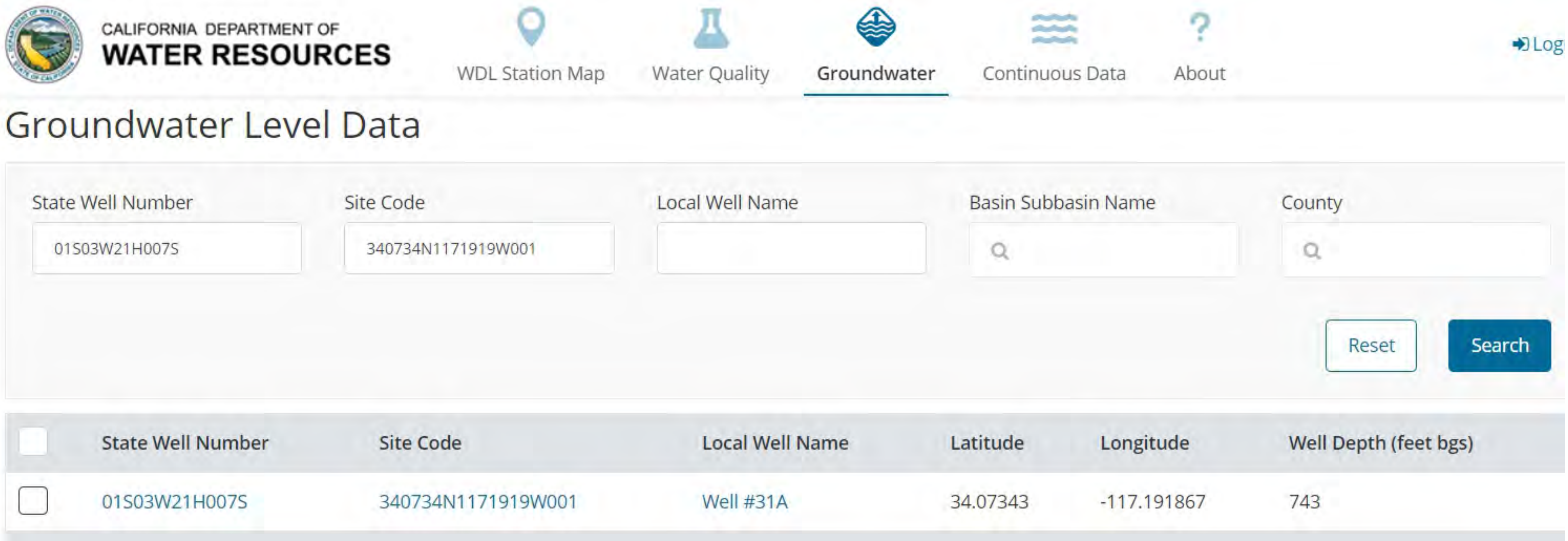
Water Data Library (WDL) Station Map

Use the map below to locate monitoring stations. You can find an area of interest if you zoom and pan the map. Use the search box below to find feat
of a city, park, landmark, lake, water feature, or zip code within California. Additional searches by data type are possible by clicking the links above.

340734N1171919W001

Local Well Name: Well #31A
Site Code: 340734N1171919W001
Well Use: Residential
View groundwater level data
Download groundwater level data

Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, Loma Linda University, City of Redlands, County of Riverside, Esri, HERE, Garmin, SafeGraph, INCREMENT P, M



Groundwater Level Data

State Well Number: 01S03W21H007S

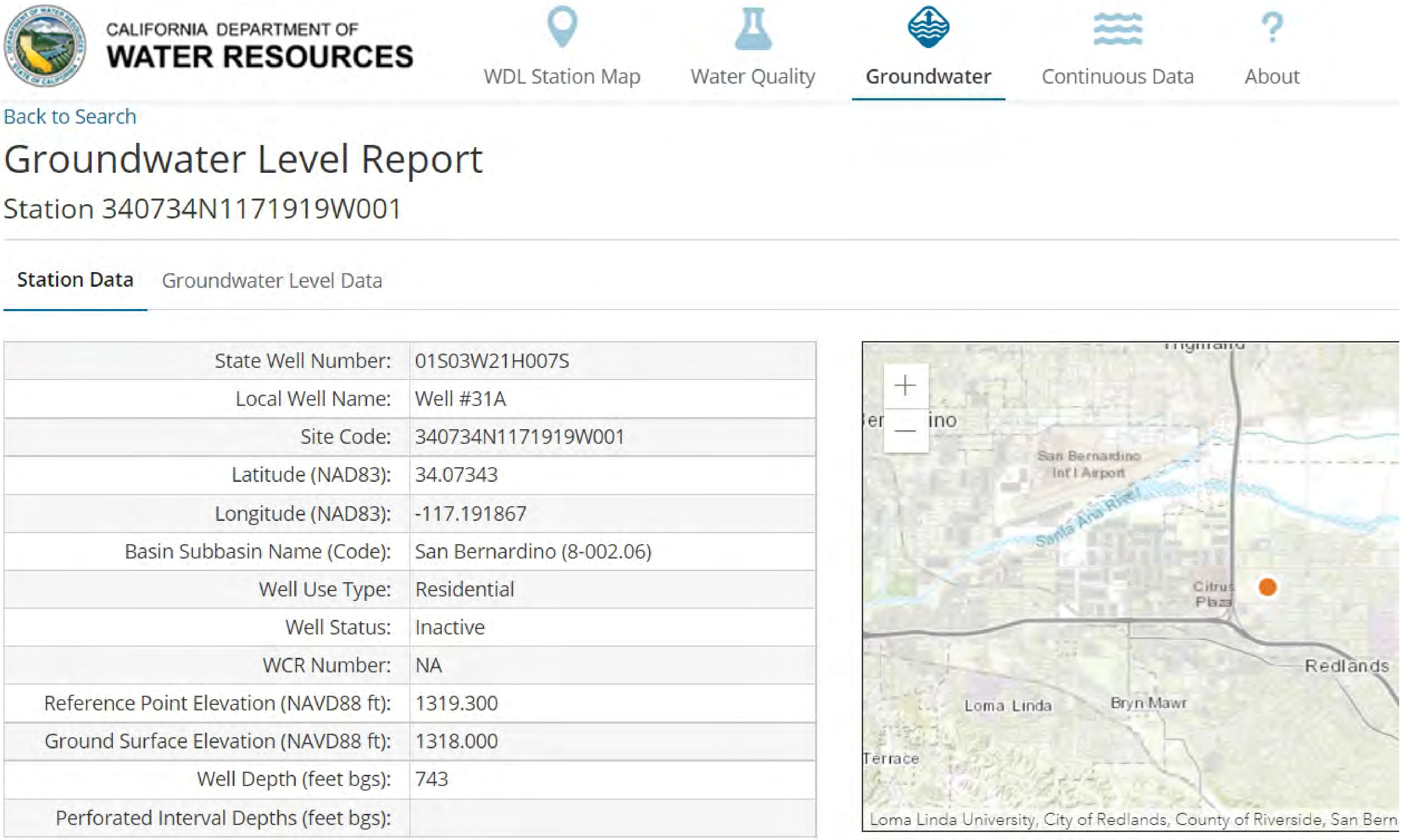
Site Code: 340734N1171919W001

Local Well Name:

Basin Subbasin Name:

County:

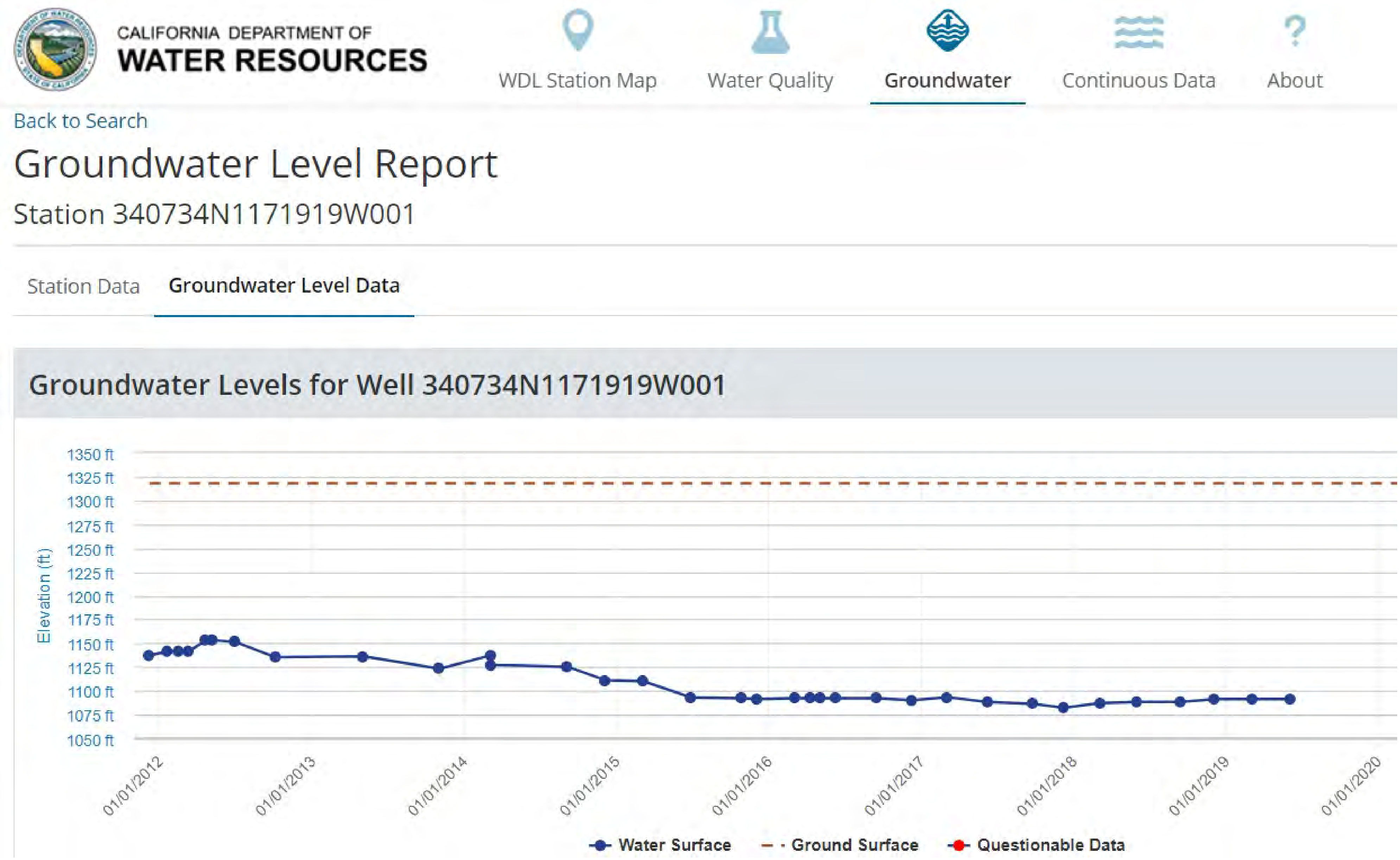
☐	State Well Number	Site Code	Local Well Name	Latitude	Longitude	Well Depth (feet bgs)
☐	01S03W21H007S	340734N1171919W001	Well #31A	34.07343	-117.191867	743



Groundwater Level Report

Station 340734N1171919W001

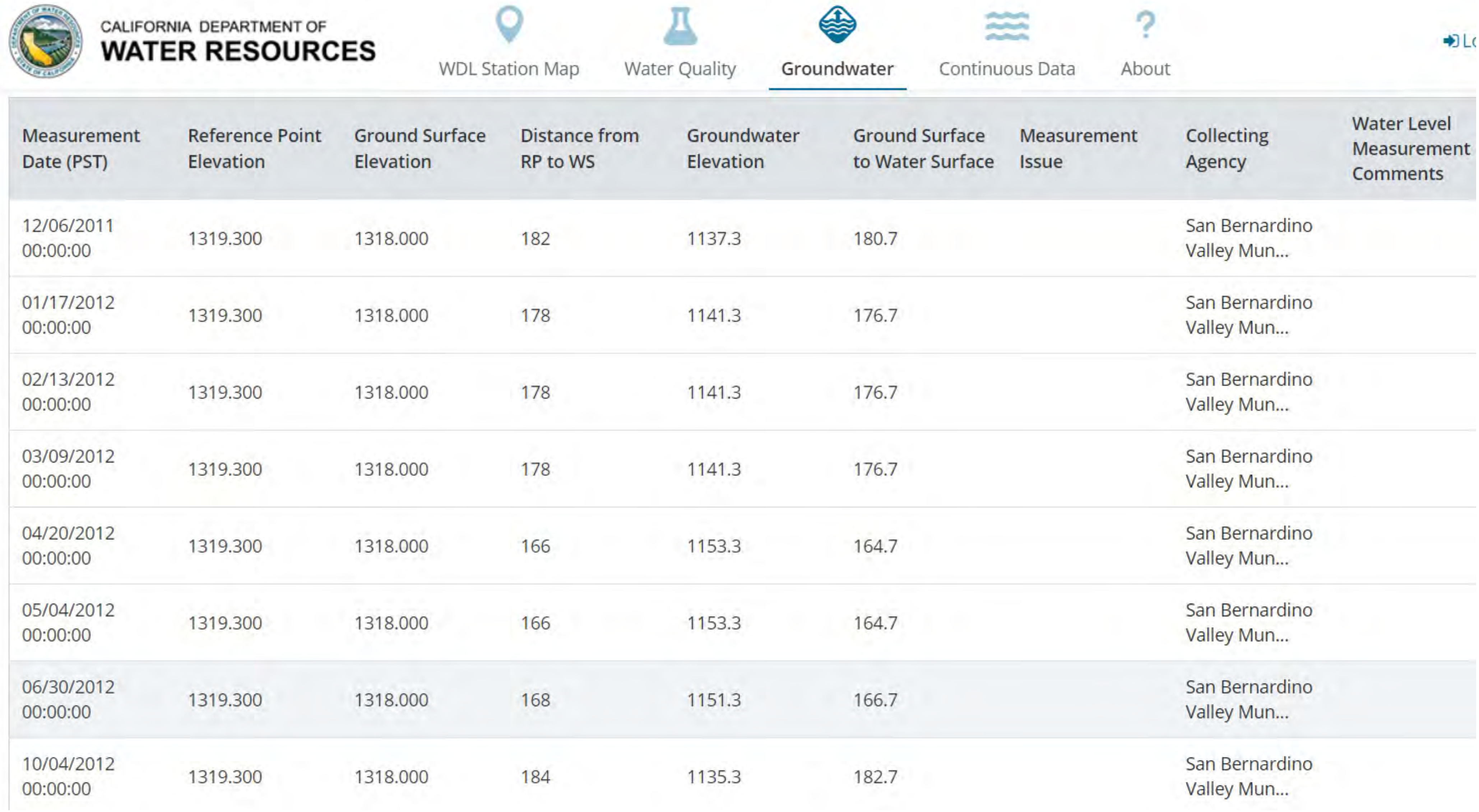
State Well Number:	01S03W21H007S
Local Well Name:	Well #31A
Site Code:	340734N1171919W001
Latitude (NAD83):	34.07343
Longitude (NAD83):	-117.191867
Basin Subbasin Name (Code):	San Bernardino (8-002.06)
Well Use Type:	Residential
Well Status:	Inactive
WCR Number:	NA
Reference Point Elevation (NAVD88 ft):	1319.300
Ground Surface Elevation (NAVD88 ft):	1318.000
Well Depth (feet bgs):	743
Perforated Interval Depths (feet bgs):	



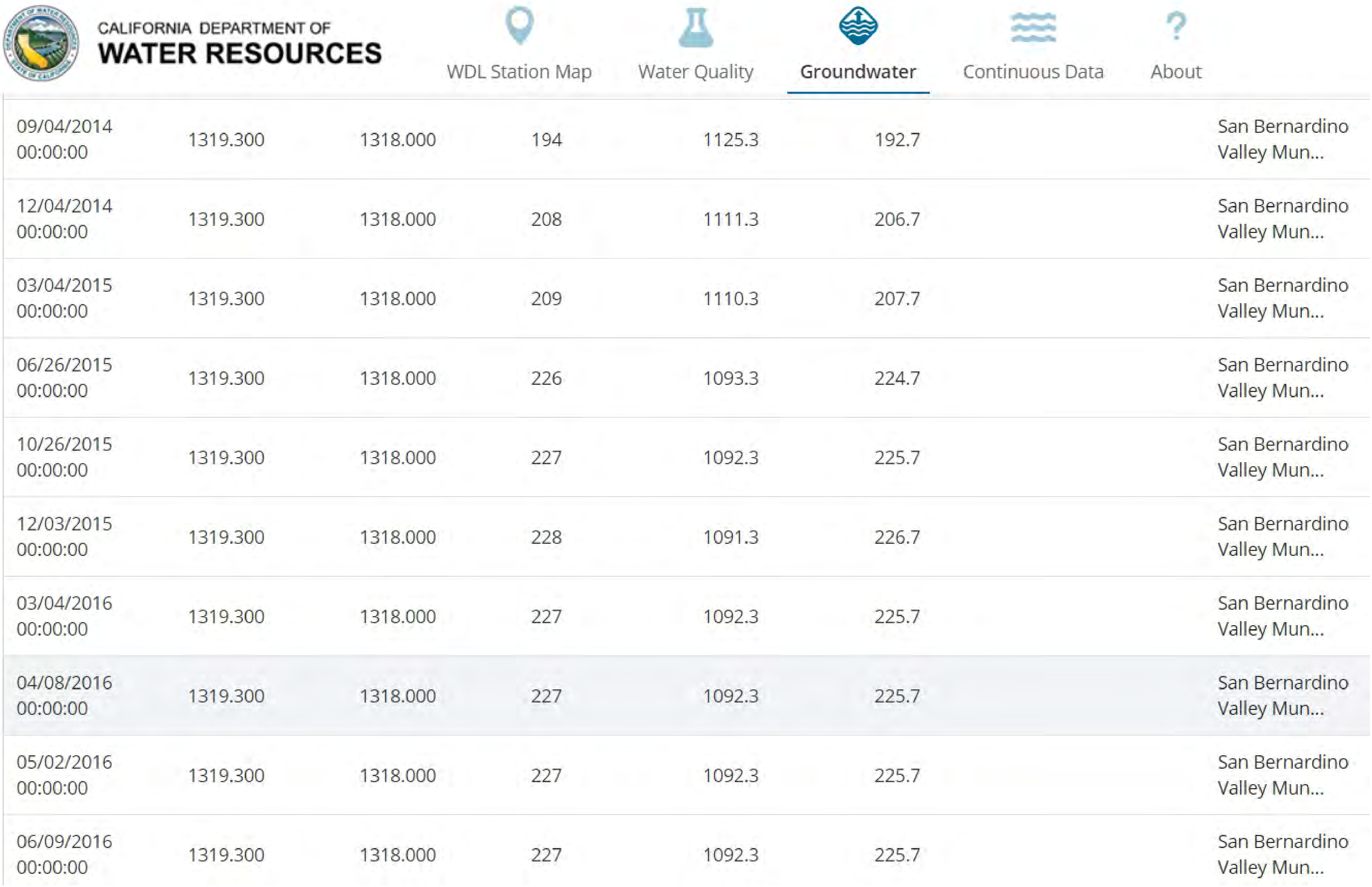
Groundwater Level Report

Station 340734N1171919W001

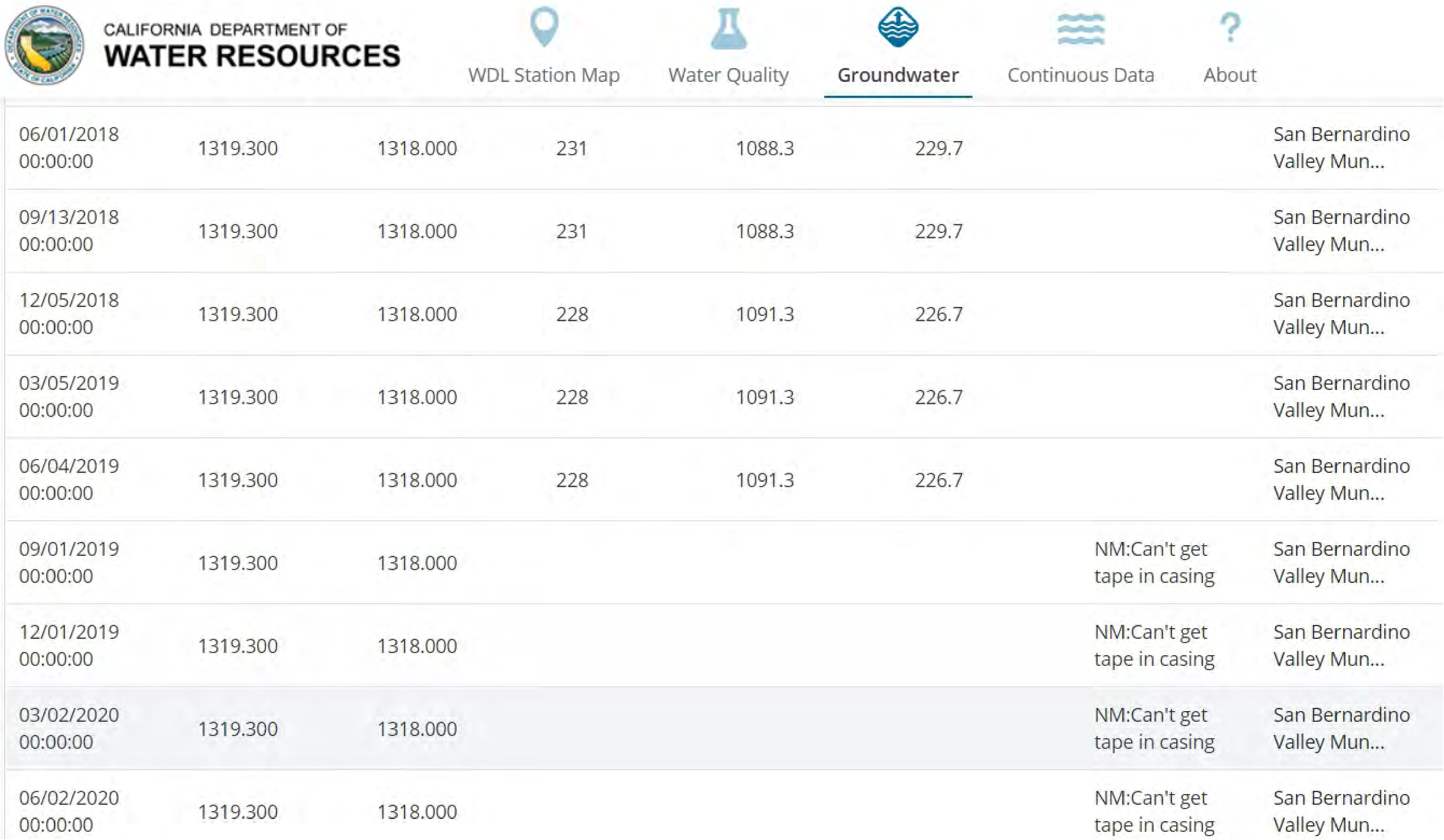
Groundwater Levels for Well 340734N1171919W001



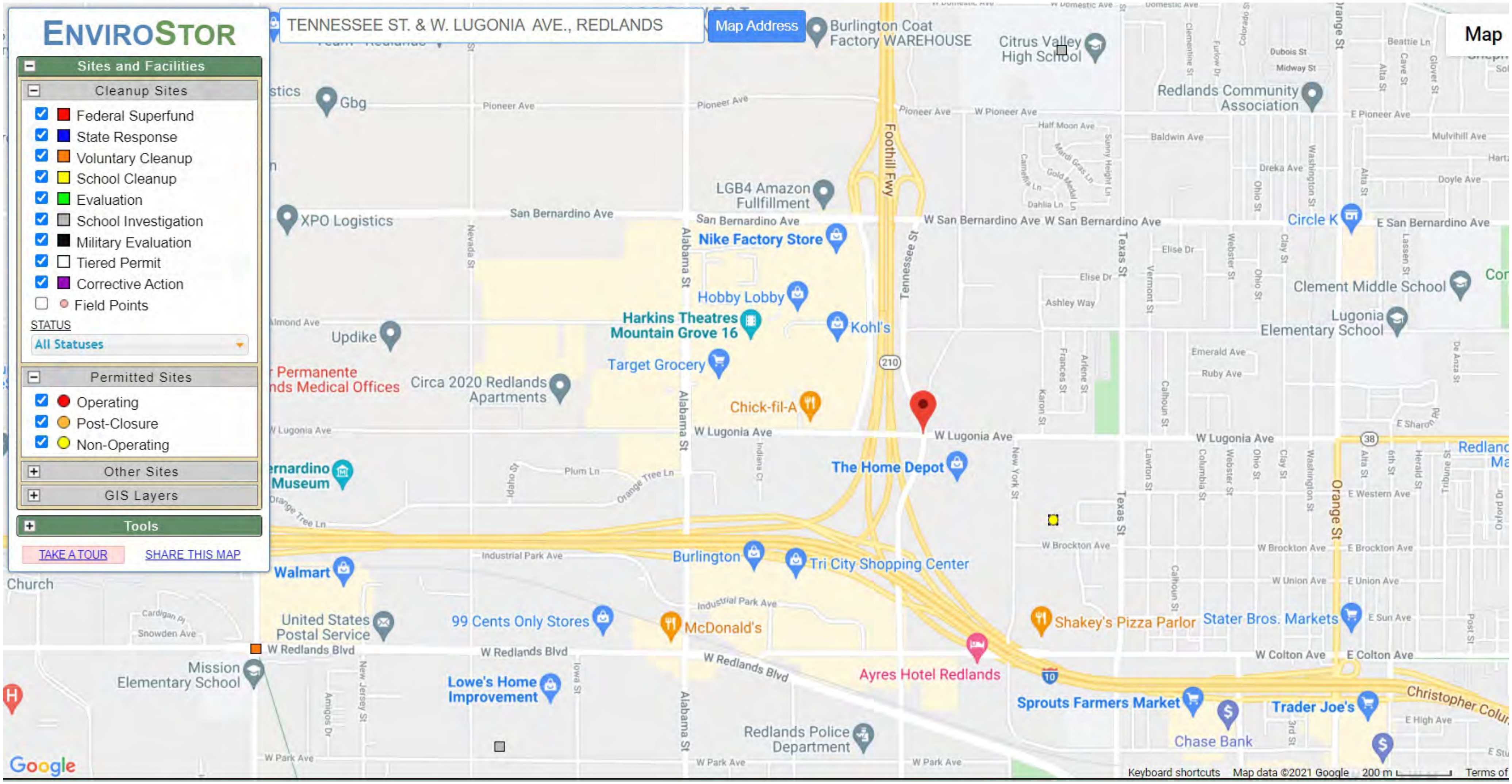
Measurement Date (PST)	Reference Point Elevation	Ground Surface Elevation	Distance from RP to WS	Groundwater Elevation	Ground Surface to Water Surface	Measurement Issue	Collecting Agency	Water Level Measurement Comments
12/06/2011 00:00:00	1319.300	1318.000	182	1137.3	180.7		San Bernardino Valley Mun...	
01/17/2012 00:00:00	1319.300	1318.000	178	1141.3	176.7		San Bernardino Valley Mun...	
02/13/2012 00:00:00	1319.300	1318.000	178	1141.3	176.7		San Bernardino Valley Mun...	
03/09/2012 00:00:00	1319.300	1318.000	178	1141.3	176.7		San Bernardino Valley Mun...	
04/20/2012 00:00:00	1319.300	1318.000	166	1153.3	164.7		San Bernardino Valley Mun...	
05/04/2012 00:00:00	1319.300	1318.000	166	1153.3	164.7		San Bernardino Valley Mun...	
06/30/2012 00:00:00	1319.300	1318.000	168	1151.3	166.7		San Bernardino Valley Mun...	
10/04/2012 00:00:00	1319.300	1318.000	184	1135.3	182.7		San Bernardino Valley Mun...	



09/04/2014 00:00:00	1319.300	1318.000	194	1125.3	192.7	San Bernardino Valley Mun...
12/04/2014 00:00:00	1319.300	1318.000	208	1111.3	206.7	San Bernardino Valley Mun...
03/04/2015 00:00:00	1319.300	1318.000	209	1110.3	207.7	San Bernardino Valley Mun...
06/26/2015 00:00:00	1319.300	1318.000	226	1093.3	224.7	San Bernardino Valley Mun...
10/26/2015 00:00:00	1319.300	1318.000	227	1092.3	225.7	San Bernardino Valley Mun...
12/03/2015 00:00:00	1319.300	1318.000	228	1091.3	226.7	San Bernardino Valley Mun...
03/04/2016 00:00:00	1319.300	1318.000	227	1092.3	225.7	San Bernardino Valley Mun...
04/08/2016 00:00:00	1319.300	1318.000	227	1092.3	225.7	San Bernardino Valley Mun...
05/02/2016 00:00:00	1319.300	1318.000	227	1092.3	225.7	San Bernardino Valley Mun...
06/09/2016 00:00:00	1319.300	1318.000	227	1092.3	225.7	San Bernardino Valley Mun...



06/01/2018 00:00:00	1319.300	1318.000	231	1088.3	229.7		San Bernardino Valley Mun...
09/13/2018 00:00:00	1319.300	1318.000	231	1088.3	229.7		San Bernardino Valley Mun...
12/05/2018 00:00:00	1319.300	1318.000	228	1091.3	226.7		San Bernardino Valley Mun...
03/05/2019 00:00:00	1319.300	1318.000	228	1091.3	226.7		San Bernardino Valley Mun...
06/04/2019 00:00:00	1319.300	1318.000	228	1091.3	226.7		San Bernardino Valley Mun...
09/01/2019 00:00:00	1319.300	1318.000				NM:Can't get tape in casing	San Bernardino Valley Mun...
12/01/2019 00:00:00	1319.300	1318.000				NM:Can't get tape in casing	San Bernardino Valley Mun...
03/02/2020 00:00:00	1319.300	1318.000				NM:Can't get tape in casing	San Bernardino Valley Mun...
06/02/2020 00:00:00	1319.300	1318.000				NM:Can't get tape in casing	San Bernardino Valley Mun...



ENVIROSTOR

TENNESSEE ST. & W. LUGONIA AVE., REDLANDS

Map Address

⊟ Sites and Facilities

⊟ Cleanup Sites

- ☑ 🟥 Federal Superfund
- ☑ 🟦 State Response
- ☑ 🟧 Voluntary Cleanup
- ☑ 🟨 School Cleanup
- ☑ 🟩 Evaluation
- ☑ ▨ School Investigation
- ☑ ■ Military Evaluation
- ☑ □ Tiered Permit
- ☑ 🟪 Corrective Action
- ☐ ● Field Points

STATUS

All Statuses

⊟ Permitted Sites

- ☑ 🔴 Operating
- ☑ 🟠 Post-Closure
- ☑ 🟡 Non-Operating

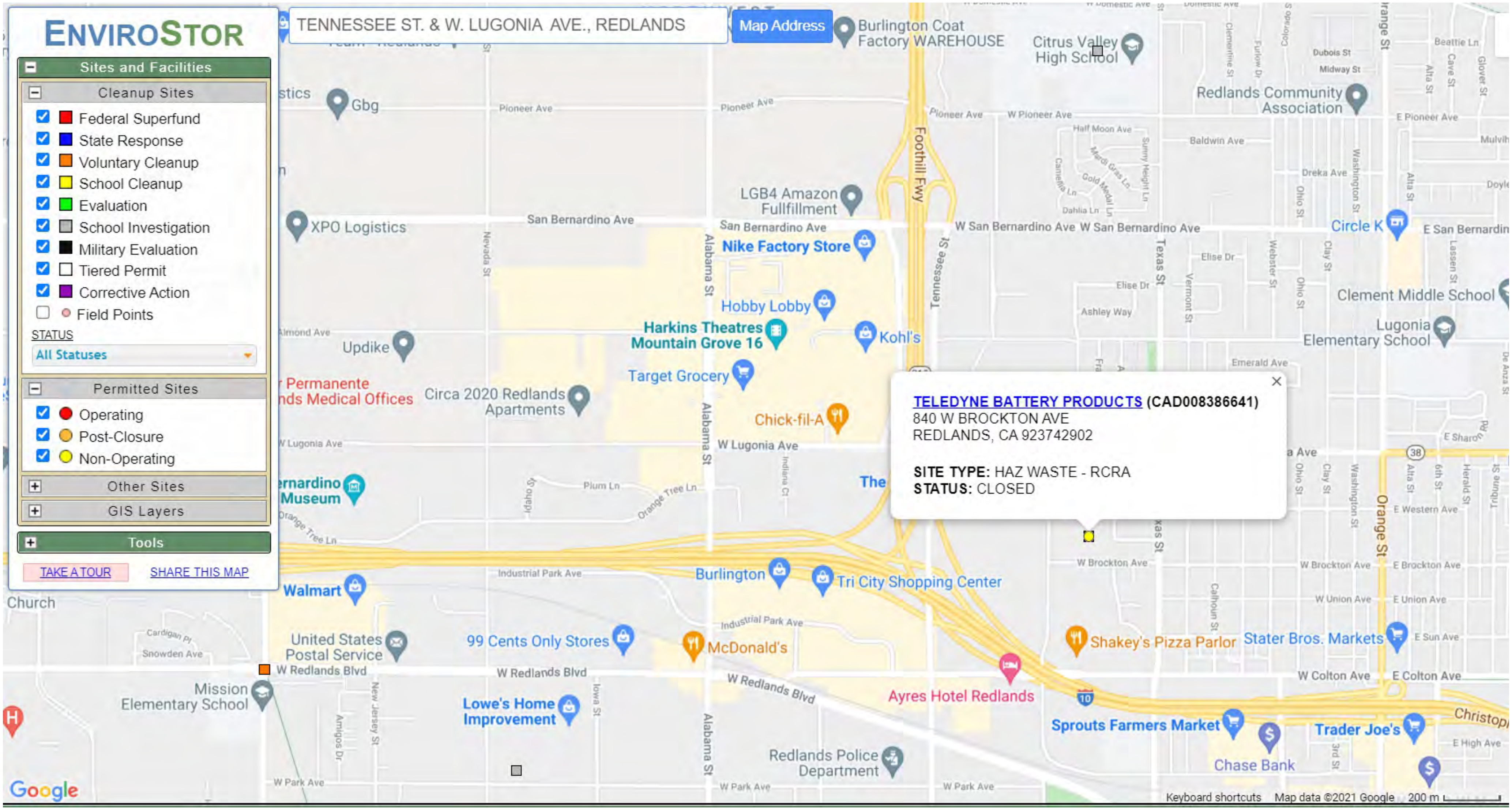
⊞ Other Sites

⊞ GIS Layers

⊞ Tools

TAKE A TOUR

SHARE THIS MAP



ENVIROSTOR

TENNESSEE ST. & W. LUGONIA AVE., REDLANDS

Sites and Facilities

Cleanup Sites

- ☑ 🟥 Federal Superfund
- ☑ 🟦 State Response
- ☑ 🟧 Voluntary Cleanup
- ☑ 🟨 School Cleanup
- ☑ 🟩 Evaluation
- ☑ ▨ School Investigation
- ☑ ⬛ Military Evaluation
- ☑ ☐ Tiered Permit
- ☑ 🟪 Corrective Action
- ☐ ● Field Points

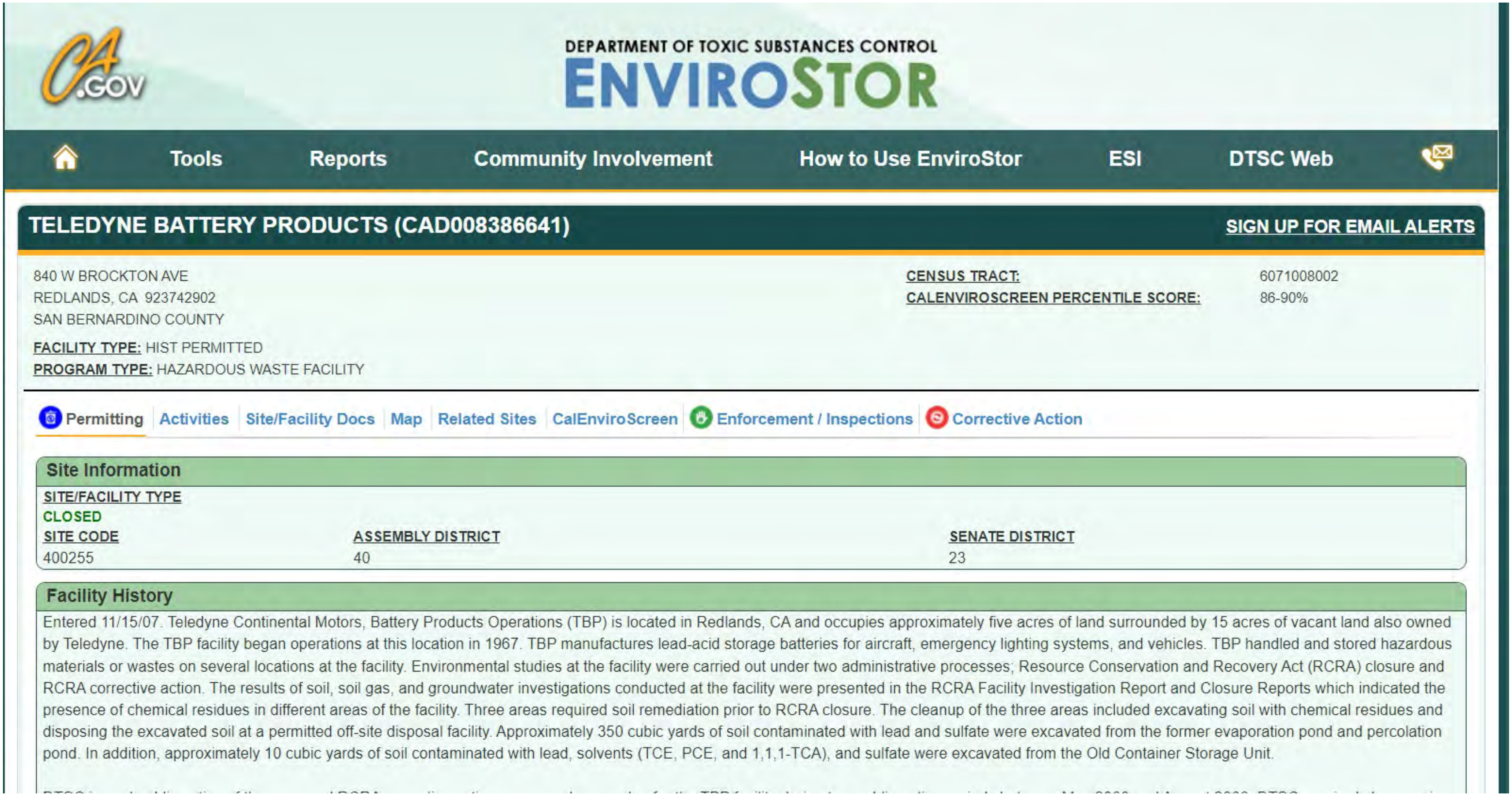
STATUS: All Statuses

Permitted Sites

- ☑ 🔴 Operating
- ☑ 🟠 Post-Closure
- ☑ 🟡 Non-Operating

TELEDYNE BATTERY PRODUCTS (CAD008386641)
840 W BROCKTON AVE
REDLANDS, CA 923742902

SITE TYPE: HAZ WASTE - RCRA
STATUS: CLOSED



TELEDYNE BATTERY PRODUCTS (CAD008386641)

840 W BROCKTON AVE
REDLANDS, CA 923742902
SAN BERNARDINO COUNTY

CENSUS TRACT: 6071008002
CALENVIROSCREEN PERCENTILE SCORE: 86-90%

FACILITY TYPE: HIST PERMITTED
PROGRAM TYPE: HAZARDOUS WASTE FACILITY

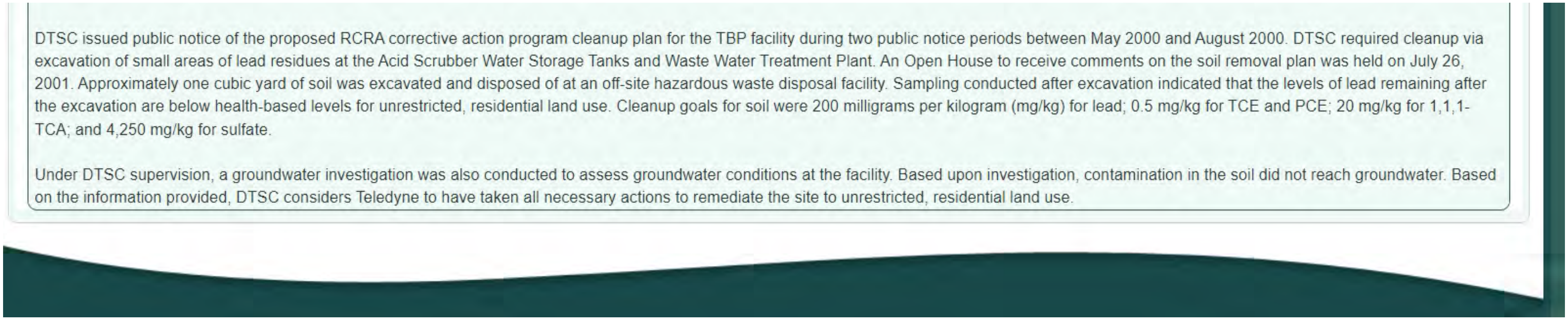
Site Information

SITE/FACILITY TYPE
CLOSED

SITE CODE	ASSEMBLY DISTRICT	SENATE DISTRICT
400255	40	23

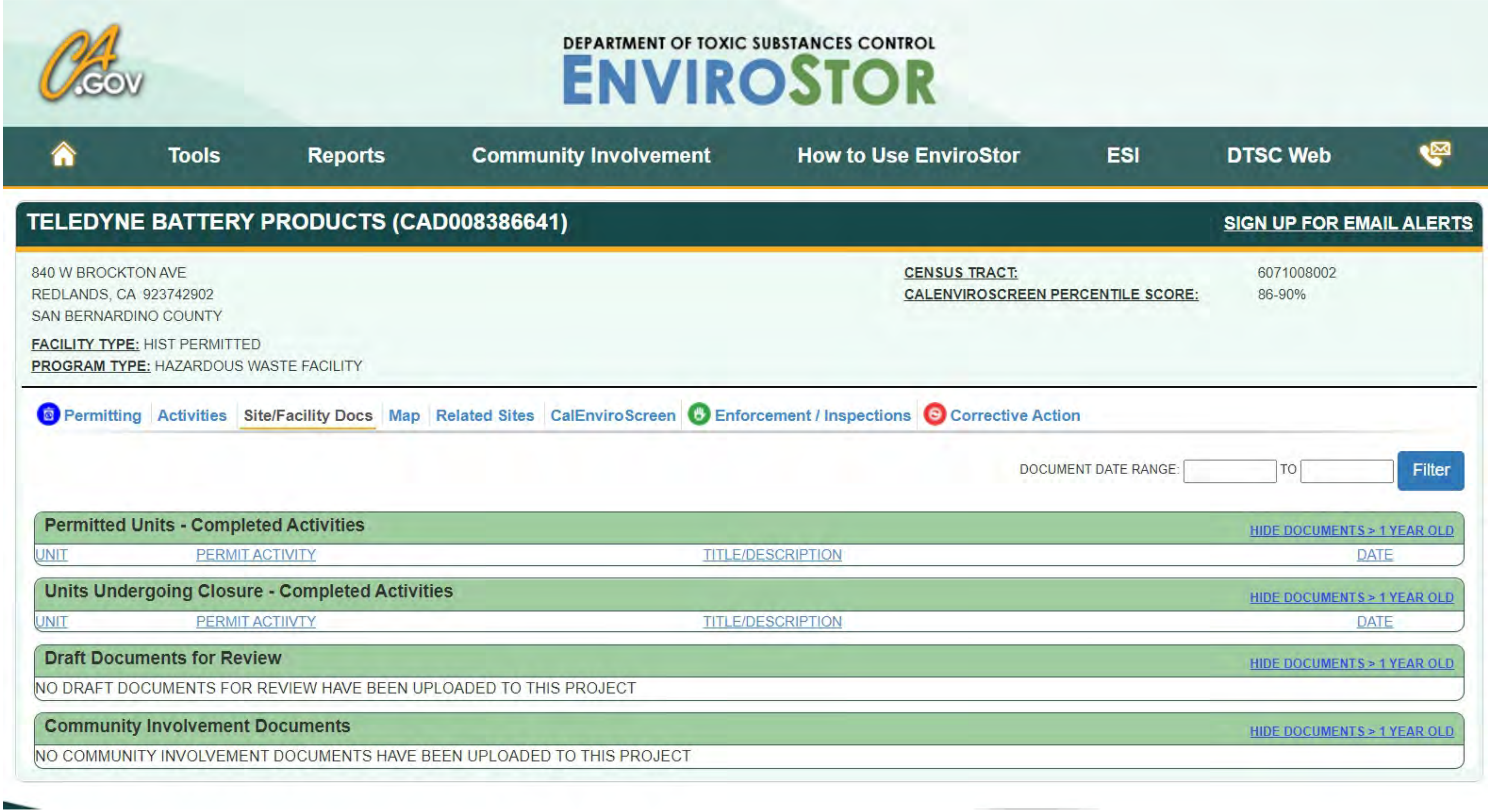
Facility History

Entered 11/15/07. Teledyne Continental Motors, Battery Products Operations (TBP) is located in Redlands, CA and occupies approximately five acres of land surrounded by 15 acres of vacant land also owned by Teledyne. The TBP facility began operations at this location in 1967. TBP manufactures lead-acid storage batteries for aircraft, emergency lighting systems, and vehicles. TBP handled and stored hazardous materials or wastes on several locations at the facility. Environmental studies at the facility were carried out under two administrative processes; Resource Conservation and Recovery Act (RCRA) closure and RCRA corrective action. The results of soil, soil gas, and groundwater investigations conducted at the facility were presented in the RCRA Facility Investigation Report and Closure Reports which indicated the presence of chemical residues in different areas of the facility. Three areas required soil remediation prior to RCRA closure. The cleanup of the three areas included excavating soil with chemical residues and disposing the excavated soil at a permitted off-site disposal facility. Approximately 350 cubic yards of soil contaminated with lead and sulfate were excavated from the former evaporation pond and percolation pond. In addition, approximately 10 cubic yards of soil contaminated with lead, solvents (TCE, PCE, and 1,1,1-TCA), and sulfate were excavated from the Old Container Storage Unit.



DTSC issued public notice of the proposed RCRA corrective action program cleanup plan for the TBP facility during two public notice periods between May 2000 and August 2000. DTSC required cleanup via excavation of small areas of lead residues at the Acid Scrubber Water Storage Tanks and Waste Water Treatment Plant. An Open House to receive comments on the soil removal plan was held on July 26, 2001. Approximately one cubic yard of soil was excavated and disposed of at an off-site hazardous waste disposal facility. Sampling conducted after excavation indicated that the levels of lead remaining after the excavation are below health-based levels for unrestricted, residential land use. Cleanup goals for soil were 200 milligrams per kilogram (mg/kg) for lead; 0.5 mg/kg for TCE and PCE; 20 mg/kg for 1,1,1-TCA; and 4,250 mg/kg for sulfate.

Under DTSC supervision, a groundwater investigation was also conducted to assess groundwater conditions at the facility. Based upon investigation, contamination in the soil did not reach groundwater. Based on the information provided, DTSC considers Teledyne to have taken all necessary actions to remediate the site to unrestricted, residential land use.



TELEDYNE BATTERY PRODUCTS (CAD008386641)

840 W BROCKTON AVE
REDLANDS, CA 923742902
SAN BERNARDINO COUNTY

CENSUS TRACT: 6071008002
CALENVIROSCREEN PERCENTILE SCORE: 86-90%

FACILITY TYPE: HIST PERMITTED
PROGRAM TYPE: HAZARDOUS WASTE FACILITY

Permitted Units - Completed Activities

UNIT	PERMIT ACTIVITY	TITLE/DESCRIPTION	DATE

Units Undergoing Closure - Completed Activities

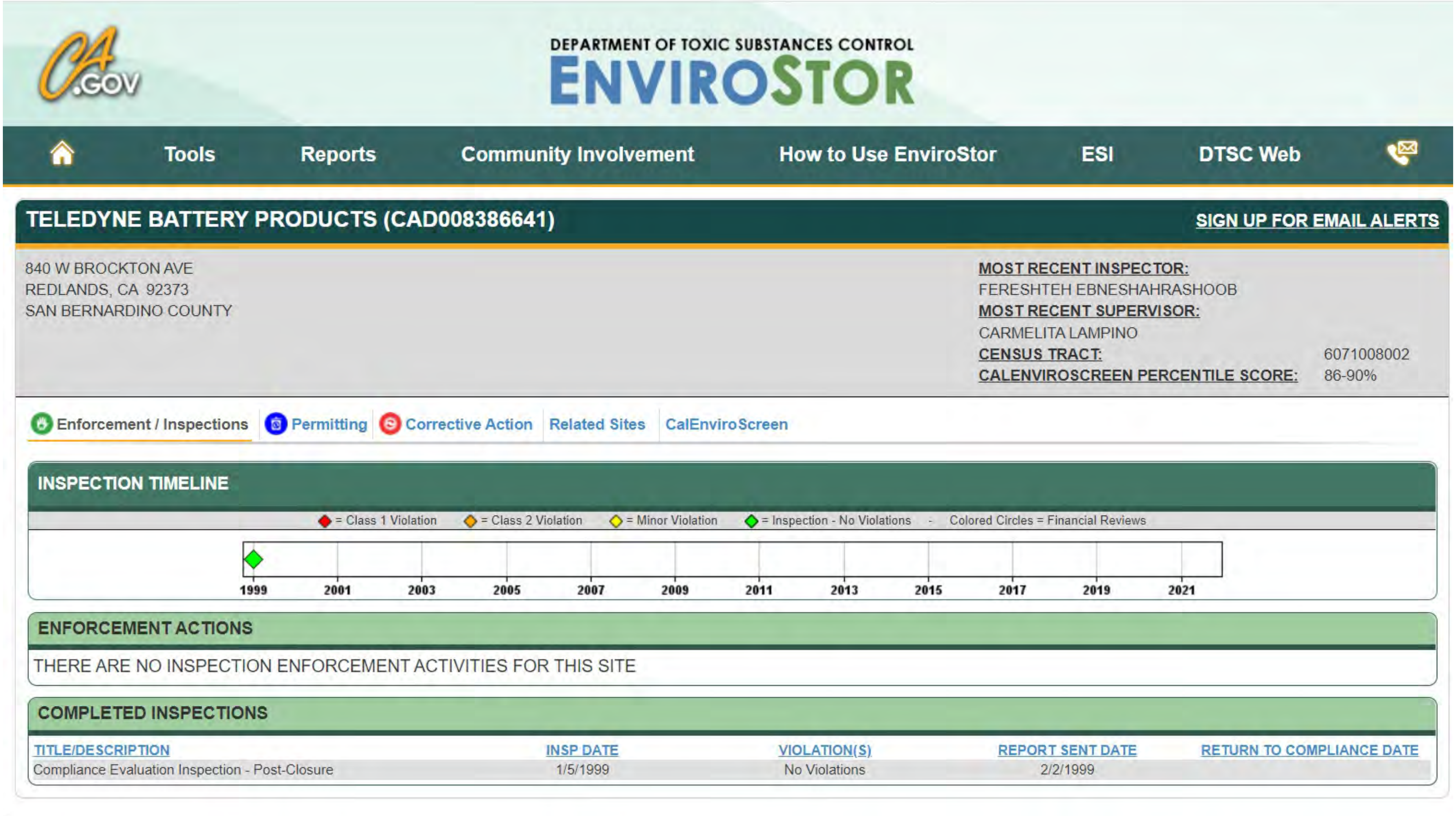
UNIT	PERMIT ACTIIVTY	TITLE/DESCRIPTION	DATE

Draft Documents for Review

NO DRAFT DOCUMENTS FOR REVIEW HAVE BEEN UPLOADED TO THIS PROJECT

Community Involvement Documents

NO COMMUNITY INVOLVEMENT DOCUMENTS HAVE BEEN UPLOADED TO THIS PROJECT



TELEDYNE BATTERY PRODUCTS (CAD008386641)

840 W BROCKTON AVE
REDLANDS, CA 92373
SAN BERNARDINO COUNTY

MOST RECENT INSPECTOR:
FERESHTEH EBNESHAHRASHOOB
MOST RECENT SUPERVISOR:
CARMELITA LAMPINO
CENSUS TRACT: 6071008002
CALENVIROSCREEN PERCENTILE SCORE: 86-90%

INSPECTION TIMELINE

◆ = Class 1 Violation ◆ = Class 2 Violation ◆ = Minor Violation ◆ = Inspection - No Violations - Colored Circles = Financial Reviews

ENFORCEMENT ACTIONS

THERE ARE NO INSPECTION ENFORCEMENT ACTIVITIES FOR THIS SITE

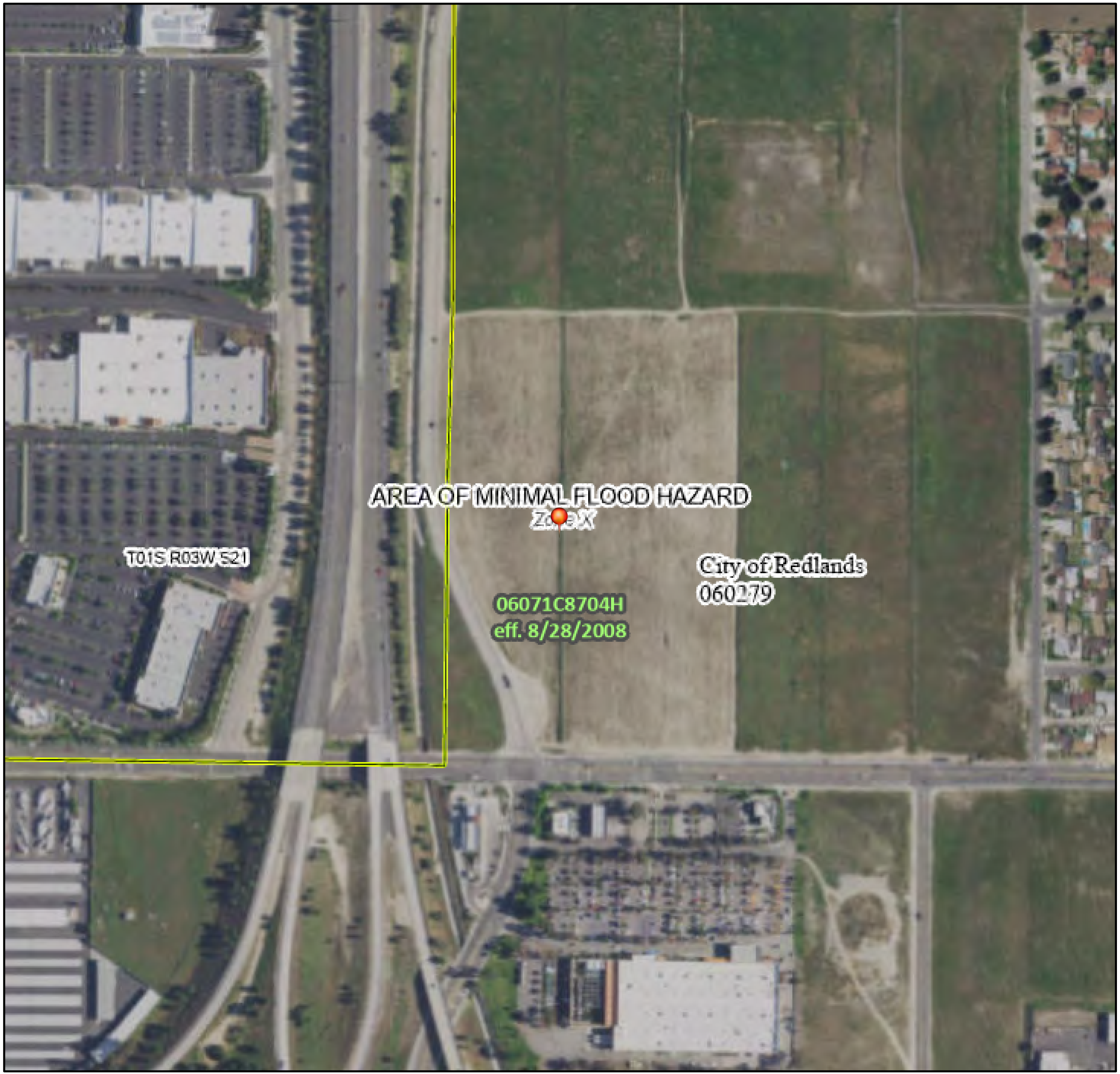
COMPLETED INSPECTIONS

TITLE/DESCRIPTION	INSP DATE	VIOLATION(S)	REPORT SENT DATE	RETURN TO COMPLIANCE DATE
Compliance Evaluation Inspection - Post-Closure	1/5/1999	No Violations	2/2/1999	

National Flood Hazard Layer FIRMette

FEMA

117°12'15"W 34°4'34"N



117°11'37"W 34°4'4"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

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

- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 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

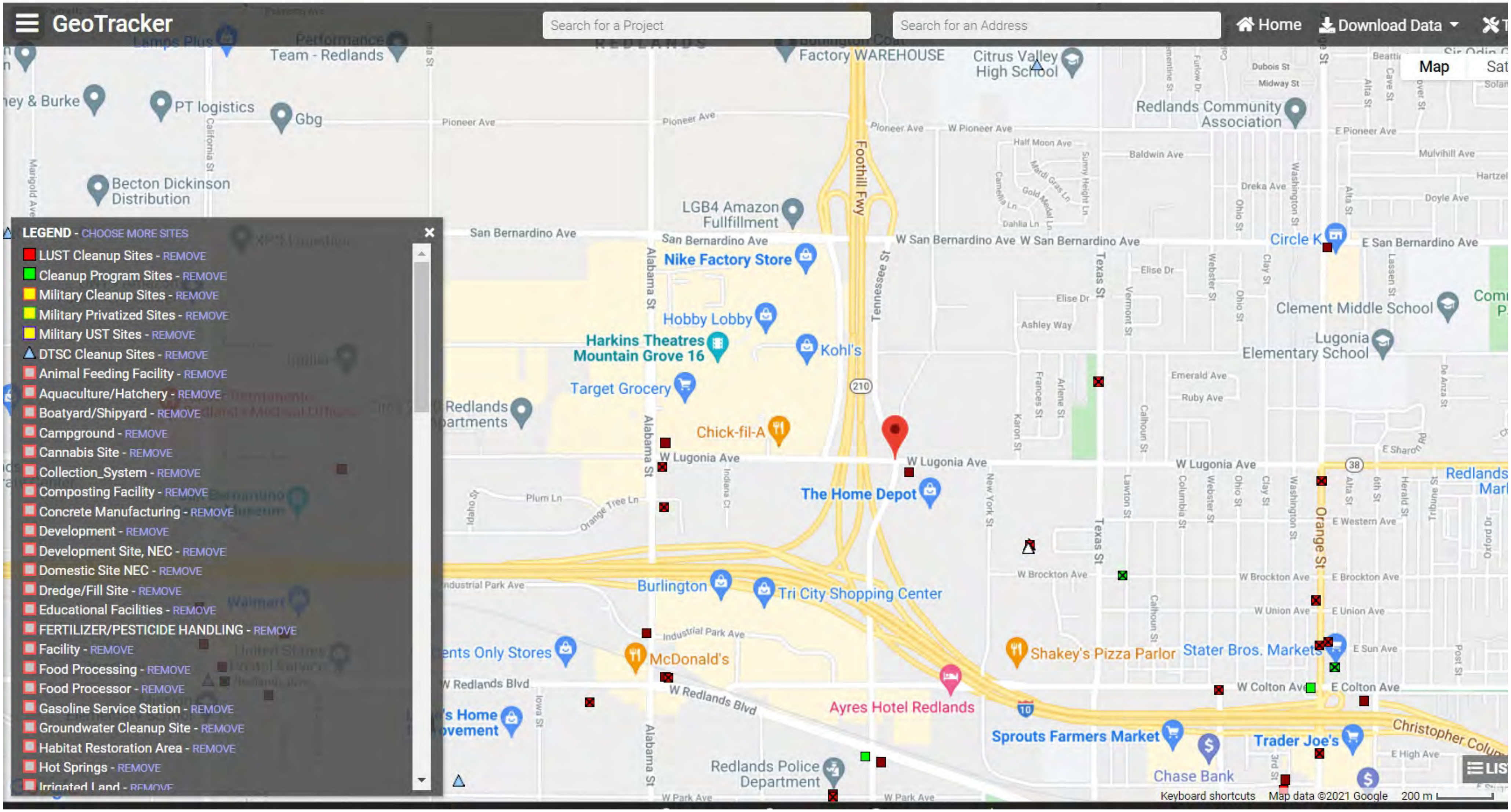
N

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

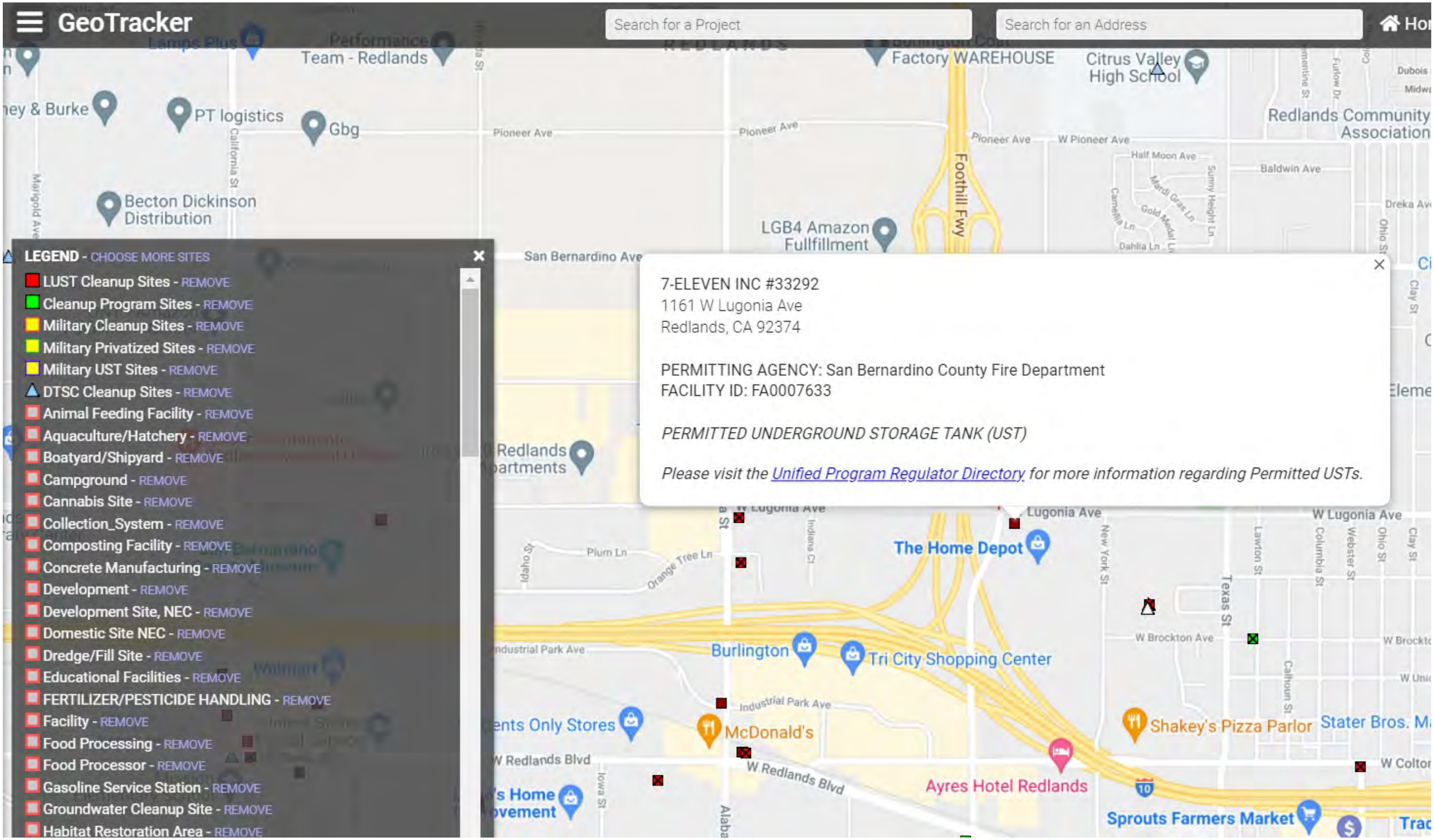
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/7/2022 at 6:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new 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.



LEGEND - CHOOSE MORE SITES ×

- 🟥 LUST Cleanup Sites - REMOVE
- 🟩 Cleanup Program Sites - REMOVE
- 🟨 Military Cleanup Sites - REMOVE
- 🟨 Military Privatized Sites - REMOVE
- 🟨 Military UST Sites - REMOVE
- △ DTSC Cleanup Sites - REMOVE
- 🟥 Animal Feeding Facility - REMOVE
- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE



LEGEND - CHOOSE MORE SITES ✕

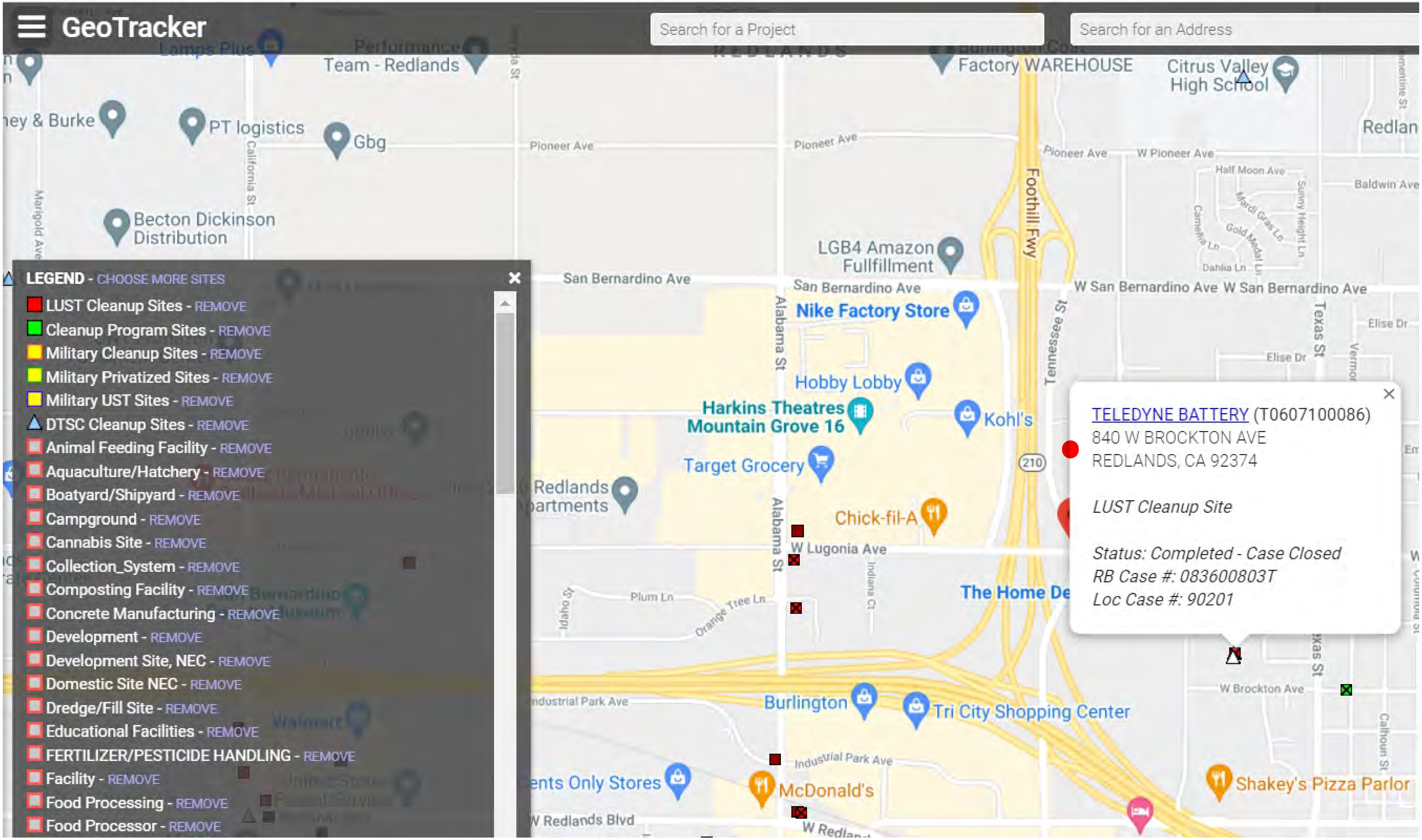
- 🟥 LUST Cleanup Sites - REMOVE
- 🟩 Cleanup Program Sites - REMOVE
- 🟧 Military Cleanup Sites - REMOVE
- 🟨 Military Privatized Sites - REMOVE
- 🟨 Military UST Sites - REMOVE
- △ DTSC Cleanup Sites - REMOVE
- 🟥 Animal Feeding Facility - REMOVE
- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE

7-ELEVEN INC #33292
1161 W Lugonia Ave
Redlands, CA 92374

PERMITTING AGENCY: San Bernardino County Fire Department
FACILITY ID: FA0007633

PERMITTED UNDERGROUND STORAGE TANK (UST)

Please visit the Unified Program Regulator Directory for more information regarding Permitted USTs.



GeoTracker

Search for a Project

Search for an Address

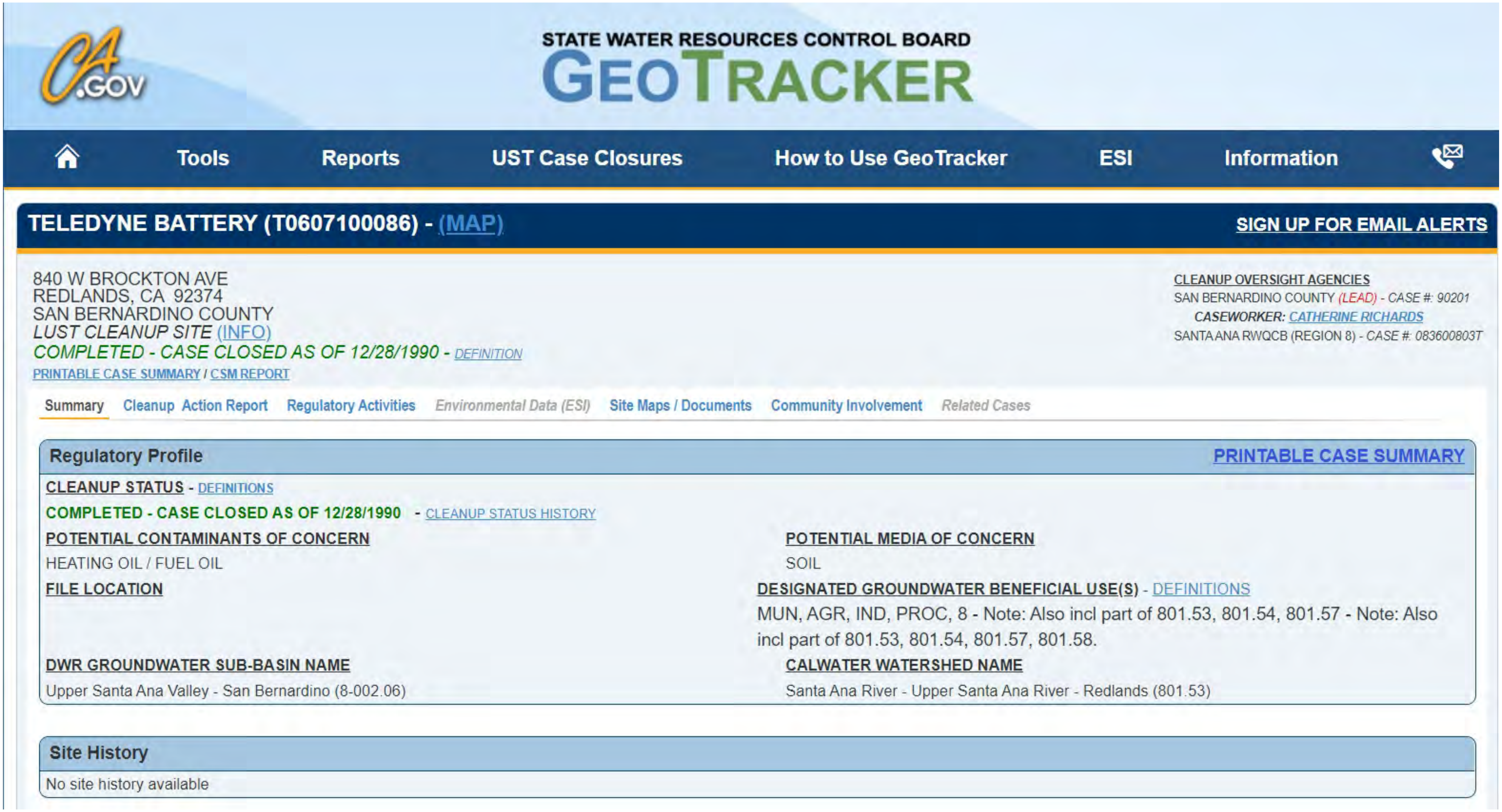
LEGEND - CHOOSE MORE SITES

- 🟥 LUST Cleanup Sites - REMOVE
- 🟩 Cleanup Program Sites - REMOVE
- 🟧 Military Cleanup Sites - REMOVE
- 🟨 Military Privatized Sites - REMOVE
- 🟨 Military UST Sites - REMOVE
- △ DTSC Cleanup Sites - REMOVE
- 🟥 Animal Feeding Facility - REMOVE
- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE

TELEDYNE BATTERY (T0607100086)
840 W BROCKTON AVE
REDLANDS, CA 92374

LUST Cleanup Site

Status: Completed - Case Closed
RB Case #: 083600803T
Loc Case #: 90201



TELEDYNE BATTERY (T0607100086) - (MAP)

SIGN UP FOR EMAIL ALERTS

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD) - CASE #: 90201*
CASEWORKER: *CATHERINE RICHARDS*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083600803T*

Regulatory Profile

PRINTABLE CASE SUMMARY

CLEANUP STATUS - DEFINITIONS

COMPLETED - CASE CLOSED AS OF 12/28/1990 - CLEANUP STATUS HISTORY

POTENTIAL CONTAMINANTS OF CONCERN
HEATING OIL / FUEL OIL

POTENTIAL MEDIA OF CONCERN
SOIL

FILE LOCATION

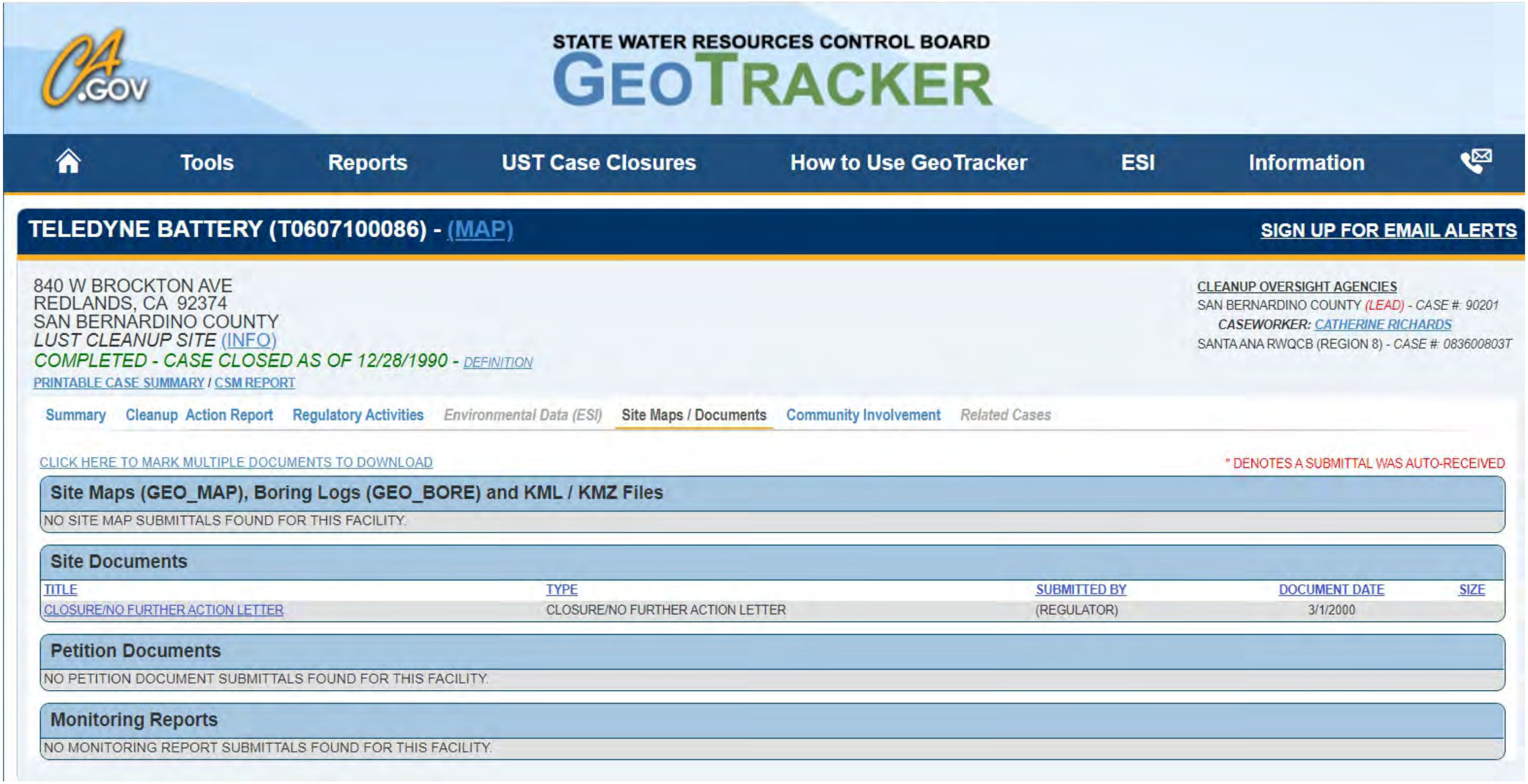
DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS
MUN, AGR, IND, PROC, 8 - Note: Also incl part of 801.53, 801.54, 801.57 - Note: Also incl part of 801.53, 801.54, 801.57, 801.58.

DWR GROUNDWATER SUB-BASIN NAME
Upper Santa Ana Valley - San Bernardino (8-002.06)

CALWATER WATERSHED NAME
Santa Ana River - Upper Santa Ana River - Redlands (801.53)

Site History

No site history available



TELEDYNE BATTERY (T0607100086) - (MAP)

SIGN UP FOR EMAIL ALERTS

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD) - CASE #: 90201*
CASEWORKER: *CATHERINE RICHARDS*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083600803T*

CLICK HERE TO MARK MULTIPLE DOCUMENTS TO DOWNLOAD

* DENOTES A SUBMITTAL WAS AUTO-RECEIVED

Site Maps (GEO_MAP), Boring Logs (GEO_BORE) and KML / KMZ Files

NO SITE MAP SUBMITTALS FOUND FOR THIS FACILITY.

Site Documents

TITLE	TYPE	SUBMITTED BY	DOCUMENT DATE	SIZE
CLOSURE/NO FURTHER ACTION LETTER	CLOSURE/NO FURTHER ACTION LETTER	(REGULATOR)	3/1/2000	

Petition Documents

NO PETITION DOCUMENT SUBMITTALS FOUND FOR THIS FACILITY.

Monitoring Reports

NO MONITORING REPORT SUBMITTALS FOUND FOR THIS FACILITY.

TELEDYNE BATTERY (T0607100086) - (MAP)

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGEN
SAN BERNARDINO COUNTY (
CASEWORKER: *CATHERI*
SANTA ANA RWQCB (REGION

Regulatory Activities

* Indicates a re

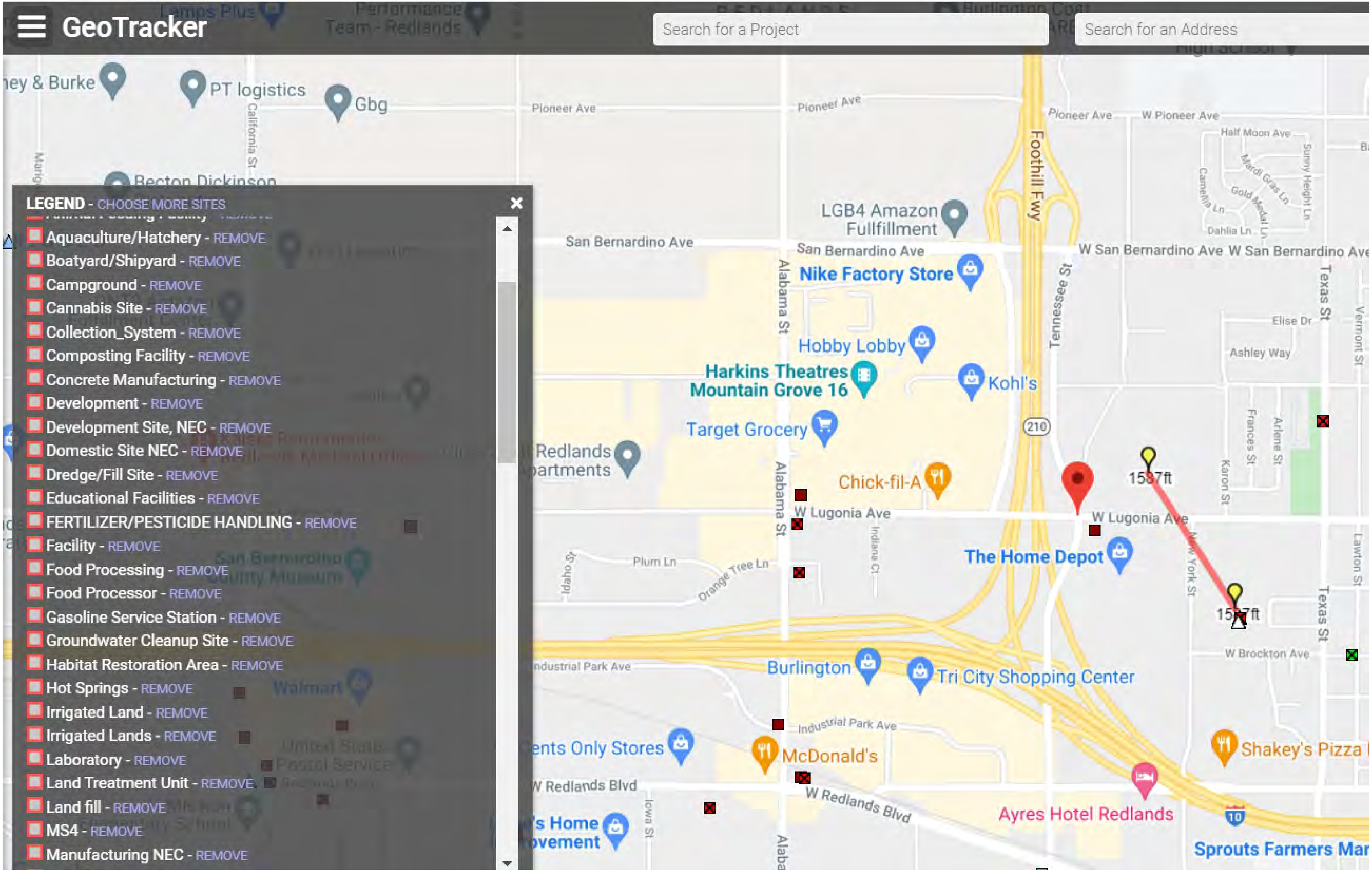
	ACTION TYPE	ACTION	ACTION DATE	RECEIVED / ISSUE DATE	TITLE / DESCRIPTION / COMMENTS
[VIEW DOCS]	*Other Regulatory Actions*	Closure/No Further Action Letter	3/1/2000	3/1/2000	Closure/No Further Action Letter
	Referral to Other Agency	Referral to Regional Board	12/28/1990	12/28/1990	
	Leak Action	Leak Reported	5/15/1987		
	Leak Action	Leak Discovery	3/30/1987		

TELEDYNE BATTERY (T0607100086) - (MAP)

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

Cleanup Action Report

NO CLEANUP ACTIONS EXIST



LEGEND - CHOOSE MORE SITES ✕

- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE
- 🟥 Irrigated Lands - REMOVE
- 🟥 Laboratory - REMOVE
- 🟥 Land Treatment Unit - REMOVE
- 🟥 Land fill - REMOVE
- 🟥 MS4 - REMOVE
- 🟥 Manufacturing NEC - REMOVE

COUNTY FIRE DEPARTMENT

HAZARDOUS MATERIALS DIVISION
FIELD SERVICES • ENVIRONMENTAL PROTECTION
385 North Arrowhead Avenue, Second Floor • San Bernardino, CA 92415-0153
(909) 387-3080 • Fax (909) 387-4323

COUNTY OF SAN BERNARDINO

PETER R. HILLS
Fire Chief
County Fire Warden

March 1, 2000

TELEDYNE AIRCRAFT PRODUCTS
840 W. BROCKTON AVE
REDLANDS, CA 92374

SUBJECT: CLOSURE IN PLACE OF FOUR UNDERGROUND STORAGE TANKS AT 840 W. BROCKTON AVE, REDLANDS

The Department has received the sample results and/or closure report submitted by Encon dated February 16, 2000. After review of the reports prepared by you or your agent, it has been determined that the extent of contamination or lack thereof would indicate that no further investigation is warranted at this time.

It is important to note that this can not be construed as a release of liability for the site or declaration that the site is free from contamination. Should further projects or environmental investigations reveal additional contaminants site you will be responsible and held liable for the investigation and remedial actions.

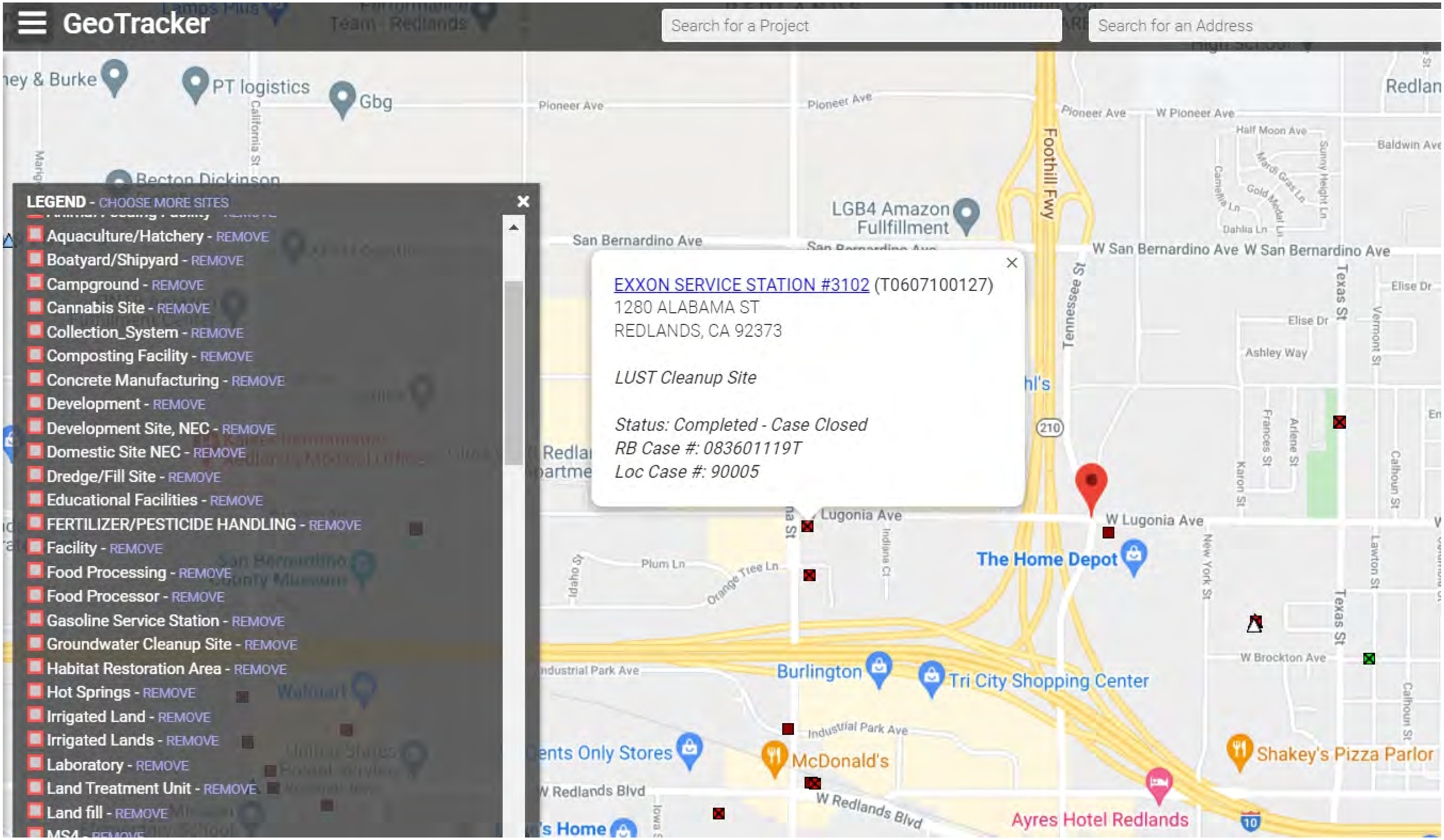
If you have any questions, please call (909) 387-3082.

Jim E Smith

JIM E. SMITH, REHS
Hazardous Materials Field Services

JES/jc

cc: Encon



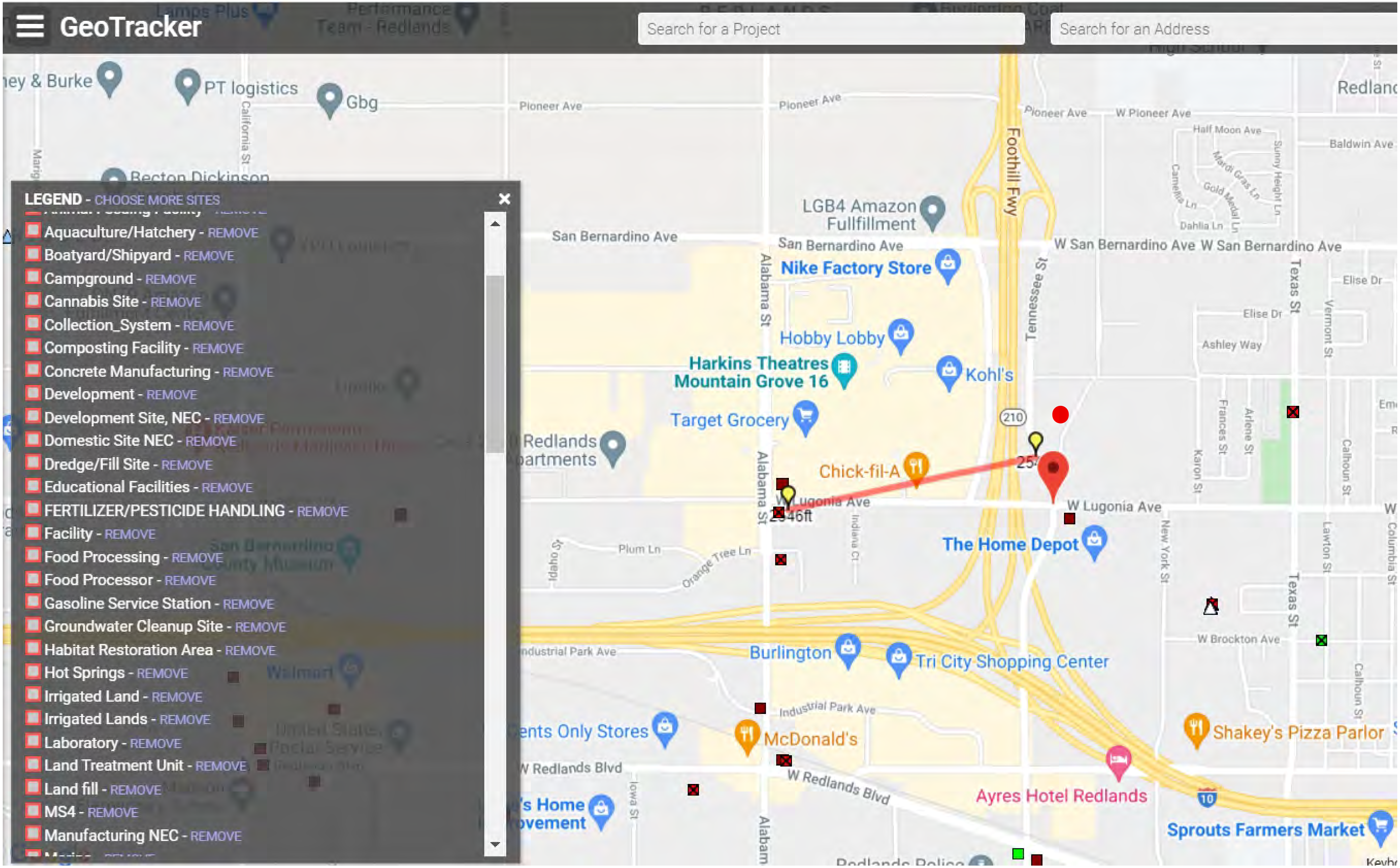
LEGEND - CHOOSE MORE SITES

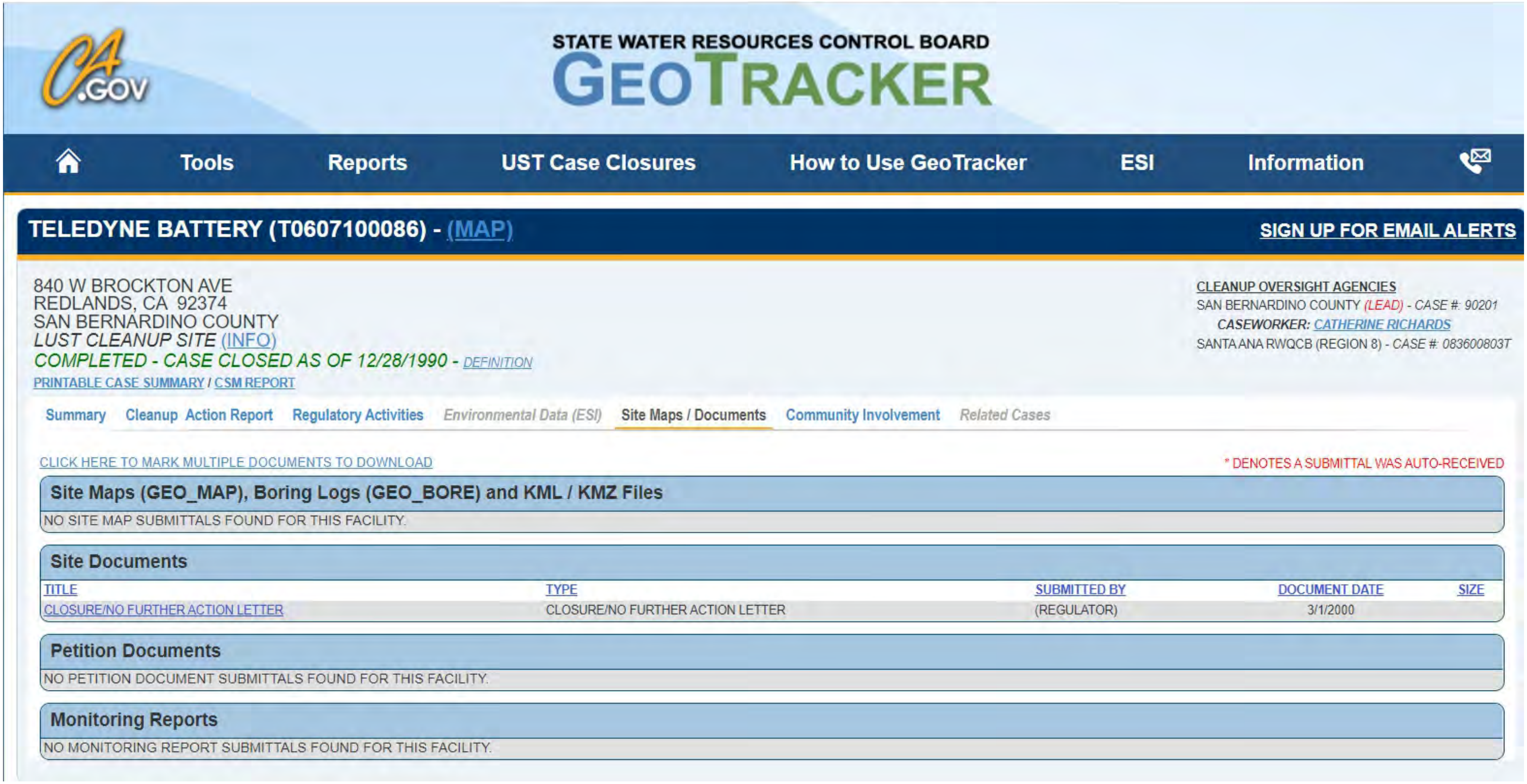
- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE
- 🟥 Irrigated Lands - REMOVE
- 🟥 Laboratory - REMOVE
- 🟥 Land Treatment Unit - REMOVE
- 🟥 Land fill - REMOVE
- 🟥 MS4 - REMOVE

EXXON SERVICE STATION #3102 (T0607100127)
1280 ALABAMA ST
REDLANDS, CA 92373

LUST Cleanup Site

Status: Completed - Case Closed
RB Case #: 083601119T
Loc Case #: 90005


GeoTracker
Search for a Project
Search for an Address
LEGEND - CHOOSE MORE SITES
Aquaculture/Hatchery - REMOVE
Boatyard/Shipyard - REMOVE
Campground - REMOVE
Cannabis Site - REMOVE
Collection_System - REMOVE
Composting Facility - REMOVE
Concrete Manufacturing - REMOVE
Development - REMOVE
Development Site, NEC - REMOVE
Domestic Site NEC - REMOVE
Dredge/Fill Site - REMOVE
Educational Facilities - REMOVE
FERTILIZER/PESTICIDE HANDLING - REMOVE
Facility - REMOVE
Food Processing - REMOVE
Food Processor - REMOVE
Gasoline Service Station - REMOVE
Groundwater Cleanup Site - REMOVE
Habitat Restoration Area - REMOVE
Hot Springs - REMOVE
Irrigated Land - REMOVE
Irrigated Lands - REMOVE
Laboratory - REMOVE
Land Treatment Unit - REMOVE
Land fill - REMOVE
MS4 - REMOVE
Manufacturing NEC - REMOVE
PT logistics
Gbg
Pioneer Ave
W Pioneer Ave
San Bernardino Ave
W San Bernardino Ave
LGB4 Amazon Fullfillment
Nike Factory Store
Hobby Lobby
Harkins Theatres Mountain Grove 16
Kohl's
Target Grocery
Chick-fil-A
Redlands Apartments
Foothill Fwy
Alabama St
Tennessee St
Texas St
210
W Lugonia Ave
2546ft
The Home Depot
Plum Ln
Orange Tree Ln
Industrial Park Ave
Burlington
Tri City Shopping Center
W Brockton Ave
McDonald's
Shakey's Pizza Parlor
W Redlands Blvd
Ayres Hotel Redlands
10
Sprouts Farmers Market



TELEDYNE BATTERY (T0607100086) - (MAP)

SIGN UP FOR EMAIL ALERTS

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD) - CASE #: 90201*
CASEWORKER: *CATHERINE RICHARDS*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083600803T*

CLICK HERE TO MARK MULTIPLE DOCUMENTS TO DOWNLOAD

* DENOTES A SUBMITTAL WAS AUTO-RECEIVED

Site Maps (GEO_MAP), Boring Logs (GEO_BORE) and KML / KMZ Files

NO SITE MAP SUBMITTALS FOUND FOR THIS FACILITY.

Site Documents

TITLE	TYPE	SUBMITTED BY	DOCUMENT DATE	SIZE
CLOSURE/NO FURTHER ACTION LETTER	CLOSURE/NO FURTHER ACTION LETTER	(REGULATOR)	3/1/2000	

Petition Documents

NO PETITION DOCUMENT SUBMITTALS FOUND FOR THIS FACILITY.

Monitoring Reports

NO MONITORING REPORT SUBMITTALS FOUND FOR THIS FACILITY.

TELEDYNE BATTERY (T0607100086) - (MAP)

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

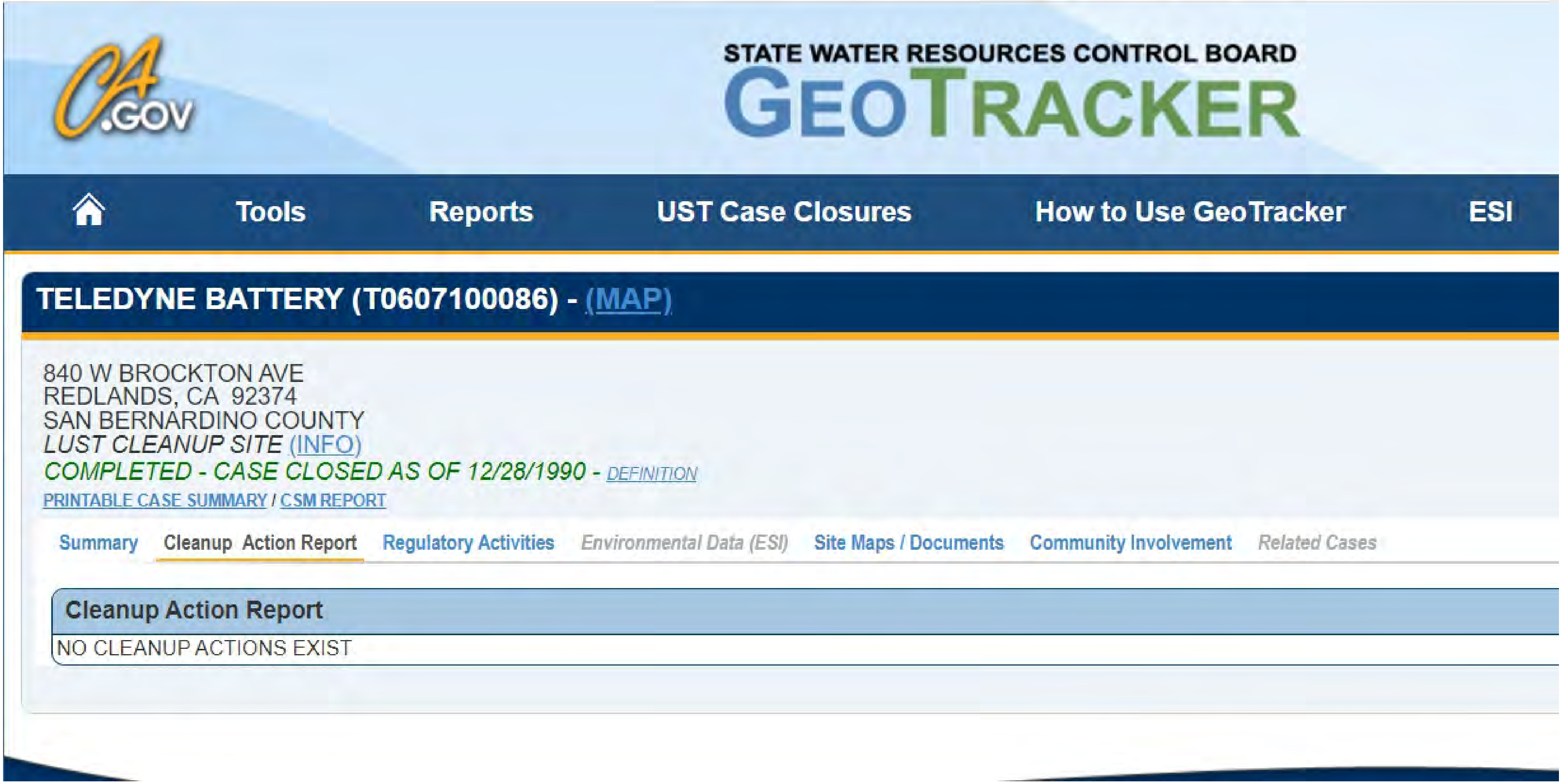
CLEANUP OVERSIGHT AGEN
SAN BERNARDINO COUNTY (
CASEWORKER: *CATHERI*
SANTA ANA RWQCB (REGION

Regulatory Activities

Action Type Filter: Show All Activities

* Indicates a re

	ACTION TYPE	ACTION	ACTION DATE	RECEIVED / ISSUE DATE	TITLE / DESCRIPTION / COMMENTS
[VIEW DOCS]	*Other Regulatory Actions*	Closure/No Further Action Letter	3/1/2000	3/1/2000	Closure/No Further Action Letter
	Referral to Other Agency	Referral to Regional Board	12/28/1990	12/28/1990	
	Leak Action	Leak Reported	5/15/1987		
	Leak Action	Leak Discovery	3/30/1987		

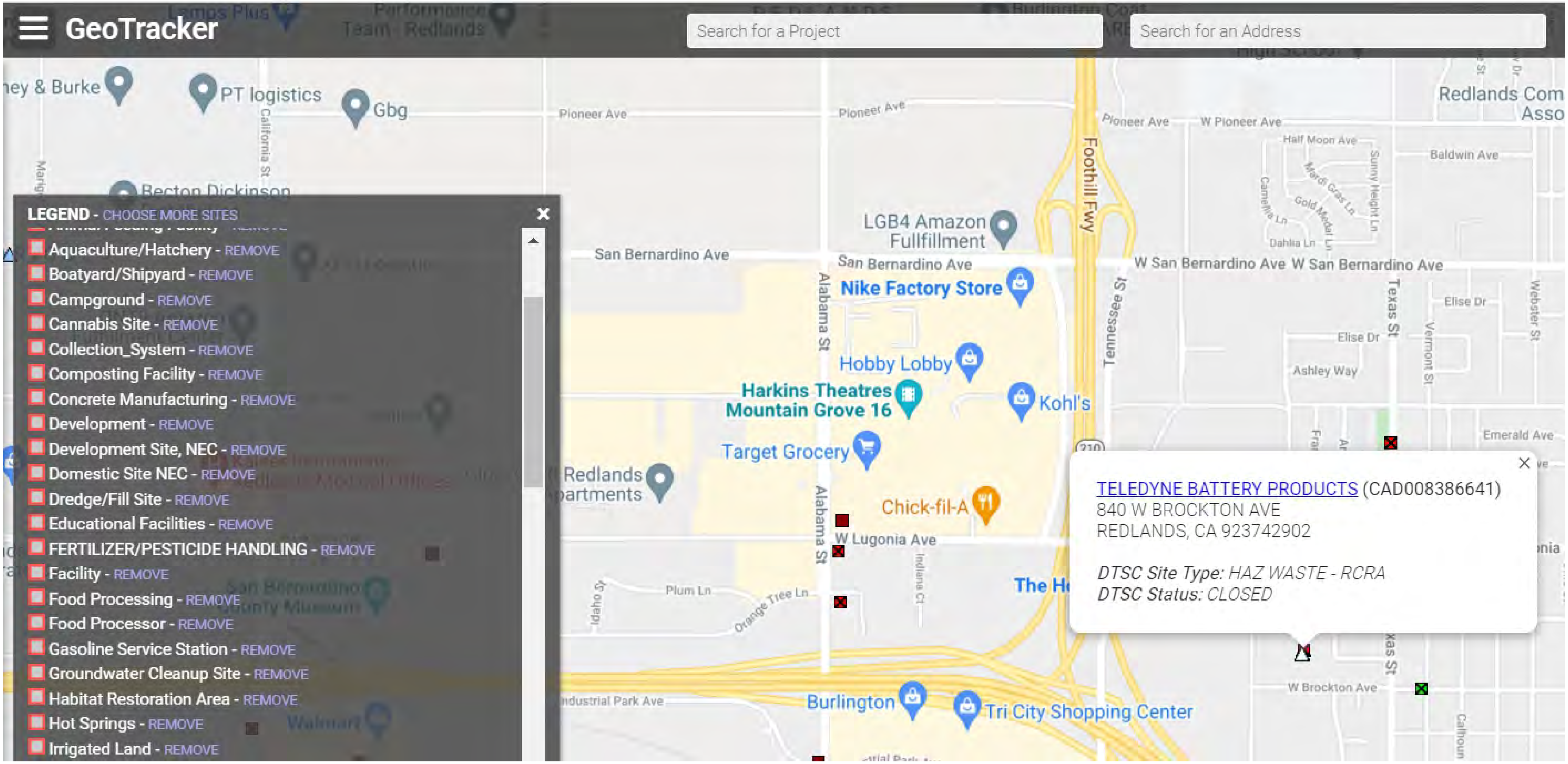


TELEDYNE BATTERY (T0607100086) - (MAP)

840 W BROCKTON AVE
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 12/28/1990 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

Cleanup Action Report

NO CLEANUP ACTIONS EXIST

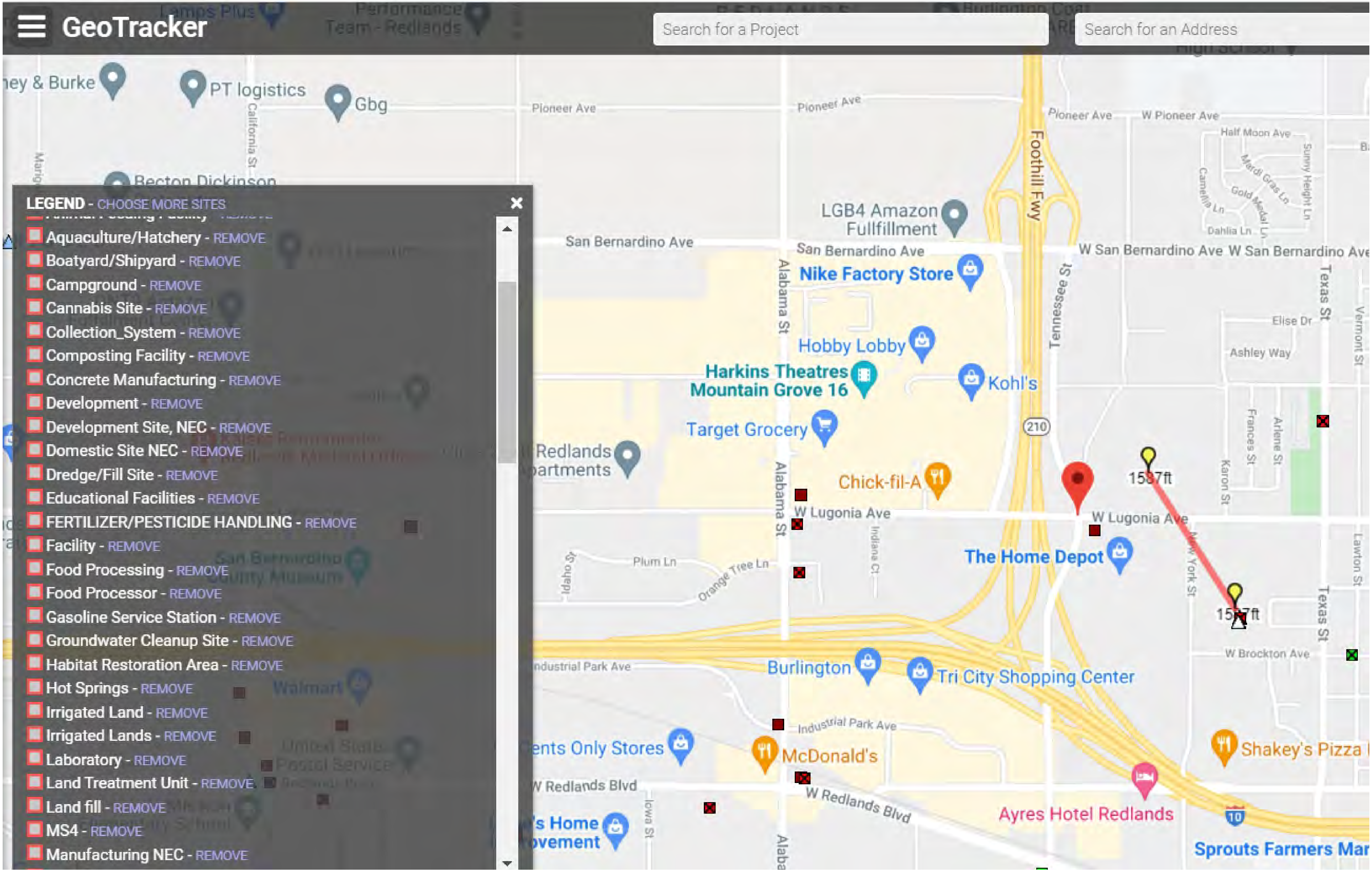


LEGEND - CHOOSE MORE SITES

- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE

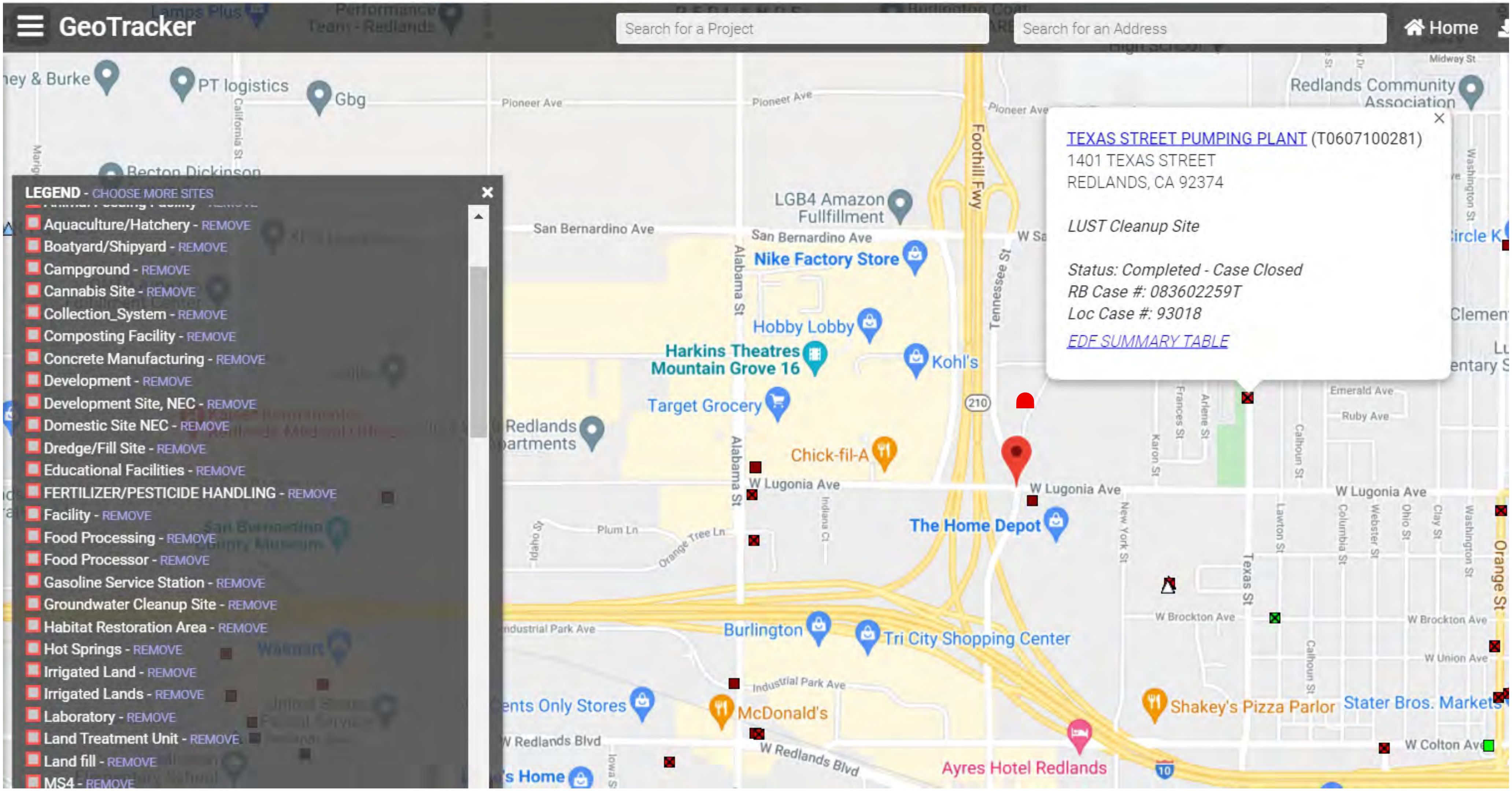
TELEDYNE BATTERY PRODUCTS (CAD008386641)
840 W BROCKTON AVE
REDLANDS, CA 923742902

DTSC Site Type: HAZ WASTE - RCRA
DTSC Status: CLOSED



LEGEND - CHOOSE MORE SITES

- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE
- 🟥 Irrigated Lands - REMOVE
- 🟥 Laboratory - REMOVE
- 🟥 Land Treatment Unit - REMOVE
- 🟥 Land fill - REMOVE
- 🟥 MS4 - REMOVE
- 🟥 Manufacturing NEC - REMOVE

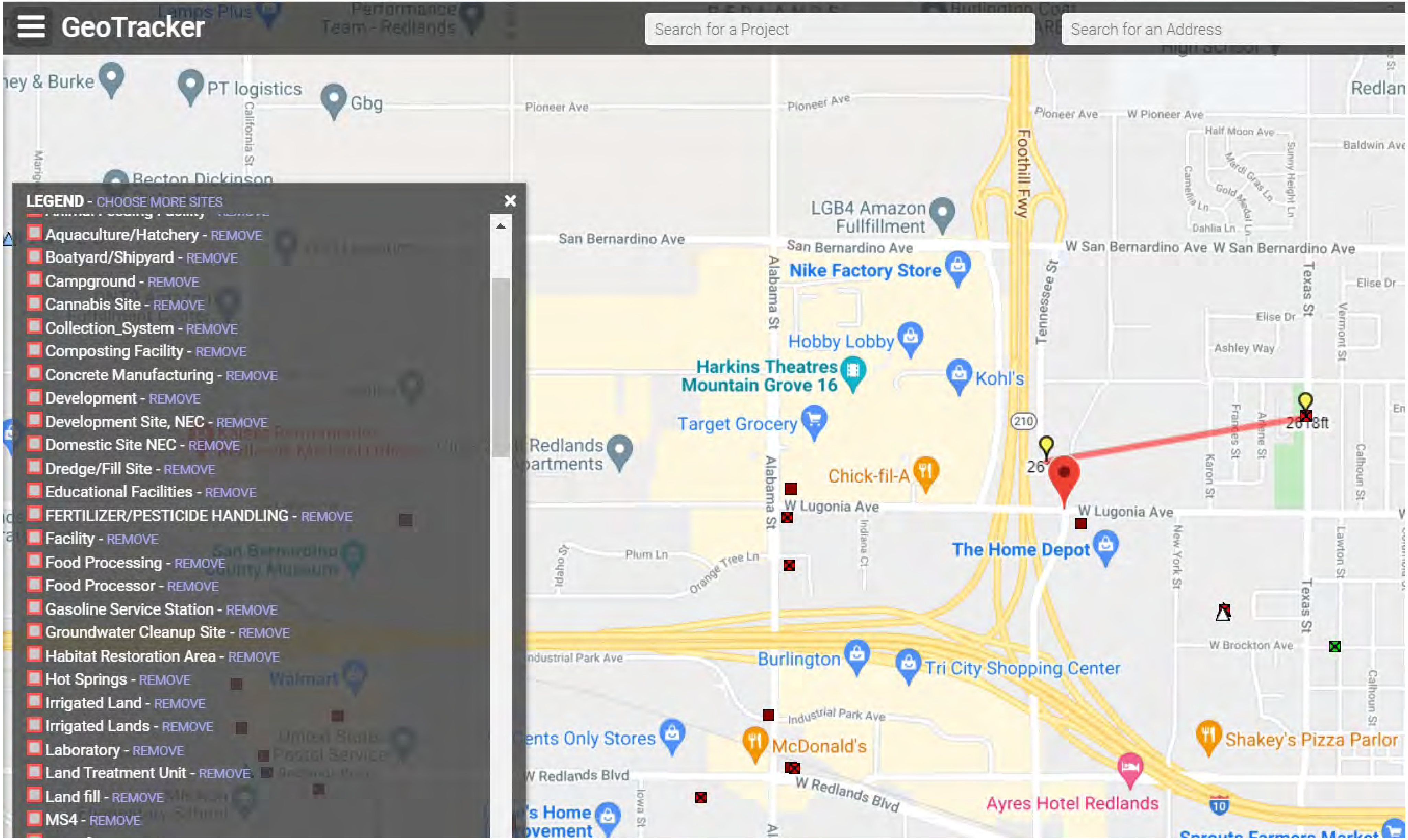


[TEXAS STREET PUMPING PLANT](#) (T0607100281)
1401 TEXAS STREET
REDLANDS, CA 92374

LUST Cleanup Site

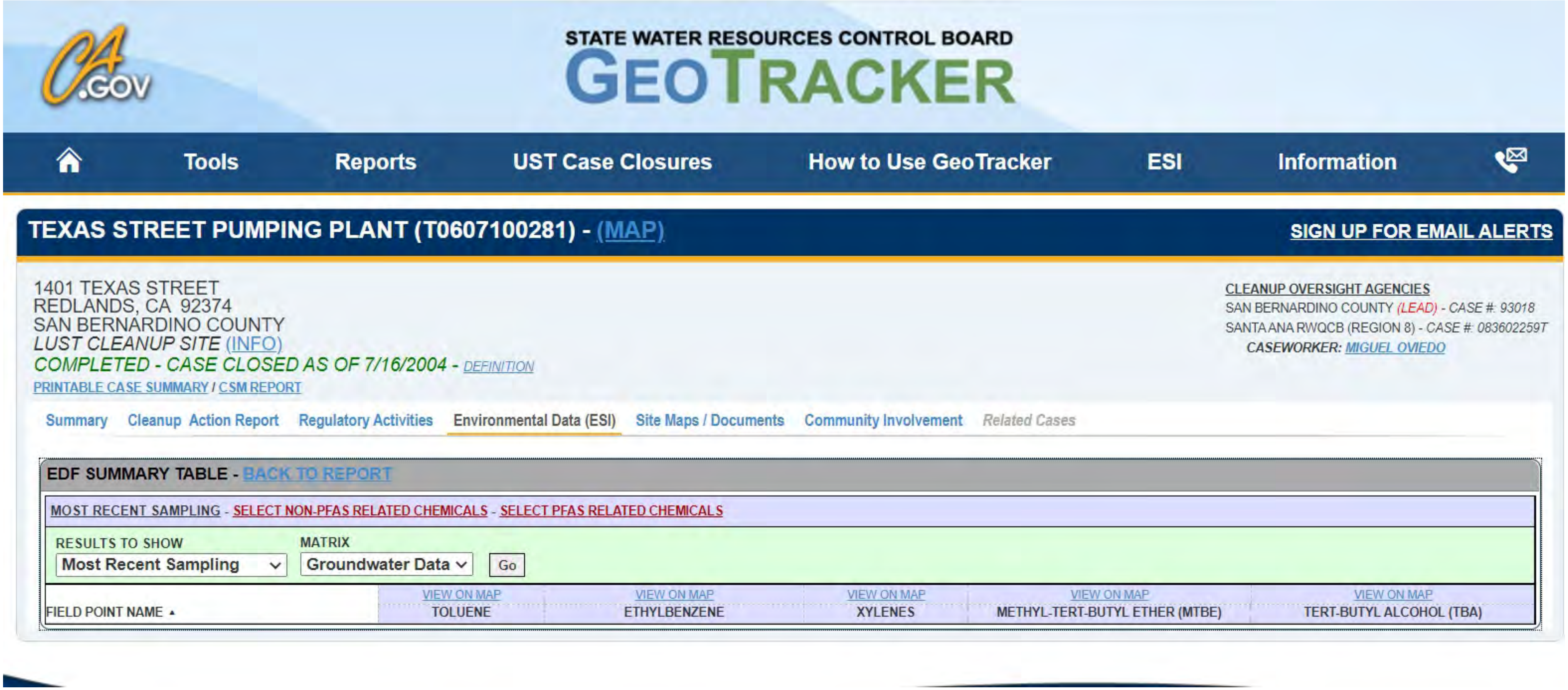
Status: Completed - Case Closed
RB Case #: 083602259T
Loc Case #: 93018

[EDF SUMMARY TABLE](#)



LEGEND - CHOOSE MORE SITES ✕

- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE
- 🟥 Irrigated Lands - REMOVE
- 🟥 Laboratory - REMOVE
- 🟥 Land Treatment Unit - REMOVE
- 🟥 Land fill - REMOVE
- 🟥 MS4 - REMOVE



TEXAS STREET PUMPING PLANT (T0607100281) - (MAP)

SIGN UP FOR EMAIL ALERTS

1401 TEXAS STREET
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 7/16/2004 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

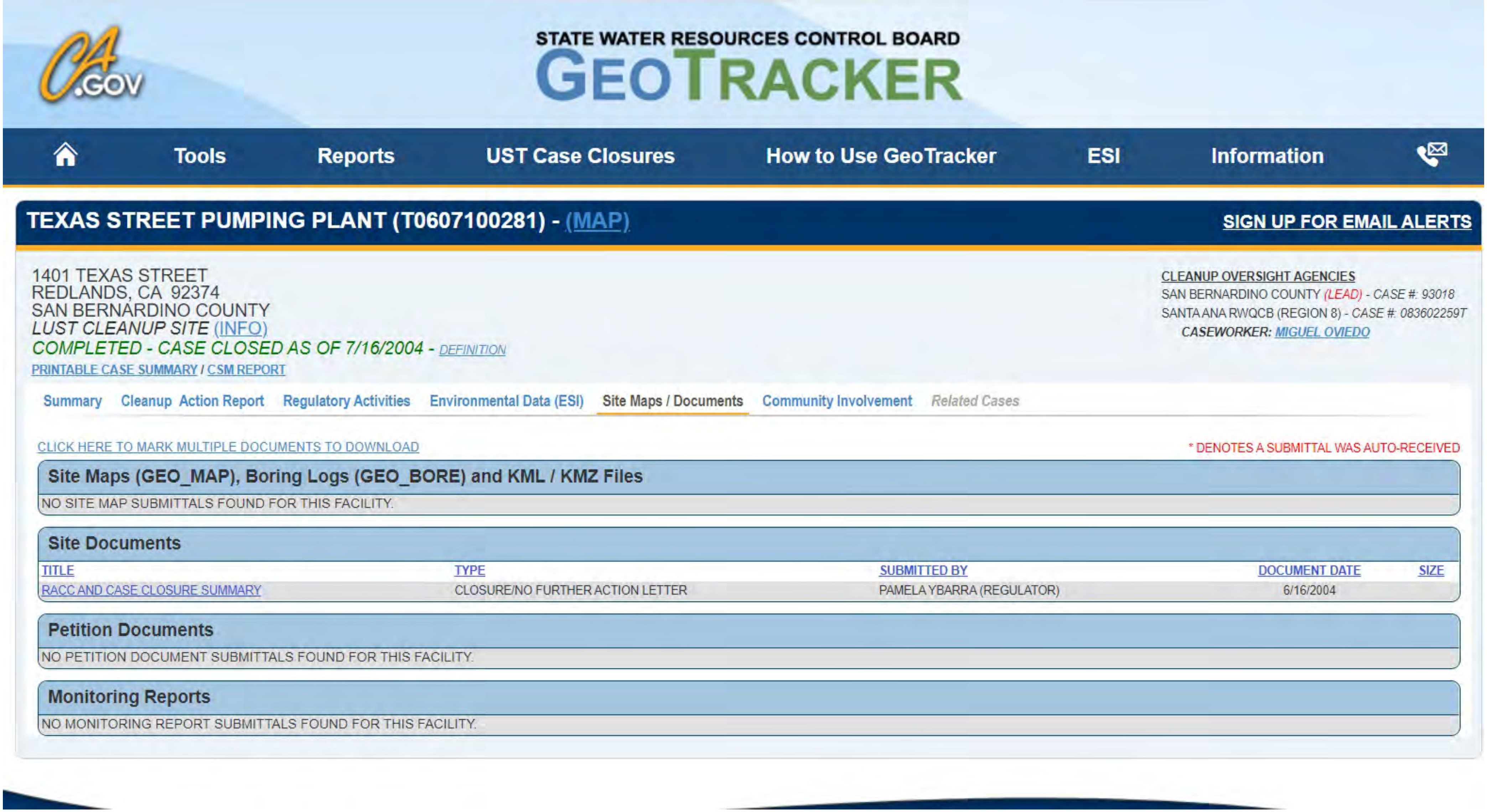
CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 93018*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602259T*
CASEWORKER: *MIGUEL OVIEDO*

EDF SUMMARY TABLE - BACK TO REPORT

MOST RECENT SAMPLING - SELECT NON-PFAS RELATED CHEMICALS - SELECT PFAS RELATED CHEMICALS

RESULTS TO SHOW: Most Recent Sampling
MATRIX: Groundwater Data

FIELD POINT NAME ▲	VIEW ON MAP TOLUENE	VIEW ON MAP ETHYLBENZENE	VIEW ON MAP XYLENES	VIEW ON MAP METHYL-TERT-BUTYL ETHER (MTBE)	VIEW ON MAP TERT-BUTYL ALCOHOL (TBA)



TEXAS STREET PUMPING PLANT (T0607100281) - (MAP)

SIGN UP FOR EMAIL ALERTS

1401 TEXAS STREET
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 7/16/2004 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD) - CASE #: 93018*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602259T*
CASEWORKER: *MIGUEL OVIEDO*

CLICK HERE TO MARK MULTIPLE DOCUMENTS TO DOWNLOAD

* DENOTES A SUBMITTAL WAS AUTO-RECEIVED

Site Maps (GEO_MAP), Boring Logs (GEO_BORE) and KML / KMZ Files

NO SITE MAP SUBMITTALS FOUND FOR THIS FACILITY.

Site Documents

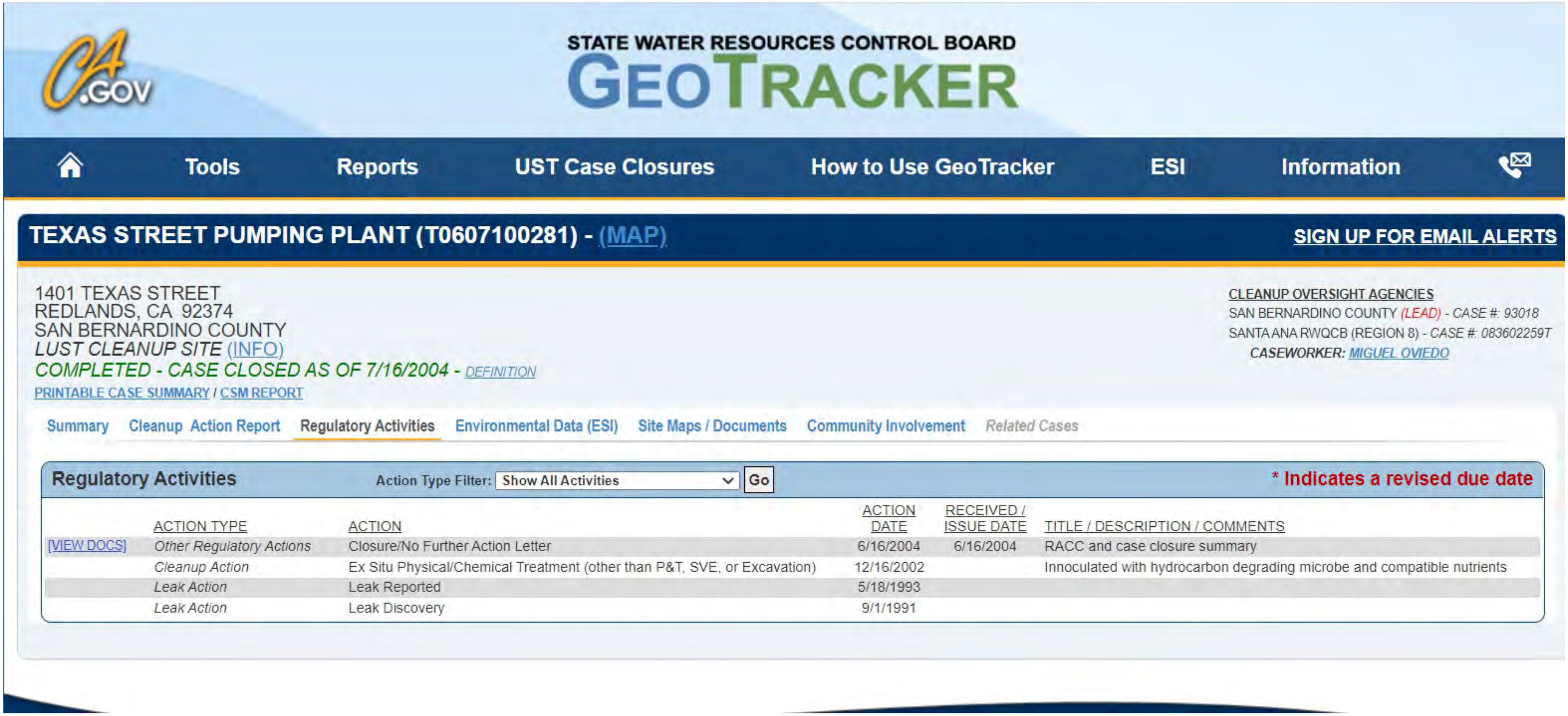
TITLE	TYPE	SUBMITTED BY	DOCUMENT DATE	SIZE
RACC AND CASE CLOSURE SUMMARY	CLOSURE/NO FURTHER ACTION LETTER	PAMELA YBARRA (REGULATOR)	6/16/2004	

Petition Documents

NO PETITION DOCUMENT SUBMITTALS FOUND FOR THIS FACILITY.

Monitoring Reports

NO MONITORING REPORT SUBMITTALS FOUND FOR THIS FACILITY.



TEXAS STREET PUMPING PLANT (T0607100281) - (MAP)

1401 TEXAS STREET
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 7/16/2004 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

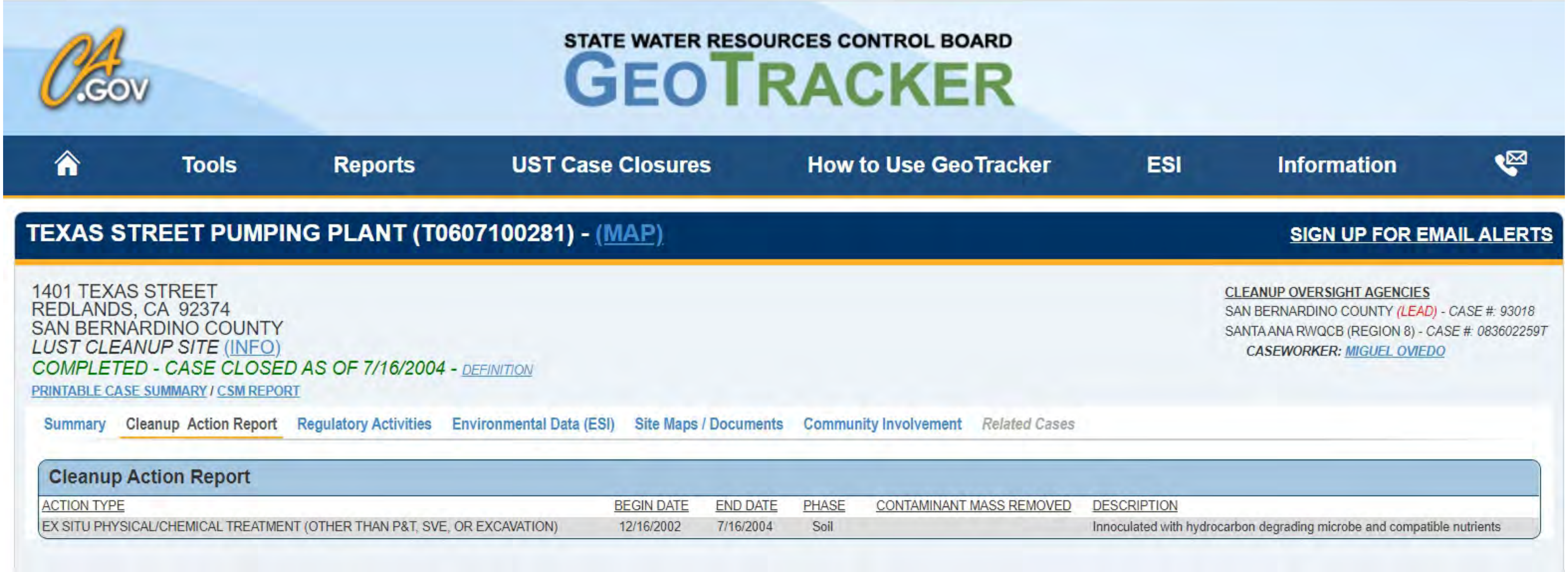
CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 93018*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602259T*
CASEWORKER: *MIGUEL OVIEDO*

Regulatory Activities

Action Type Filter: Show All Activities

*** Indicates a revised due date**

	ACTION TYPE	ACTION	ACTION DATE	RECEIVED / ISSUE DATE	TITLE / DESCRIPTION / COMMENTS
[VIEW DOCS]	*Other Regulatory Actions*	Closure/No Further Action Letter	6/16/2004	6/16/2004	RACC and case closure summary
	Cleanup Action	Ex Situ Physical/Chemical Treatment (other than P&T, SVE, or Excavation)	12/16/2002		Innoculated with hydrocarbon degrading microbe and compatible nutrients
	Leak Action	Leak Reported	5/18/1993		
	Leak Action	Leak Discovery	9/1/1991		



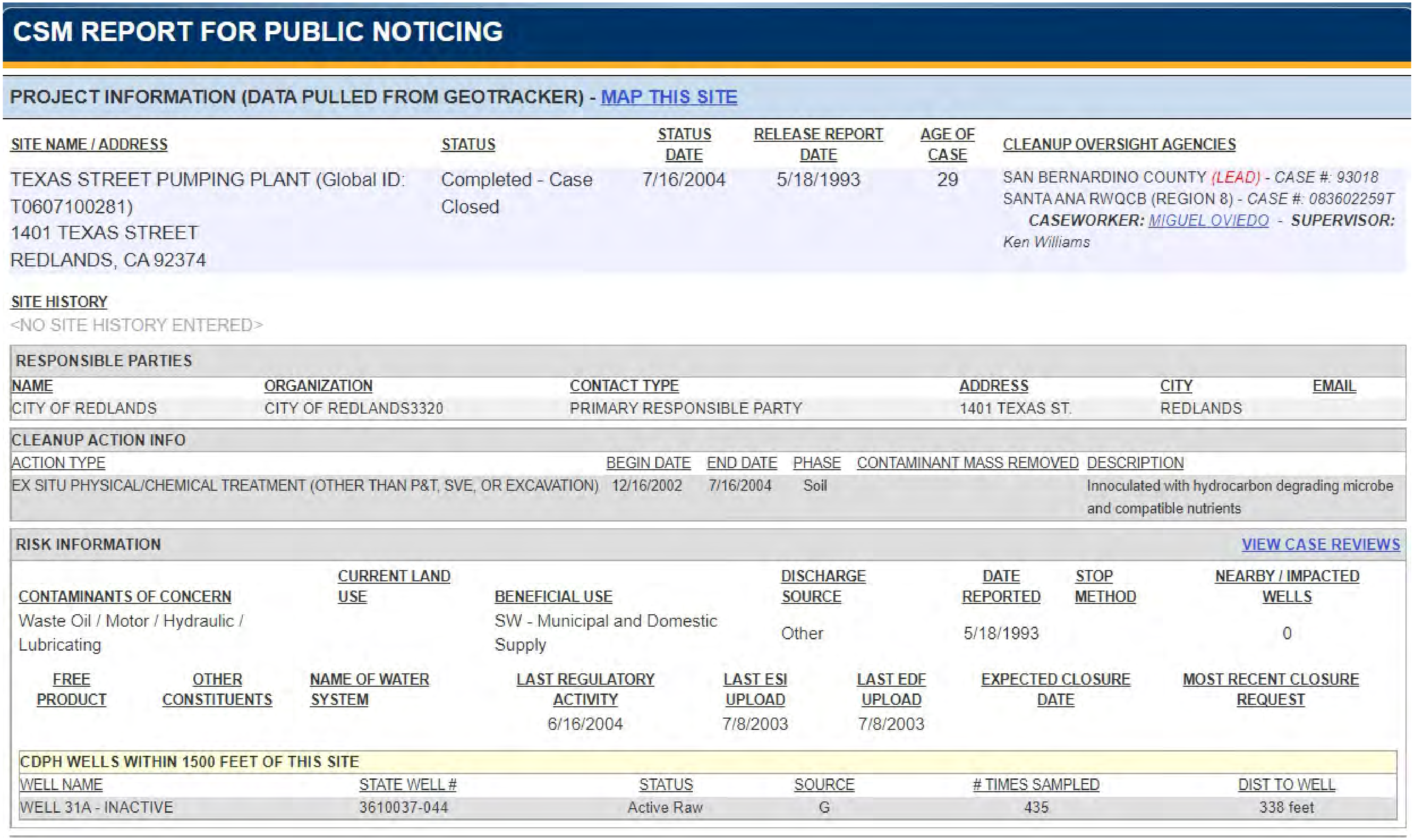
TEXAS STREET PUMPING PLANT (T0607100281) - (MAP)

1401 TEXAS STREET
REDLANDS, CA 92374
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 7/16/2004 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD) - CASE #: 93018*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602259T*
CASEWORKER: *MIGUEL OVIEDO*

Cleanup Action Report

ACTION TYPE	BEGIN DATE	END DATE	PHASE	CONTAMINANT MASS REMOVED	DESCRIPTION
EX SITU PHYSICAL/CHEMICAL TREATMENT (OTHER THAN P&T, SVE, OR EXCAVATION)	12/16/2002	7/16/2004	Soil		Innoculated with hydrocarbon degrading microbe and compatible nutrients



CSM REPORT FOR PUBLIC NOTICING

PROJECT INFORMATION (DATA PULLED FROM GEOTRACKER) - MAP THIS SITE

SITE NAME / ADDRESS	STATUS	STATUS DATE	RELEASE REPORT DATE	AGE OF CASE	CLEANUP OVERSIGHT AGENCIES
TEXAS STREET PUMPING PLANT (Global ID: T0607100281) 1401 TEXAS STREET REDLANDS, CA 92374	Completed - Case Closed	7/16/2004	5/18/1993	29	SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 93018* SANTA ANA RWQCB (REGION 8) - *CASE #: 083602259T* ***CASEWORKER:*** *MIGUEL OVIEDO* - ***SUPERVISOR:*** *Ken Williams*

SITE HISTORY

<NO SITE HISTORY ENTERED>

RESPONSIBLE PARTIES

NAME	ORGANIZATION	CONTACT TYPE	ADDRESS	CITY	EMAIL
CITY OF REDLANDS	CITY OF REDLANDS3320	PRIMARY RESPONSIBLE PARTY	1401 TEXAS ST.	REDLANDS	

CLEANUP ACTION INFO

ACTION TYPE	BEGIN DATE	END DATE	PHASE	CONTAMINANT MASS REMOVED	DESCRIPTION
EX SITU PHYSICAL/CHEMICAL TREATMENT (OTHER THAN P&T, SVE, OR EXCAVATION)	12/16/2002	7/16/2004	Soil		Innoculated with hydrocarbon degrading microbe and compatible nutrients

RISK INFORMATION

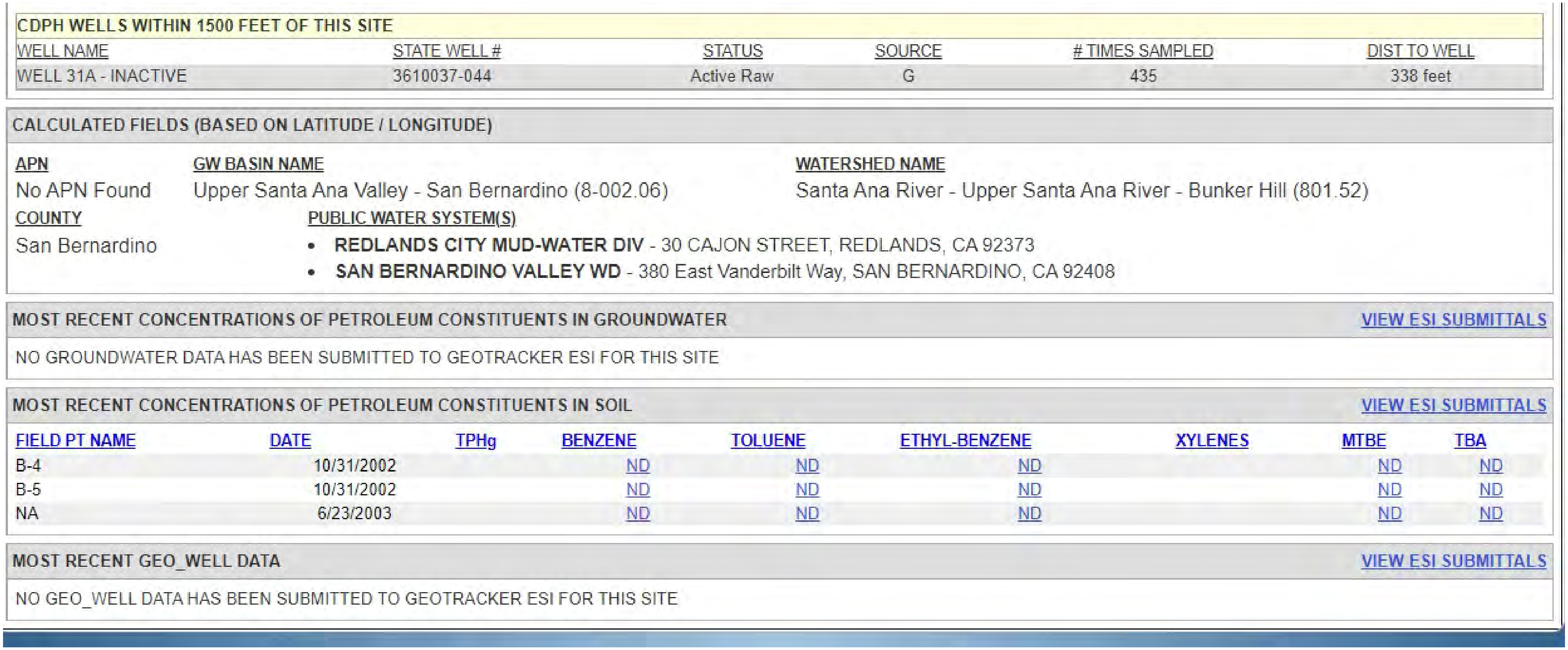
VIEW CASE REVIEWS

CONTAMINANTS OF CONCERN	CURRENT LAND USE	BENEFICIAL USE	DISCHARGE SOURCE	DATE REPORTED	STOP METHOD	NEARBY / IMPACTED WELLS
Waste Oil / Motor / Hydraulic / Lubricating		SW - Municipal and Domestic Supply	Other	5/18/1993		0

FREE PRODUCT	OTHER CONSTITUENTS	NAME OF WATER SYSTEM	LAST REGULATORY ACTIVITY	LAST ESI UPLOAD	LAST EDF UPLOAD	EXPECTED CLOSURE DATE	MOST RECENT CLOSURE REQUEST
			6/16/2004	7/8/2003	7/8/2003		

CDPH WELLS WITHIN 1500 FEET OF THIS SITE

WELL NAME	STATE WELL #	STATUS	SOURCE	# TIMES SAMPLED	DIST TO WELL
WELL 31A - INACTIVE	3610037-044	Active Raw	G	435	338 feet



CDPH WELLS WITHIN 1500 FEET OF THIS SITE

WELL NAME	STATE WELL #	STATUS	SOURCE	# TIMES SAMPLED	DIST TO WELL
WELL 31A - INACTIVE	3610037-044	Active Raw	G	435	338 feet

CALCULATED FIELDS (BASED ON LATITUDE / LONGITUDE)

APN	GW BASIN NAME	WATERSHED NAME
No APN Found	Upper Santa Ana Valley - San Bernardino (8-002.06)	Santa Ana River - Upper Santa Ana River - Bunker Hill (801.52)

COUNTY

San Bernardino

PUBLIC WATER SYSTEM(S)

- **REDLANDS CITY MUD-WATER DIV** - 30 CAJON STREET, REDLANDS, CA 92373
- **SAN BERNARDINO VALLEY WD** - 380 East Vanderbilt Way, SAN BERNARDINO, CA 92408

MOST RECENT CONCENTRATIONS OF PETROLEUM CONSTITUENTS IN GROUNDWATER

VIEW ESI SUBMITTALS

NO GROUNDWATER DATA HAS BEEN SUBMITTED TO GEOTRACKER ESI FOR THIS SITE

MOST RECENT CONCENTRATIONS OF PETROLEUM CONSTITUENTS IN SOIL

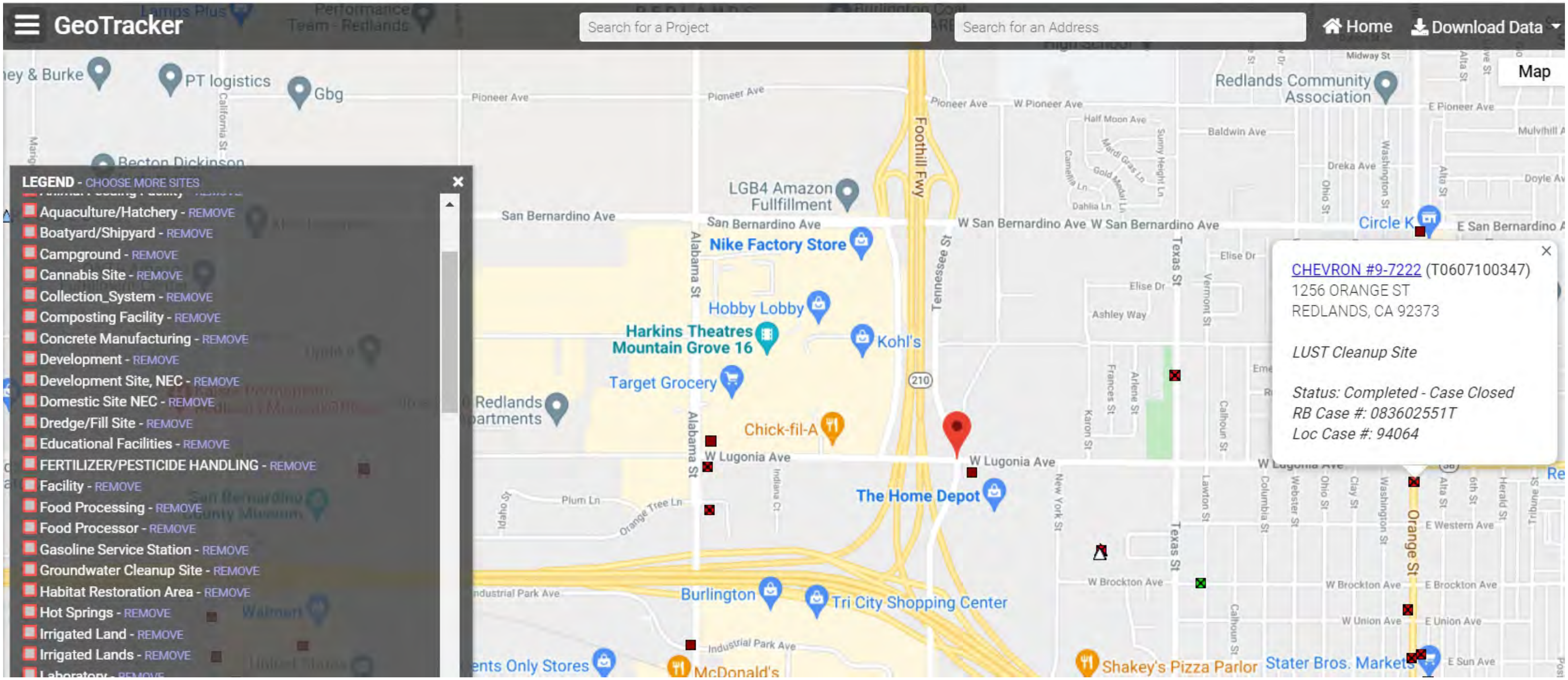
VIEW ESI SUBMITTALS

FIELD PT NAME	DATE	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	MTBE	TBA
B-4	10/31/2002		ND	ND	ND		ND	ND
B-5	10/31/2002		ND	ND	ND		ND	ND
NA	6/23/2003		ND	ND	ND		ND	ND

MOST RECENT GEO_WELL DATA

VIEW ESI SUBMITTALS

NO GEO_WELL DATA HAS BEEN SUBMITTED TO GEOTRACKER ESI FOR THIS SITE



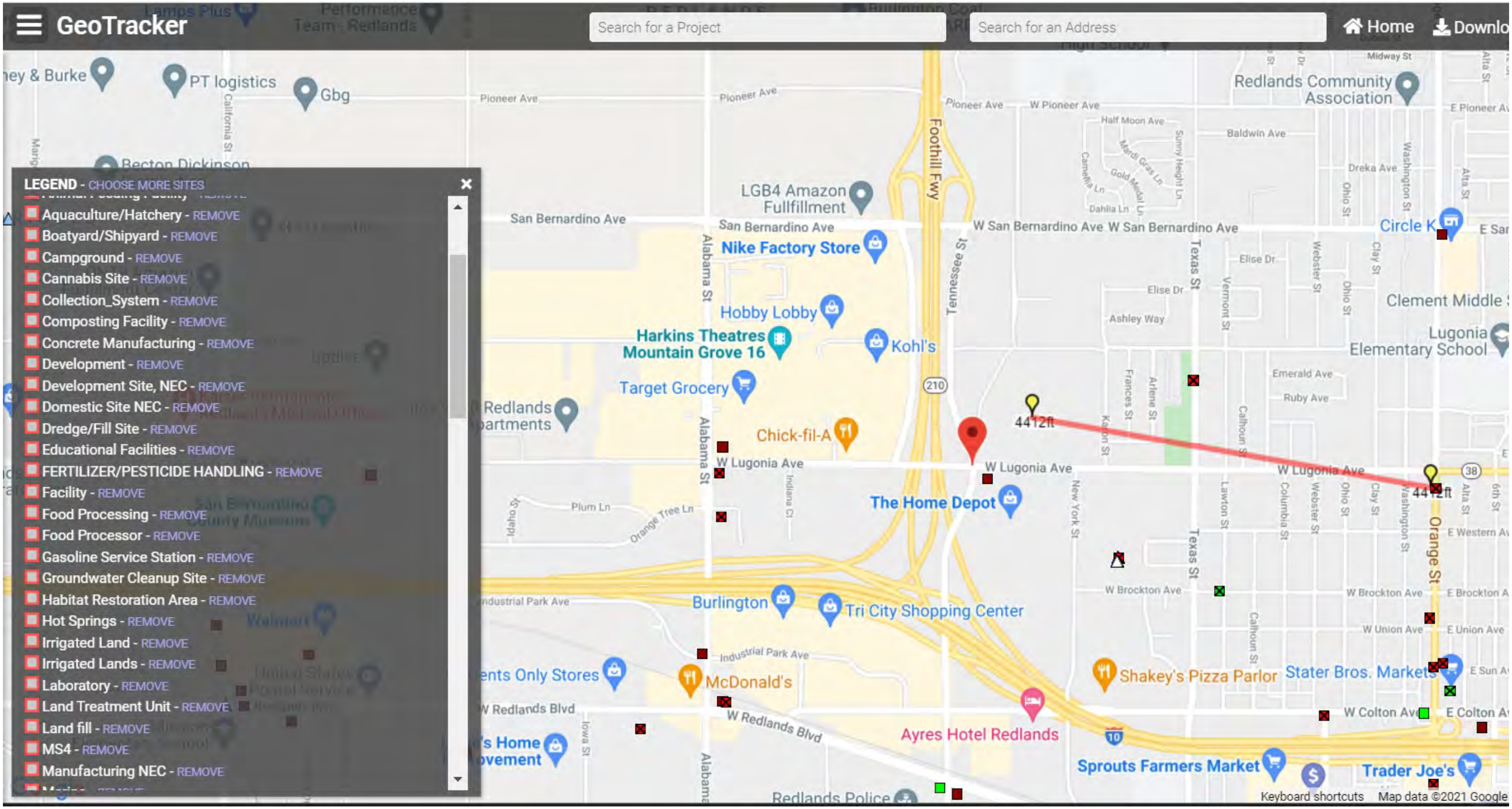
LEGEND - CHOOSE MORE SITES

- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE
- 🟥 Irrigated Lands - REMOVE
- 🟥 Laboratory - REMOVE

CHEVRON #9-7222 (T0607100347)
1256 ORANGE ST
REDLANDS, CA 92373

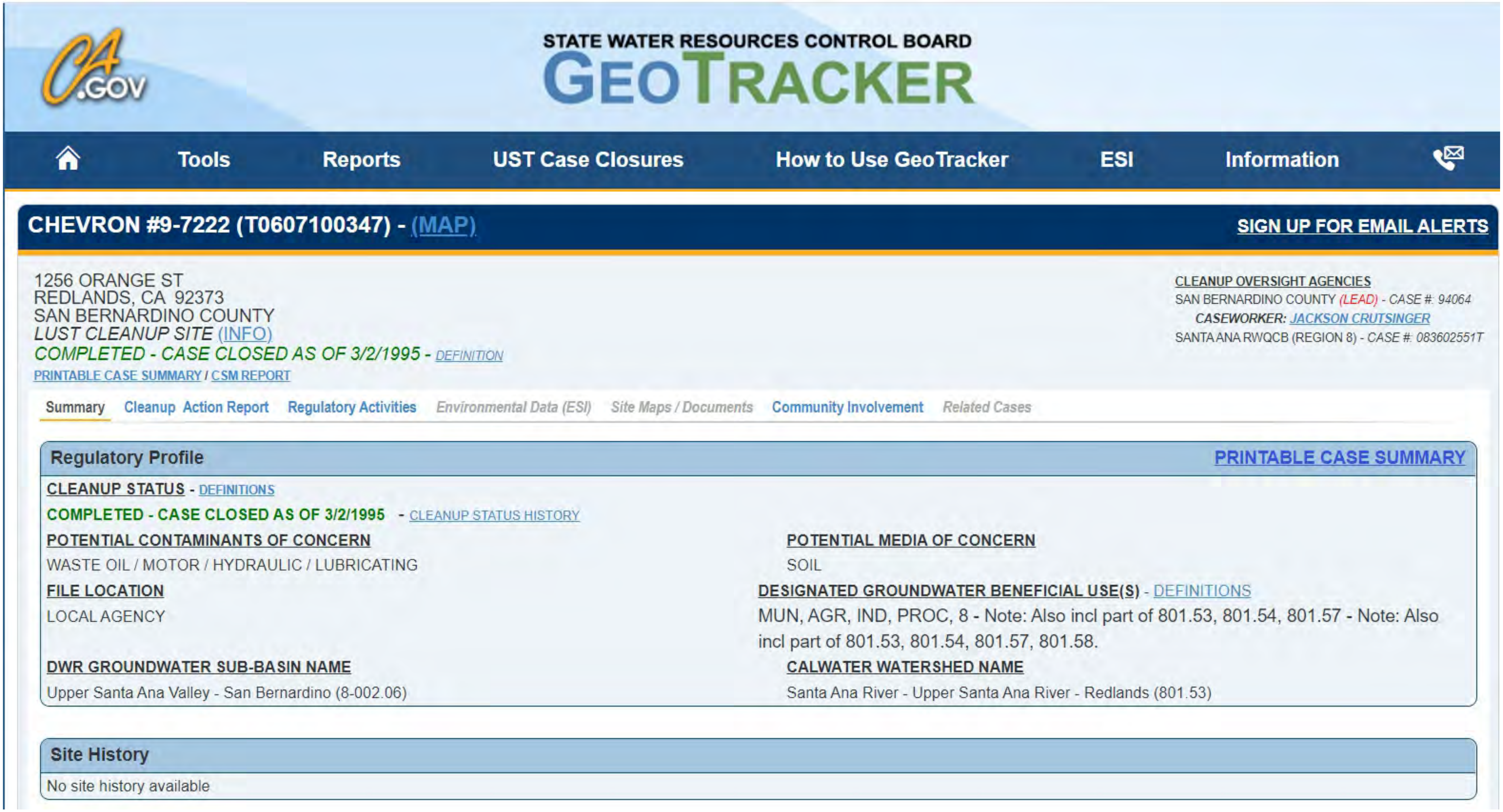
LUST Cleanup Site

Status: Completed - Case Closed
RB Case #: 083602551T
Loc Case #: 94064



LEGEND - CHOOSE MORE SITES ×

- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE
- 🟥 Irrigated Lands - REMOVE
- 🟥 Laboratory - REMOVE
- 🟥 Land Treatment Unit - REMOVE
- 🟥 Land fill - REMOVE
- 🟥 MS4 - REMOVE
- 🟥 Manufacturing NEC - REMOVE



CHEVRON #9-7222 (T0607100347) - (MAP)

SIGN UP FOR EMAIL ALERTS

1256 ORANGE ST
REDLANDS, CA 92373
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 3/2/1995 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 94064*
CASEWORKER: *JACKSON CRUTSINGER*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602551T*

Regulatory Profile

PRINTABLE CASE SUMMARY

CLEANUP STATUS - DEFINITIONS

COMPLETED - CASE CLOSED AS OF 3/2/1995 - CLEANUP STATUS HISTORY

POTENTIAL CONTAMINANTS OF CONCERN
WASTE OIL / MOTOR / HYDRAULIC / LUBRICATING

POTENTIAL MEDIA OF CONCERN
SOIL

FILE LOCATION
LOCAL AGENCY

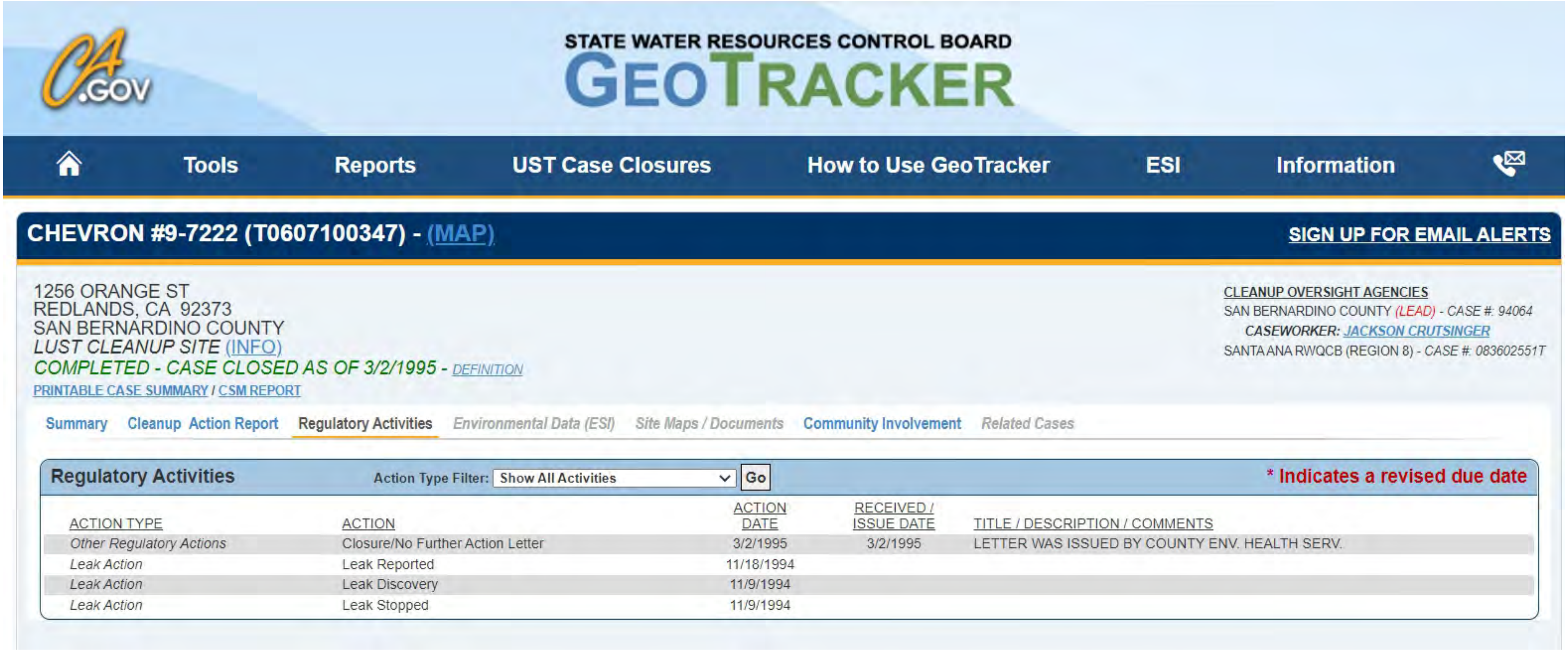
DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS
MUN, AGR, IND, PROC, 8 - Note: Also incl part of 801.53, 801.54, 801.57 - Note: Also incl part of 801.53, 801.54, 801.57, 801.58.

DWR GROUNDWATER SUB-BASIN NAME
Upper Santa Ana Valley - San Bernardino (8-002.06)

CALWATER WATERSHED NAME
Santa Ana River - Upper Santa Ana River - Redlands (801.53)

Site History

No site history available



CHEVRON #9-7222 (T0607100347) - (MAP)

1256 ORANGE ST
REDLANDS, CA 92373
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 3/2/1995 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

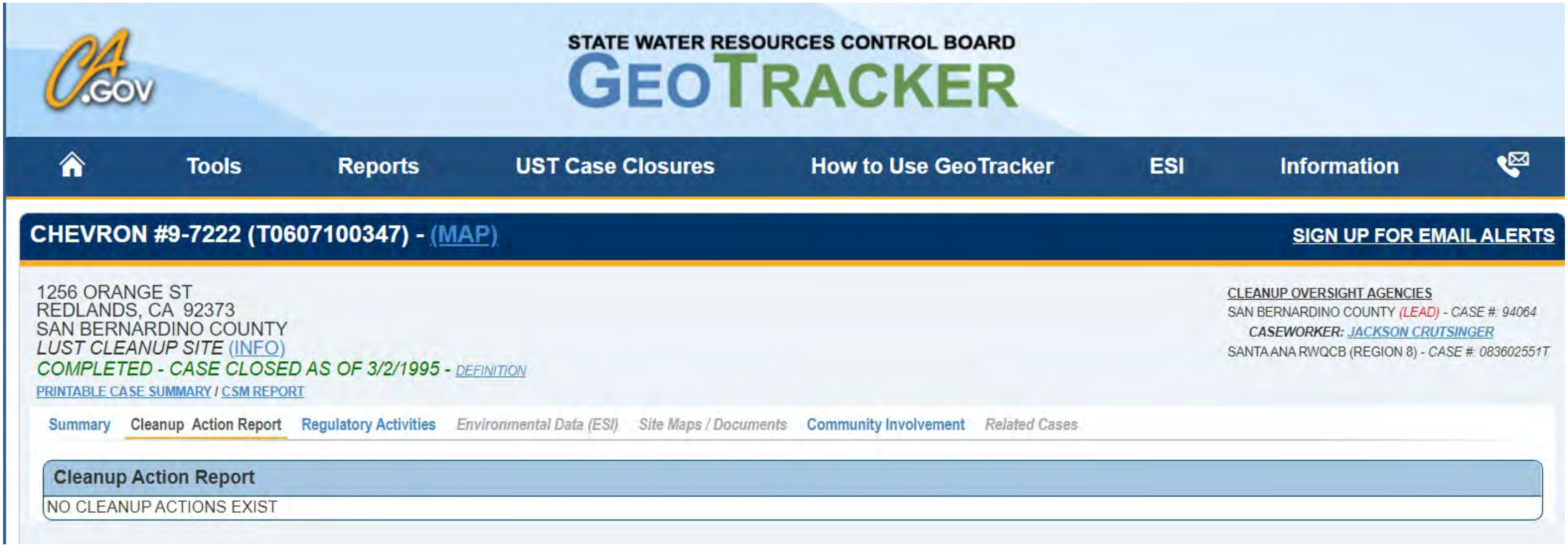
CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 94064*
CASEWORKER: *JACKSON CRUTSINGER*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602551T*

Regulatory Activities

Action Type Filter: Show All Activities

* Indicates a revised due date

ACTION TYPE	ACTION	ACTION DATE	RECEIVED / ISSUE DATE	TITLE / DESCRIPTION / COMMENTS
Other Regulatory Actions	Closure/No Further Action Letter	3/2/1995	3/2/1995	LETTER WAS ISSUED BY COUNTY ENV. HEALTH SERV.
Leak Action	Leak Reported	11/18/1994		
Leak Action	Leak Discovery	11/9/1994		
Leak Action	Leak Stopped	11/9/1994		



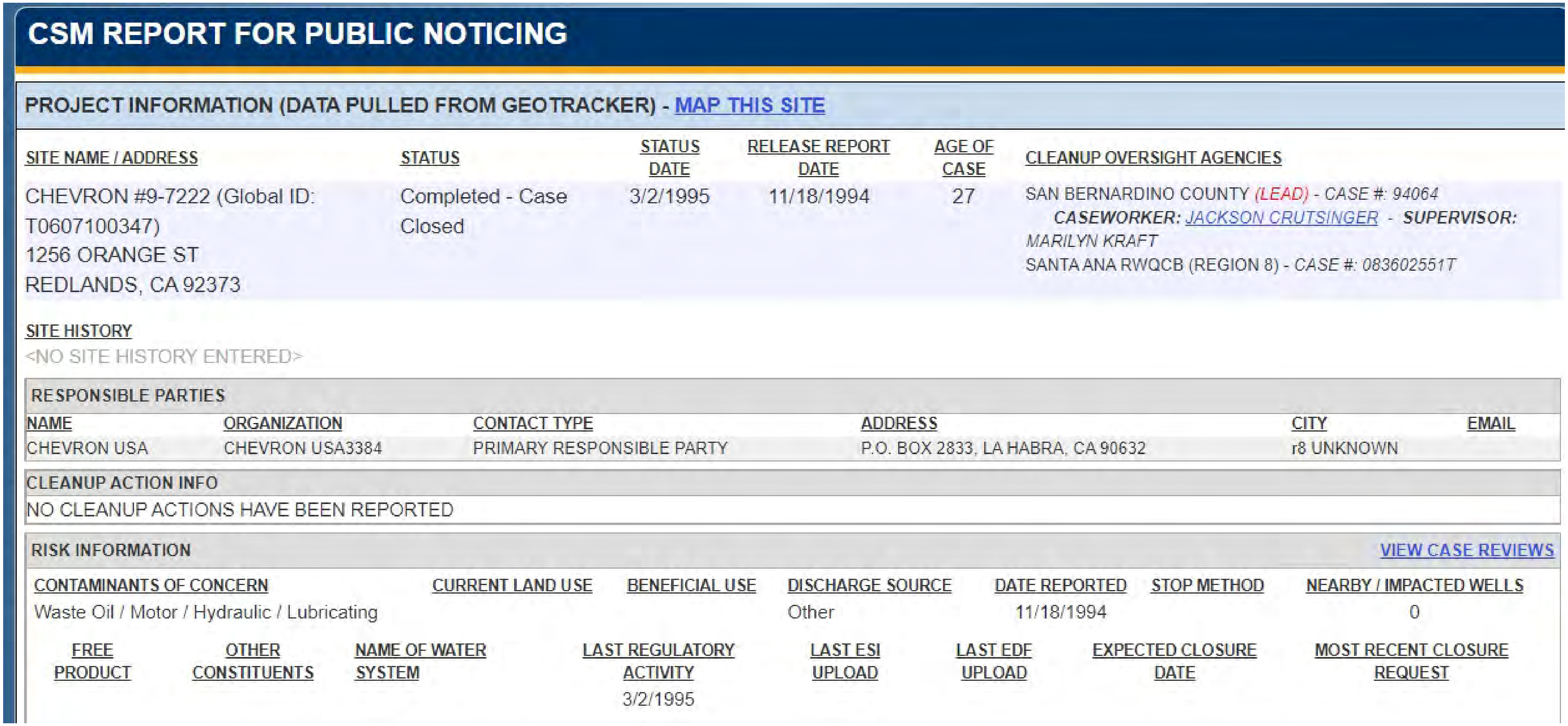
CHEVRON #9-7222 (T0607100347) - (MAP)

1256 ORANGE ST
REDLANDS, CA 92373
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 3/2/1995 - DEFINITION
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD) - CASE #: 94064*
CASEWORKER: *JACKSON CRUTSINGER*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083602551T*

Cleanup Action Report

NO CLEANUP ACTIONS EXIST



CSM REPORT FOR PUBLIC NOTICING

PROJECT INFORMATION (DATA PULLED FROM GEOTRACKER) - MAP THIS SITE

SITE NAME / ADDRESS	STATUS	STATUS DATE	RELEASE REPORT DATE	AGE OF CASE	CLEANUP OVERSIGHT AGENCIES
CHEVRON #9-7222 (Global ID: T0607100347) 1256 ORANGE ST REDLANDS, CA 92373	Completed - Case Closed	3/2/1995	11/18/1994	27	SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 94064* ***CASEWORKER:*** *JACKSON CRUTSINGER* - ***SUPERVISOR:*** *MARILYN KRAFT* SANTA ANA RWQCB (REGION 8) - *CASE #: 083602551T*

SITE HISTORY

<NO SITE HISTORY ENTERED>

RESPONSIBLE PARTIES

NAME	ORGANIZATION	CONTACT TYPE	ADDRESS	CITY	EMAIL
CHEVRON USA	CHEVRON USA3384	PRIMARY RESPONSIBLE PARTY	P.O. BOX 2833, LA HABRA, CA 90632	r8 UNKNOWN	

CLEANUP ACTION INFO

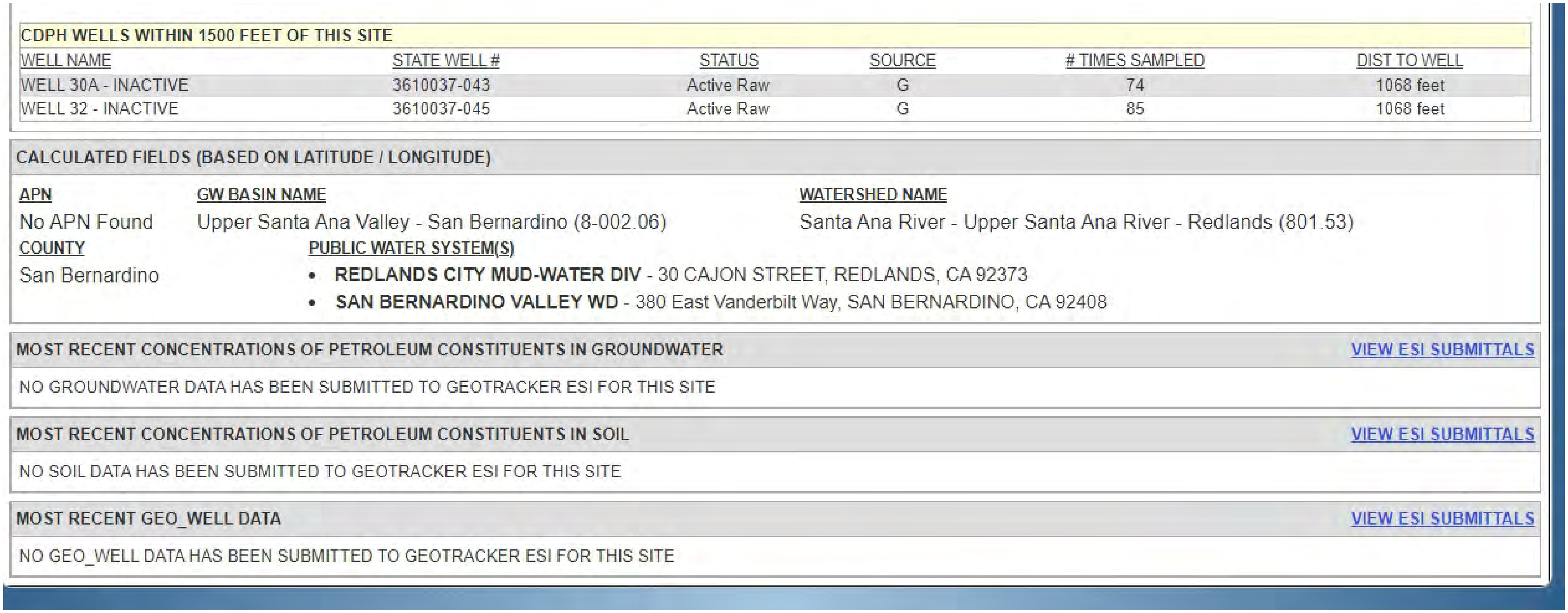
NO CLEANUP ACTIONS HAVE BEEN REPORTED

RISK INFORMATION

VIEW CASE REVIEWS

CONTAMINANTS OF CONCERN	CURRENT LAND USE	BENEFICIAL USE	DISCHARGE SOURCE	DATE REPORTED	STOP METHOD	NEARBY / IMPACTED WELLS
Waste Oil / Motor / Hydraulic / Lubricating			Other	11/18/1994		0

FREE PRODUCT	OTHER CONSTITUENTS	NAME OF WATER SYSTEM	LAST REGULATORY ACTIVITY	LAST ESI UPLOAD	LAST EDF UPLOAD	EXPECTED CLOSURE DATE	MOST RECENT CLOSURE REQUEST
			3/2/1995				



CDPH WELLS WITHIN 1500 FEET OF THIS SITE

WELL NAME	STATE WELL #	STATUS	SOURCE	# TIMES SAMPLED	DIST TO WELL
WELL 30A - INACTIVE	3610037-043	Active Raw	G	74	1068 feet
WELL 32 - INACTIVE	3610037-045	Active Raw	G	85	1068 feet

CALCULATED FIELDS (BASED ON LATITUDE / LONGITUDE)

APN	GW BASIN NAME	WATERSHED NAME
No APN Found	Upper Santa Ana Valley - San Bernardino (8-002.06)	Santa Ana River - Upper Santa Ana River - Redlands (801.53)

COUNTY

San Bernardino

PUBLIC WATER SYSTEM(S)

- **REDLANDS CITY MUD-WATER DIV** - 30 CAJON STREET, REDLANDS, CA 92373
- **SAN BERNARDINO VALLEY WD** - 380 East Vanderbilt Way, SAN BERNARDINO, CA 92408

MOST RECENT CONCENTRATIONS OF PETROLEUM CONSTITUENTS IN GROUNDWATER VIEW ESI SUBMITTALS

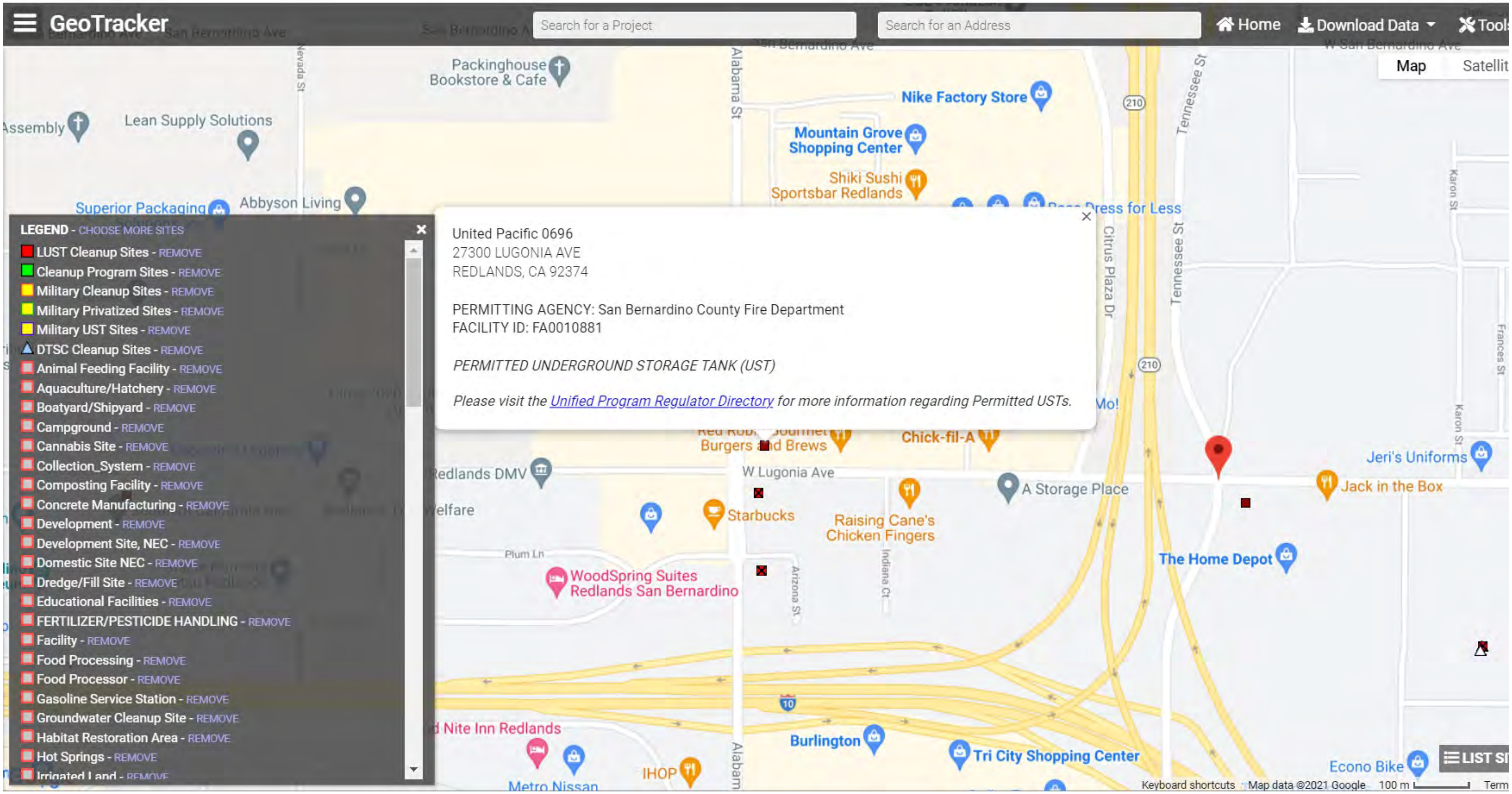
NO GROUNDWATER DATA HAS BEEN SUBMITTED TO GEOTRACKER ESI FOR THIS SITE

MOST RECENT CONCENTRATIONS OF PETROLEUM CONSTITUENTS IN SOIL VIEW ESI SUBMITTALS

NO SOIL DATA HAS BEEN SUBMITTED TO GEOTRACKER ESI FOR THIS SITE

MOST RECENT GEO_WELL DATA VIEW ESI SUBMITTALS

NO GEO_WELL DATA HAS BEEN SUBMITTED TO GEOTRACKER ESI FOR THIS SITE



LEGEND - CHOOSE MORE SITES

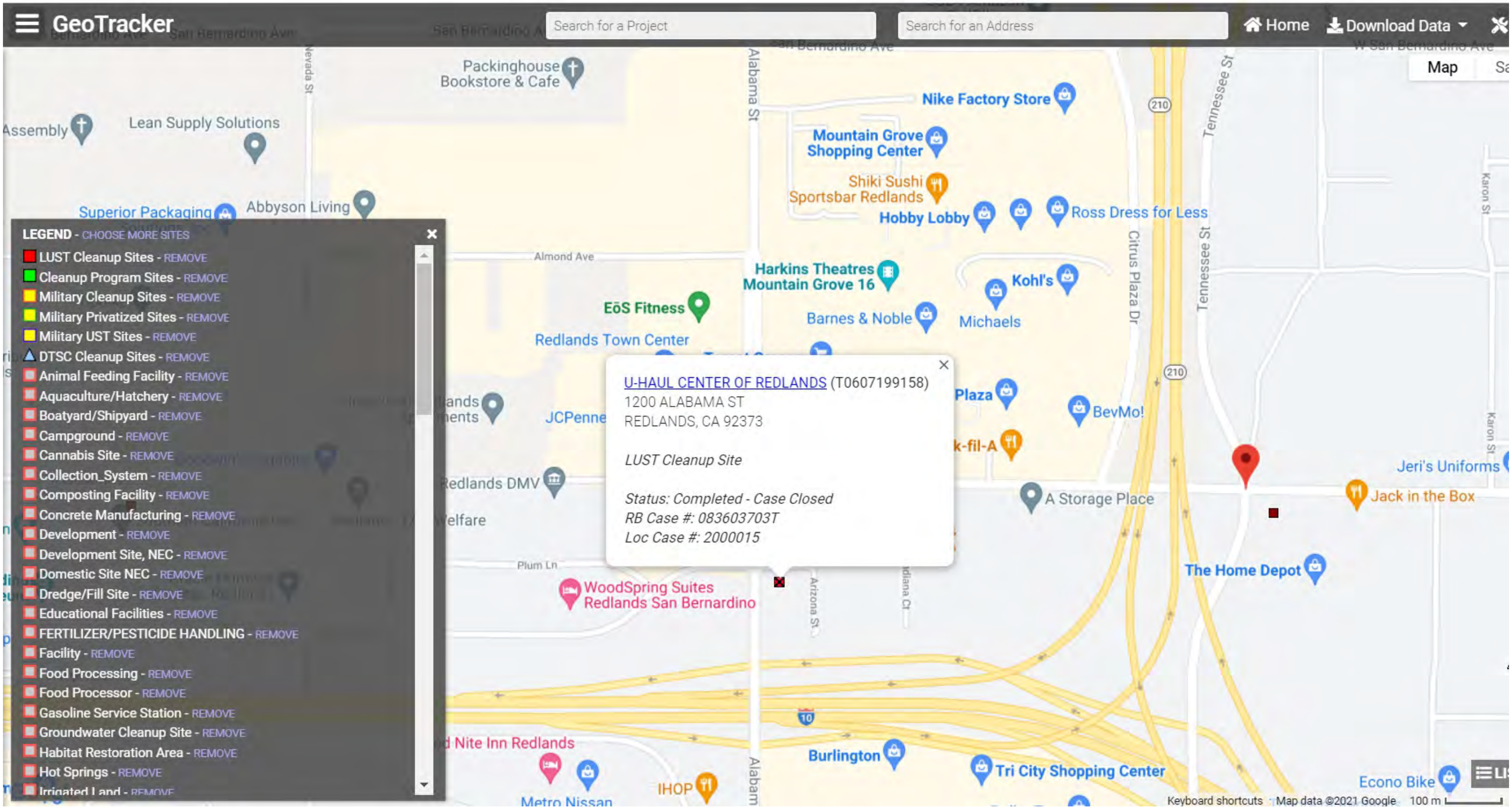
- 🟥 LUST Cleanup Sites - REMOVE
- 🟩 Cleanup Program Sites - REMOVE
- 🟨 Military Cleanup Sites - REMOVE
- 🟨 Military Privatized Sites - REMOVE
- 🟨 Military UST Sites - REMOVE
- △ DTSC Cleanup Sites - REMOVE
- 🟥 Animal Feeding Facility - REMOVE
- 🟥 Aquaculture/Hatchery - REMOVE
- 🟥 Boatyard/Shipyard - REMOVE
- 🟥 Campground - REMOVE
- 🟥 Cannabis Site - REMOVE
- 🟥 Collection_System - REMOVE
- 🟥 Composting Facility - REMOVE
- 🟥 Concrete Manufacturing - REMOVE
- 🟥 Development - REMOVE
- 🟥 Development Site, NEC - REMOVE
- 🟥 Domestic Site NEC - REMOVE
- 🟥 Dredge/Fill Site - REMOVE
- 🟥 Educational Facilities - REMOVE
- 🟥 FERTILIZER/PESTICIDE HANDLING - REMOVE
- 🟥 Facility - REMOVE
- 🟥 Food Processing - REMOVE
- 🟥 Food Processor - REMOVE
- 🟥 Gasoline Service Station - REMOVE
- 🟥 Groundwater Cleanup Site - REMOVE
- 🟥 Habitat Restoration Area - REMOVE
- 🟥 Hot Springs - REMOVE
- 🟥 Irrigated Land - REMOVE

United Pacific 0696
27300 LUGONIA AVE
REDLANDS, CA 92374

PERMITTING AGENCY: San Bernardino County Fire Department
FACILITY ID: FA0010881

PERMITTED UNDERGROUND STORAGE TANK (UST)

Please visit the Unified Program Regulator Directory for more information regarding Permitted USTs.



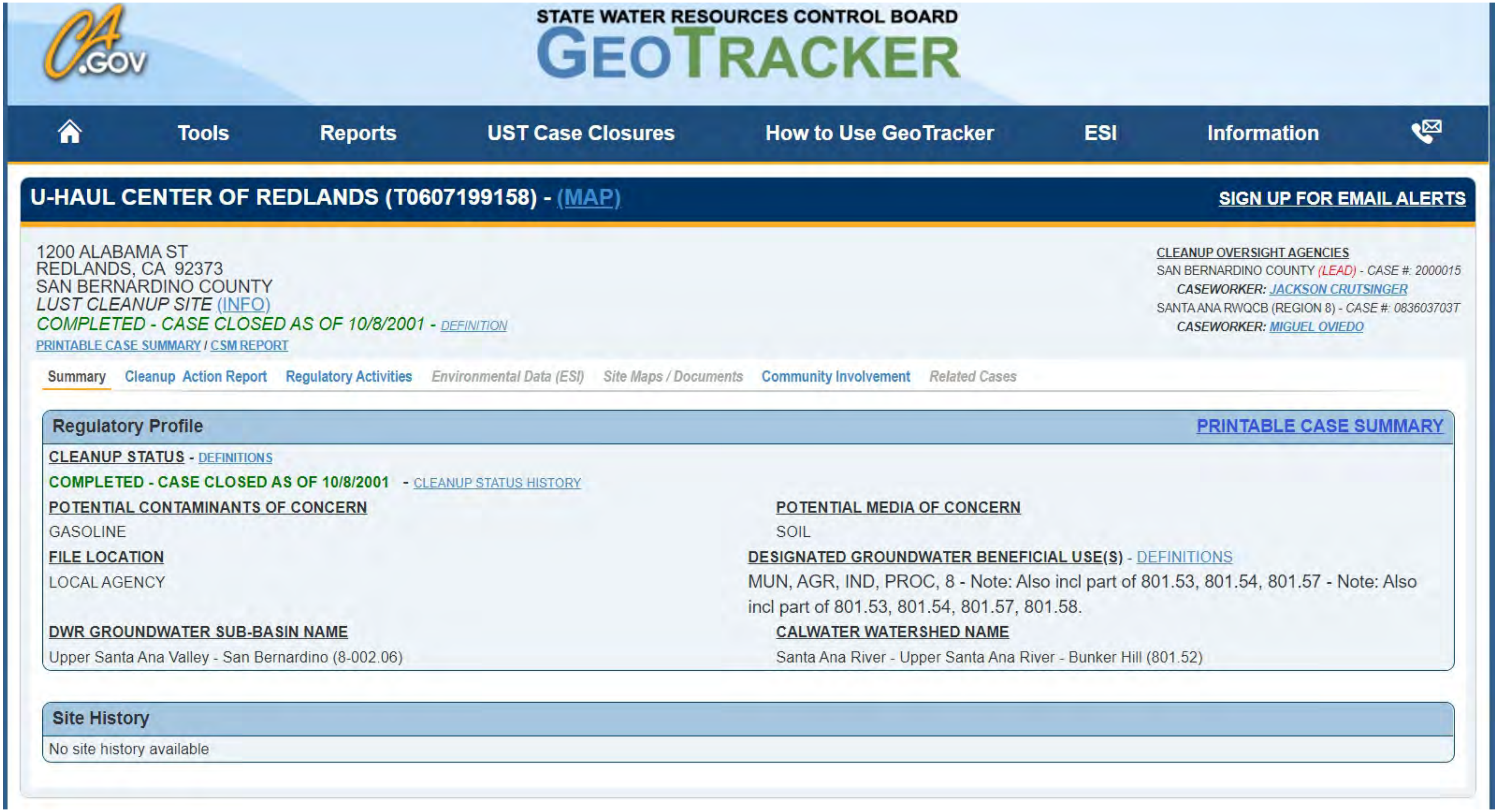
LEGEND - CHOOSE MORE SITES

- 🟥 LUST Cleanup Sites - REMOVE
- 🟩 Cleanup Program Sites - REMOVE
- 🟨 Military Cleanup Sites - REMOVE
- 🟨 Military Privatized Sites - REMOVE
- 🟨 Military UST Sites - REMOVE
- △ DTSC Cleanup Sites - REMOVE
- ■ Animal Feeding Facility - REMOVE
- ■ Aquaculture/Hatchery - REMOVE
- ■ Boatyard/Shipyard - REMOVE
- ■ Campground - REMOVE
- ■ Cannabis Site - REMOVE
- ■ Collection_System - REMOVE
- ■ Composting Facility - REMOVE
- ■ Concrete Manufacturing - REMOVE
- ■ Development - REMOVE
- ■ Development Site, NEC - REMOVE
- ■ Domestic Site NEC - REMOVE
- ■ Dredge/Fill Site - REMOVE
- ■ Educational Facilities - REMOVE
- ■ FERTILIZER/PESTICIDE HANDLING - REMOVE
- ■ Facility - REMOVE
- ■ Food Processing - REMOVE
- ■ Food Processor - REMOVE
- ■ Gasoline Service Station - REMOVE
- ■ Groundwater Cleanup Site - REMOVE
- ■ Habitat Restoration Area - REMOVE
- ■ Hot Springs - REMOVE
- ■ Irrigated Land - REMOVE

U-HAUL CENTER OF REDLANDS (T0607199158)
1200 ALABAMA ST
REDLANDS, CA 92373

LUST Cleanup Site

Status: Completed - Case Closed
RB Case #: 083603703T
Loc Case #: 2000015



U-HAUL CENTER OF REDLANDS (T0607199158) - (MAP)

1200 ALABAMA ST
REDLANDS, CA 92373
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 10/8/2001 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 2000015*
CASEWORKER: *JACKSON CRUTSINGER*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083603703T*
CASEWORKER: *MIGUEL OVIEDO*

Regulatory Profile

PRINTABLE CASE SUMMARY

CLEANUP STATUS - DEFINITIONS

COMPLETED - CASE CLOSED AS OF 10/8/2001 - CLEANUP STATUS HISTORY

POTENTIAL CONTAMINANTS OF CONCERN
GASOLINE

POTENTIAL MEDIA OF CONCERN
SOIL

FILE LOCATION
LOCAL AGENCY

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS
MUN, AGR, IND, PROC, 8 - Note: Also incl part of 801.53, 801.54, 801.57 - Note: Also incl part of 801.53, 801.54, 801.57, 801.58.

DWR GROUNDWATER SUB-BASIN NAME
Upper Santa Ana Valley - San Bernardino (8-002.06)

CALWATER WATERSHED NAME
Santa Ana River - Upper Santa Ana River - Bunker Hill (801.52)

Site History

No site history available

U-HAUL CENTER OF REDLANDS (T0607199158) - (MAP)

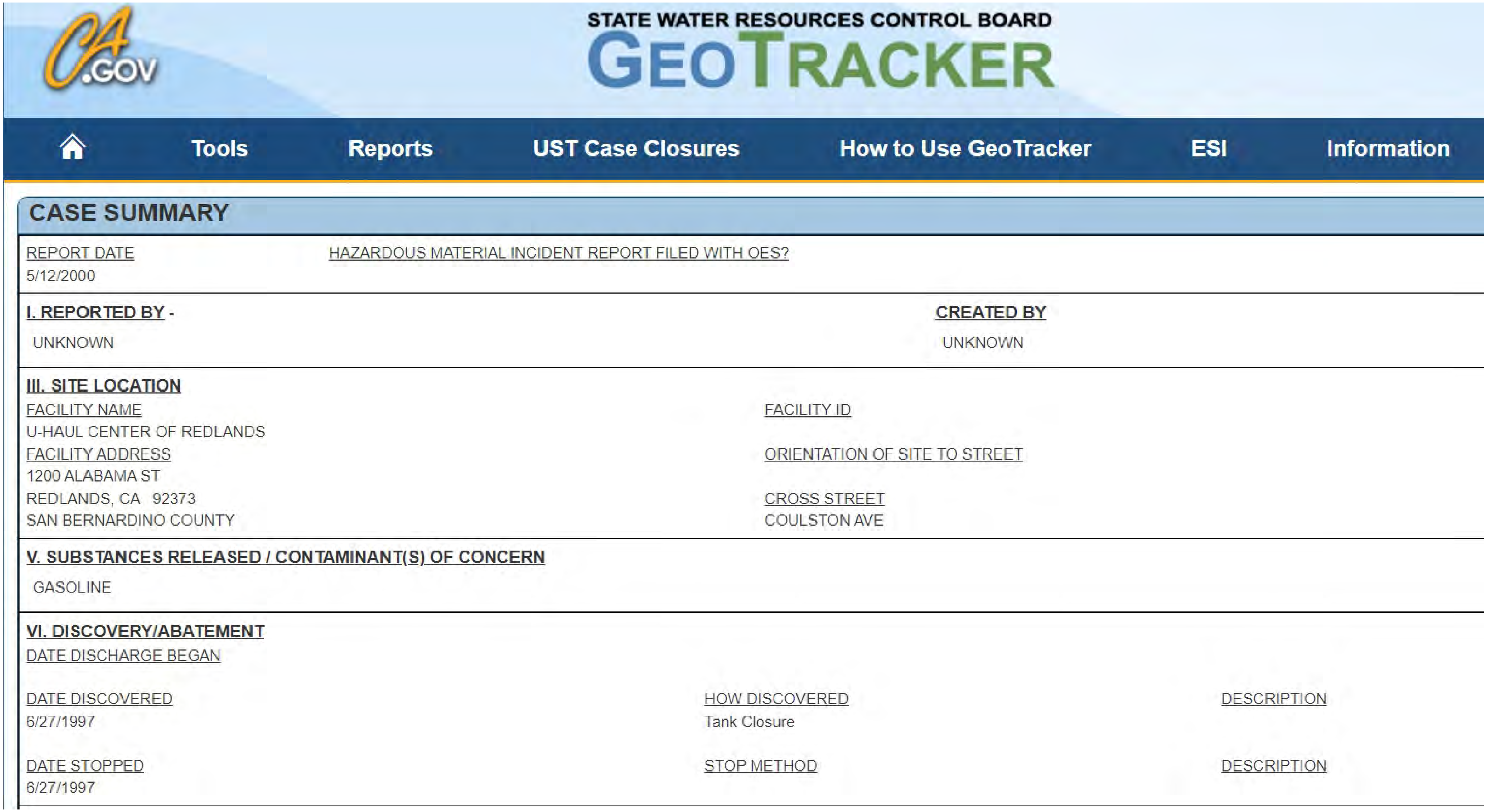
SIGN UP FOR EMAIL ALERTS

1200 ALABAMA ST
REDLANDS, CA 92373
SAN BERNARDINO COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 10/8/2001 - *DEFINITION*
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
SAN BERNARDINO COUNTY *(LEAD)* - *CASE #: 2000015*
CASEWORKER: ***JACKSON CRUTSINGER***
SANTA ANA RWQCB (REGION 8) - *CASE #: 083603703T*
CASEWORKER: ***MIGUEL OVIEDO***

Cleanup Action Report

NO CLEANUP ACTIONS EXIST



CASE SUMMARY

REPORT DATE
5/12/2000

HAZARDOUS MATERIAL INCIDENT REPORT FILED WITH OES?

I. REPORTED BY -
UNKNOWN

CREATED BY
UNKNOWN

III. SITE LOCATION

FACILITY NAME
U-HAUL CENTER OF REDLANDS

FACILITY ID

FACILITY ADDRESS
1200 ALABAMA ST
REDLANDS, CA 92373
SAN BERNARDINO COUNTY

ORIENTATION OF SITE TO STREET

CROSS STREET
COULSTON AVE

V. SUBSTANCES RELEASED / CONTAMINANT(S) OF CONCERN

GASOLINE

VI. DISCOVERY/ABATEMENT

DATE DISCHARGE BEGAN

DATE DISCOVERED	HOW DISCOVERED	DESCRIPTION
6/27/1997	Tank Closure	
DATE STOPPED	STOP METHOD	DESCRIPTION
6/27/1997		

VII. SOURCE/CAUSE

SOURCE OF DISCHARGE	CAUSE OF DISCHARGE
Other	Unknown

DISCHARGE DESCRIPTION

VIII. CASE TYPE

CASE TYPE
Soil

IX. REMEDIAL ACTION

NO REMEDIAL ACTIONS ENTERED

X. GENERAL COMMENTS

XI. CERTIFICATION

I HEREBY CERTIFY THAT THE INFORMATION REPORTED HEREIN IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

XII. REGULATORY USE ONLY

LOCAL AGENCY CASE NUMBER	REGIONAL BOARD CASE NUMBER
2000015	083603703T

LOCAL AGENCY

CONTACT NAME	INITIALS	ORGANIZATION_NAME	EMAIL ADDRESS
JACKSON CRUTSINGER	JC	SAN BERNARDINO COUNTY	jcrutsinger@sbcfire.org

ADDRESS
620 SOUTH E STREET
SAN BERNARDINO, CA 92415-0153

CONTACT DESCRIPTION

PHONE TYPE	PHONE NUMBER	EXTENSION
OFFICE	(909)-386-8419	

XII. REGULATORY USE ONLY

LOCAL AGENCY CASE NUMBER	REGIONAL BOARD CASE NUMBER
2000015	083603703T

LOCAL AGENCY

CONTACT NAME	INITIALS	ORGANIZATION_NAME	EMAIL ADDRESS
JACKSON CRUTSINGER	JC	SAN BERNARDINO COUNTY	jcrutsinger@sbcfire.org

ADDRESS
620 SOUTH E STREET
SAN BERNARDINO, CA 92415-0153

CONTACT DESCRIPTION

PHONE TYPE	**PHONE NUMBER**	**EXTENSION**
OFFICE	(909)-386-8419	

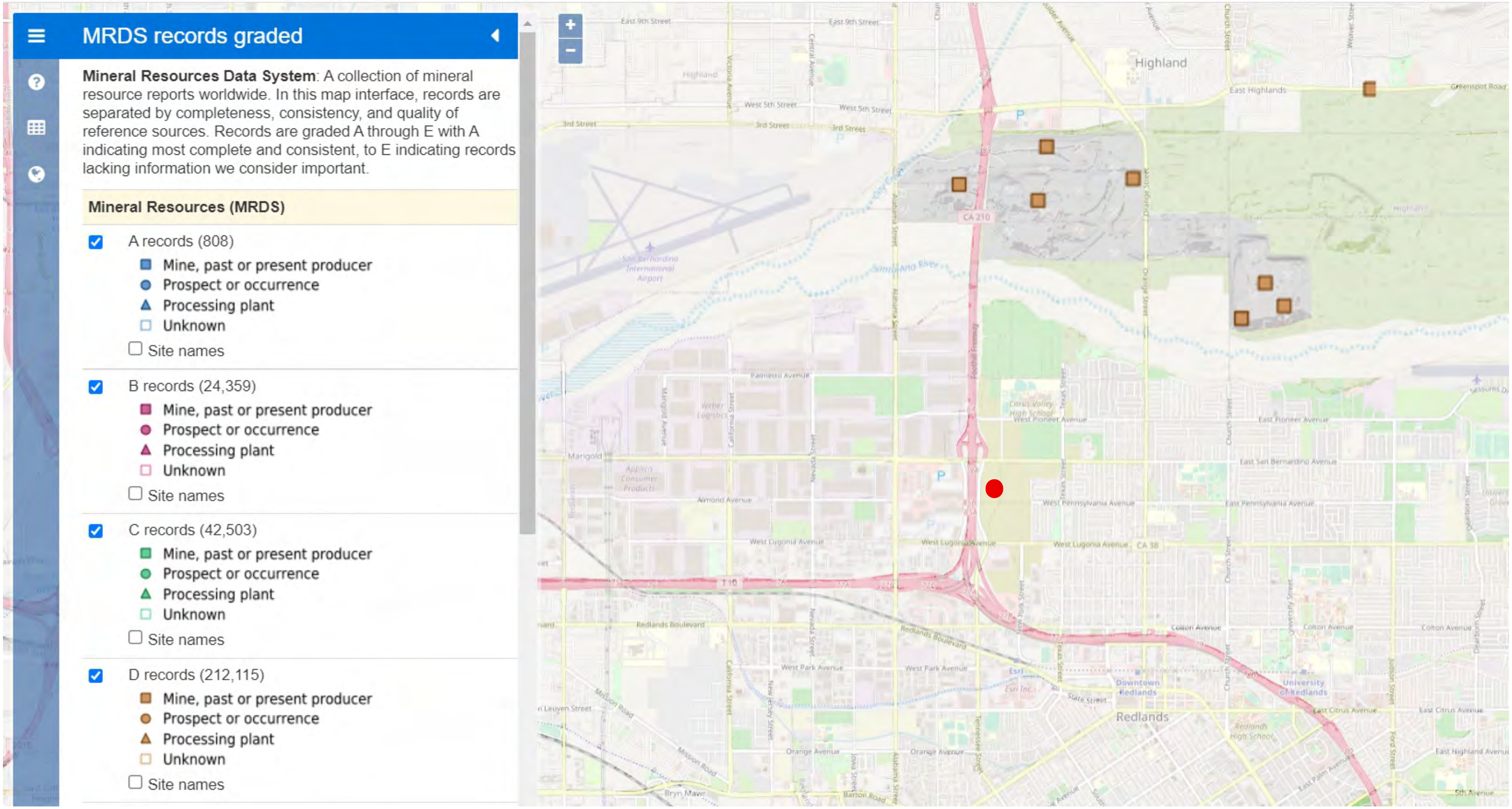
REGIONAL BOARD

CONTACT NAME	INITIALS	ORGANIZATION_NAME	EMAIL ADDRESS
MIGUEL OVIEDO	MAO	SANTA ANA RWQCB (REGION 8)	miguel.oviedo@waterboards.ca.gov

ADDRESS
3737 Main Street, Suite 500
RIVERSIDE, CA 92501

CONTACT DESCRIPTION

PHONE TYPE	**PHONE NUMBER**	**EXTENSION**
PHONE	(951)-782-3238	



MRDS records graded

Mineral Resources Data System: A collection of mineral resource reports worldwide. In this map interface, records are separated by completeness, consistency, and quality of reference sources. Records are graded A through E with A indicating most complete and consistent, to E indicating records lacking information we consider important.

Mineral Resources (MRDS)

☑ A records (808)
- ■ Mine, past or present producer
- ● Prospect or occurrence
- ▲ Processing plant
- □ Unknown

☐ Site names

☑ B records (24,359)
- ■ Mine, past or present producer
- ● Prospect or occurrence
- ▲ Processing plant
- □ Unknown

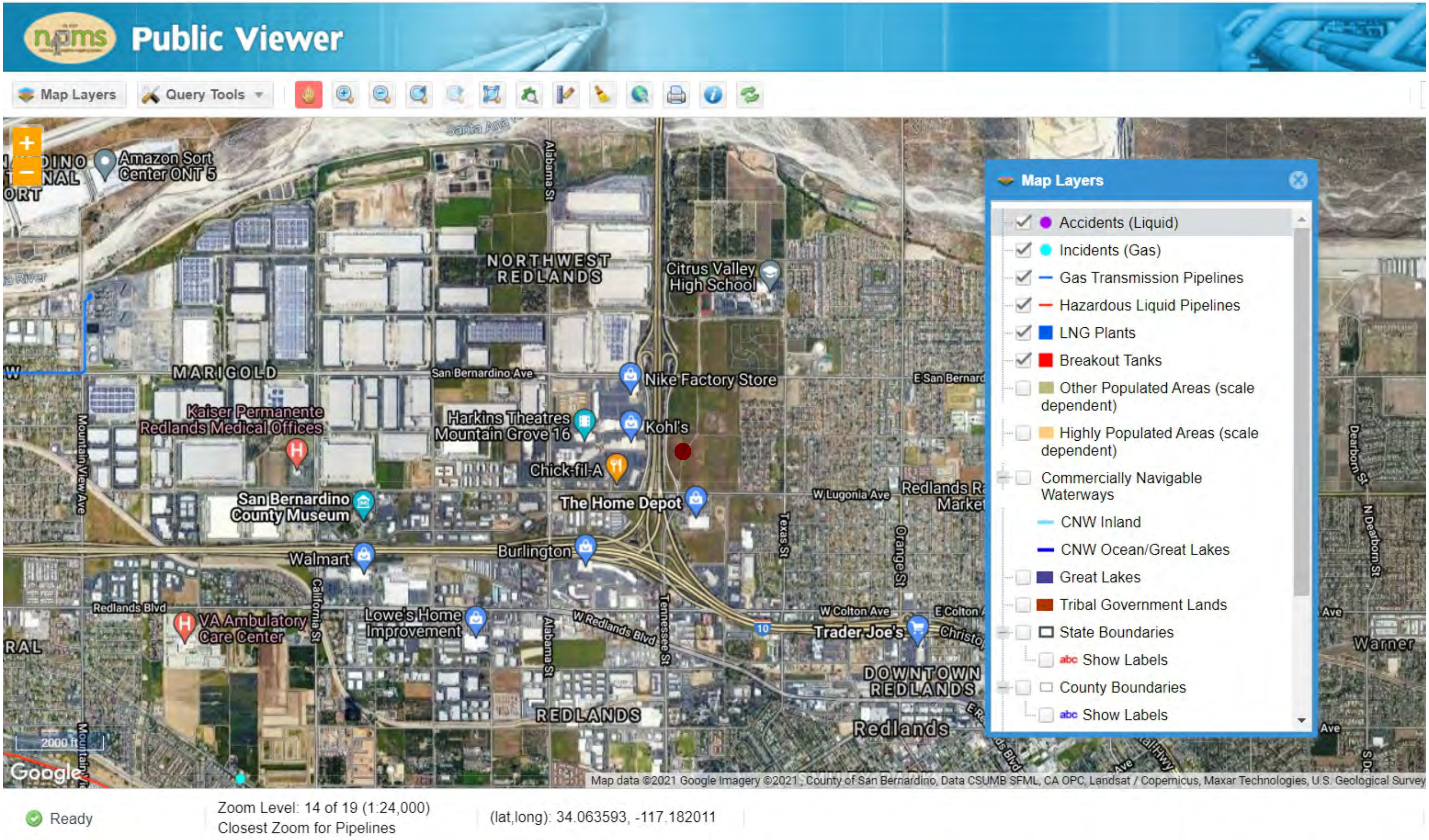
☐ Site names

☑ C records (42,503)
- ■ Mine, past or present producer
- ● Prospect or occurrence
- ▲ Processing plant
- □ Unknown

☐ Site names

☑ D records (212,115)
- ■ Mine, past or present producer
- ● Prospect or occurrence
- ▲ Processing plant
- □ Unknown

☐ Site names



Map Layers

- ☑ ● Accidents (Liquid)
- ☑ ● Incidents (Gas)
- ☑ — Gas Transmission Pipelines
- ☑ — Hazardous Liquid Pipelines
- ☑ ■ LNG Plants
- ☑ ■ Breakout Tanks
- ☐ ■ Other Populated Areas (scale dependent)
- ☐ ■ Highly Populated Areas (scale dependent)
- ☐ Commercially Navigable Waterways
  - — CNW Inland
  - — CNW Ocean/Great Lakes
- ☐ ■ Great Lakes
- ☐ ■ Tribal Government Lands
- ☐ □ State Boundaries
  - ☐ abc Show Labels
- ☐ □ County Boundaries
  - ☐ abc Show Labels

Map data ©2021 Google Imagery ©2021 , County of San Bernardino, Data CSUMB SFML, CA OPC, Landsat / Copernicus, Maxar Technologies, U.S. Geological Survey

Ready

Zoom Level: 14 of 19 (1:24,000)
Closest Zoom for Pipelines

(lat,long): 34.063593, -117.182011

APPENDIX C

EDR HISTORICAL REPORTS

LPA Redlands Project
NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 06794904.2r
December 20, 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

SECTION **PAGE**

GEOCHECK ADDENDUM

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

NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

COORDINATES

Latitude (North):	34.0724320 - 34ˆ 4' 20.75''
Longitude (West):	117.1986060 - 117ˆ 11' 54.98''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	481674.3
UTM Y (Meters):	3770010.2
Elevation:	1286 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12014994 REDLANDS, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	THE HOME DEPOT STORE	1151 W LUGONIA AVE	CERS HAZ WASTE, San Bern. Co. Permit, CERS	Higher	568, 0.108, South
A2	HOME DEPOT 1013	1151 W LUGONIA AVE	RCRA-SQG, HAZNET, HWTS	Higher	568, 0.108, South
A3	7-ELEVEN INC #33292	1161 W LUGONIA AVE	CERS HAZ WASTE, CERS TANKS, San Bern. Co. Permit,...	Lower	585, 0.111, South
A4	7 ELEVEN STORE 33292	1161 W LUGONIA AVE	RCRA NonGen / NLR	Lower	585, 0.111, South
A5	7-ELEVEN INC #33292	1161 W LUGONIA AVE	UST	Lower	585, 0.111, South
B6	PTJV-CA LP DBA THRIV	27580 W LUGONIA AVE	RCRA NonGen / NLR	Lower	860, 0.163, WSW
B7	PETCO #1123	27580 W LUGONIA AVE	CERS HAZ WASTE, San Bern. Co. Permit, CERS	Lower	860, 0.163, WSW
B8	PETCO STORE #1123	27580 W LUGONIA AVE	RCRA NonGen / NLR	Lower	860, 0.163, WSW
B9	FIVE BELOW INC	27592 W LUGONIA AVE	RCRA NonGen / NLR	Lower	899, 0.170, SW
B10	FIVE BELOW INC	27592 W LUGONIA AVE	CERS HAZ WASTE, HAZNET, San Bern. Co. Permit,...	Lower	899, 0.170, SW
B11	PARTY CITY #1510 RED	27588 LUGONIA AVE ST	San Bern. Co. Permit	Lower	913, 0.173, SW
B12	PARTY CITY #1510 RED	27588 W LUGONIA AVE	CERS HAZ WASTE, CERS	Lower	913, 0.173, SW
B13	PARTY CITY CORPORATI	27588 W LUGONIA AVE	RCRA NonGen / NLR	Lower	913, 0.173, SW
C14	AL CALIFORNIA LLC DB	27641 SAN BERNARDINO	RCRA NonGen / NLR	Lower	1138, 0.216, NW
C15	AL CALIFORNIA LLC DB	27641 SAN BERNARDINO	CERS HAZ WASTE, San Bern. Co. Permit, CERS, HWTS	Lower	1138, 0.216, NW
D16	KOHL'S, INC. - STORE	27540 W LUGONIA AVE	CERS HAZ WASTE, San Bern. Co. Permit, CERS	Lower	1155, 0.219, WSW
D17	KOHL'S INC - STORE #	27540 LUGONIA AVE	RCRA NonGen / NLR	Lower	1155, 0.219, WSW
D18	MICHAELS STORES INC	27543 LUGONIA AVE	RCRA NonGen / NLR	Lower	1165, 0.221, WSW
D19	MICHAELS STORE #4730	27534 LUGONIA AVE	San Bern. Co. Permit	Lower	1189, 0.225, WSW
E20	SEPHORA #1236	27514 LUGONIA AVE	RCRA NonGen / NLR	Lower	1189, 0.225, West
E21	SEPHORA #1236	27514 LUGONIA AVE	CERS HAZ WASTE, HAZNET, San Bern. Co. Permit, HWTS	Lower	1189, 0.225, West
D22	BATH & BODY WORKS #2	27530 W LUGONIA AVE	CERS HAZ WASTE, HAZNET, San Bern. Co. Permit,...	Lower	1211, 0.229, WSW
D23	BATH & BODY WORKS #2	27530 W LUGONIA AVE	RCRA NonGen / NLR	Lower	1211, 0.229, WSW
D24	CHICK-FIL-A @ CITRUS	27520 LUGONIA AVE	San Bern. Co. Permit	Lower	1263, 0.239, WSW
F25	WELL 31-A	1401 TEXAS ST	SWEEPS UST, HIST UST, CA FID UST, HIST CORTESE	Higher	1786, 0.338, East
F26	TEXAS STREET PUMPING	1401 TEXAS STREET	LUST, HIST UST, EMI, San Bern. Co. Permit, CERS	Higher	1786, 0.338, East
F27	TEXAS STREET PUMPING	1401 TEXAS STREET	LUST, Cortese	Higher	1786, 0.338, East
G28	TELEDYNE BATTERY	840 BROCKTON AVE	LUST	Higher	1801, 0.341, SE
G29	TELEDYNE INC TELEDYN	840 W BROCKTON AVE	CORRACTS, RCRA-TSDF, RCRA-LQG, 2020 COR ACTION,...	Higher	2041, 0.387, SE
G30	TELEDYNE BATTERY	840 W BROCKTON AVE	ENVIROSTOR, LUST, CERS HAZ WASTE, SWEEPS UST, HIST	Higher	2041, 0.387, SE
G31	TELEDYNE	840 W BROCKTON AVENU	CPS-SLIC	Higher	2041, 0.387, SE
32	STORM,REDLANDS	840 WEST BROCKTON AV	WMUDS/SWAT	Higher	2398, 0.454, SE
33	REDLANDS FARMING COM	780 WEST SAN BERNARD	ENVIROSTOR	Higher	2634, 0.499, NE
34	NEW HIGH SCHOOL NO.3	TEXAS STREET/W. PION	ENVIROSTOR, SCH, CERS	Higher	3549, 0.672, NNE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

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

STANDARD ENVIRONMENTAL RECORDS

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 Delisted NPL sites

Delisted NPL	National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

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

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE	Superfund Enterprise Management System Archive

Lists of Federal RCRA generators

RCRA-LQG	RCRA - Large Quantity Generators
RCRA-VSQG	RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

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

Federal ERNS list

ERNS	Emergency Response Notification System

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
AST	Aboveground Petroleum Storage Tank Facilities
INDIAN UST	Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

VCP	Voluntary Cleanup Program Properties
INDIAN VCP	Voluntary Cleanup Priority Listing

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

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

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL	Delisted National Clandestine Laboratory Register
HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
CDL	Clandestine Drug Labs
Toxic Pits	Toxic Pits Cleanup Act Sites
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
HIST UST	Hazardous Substance Storage Container Database

CA FID UST	Facility Inventory Database

Local Land Records

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

Records of Emergency Release Reports

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

Other Ascertainable Records

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

EXECUTIVE SUMMARY

CA BOND EXP. PLAN	Bond Expenditure Plan
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
CIWQS	California Integrated Water Quality System
CERS	CERS
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)
MINES MRDS	Mineral Resources Data System
HWTS	Hazardous Waste Tracking System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

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

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List
RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

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

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

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

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 09/13/2021 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TELEDYNE INC TELEDYN EPA ID:: CAD008386641	***840 W BROCKTON AVE***	***SE 1/4 - 1/2 (0.387 mi.)***	***G29***	***131***

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 09/13/2021 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TELEDYNE INC TELEDYN EPA ID:: CAD008386641	***840 W BROCKTON AVE***	***SE 1/4 - 1/2 (0.387 mi.)***	***G29***	***131***

Lists of Federal RCRA generators

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 09/13/2021 has revealed that there is 1

RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HOME DEPOT 1013 EPA ID:: CAR000169136	***1151 W LUGONIA AVE***	***S 0 - 1/8 (0.108 mi.)***	***A2***	***13***

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TELEDYNE BATTERY Facility Id: 36360017 Facility Id: 80001578 Status: Refer: RCRA Status: No Further Action	***840 W BROCKTON AVE***	***SE 1/4 - 1/2 (0.387 mi.)***	***G30***	***236***
REDLANDS FARMING COM Facility Id: 36350019 Status: Refer: Other Agency	780 WEST SAN BERNARD	NE 1/4 - 1/2 (0.499 mi.)	33	298
NEW HIGH SCHOOL NO.3 Facility Id: 36010062 Status: No Further Action	***TEXAS STREET/W. PION***	***NNE 1/2 - 1 (0.672 mi.)***	***34***	***300***

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 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TEXAS STREET PUMPING Database: LUST, Date of Government Version: 09/07/2021 Status: Completed - Case Closed	***1401 TEXAS STREET***	***E 1/4 - 1/2 (0.338 mi.)***	***F26***	***125***

Global Id: T0607100281

TEXAS STREET PUMPING	***1401 TEXAS STREET***	***E 1/4 - 1/2 (0.338 mi.)***	***F27***	***129***

Database: LUST REG 8, Date of Government Version: 02/14/2005
Facility Status: Case Closed
Global ID: T0607100281

TELEDYNE BATTERY	840 BROCKTON AVE	SE 1/4 - 1/2 (0.341 mi.)	G28	130

Database: LUST REG 8, Date of Government Version: 02/14/2005
Facility Status: Case Closed
Global ID: T0607100086

TELEDYNE BATTERY	***840 W BROCKTON AVE***	***SE 1/4 - 1/2 (0.387 mi.)***	***G30***	***236***

Database: LUST, Date of Government Version: 09/07/2021
Status: Completed - Case Closed
Global Id: T0607100086

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TELEDYNE	840 W BROCKTON AVENU	SE 1/4 - 1/2 (0.387 mi.)	G31	296

Database: SLIC REG 8, Date of Government Version: 04/03/2008
Facility Status: Post-Investigation/Remediation Monitoring

Lists of state and tribal registered storage tanks

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board’s Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
7-ELEVEN INC #33292	1161 W LUGONIA AVE	S 0 - 1/8 (0.111 mi.)	A5	72

Database: UST, Date of Government Version: 09/07/2021
Facility Id: FA0007633

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

EXECUTIVE SUMMARY

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there is 1 WMUDS/SWAT site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
STORM,REDLANDS	840 WEST BROCKTON AV	SE 1/4 - 1/2 (0.454 mi.)	32	297

Local Lists of Hazardous waste / Contaminated Sites

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

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 07/15/2021 has revealed that there are 9 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THE HOME DEPOT STORE	***1151 W LUGONIA AVE***	***S 0 - 1/8 (0.108 mi.)***	***A1***	***9***

Lower Elevation	Address	Direction / Distance	Map ID	Page
7-ELEVEN INC #33292	***1161 W LUGONIA AVE***	***S 0 - 1/8 (0.111 mi.)***	***A3***	***59***
PETCO #1123	***27580 W LUGONIA AVE***	***WSW 1/8 - 1/4 (0.163 mi.)***	***B7***	***75***
FIVE BELOW INC	***27592 W LUGONIA AVE***	***SW 1/8 - 1/4 (0.170 mi.)***	***B10***	***83***
PARTY CITY #1510 RED	***27588 W LUGONIA AVE***	***SW 1/8 - 1/4 (0.173 mi.)***	***B12***	***89***
AL CALIFORNIA LLC DB	***27641 SAN BERNARDINO***	***NW 1/8 - 1/4 (0.216 mi.)***	***C15***	***97***
KOHL'S, INC. - STORE	***27540 W LUGONIA AVE***	***WSW 1/8 - 1/4 (0.219 mi.)***	***D16***	***101***
SEPHORA #1236	***27514 LUGONIA AVE***	***W 1/8 - 1/4 (0.225 mi.)***	***E21***	***113***
BATH & BODY WORKS #2	***27530 W LUGONIA AVE***	***WSW 1/8 - 1/4 (0.229 mi.)***	***D22***	***116***

Local Lists of Registered Storage Tanks

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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
7-ELEVEN INC #33292	***1161 W LUGONIA AVE***	***S 0 - 1/8 (0.111 mi.)***	***A3***	***59***

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 are 10 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
7 ELEVEN STORE 33292 EPA ID:: CAL000261652	1161 W LUGONIA AVE	S 0 - 1/8 (0.111 mi.)	A4	69
PTJV-CA LP DBA THRIV EPA ID:: CAL000450076	27580 W LUGONIA AVE	WSW 1/8 - 1/4 (0.163 mi.)	B6	72
PETCO STORE #1123 EPA ID:: CAL000388196	27580 W LUGONIA AVE	WSW 1/8 - 1/4 (0.163 mi.)	B8	78
FIVE BELOW INC EPA ID:: CAL000426894	27592 W LUGONIA AVE	SW 1/8 - 1/4 (0.170 mi.)	B9	80
PARTY CITY CORPORATI EPA ID:: CAL000417880	27588 W LUGONIA AVE	SW 1/8 - 1/4 (0.173 mi.)	B13	92
AL CALIFORNIA LLC DB EPA ID:: CAL000448837	27641 SAN BERNARDINO	NW 1/8 - 1/4 (0.216 mi.)	C14	95
KOHL’S INC - STORE # EPA ID:: CAL000356155	27540 LUGONIA AVE	WSW 1/8 - 1/4 (0.219 mi.)	D17	105
MICHAELS STORES INC EPA ID:: CAL000371257	27543 LUGONIA AVE	WSW 1/8 - 1/4 (0.221 mi.)	D18	108
SEPHORA #1236 EPA ID:: CAL000446349	27514 LUGONIA AVE	W 1/8 - 1/4 (0.225 mi.)	E20	110
BATH & BODY WORKS #2 EPA ID:: CAL000439637	27530 W LUGONIA AVE	WSW 1/8 - 1/4 (0.229 mi.)	D23	120

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 09/20/2021 has revealed that there are 2 Cortese sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TEXAS STREET PUMPING Cleanup Status: COMPLETED - CASE CLOSED	***1401 TEXAS STREET***	***E 1/4 - 1/2 (0.338 mi.)***	***F27***	***129***
TELEDYNE BATTERY Cleanup Status: COMPLETED - CASE CLOSED	***840 W BROCKTON AVE***	***SE 1/4 - 1/2 (0.387 mi.)***	***G30***	***236***

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

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WELL 31-A Reg Id: 083602328T Reg Id: 083602259T	***1401 TEXAS ST***	***E 1/4 - 1/2 (0.338 mi.)***	***F25***	***123***

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 08/13/2021 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TELEDYNE BATTERY EPA ID: CAD008386641 Cleanup Status: CLOSED	***840 W BROCKTON AVE***	***SE 1/4 - 1/2 (0.387 mi.)***	***G30***	***236***

San Bern. Co. Permit: San Bernardino County Fire Department Hazardous Materials Division.

A review of the San Bern. Co. Permit list, as provided by EDR, and dated 08/11/2021 has revealed that there are 11 San Bern. Co. Permit sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THE HOME DEPOT STORE Facility Status: ACTIVE Facility Id: FA0006659	***1151 W LUGONIA AVE***	***S 0 - 1/8 (0.108 mi.)***	***A1***	***9***

Lower Elevation	Address	Direction / Distance	Map ID	Page
7-ELEVEN INC #33292 Facility Status: ACTIVE Facility Id: FA0007633	***1161 W LUGONIA AVE***	***S 0 - 1/8 (0.111 mi.)***	***A3***	***59***
PETCO #1123 Facility Status: ACTIVE Facility Status: FEE EXEMPT Facility Id: FA0015865	***27580 W LUGONIA AVE***	***WSW 1/8 - 1/4 (0.163 mi.)***	***B7***	***75***
FIVE BELOW INC Facility Status: ACTIVE Facility Status: FEE EXEMPT Facility Id: FA0018013	***27592 W LUGONIA AVE***	***SW 1/8 - 1/4 (0.170 mi.)***	***B10***	***83***
PARTY CITY #1510 RED Facility Status: ACTIVE Facility Id: FA0009473	27588 LUGONIA AVE ST	SW 1/8 - 1/4 (0.173 mi.)	B11	89
AL CALIFORNIA LLC DB Facility Status: ACTIVE Facility Id: FA0018500	***27641 SAN BERNARDINO***	***NW 1/8 - 1/4 (0.216 mi.)***	***C15***	***97***
KOHL'S, INC. - STORE Facility Status: ACTIVE Facility Status: FEE EXEMPT	***27540 W LUGONIA AVE***	***WSW 1/8 - 1/4 (0.219 mi.)***	***D16***	***101***

EXECUTIVE SUMMARY

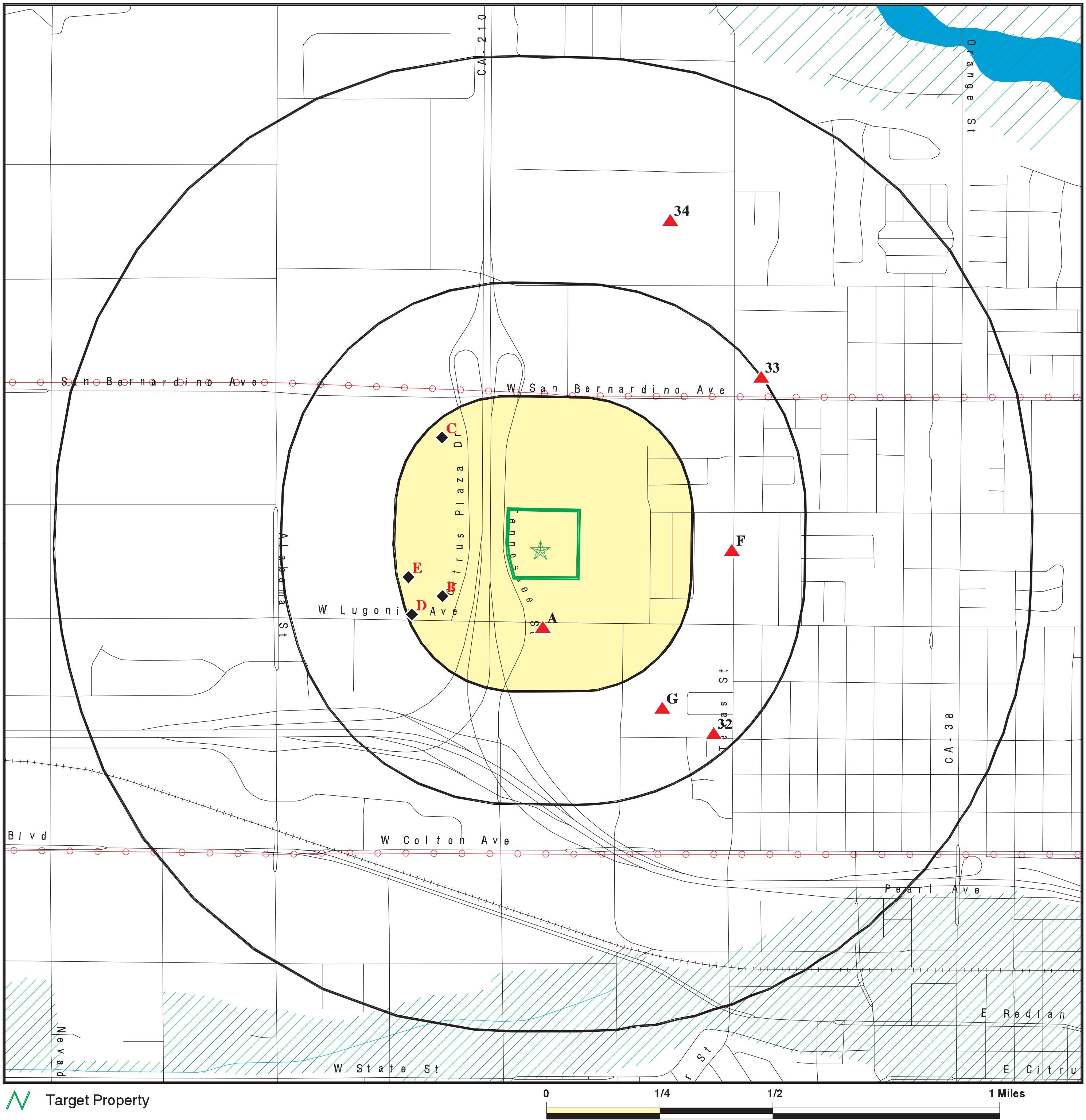
Facility Id: FA0016009				
MICHAELS STORE #4730 Facility Status: INACTIVE Facility Id: FA0009104	27534 LUGONIA AVE	WSW 1/8 - 1/4 (0.225 mi.)	D19	110
SEPHORA #1236 Facility Status: ACTIVE Facility Id: FA0018503	***27514 LUGONIA AVE***	***W 1/8 - 1/4 (0.225 mi.)***	***E21***	***113***
BATH & BODY WORKS #2 Facility Status: ACTIVE Facility Id: FA0018427	***27530 W LUGONIA AVE***	***WSW 1/8 - 1/4 (0.229 mi.)***	***D22***	***116***
CHICK-FIL-A @ CITRUS Facility Status: INACTIVE Facility Id: FA0011185	27520 LUGONIA AVE	WSW 1/8 - 1/4 (0.239 mi.)	D24	122

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 8 records.

Site Name	Database(s)
ALPER EQUIPMENT INC	DRYCLEANERS
REDLANDS SMUDGE POT TANKS SITE	SEMS
UNIVERSAL RUNDEL	SEMS-ARCHIVE
REDLANDS FARMING CO	SEMS-ARCHIVE
ALABAMA STREET ILLEGAL DISPOSAL SI	SWF/LF
CHURCH STREET LANDFILL	SWF/LF
CRAFTON-REDLANDS AREA	CA BOND EXP. PLAN
EDISON/REDLANDS MGP	EDR MGP

OVERVIEW MAP - 06794904.2R

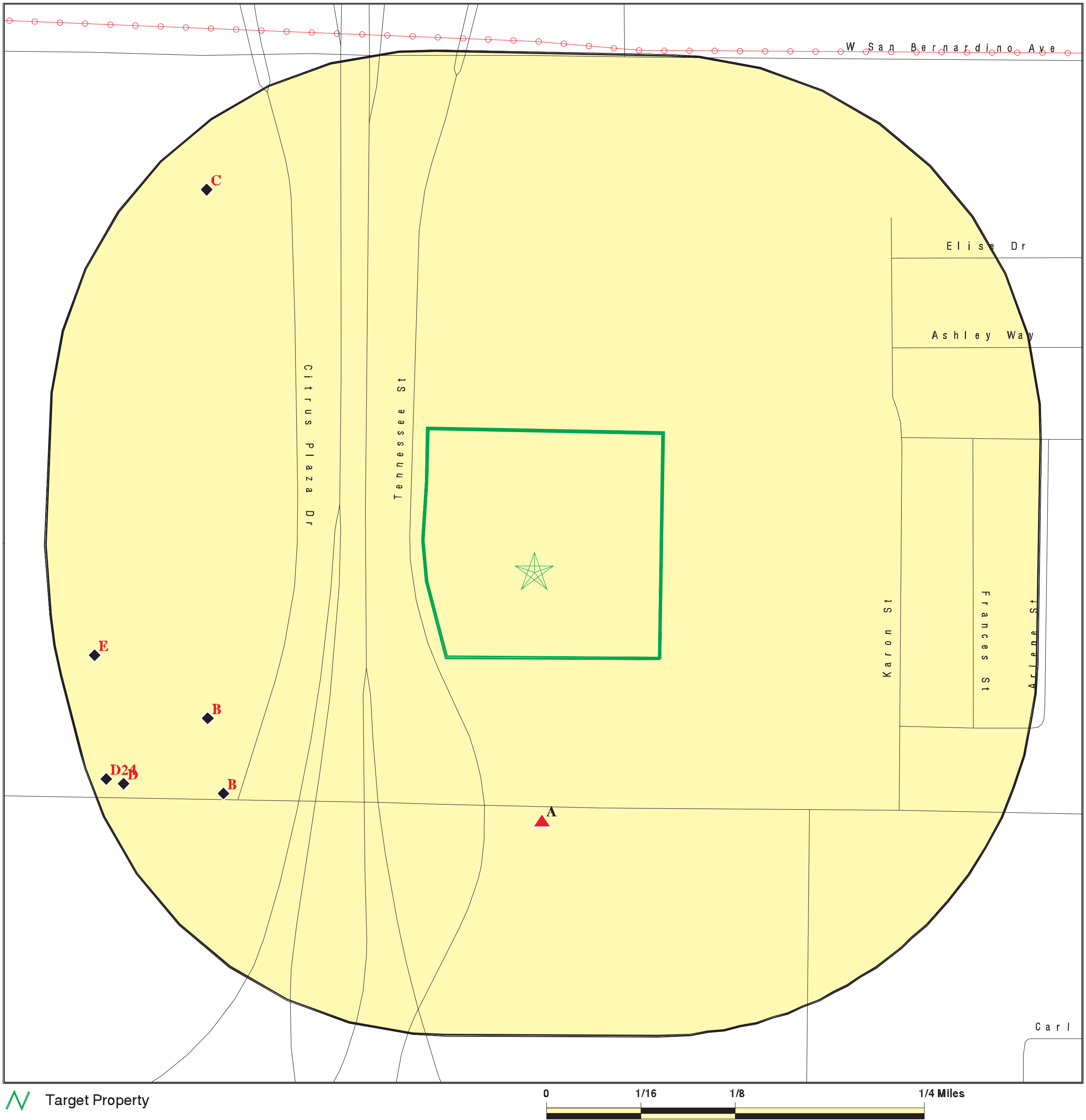


- Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- ▨ Special Flood Hazard Area (1%)
- ▨ 0.2% Annual Chance Flood Hazard
- ▦ 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:	LPA Redlands Project	CLIENT:	Petra Geotechnical Inc
ADDRESS:	NEC Tennessee St. and W. Lugonia Ave Redlands CA 92374	CONTACT:	Edward Lump
		INQUIRY #:	06794904.2r
LAT/LONG:	34.072432 / 117.198606	DATE:	December 20, 2021 6:25 pm

DETAIL MAP - 06794904.2R



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

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

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands CA 92374
LAT/LONG: 34.072432 / 117.198606

CLIENT: Petra Geotechnical Inc
CONTACT: Edward Lump
INQUIRY #: 06794904.2r
DATE: December 20, 2021 6:26 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	0	0	NR	0
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	0	NR	NR	0
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	1	0	NR	1
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	1	NR	NR	1
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		1	0	NR	NR	NR	1
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
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	2	1	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	4	NR	NR	4
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		1	0	NR	NR	NR	1
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
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	1	NR	NR	1
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		2	7	NR	NR	NR	9
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	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		0	0	NR	NR	NR	0
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	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		1	9	NR	NR	NR	10
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	2	NR	NR	2
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
HWP	1.000		0	0	1	0	NR	1
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		2	9	NR	NR	NR	11
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
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

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LF	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	8	25	14	1	0	48

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **South** **< 1/8** **0.108 mi.** **568 ft.**	**THE HOME DEPOT STORE #1013** **1151 W LUGONIA AVE** **REDLANDS, CA 92374** **Site 1 of 5 in cluster A**	**CERS HAZ WASTE** **San Bern. Co. Permit** **CERS**	**S105698104** **N/A**

Relative:
Higher

Actual:
1286 ft.

CERS HAZ WASTE:

Name:	THE HOME DEPOT STORE #1013
Address:	1151 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	403804
CERS ID:	10045531
CERS Description:	Hazardous Waste Generator

San Bern. Co. Permit:

Name:	THE HOME DEPOT STORE #1013
Address:	1151 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006659
Owner:	The Home Depot U.S.A., Inc.
Permit Number:	PT0012727
Permit Category:	LARGE QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	09/30/2021

Name:	THE HOME DEPOT STORE #1013
Address:	1151 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006659
Owner:	The Home Depot U.S.A., Inc.
Permit Number:	PT0001009
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2021

CERS:

Name:	THE HOME DEPOT STORE #1013
Address:	1151 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	403804
CERS ID:	10045531
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	403804
Site Name:	The Home Depot Store #1013
Violation Date:	04-13-2020
Citation:	HSC 6.5 25244.19 - California Health and Safety Code, Chapter 6.5, Section(s) 25244.19
Violation Description:	Failure of a generator to conduct, when required, a source reduction evaluation review and plan every four years, and/or failure of the review and plan to contain all required information.
Violation Notes:	Returned to compliance on 04/22/2020. 2018 Source Reduction Plan (SB-14) was not available for review at the time of the inspection; facility generated greater than 12 tons of hazardous waste in the 2018 reporting year. CORRECTIVE ACTION: Sign the Certificate of Compliance indicating that a Source Reduction Pan (SB-14) has been prepared for

THE HOME DEPOT STORE #1013 (Continued) **S105698104**

	the 2018 reporting year. Provide this Division a copy of the prepared 2018 Source Reduction Plan.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	403804
Site Name:	The Home Depot Store #1013
Violation Date:	05-12-2017
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 05/23/2017. Failure to conduct a Source Reduction Evaluation Review and Plan (CHSC 25244.19(a))
Violation Division:	San Bernardino County Fire Department
Violation Program:	HW
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-03-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - HW
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-13-2020
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-12-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	ROUTINE INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-12-2017
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	ROUTINE INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection

THE HOME DEPOT STORE #1013 (Continued) **S105698104**

Eval Date: 03-03-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: INSPECTION - BP
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-13-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 403804
Site Name: The Home Depot Store #1013
Site Address: 1151 W LUGONIA AVE
Site City: REDLANDS
Site Zip: 92374
Enf Action Date: 05-12-2017
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: San Bernardino County Fire Department
Enf Action Program: HW
Enf Action Source: CERS

Affiliation:
Affiliation Type Desc: Legal Owner
Entity Name: The Home Depot U.S.A., Inc.
Entity Title: Not reported
Affiliation Address: 2455 Paces Ferry Road, C-19
Affiliation City: Atlanta
Affiliation State: GA
Affiliation Country: United States
Affiliation Zip: 30339
Affiliation Phone: (770) 433-8211

Affiliation Type Desc: Operator
Entity Name: The Home Depot U.S.A., 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: (770) 433-8211

Affiliation Type Desc: Document Preparer
Entity Name: ARCADIS U.S., Inc.
Entity Title: Not reported
Affiliation Address: Not reported

THE HOME DEPOT STORE #1013 (Continued) **S105698104**

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:	ARCADIS U.S., Inc.
Entity Title:	Not reported
Affiliation Address:	213 Court Street, Suite 700 c/o Compliance Dept.
Affiliation City:	Middletown
Affiliation State:	CT
Affiliation Country:	Not reported
Affiliation Zip:	06457
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	The Home Depot USA, 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:	CUPA District
Entity Name:	San Bernardino County Fire
Entity Title:	Not reported
Affiliation Address:	620 South E Street
Affiliation City:	San Bernardino
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92415-0153
Affiliation Phone:	(909) 386-8401
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	213 Court Street, Suite 700 c/o Compliance Dept.
Affiliation City:	Middletown
Affiliation State:	CT
Affiliation Country:	Not reported
Affiliation Zip:	06457
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	Tim Hsu, Agent for The Home Depot
Entity Title:	Regulatory Compliance Specialist
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:	Property Owner

THE HOME DEPOT STORE #1013 (Continued) **S105698104**

Entity Name: THE HOME DEPOT U.S.A., INC.
Entity Title: Not reported
Affiliation Address: 2455 Paces Ferry Road, C-19
Affiliation City: Atlanta
Affiliation State: GA
Affiliation Country: United States
Affiliation Zip: 30339
Affiliation Phone: (770) 433-8211

A2
South
< 1/8
0.108 mi.
568 ft.

HOME DEPOT 1013
1151 W LUGONIA AVE
REDLANDS, CA 92374

RCRA-SQG
HAZNET
HWTS

1009216527
CAR000169136

Site 2 of 5 in cluster A

Relative:
Higher

Actual:
1286 ft.

RCRA-SQG:
Date Form Received by Agency: 20210810
Handler Name: HOME DEPOT 1013
Handler Address: 1151 W LUGONIA AVE
Handler City,State,Zip: REDLANDS, CA 92374
EPA ID: CAR000169136
Contact Name: ASHLEY CAMPBELL
Contact Address: CHEMICAL RD
Contact City,State,Zip: PASADENA, TX 77507
Contact Telephone: 281-842-0809
Contact Fax: Not reported
Contact Email: ACAMPBELL@HARSCO.COM
Contact Title: COMPLIANCE & REGULATORY AFFAIRS SPECIALIST
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: GREY HAWK CT, SUITE 200
Mailing City,State,Zip: CARLSBAD, CA 92010
Owner Name: HOME DEPOT USA
Owner Type: Private
Operator Name: HOME DEPOT USA
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: No
Universal Waste Destination Facility: No
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

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: 20210820
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Hazardous Waste Summary:
Waste Code: D001
Waste Description: IGNITABLE WASTE

Waste Code: D002
Waste Description: CORROSIVE WASTE

Waste Code: D003
Waste Description: REACTIVE WASTE

Waste Code: D005
Waste Description: BARIUM

Waste Code: D006

HOME DEPOT 1013 (Continued) **1009216527**

Waste Description: CADMIUM

Waste Code: D007
Waste Description: CHROMIUM

Waste Code: D008
Waste Description: LEAD

Waste Code: D009
Waste Description: MERCURY

Waste Code: D010
Waste Description: SELENIUM

Waste Code: D011
Waste Description: SILVER

Waste Code: D016
Waste Description: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

Waste Code: D018
Waste Description: BENZENE

Waste Code: D035
Waste Description: METHYL ETHYL KETONE

Waste Code: F003
Waste Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: F005
Waste Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: U002
Waste Description: 2-PROPANONE (I) (OR) ACETONE (I)

Waste Code: U240
Waste Description: 2,4-D, SALTS & ESTERS (OR) ACETIC ACID, (2,4-DICHLOROPHENOXY)-, SALTS & ESTERS (OR) DICHLOROPHENOXYACETIC ACID 2,4-D

Waste Code: U279
Waste Description: U279

HOME DEPOT 1013 (Continued) **1009216527**

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	HOME DEPOT USA
Legal Status:	Private
Date Became Current:	20010628
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	HOME DEPOT USA
Legal Status:	Private
Date Became Current:	20010628
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	HOME DEPOT USA
Legal Status:	Private
Date Became Current:	20010628
Date Ended Current:	Not reported
Owner/Operator Address:	2455 PACES FERRY RD
Owner/Operator City,State,Zip:	ATLANTA, GA 30339
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	HOME DEPOT USA
Legal Status:	Private
Date Became Current:	20010628
Date Ended Current:	Not reported
Owner/Operator Address:	2455 PACES FERRY RD
Owner/Operator City,State,Zip:	ATLANTA, GA 30339
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20050629
Handler Name:	HOME DEPOT USA INC HD 1013
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No

HOME DEPOT 1013 (Continued) **1009216527**

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: 20210810
Handler Name: HOME DEPOT 1013
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: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 44411
NAICS Description: HOME CENTERS

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

HAZNET:
Name: HOME DEPOT #1013
Address: 1151 W LUGONIA AVE
Address 2: Not reported
City,State,Zip: REDLANDS, CA 775070000
Contact: ASHLEY CAMPBELL
Telephone: 7139855472
Mailing Name: Not reported
Mailing Address: 9950 CHEMICAL ROAD

Year: 2019
Gepaid: CAR000169136
TSD EPA ID: CAD008364432
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.58450

Year: 2019
Gepaid: CAR000169136
TSD EPA ID: CAD008364432
CA Waste Code: 181 - Other inorganic solid waste
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

HOME DEPOT 1013 (Continued) **1009216527**

Tons:	0.48450
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	NVD980895338
CA Waste Code:	181 - Other inorganic solid waste
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.05300
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	CAD008364432
CA Waste Code:	343 - Unspecified organic liquid mixture
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01400
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	AZR000515924
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.20550
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	CAD008364432
CA Waste Code:	122 - Alkaline solution without metals pH >= 12.5
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.37750
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	CAD008364432
CA Waste Code:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.10300
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	CAD980884183
CA Waste Code:	141 - Off-specification, aged or surplus inorganics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01000
Year:	2019
Gepaid:	CAR000169136
TSD EPA ID:	NVD980895338
CA Waste Code:	214 - Unspecified solvent mixture
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.75050

HOME DEPOT 1013 (Continued) **1009216527**

Year: 2019
Gepaid: CAR000169136
TSD EPA ID: AZR000515924
CA Waste Code: 221 - Waste oil and mixed oil
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.69250

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

Additional Info:
Year: 2013
Gen EPA ID: CAR000169136

Shipment Date: 20131227
Creation Date: 3/1/2014 22:15:07
Receipt Date: 20140106
Manifest ID: 000665062PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0195
Waste Quantity: 39
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20131227
Creation Date: 3/1/2014 22:15:07
Receipt Date: 20140106
Manifest ID: 000665062PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: - Not reported
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

HOME DEPOT 1013 (Continued) **1009216527**

Quantity Tons:	0.0025
Waste Quantity:	5
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:	20131227
Creation Date:	3/1/2014 22:15:07
Receipt Date:	20140106
Manifest ID:	000665062PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D035
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.004
Waste Quantity:	8
Quantity Unit:	P
Additional Code 1:	D018
Additional Code 2:	D001
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20131227
Creation Date:	3/1/2014 22:15:07
Receipt Date:	20140106
Manifest ID:	000665062PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0055
Waste Quantity:	11
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

HOME DEPOT 1013 (Continued) **1009216527**

Shipment Date:	20131227
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000665062PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0045
Waste Quantity:	9
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:	20131227
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000665062PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.019
Waste Quantity:	38
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:	20131227
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000665062PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880

HOME DEPOT 1013 (Continued) **1009216527**

Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.056
Waste Quantity: 112
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: 20131227
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000665062PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 291 - Latex waste
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0395
Waste Quantity: 79
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: 20131227
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000665062PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code: D018

HOME DEPOT 1013 (Continued) **1009216527**

Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.0665
Waste Quantity: 133
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20131219
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000661555PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0645
Waste Quantity: 129
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: 2012
Gen EPA ID: CAR000169136

Shipment Date: 20121212
Creation Date: 3/21/2013 22:15:06
Receipt Date: 20121231
Manifest ID: 000423043PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D035
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0615
Waste Quantity: 123

HOME DEPOT 1013 (Continued) **1009216527**

Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20121212
Creation Date: 3/21/2013 22:15:06
Receipt Date: 20121231
Manifest ID: 000423043PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.045
Waste Quantity: 90
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20121212
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000423043PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: - Not reported
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.04
Waste Quantity: 80
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: 20121212

HOME DEPOT 1013 (Continued) **1009216527**

Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000423043PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: - Not reported
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: Not reported
Waste Quantity: Not reported
Quantity Unit: Not reported
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: 20121212
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000423043PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: - Not reported
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.003
Waste Quantity: 6
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: 20121212
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000423043PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP

HOME DEPOT 1013 (Continued) **1009216527**

TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.19
Waste Quantity:	50
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:	20121212
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000423043PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.2125
Waste Quantity:	425
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:	20121212
Creation Date:	3/21/2013 22:15:06
Receipt Date:	20121231
Manifest ID:	000423043PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No

HOME DEPOT 1013 (Continued) **1009216527**

	Treatment/Reovery (H010-H129) Or (H131-H135)
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:	20121212
Creation Date:	3/21/2013 22:15:06
Receipt Date:	20121231
Manifest ID:	000423043PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.005
Waste Quantity:	10
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:	20121029
Creation Date:	1/13/2013 22:15:06
Receipt Date:	20121107
Manifest ID:	000397158PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0105
Waste Quantity:	21
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2017
Gen EPA ID: CAR000169136

Shipment Date: 20171228
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001729953PSC
Trans EPA ID: MNS000110924
Trans Name: STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID: CAR000217554
Trans 2 Name: CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.003
Waste Quantity: 6
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: 20171228
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001729953PSC
Trans EPA ID: MNS000110924
Trans Name: STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID: CAR000217554
Trans 2 Name: CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code: D018
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.014
Waste Quantity: 28
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20171228

HOME DEPOT 1013 (Continued) **1009216527**

Creation Date:	8/7/2018 18:30:18
Receipt Date:	20180104
Manifest ID:	001729953PSC
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	CAR000217554
Trans 2 Name:	CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0535
Waste Quantity:	107
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:	20171228
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20180104
Manifest ID:	001729953PSC
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	CAR000217554
Trans 2 Name:	CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.022
Waste Quantity:	44
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:	20171228
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20180104
Manifest ID:	001729953PSC
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	CAR000217554
Trans 2 Name:	CRUZ CONTAINERS LOGISTICS INC

HOME DEPOT 1013 (Continued) **1009216527**

TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D035
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.0065
Waste Quantity:	13
Quantity Unit:	P
Additional Code 1:	D018
Additional Code 2:	D001
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20171228
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20180104
Manifest ID:	001729953PSC
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	CAR000217554
Trans 2 Name:	CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	D016
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.007
Waste Quantity:	14
Quantity Unit:	P
Additional Code 1:	D008
Additional Code 2:	D007
Additional Code 3:	D005
Additional Code 4:	D001
Additional Code 5:	Not reported

Shipment Date:	20171228
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	001729953PSC
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	CAR000217554
Trans 2 Name:	CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

HOME DEPOT 1013 (Continued) **1009216527**

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: 20171228
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001729953PSC
Trans EPA ID: MNS000110924
Trans Name: STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID: CAR000217554
Trans 2 Name: CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: D008
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.002
Waste Quantity: 4
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: 20171221
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001724577PSC
Trans EPA ID: MNS000110924
Trans Name: STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID: CAR000217554
Trans 2 Name: CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
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: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0035
Waste Quantity: 7
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Additional Code 5: Not reported

Shipment Date: 20171221
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001724577PSC
Trans EPA ID: MNS000110924
Trans Name: STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID: CAR000217554
Trans 2 Name: CRUZ CONTAINERS LOGISTICS INC
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.108
Waste Quantity: 216
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: 2011
Gen EPA ID: CAR000169136

Shipment Date: 20111214
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000122723MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.012
Waste Quantity: 24
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: 20111214

HOME DEPOT 1013 (Continued) **1009216527**

Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000122723MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code:	D018
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.008
Waste Quantity:	16
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20111214
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000122723MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.145
Waste Quantity:	290
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:	20111214
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000122723MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432

HOME DEPOT 1013 (Continued) **1009216527**

Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.118
Waste Quantity: 236
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: 20111214
Creation Date: 7/19/2012 22:00:21
Receipt Date: 20111215
Manifest ID: 000122723MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 291 - Latex waste
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.1075
Waste Quantity: 215
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: 20111214
Creation Date: 7/19/2012 22:00:21
Receipt Date: 20111215
Manifest ID: 000122723MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D035
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

HOME DEPOT 1013 (Continued) **1009216527**

Quantity Tons: 0.048
Waste Quantity: 96
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20111214
Creation Date: 7/19/2012 22:00:21
Receipt Date: 20111215
Manifest ID: 000122723MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.0575
Waste Quantity: 115
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20111114
Creation Date: 7/19/2012 22:00:18
Receipt Date: 20111117
Manifest ID: 000210608PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0045
Waste Quantity: 9
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

HOME DEPOT 1013 (Continued) **1009216527**

Shipment Date:	20111114
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000210608PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.008
Waste Quantity:	16
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:	20111114
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000210608PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	D016
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
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
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2010
Gen EPA ID:	CAR000169136

Shipment Date:	20101209
Creation Date:	2/8/2011 18:30:44
Receipt Date:	20101213

HOME DEPOT 1013 (Continued) **1009216527**

Manifest ID: 000076050MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.051
Waste Quantity: 102
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20101209
Creation Date: 2/8/2011 18:30:44
Receipt Date: 20101213
Manifest ID: 000076050MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D035
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.038
Waste Quantity: 76
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20101209
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000076050MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.096
Waste Quantity:	192
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:	20101209
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000076050MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	D016
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.01
Waste Quantity:	20
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:	20101209
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000076050MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0185
Waste Quantity:	37

HOME DEPOT 1013 (Continued) **1009216527**

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: 20101209
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000076050MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: - Not reported
Quantity Tons: Not reported
Waste Quantity: Not reported
Quantity Unit: Not reported
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: 20101209
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000076050MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 291 - Latex waste
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.116
Waste Quantity: 232
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: 20101209

HOME DEPOT 1013 (Continued) **1009216527**

Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000076050MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.096
Waste Quantity:	192
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:	20101209
Creation Date:	2/8/2011 18:30:44
Receipt Date:	20101213
Manifest ID:	000076050MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code:	D018
Meth Code:	- Not reported
Quantity Tons:	Not reported
Waste Quantity:	Not reported
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20101209
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000076050MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICE OF POMONA LP
TSDF EPA ID:	CAD008364432

HOME DEPOT 1013 (Continued) **1009216527**

Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.01
Waste Quantity: 20
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: 2014
Gen EPA ID: CAR000169136

Shipment Date: 20141224
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20150102
Manifest ID: 000914502PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.09
Waste Quantity: 180
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: 20141224
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20150102
Manifest ID: 000914502PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0085
Waste Quantity: 17
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20141224
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20150102
Manifest ID: 000914502PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.0375
Waste Quantity: 75
Quantity Unit: P
Additional Code 1: D018
Additional Code 2: D001
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20141224
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20150102
Manifest ID: 000914502PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0115
Waste Quantity: 23
Quantity Unit: P
Additional Code 1: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20141218
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20141223
Manifest ID: 000909888PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0135
Waste Quantity: 27
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20141218
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20141223
Manifest ID: 000909888PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.0115
Waste Quantity: 23
Quantity Unit: P
Additional Code 1: D018
Additional Code 2: D001
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20141218
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20141223

HOME DEPOT 1013 (Continued) **1009216527**

Manifest ID: 000909888PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0015
Waste Quantity: 3
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: 20141218
Creation Date: 6/25/2015 22:15:06
Receipt Date: 20141223
Manifest ID: 000909888PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0245
Waste Quantity: 49
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: 20141211
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000905218PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC

HOME DEPOT 1013 (Continued) **1009216527**

TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.1245
Waste Quantity: 249
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: 20141211
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000905218PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.1185
Waste Quantity: 237
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: 2009
Gen EPA ID: CAR000169136

Shipment Date: 20091209
Creation Date: 3/5/2010 18:31:15
Receipt Date: 20091215
Manifest ID: 000027493MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics

HOME DEPOT 1013 (Continued) **1009216527**

RCRA Code: D035
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0615
Waste Quantity: 123
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20091209
Creation Date: 3/5/2010 18:31:15
Receipt Date: 20091215
Manifest ID: 000027493MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.164
Waste Quantity: 328
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20091209
Creation Date: 3/5/2010 18:31:15
Receipt Date: 20091215
Manifest ID: 000027493MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.041
Waste Quantity: 82
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20091209
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000027493MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 291 - Latex waste
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.134
Waste Quantity: 268
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: 20091209
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000027493MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.023
Waste Quantity: 46
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: 20091209
Creation Date: Not reported
Receipt Date: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Manifest ID:	000027493MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	D016
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.081
Waste Quantity:	162
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:	20091209
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000027493MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	D009
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.006
Waste Quantity:	12
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:	20091209
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000027493MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC

HOME DEPOT 1013 (Continued) **1009216527**

TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0275
Waste Quantity: 55
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: 20091209
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 000027493MWI
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 291 - Latex waste
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.123
Waste Quantity: 246
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: 20091019
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 005463700JJK
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0185

HOME DEPOT 1013 (Continued) **1009216527**

Waste Quantity: 37
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: 2015
Gen EPA ID: CAR000169136

Shipment Date: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code: D018
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.011
Waste Quantity: 22
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0025
Waste Quantity: 5
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.062
Waste Quantity: 124
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: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0605
Waste Quantity: 121
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: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105

HOME DEPOT 1013 (Continued) **1009216527**

Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.16
Waste Quantity: 320
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: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.014
Waste Quantity: 28
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC

HOME DEPOT 1013 (Continued) **1009216527**

TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.011
Waste Quantity: 22
Quantity Unit: P
Additional Code 1: D018
Additional Code 2: D001
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.001
Waste Quantity: 2
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: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.011
Waste Quantity: 22

HOME DEPOT 1013 (Continued) **1009216527**

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: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: D008
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.001
Waste Quantity: 2
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: 2016
Gen EPA ID: CAR000169136

Shipment Date: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D035
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.011
Waste Quantity: 22
Quantity Unit: P
Additional Code 1: D018
Additional Code 2: D001
Additional Code 3: Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0605
Waste Quantity: 121
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: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.062
Waste Quantity: 124
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: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC

HOME DEPOT 1013 (Continued) **1009216527**

Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	D016
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
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:	20151231
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	001179726PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code:	D018
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.011
Waste Quantity:	22
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20151231
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	001179726PSC
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	CAD983649880
Trans 2 Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported

HOME DEPOT 1013 (Continued) **1009216527**

Waste Code Description: 122 - Alkaline solution without metals (pH > 12.5
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.011
Waste Quantity: 22
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: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.001
Waste Quantity: 2
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: 20151231
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: D008
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.001
Waste Quantity: 2
Quantity Unit: P

HOME DEPOT 1013 (Continued) **1009216527**

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: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: D016
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.014
Waste Quantity: 28
Quantity Unit: P
Additional Code 1: D008
Additional Code 2: D007
Additional Code 3: D005
Additional Code 4: D001
Additional Code 5: Not reported

Shipment Date: 20151231
Creation Date: 3/25/2016 22:15:42
Receipt Date: 20160105
Manifest ID: 001179726PSC
Trans EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
Trans 2 EPA ID: CAD983649880
Trans 2 Name: PSC ENVIRONMENTAL SERVICES OF POMONA LP
TSDF EPA ID: CAD008364432
Trans Name: RHO CHEM LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 352 - Other organic solids
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.16
Waste Quantity: 320
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

HOME DEPOT 1013 (Continued) **1009216527**

HWTS:
Name: HOME DEPOT #1013
Address: 1151 W LUGONIA AVE
Address 2: Not reported
City,State,Zip: REDLANDS, CA 923740000
EPA ID: CAR000169136
Inactive Date: Not reported
Create Date: 01/17/2006
Last Act Date: 08/24/2020
Mailing Name: Not reported
Mailing Address: 9950 CHEMICAL ROAD
Mailing Address 2: Not reported
Mailing City,State,Zip: PASADENA, TX 775070000
Owner Name: HOME DEPOT USA
Owner Address: 2455 PACES FERRY RD
Owner Address 2: Not reported
Owner City,State,Zip: ATLANTA, GA 30339
Contact Name: ASHLEY CAMPBELL
Contact Address: 9950 CHEMICAL ROAD
Contact Address 2: Not reported
City,State,Zip: PASADENA, TX 77507

NAICS:
EPA ID: CAR000169136
Create Date: 2009-10-12 09:10:54.017
NAICS Code: 44413
NAICS Description: Hardware Stores
Issued EPA ID Date: 2006-01-17 08:42:00
Inactive Date: Not reported
Facility Name: HOME DEPOT #1013
Facility Address: 1151 W LUGONIA AVE
Facility Address 2: Not reported
Facility City: REDLANDS
Facility County: Not reported
Facility State: CA
Facility Zip: 923740000

A3 **South** **< 1/8** **0.111 mi.** **585 ft.**	**7-ELEVEN INC #33292** **1161 W LUGONIA AVE** **REDLANDS, CA 92374** **Site 3 of 5 in cluster A**	**CERS HAZ WASTE** **CERS TANKS** **San Bern. Co. Permit** **CERS**	**S107148169** **N/A**

Relative:
Lower

Actual:
1285 ft.

CERS HAZ WASTE:
Name: 7-ELEVEN INC #33292
Address: 1161 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 875
CERS ID: 10047250
CERS Description: Hazardous Waste Generator

CERS TANKS:
Name: 7-ELEVEN INC #33292
Address: 1161 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 875

7-ELEVEN INC #33292 (Continued) **S107148169**

CERS ID:	10047250
CERS Description:	Underground Storage Tank

San Bern. Co. Permit:

Name:	7-ELEVEN INC #33292
Address:	1161 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007633
Owner:	7-ELEVEN INC
Permit Number:	PT0013119
Permit Category:	REGULAR UST ANNUAL INSPECTION (PER TANK)
Facility Status:	ACTIVE
Expiration Date:	02/28/2022

Name:	7-ELEVEN INC #33292
Address:	1161 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007633
Owner:	7-ELEVEN INC
Permit Number:	PT0013118
Permit Category:	REGULAR UST ANNUAL INSPECTION (PER TANK)
Facility Status:	ACTIVE
Expiration Date:	02/28/2022

Name:	7-ELEVEN INC #33292
Address:	1161 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007633
Owner:	7-ELEVEN INC
Permit Number:	PT0013117
Permit Category:	HAZMAT HANDLER, UST ONLY - PER YEAR
Facility Status:	ACTIVE
Expiration Date:	02/28/2022

Name:	7-ELEVEN INC #33292
Address:	1161 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007633
Owner:	7-ELEVEN INC
Permit Number:	PT0024211
Permit Category:	WASTE INCIDENTAL UST OPERATION ONLY -PER YEAR
Facility Status:	ACTIVE
Expiration Date:	02/28/2022

CERS:

Name:	7-ELEVEN INC #33292
Address:	1161 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	875
CERS ID:	10047250
CERS Description:	Chemical Storage Facilities

7-ELEVEN INC #33292 (Continued) **S107148169**

Violations:

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-06-2017
Citation: HSC 6.7 29291(b) - California Health and Safety Code, Chapter 6.7, Section(s) 29291(b)
Violation Description: Failure of the UST system to be designed and constructed with a monitoring system capable of detecting the entry of the hazardous substance into the secondary containment.
Violation Notes: Returned to compliance on 01/24/2017. OBSERVATION: The monitoring system lost power during this inspection. Technician Castro contacted TanknologyG s Maintenance Division for support. Technician Quiros reported to the facility. A Cold Start was performed on the monitoring system. A complete monitoring certification was completed following the Cold Start. COMPLIANCE REQUIREMENT: Facility must submit Cold Start Permit fees with As-Built plans to this Department within 30 days. 2/22/17 RECIEVED STMT FROM FACILITY INDICATING THAT COLD START PERMIT WILL BE PART OF DISPENSER UPGRADE. REQUIRE FEES TO BE SUBMITTED. 3/1/17 RECIEVED PERMIT FOR MODIFICATION DISPENSER UPGRADE, LOG 012417-06 VIOLATION CORRECTED. PSAAVEDRA
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-05-2018
Citation: HSC 6.7 25284, 25286 - California Health and Safety Code, Chapter 6.7, Section(s) 25284, 25286
Violation Description: Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.
Violation Notes: Returned to compliance on 01/30/2018. FACILITY CORRECTED INFORMATION IN CERS PER M. VILLARAZA, CLOSE OUT VIOLATION-PREYES OBSERVATION: SUBMITTED UNDERGROUND STORAGE TANK (UST) INFORMATION IN CALIFORNIA ENVIRONMENTAL REPORTING SYSTEM (CERS) WAS NOT ACCURATE, COMPLETE, OR CURRENT. UPDATE THE FOLLOWING: 1) UPDATE TANK INSTALLED DATES TO 9/26/2002. 2) CERTIFICATE OF FINANCIAL RESPONSIBILITY EXPIRED. COMPLIANCE REQUIREMENT: RESUBMIT UPDATED UST INFORMATION IN CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-05-2018
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 01/30/2018. FACILITY SUBMITTED CURRENT DOCUMENTATION TO CERS SUBMITTAL 01/30/18, CLOSE OUT VIOLATION M. VILLARAZA-PREYES OBSERVATION: SUBMITTED CERTIFICATE OF FINANCIAL RESPONSIBILITY IN CALIFORNIA ENVIRONMENTAL REPORTING SYSTEM (CERS) HAS EXPIRED. COMPLIANCE REQUIREMENT: RESUBMIT UPDATE CERTIFICATE OF FINANCIAL RESPONSIBILITY IN CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST

7-ELEVEN INC #33292 (Continued) **S107148169**

Violation Source: CERS

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-09-2019
Citation: 23 CCR 16 2711(a)(8) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2711(a)(8)
Violation Description: Failure to submit or maintain a current facility plot plan.
Violation Notes: Returned to compliance on 02/08/2019. OBSERVATION: Inaccurate annular sensor listed on UST site map. CORRECTIVE ACTION: Update and resubmit UST site map via CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-09-2019
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 02/08/2019. OBSERVATION: Expired Certificate of Financial Responsibility letter. CORRECTIVE ACTION: Update and resubmit current CFR letter via CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-06-2017
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 02/21/2017. OBSERVATION: THE INSURANCE POLICY REPORTED ON THE CERTIFICATE OF FINANCIAL RESPONSIBILITY HAS EXPIRED. COMPLIANCE REQUIREMENT: FACILITY MUST UPDATE THE CERS WITH CURRENT FINANCIAL RESPONSIBILITY INFORMATION. SUBMIT THE CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Site ID: 875
Site Name: 7-ELEVEN INC #33292
Violation Date: 01-06-2017
Citation: 23 CCR 6.7 25284, 25286 - California Code of Regulations, Title 23, Chapter 6.7, Section(s) 25284, 25286
Violation Description: Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.
Violation Notes: Returned to compliance on 02/21/2017. OBSERVATION: ERRORS WERE IDENTIFIED IN THE INFORMATION SUBMITTED TO THE CALIFORNIA ENVIRONMENTAL REPORTING SYSTEM (CERS). THE UST INSTALLATION DATES FOR BOTH TANKS (T1 AND T2) WERE REPORTED TO BE 1/1/2202. COMPLIANCE REQUIREMENT: FACILITY MUST UPDATE THE CERS WITH THE CORRECT UST

7-ELEVEN INC #33292 (Continued) **S107148169**

	INSTALLATION DATES. SUBMIT THE CERTIFICATE OF COMPLIANCE WITHIN 30 DAYS. 2/21/17 REVIEWED CERS OBSERVED UPDATED VIOLATION CORRECTED. PSAAVEDRA
Violation Division:	San Bernardino County Fire Department
Violation Program:	UST
Violation Source:	CERS

Evaluation:

Eval General Type:	Other/Unknown
Eval Date:	01-09-2019
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	OVERFILL PREVENTION EQUIPMENT TESTING
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-11-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7-ELEVEN#33292- UST MONITORING CERTIFICATION
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-11-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7-ELEVEN#33292-UST INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-13-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	UST HANDLER INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-13-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7-ELEVEN- UST INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-27-2021
Violations Found:	No
Eval Type:	Routine done by local agency

7-ELEVEN INC #33292 (Continued) **S107148169**

Eval Notes: 7_11 hazmat inspection
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-05-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-05-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-05-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: ANNUAL UST INSPECTION WITH MONITORING CERTIFICATION
Eval Division: San Bernardino County Fire Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-06-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: UST ANNUAL INSPECTION DURING MONITORING SYSTEM. COLD START DURING INSPECITON.
Eval Division: San Bernardino County Fire Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-11-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: 7-ELEVEN#33292- UST WASTE INSPECTION
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 01-13-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: UST FIELD INSPECTION-FINAL FOR WORK PERFORMED UNDER PERMIT/LOG#120213-01 (PANEL COLD START); WITNESSED RECERTIFICATION

7-ELEVEN INC #33292 (Continued) **S107148169**

	DURING ANNUAL INSPECTION.
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-17-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	BP current
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-27-2021
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7_11 UST inspection
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-09-2019
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-10-2020
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	UST HM HW INSPECTIONS
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-13-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	UST FIELD INSPECTION-ANNUAL MONITORING SYSTEM CERTIFICATION (2 TANKS) W/ROBERT ALLEN
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-13-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7-ELEVEN- UST MONITORING CERTIFICATION
Eval Division:	San Bernardino County Fire Department

7-ELEVEN INC #33292 (Continued) **S107148169**

Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-27-2021
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7_11 HazWaste inspection
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-06-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	UST HANDLER INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-10-2020
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	UST HM HW INSPECTIONS
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-10-2020
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	UST HM HW INSPECTIONS
Eval Division:	San Bernardino County Fire Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-13-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	7-ELEVEN- UST INSPECTION
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS

Enforcement Action:

Site ID:	875
Site Name:	7-ELEVEN INC #33292
Site Address:	1161 W LUGONIA AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	01-06-2017
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection

7-ELEVEN INC #33292 (Continued) **S107148169**

Enf Action Notes: Not reported
Enf Action Division: San Bernardino County Fire Department
Enf Action Program: UST
Enf Action Source: CERS

Coordinates:
Site ID: 875
Facility Name: 7-ELEVEN INC #33292
Env Int Type Code: HWG
Program ID: 10047250
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 34.069790
Longitude: -117.198608

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: PO BOX 711, ATTN: ENVIRONMENTAL DEPARTMENT
Affiliation City: DALLAS
Affiliation State: TX
Affiliation Country: Not reported
Affiliation Zip: 75221
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner
Entity Name: 7-ELEVEN INC
Entity Title: Not reported
Affiliation Address: PO BOX 711, ATTN: ENVIRONMENTAL DEPARTMENT
Affiliation City: DALLAS
Affiliation State: TX
Affiliation Country: United States
Affiliation Zip: 75221
Affiliation Phone: (800) 828-0711

Affiliation Type Desc: Property Owner
Entity Name: GAIL L. REITER, TRUSTEE OF THE G
Entity Title: Not reported
Affiliation Address: 32355 S PACIFIC COAST HWY
Affiliation City: LAGUNA BEACH
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92651
Affiliation Phone: (800) 828-0711

Affiliation Type Desc: UST Tank Operator
Entity Name: 7-ELEVEN INC
Entity Title: Not reported
Affiliation Address: PO BOX 711, ATTN: ENVIRONMENTAL DEPARTMENT
Affiliation City: DALLAS
Affiliation State: TX
Affiliation Country: United States
Affiliation Zip: 75221
Affiliation Phone: (800) 828-0711

7-ELEVEN INC #33292 (Continued) **S107148169**

Affiliation Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

Affiliation Type Desc: Document Preparer
Entity Name: Stantec Consulting Services 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: JAMIL HERSHEWE
Entity Title: Not reported
Affiliation Address: PO BOX 711, ATTN: ENVIRONMENTAL DEPARTMENT
Affiliation City: DALLAS
Affiliation State: TX
Affiliation Country: Not reported
Affiliation Zip: 75221
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Amandeep Singh
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: (909) 792-5959

Affiliation Type Desc: UST Property Owner Name
Entity Name: GAIL L REITER TRUSTEE OF THE G
Entity Title: Not reported
Affiliation Address: 32355 S PACIFIC COAST HWY
Affiliation City: LAGUNA BEACH
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92651
Affiliation Phone: (800) 828-0711

Affiliation Type Desc: Identification Signer
Entity Name: STEPHEN BOYD
Entity Title: REGIONAL GASOLINE ENVIRONMENTAL COMPLIANCE MANAGER
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported

7-ELEVEN INC #33292 (Continued) **S107148169**

Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	7-ELEVEN 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:	UST Permit Applicant
Entity Name:	STEPHEN BOYD
Entity Title:	REGIONAL GASOLINE ENVIRONMENTAL COMPLIANCE MANAGER
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(714) 771-5484
Affiliation Type Desc:	UST Tank Owner
Entity Name:	7-ELEVEN INC
Entity Title:	Not reported
Affiliation Address:	PO BOX 711, ATTN: ENVIRONMENTAL DEPARTMENT
Affiliation City:	DALLAS
Affiliation State:	TX
Affiliation Country:	United States
Affiliation Zip:	75221
Affiliation Phone:	(800) 828-0711

A4 **7 ELEVEN STORE 33292** **RCRA NonGen / NLR** **1024805076**
South **1161 W LUGONIA AVE** **CAL000261652**
< 1/8 **REDLANDS, CA 92374**
0.111 mi.
585 ft. **Site 4 of 5 in cluster A**

Relative:
Lower

Actual:
1285 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20021031
Handler Name:	7 ELEVEN STORE 33292
Handler Address:	1161 W LUGONIA AVE
Handler City,State,Zip:	REDLANDS, CA 92374
EPA ID:	CAL000261652
Contact Name:	JOSE RIOS
Contact Address:	1722 ROUTH STREET
Contact City,State,Zip:	DALLAS, TX 75201
Contact Telephone:	972-828-6592
Contact Fax:	972-828-1095
Contact Email:	JOSE.RIOS@7-11.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported

7 ELEVEN STORE 33292 (Continued) **1024805076**

Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: PO BOX 711
Mailing City,State,Zip: DALLAS, TX 75221
Owner Name: 7-ELEVEN INC.
Owner Type: Other
Operator Name: JOSE RIOS
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: Yes
Universal Waste Destination Facility: Yes
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: N
Sub-Part K Indicator: Not reported
Commercial TSD Indicator: No
Treatment Storage and Disposal Type: Not reported
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported
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

7 ELEVEN STORE 33292 (Continued) **1024805076**

Handler Date of Last Change: 20180905
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: JOSE RIOS
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 1722 ROUTH STREET
Owner/Operator City,State,Zip: DALLAS, TX 75201
Owner/Operator Telephone: 972-828-6592
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: 7-ELEVEN INC.
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: PO BOX 711
Owner/Operator City,State,Zip: DALLAS, TX 75221
Owner/Operator Telephone: 714-771-5484
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20021031
Handler Name: 7 ELEVEN STORE 33292
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 44711
NAICS Description: GASOLINE STATIONS WITH CONVENIENCE STORES

Facility Has Received Notices of Violations:
Violations: No Violations Found

7 ELEVEN STORE 33292 (Continued) **1024805076**

Evaluation Action Summary:

Evaluations:	No Evaluations Found

A5
South
< 1/8
0.111 mi.
585 ft.

7-ELEVEN INC #33292
1161 W LUGONIA AVE
REDLANDS, CA 92374

UST **U004264008**
N/A

Site 5 of 5 in cluster A

Relative:
Lower

Actual:
1285 ft.

UST:

Name:	7-ELEVEN INC #33292
Address:	1161 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Facility ID:	FA0007633
Permitting Agency:	San Bernardino County Fire Department
CERSID:	10047250
Latitude:	34.06979
Longitude:	-117.198624

B6
WSW
1/8-1/4
0.163 mi.
860 ft.

PTJV-CA LP DBA THRIVE AFFORDABLE VET CARE REDLANDS
27580 W LUGONIA AVE
REDLANDS, CA 92374

RCRA NonGen / NLR **1025876940**
CAL000450076

Site 1 of 8 in cluster B

Relative:
Lower

Actual:
1266 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20191018
Handler Name:	PTJV-CA LP DBA THRIVE AFFORDABLE VET CARE REDLANDS
Handler Address:	27580 W LUGONIA AVE
Handler City,State,Zip:	REDLANDS, CA 92374
EPA ID:	CAL000450076
Contact Name:	ERNIE VASQUEZ
Contact Address:	27580 W LUGONIA AVE
Contact City,State,Zip:	REDLANDS, CA 92374
Contact Telephone:	909-748-1858
Contact Fax:	512-870-9394
Contact Email:	LEGAL@PATHWAYVETS.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	800 W CESAR CHAVEZ ST B100
Mailing City,State,Zip:	SAN ANTONIO, TX 78701
Owner Name:	PTJV-CA LP
Owner Type:	Other
Operator Name:	ERNIE VASQUEZ
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No

PTJV-CA LP DBA THRIVE AFFORDABLE VET CARE REDLANDS (Continued) **1025876940**

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:	20191021
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner

PTJV-CA LP DBA THRIVE AFFORDABLE VET CARE REDLANDS (Continued) **1025876940**

Owner/Operator Name:	PTJV-CA LP
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	800 W CESAR CHAVEZ ST B100
Owner/Operator City,State,Zip:	SAN ANTONIO, TX 78701
Owner/Operator Telephone:	512-717-8647
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	ERNIE VASQUEZ
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	27580 W LUGONIA AVE
Owner/Operator City,State,Zip:	REDLANDS, CA 92374
Owner/Operator Telephone:	909-748-1858
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20191018
Handler Name:	PTJV-CA LP DBA THRIVE AFFORDABLE VET CARE REDLANDS
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	541940
NAICS Description:	VETERINARY SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

B7 **WSW** **1/8-1/4** **0.163 mi.** **860 ft.**	**PETCO #1123** **27580 W LUGONIA AVE** **REDLANDS, CA 92374** **Site 2 of 8 in cluster B**	**CERS HAZ WASTE** **San Bern. Co. Permit** **CERS**	**S117896830** **N/A**

Relative:
Lower

Actual:
1266 ft.

CERS HAZ WASTE:
Name: PETCO #1123
Address: 27580 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 142652
CERS ID: 10464082
CERS Description: Hazardous Waste Generator

San Bern. Co. Permit:
Name: PETCO #1123
Address: 27580 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0015865
Owner: Petco Animal Supplies, Inc.
Permit Number: PT0034579
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 05/31/2022

Name: PETCO #1123
Address: 27580 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0015865
Owner: Petco Animal Supplies, Inc.
Permit Number: PT0036777
Permit Category: HAZMAT HANDLER GENERAL ACT.(NB)
Facility Status: FEE EXEMPT
Expiration Date: 05/31/2017

CERS:
Name: PETCO #1123
Address: 27580 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 142652
CERS ID: 10464082
CERS Description: Chemical Storage Facilities

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-03-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-19-2018
Violations Found: No
Eval Type: Routine done by local agency

PETCO #1123 (Continued) **S117896830**

Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	08-12-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION OF PETCO IN REDLANDS.
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Coordinates:

Site ID:	142652
Facility Name:	Petco #1123
Env Int Type Code:	HWG
Program ID:	10464082
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	34.071040
Longitude:	-117.202380

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	San Bernardino County Fire
Entity Title:	Not reported
Affiliation Address:	620 South E Street
Affiliation City:	San Bernardino
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92415-0153
Affiliation Phone:	(909) 386-8401

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	654 Richland Hills Drive
Affiliation City:	San Antonio
Affiliation State:	TX
Affiliation Country:	Not reported
Affiliation Zip:	78245
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	Petco #1123
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:	(210) 201-9217

Affiliation Type Desc:	Document Preparer

PETCO #1123 (Continued) **S117896830**

Entity Name:	David Morisset
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:	Amy Ebersole-Martinez, Safety and Environmental Manager
Entity Title:	Not reported
Affiliation Address:	654 Richland Hills Drive
Affiliation City:	San Antonio
Affiliation State:	TX
Affiliation Country:	Not reported
Affiliation Zip:	78245
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Amy Ebersole-Martinez
Entity Title:	Env. Safety and Health 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:	Legal Owner
Entity Name:	Petco Animal Supplies, Inc.
Entity Title:	Not reported
Affiliation Address:	654 Richland Hills Drive
Affiliation City:	San Antonio
Affiliation State:	TX
Affiliation Country:	United States
Affiliation Zip:	78245
Affiliation Phone:	(210) 201-9217

Affiliation Type Desc:	Parent Corporation
Entity Name:	Petco Animal Supplies, 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

B8
WSW
1/8-1/4
0.163 mi.
860 ft.

PETCO STORE #1123
27580 W LUGONIA AVE
REDLANDS, CA 92374

Site 3 of 8 in cluster B

RCRA NonGen / NLR

1024839896
CAL000388196

Relative:
Lower

Actual:
1266 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20130805
Handler Name: PETCO STORE #1123
Handler Address: 27580 W LUGONIA AVE
Handler City,State,Zip: REDLANDS, CA 92374
EPA ID: CAL000388196
Contact Name: AMY EBERSOLE-MARTINEZ
Contact Address: 654 RICHLAND HILLS
Contact City,State,Zip: SAN ANTONIO, TX 78245-0000
Contact Telephone: 858-761-5359
Contact Fax: 858-882-8686
Contact Email: SAFETY@PETCO.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 654 RICHLAND HILLS
Mailing City,State,Zip: SAN ANTONIO, TX 78245
Owner Name: PETCO ANIMALS SUPPLIES INC
Owner Type: Other
Operator Name: AMY EBERSOLE-MARTINEZ
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: Yes
Universal Waste Destination Facility: Yes
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: N
Sub-Part K Indicator: Not reported
Commercial TSD Indicator: No
Treatment Storage and Disposal Type: Not reported
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported

PETCO STORE #1123 (Continued) **1024839896**

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:	20180906
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	PETCO ANIMALS SUPPLIES INC
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	654 RICHLAND HILLS
Owner/Operator City,State,Zip:	SAN ANTONIO, TX 78245
Owner/Operator Telephone:	858-201-9217
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AMY EBERSOLE-MARTINEZ
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	654 RICHLAND HILLS
Owner/Operator City,State,Zip:	SAN ANTONIO, TX 78245-0000
Owner/Operator Telephone:	858-761-5359
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

PETCO STORE #1123 (Continued) **1024839896**

Historic Generators:
Receive Date: 20130805
Handler Name: PETCO STORE #1123
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 54189
NAICS Description: OTHER SERVICES RELATED TO ADVERTISING

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B9 **FIVE BELOW INC** **RCRA NonGen / NLR** **1024859604**
SW **27592 W LUGONIA AVE** **CAL000426894**
1/8-1/4 **REDLANDS, CA 92374**
0.170 mi.
899 ft. **Site 4 of 8 in cluster B**

Relative:
Lower

Actual:
1267 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20170418
Handler Name: FIVE BELOW INC
Handler Address: 27592 W LUGONIA AVE
Handler City,State,Zip: REDLANDS, CA 92374
EPA ID: CAL000426894
Contact Name: MAINTENANCE DEPARTMENT
Contact Address: 701 MARKET STREET
Contact City,State,Zip: PHILADELPHIA, PA 19106
Contact Telephone: 215-207-2595
Contact Fax: Not reported
Contact Email: MAINTENANCE@FIVEBELOW.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 701 MARKET STREET
Mailing City,State,Zip: PHILADELPHIA, PA 19106-0000
Owner Name: FIVE BELOW, INC

FIVE BELOW INC (Continued) **1024859604**

Owner Type: Other
Operator Name: MAINTENANCE DEPARTMENT
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: Yes
Universal Waste Destination Facility: Yes
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: N
Sub-Part K Indicator: Not reported
Commercial TSD Indicator: No
Treatment Storage and Disposal Type: Not reported
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported
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: 20180907
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No

FIVE BELOW INC (Continued) **1024859604**

Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: MAINTENANCE DEPARTMENT
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 701 MARKET STREET
Owner/Operator City,State,Zip: PHILADELPHIA, PA 19106
Owner/Operator Telephone: 215-207-2595
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: FIVE BELOW, INC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 701 MARKET STREET
Owner/Operator City,State,Zip: PHILADELPHIA, PA 19106
Owner/Operator Telephone: 215-546-7909
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20170418
Handler Name: FIVE BELOW 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: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B10	**FIVE BELOW INC**	**CERS HAZ WASTE**	**S122499505**
SW	**27592 W LUGONIA AVE**	**HAZNET**	**N/A**
1/8-1/4	**REDLANDS, CA 92374**	**San Bern. Co. Permit**	
0.170 mi.		**CERS**	
899 ft.	**Site 5 of 8 in cluster B**	**HWTS**	

Relative:
Lower

Actual:
1267 ft.

CERS HAZ WASTE:
Name: FIVE BELOW 1312
Address: 27592 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 439934
CERS ID: 10766617
CERS Description: Hazardous Waste Generator

HAZNET:
Name: FIVE BELOW INC
Address: 27592 W LUGONIA AVE
Address 2: Not reported
City,State,Zip: REDLANDS, CA 191060000
Contact: MAINTENANCE DEPARTMENT
Telephone: 2152072595
Mailing Name: Not reported
Mailing Address: 701 MARKET STREET

Year: 2019
Gepaid: CAL000426894
TSD EPA ID: CAD008252405
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.08250

Year: 2019
Gepaid: CAL000426894
TSD EPA ID: CAD008252405
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.12000

Year: 2018
Gepaid: CAL000426894
TSD EPA ID: CAD008252405
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.22650

Year: 2017
Gepaid: CAL000426894
TSD EPA ID: CAD008252405
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.0425

Additional Info:
Year: 2017
Gen EPA ID: CAL000426894

FIVE BELOW INC (Continued) **S122499505**

Shipment Date: 20171106
Creation Date: 7/28/2018 18:34:05
Receipt Date: 20171108
Manifest ID: 017232243JJK
Trans EPA ID: CAR000245050
Trans Name: ECOTRANS
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008252405
Trans Name: PACIFIC RESOURCE RECOVERY
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: Not reported
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
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: 20171006
Creation Date: 8/1/2018 18:31:24
Receipt Date: 20171010
Manifest ID: 011106492FLE
Trans EPA ID: CAR000245050
Trans Name: ECOTRANS LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008252405
Trans Name: PACIFIC RESOURCE RECOVERY
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: Not reported
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
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: 20170928
Creation Date: 7/11/2018 18:32:18
Receipt Date: 20171005
Manifest ID: 011106431FLE
Trans EPA ID: CAR000245050
Trans Name: ECOTRANS LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008252405

FIVE BELOW INC (Continued) **S122499505**

Trans Name: PACIFIC RESOURCE RECOVERY
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: Not reported
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.01
Waste Quantity: 20
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: 20170821
Creation Date: 8/1/2018 18:31:15
Receipt Date: 20170822
Manifest ID: 017232372JJK
Trans EPA ID: CAR000245050
Trans Name: ECOTRANS LLC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008252405
Trans Name: PACIFIC RESOURCE RECOVERY
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 331 - Off-specification, aged, or surplus organics
RCRA Code: Not reported
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.01
Waste Quantity: 20
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

San Bern. Co. Permit:
Name: FIVE BELOW 1312
Address: 27592 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0018013
Owner: Five Below
Permit Number: PT0038927
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 08/31/2021

Name: FIVE BELOW 1312
Address: 27592 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0018013
Owner: Five Below

FIVE BELOW INC (Continued) **S122499505**

Permit Number: PT0038926
Permit Category: HAZMAT HANDLER GENERAL ACT.(NB)
Facility Status: FEE EXEMPT
Expiration Date: 08/31/2019

CERS:
Name: FIVE BELOW 1312
Address: 27592 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 439934
CERS ID: 10766617
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 439934
Site Name: Five Below 1312
Violation Date: 08-15-2018
Citation: Un-Specified
Violation Description: Hazardous Waste Generator Program - Administration/Documentation - General Local Ordinance
Violation Notes: Failure to provide facility information to CUPA including, but not limited to, the following: 1. Names, addresses and phone numbers of the business and owner. 2. Name and twenty-four (24) hour phone number of the emergency contact person. 3. Site address where hazardous waste is generated or produced, if different from the facility address. 4. List of each type of hazardous waste generated. 5. The permittee shall prepare a Contingency Plan as defined in Section 66260.10 and Section 66265.50 et seq of Title 22 of the California Code of Regulations (SBCC 23.0602.23.0712) OBSERVATION: The facility did not provide a list of each type of hazardous waste generated. CORRECTIVE ACTION: Provide facility information to CUPA by using the California Environmental Reporting System (CERS).
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-15-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 701 Market Street, Suite 300
Affiliation City: Philadelphia
Affiliation State: PA
Affiliation Country: Not reported
Affiliation Zip: 19106
Affiliation Phone: Not reported

FIVE BELOW INC (Continued) **S122499505**

Affiliation Type Desc: Environmental Contact
Entity Name: Kim WIlson
Entity Title: Not reported
Affiliation Address: 106 Apple Street, Suite 225
Affiliation City: Titon Falls
Affiliation State: NJ
Affiliation Country: Not reported
Affiliation Zip: 07724
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner
Entity Name: Five Below
Entity Title: Not reported
Affiliation Address: 701 Market Street, Suite 300
Affiliation City: Philadelphia
Affiliation State: PA
Affiliation Country: United States
Affiliation Zip: 19106
Affiliation Phone: (215) 546-7909

Affiliation Type Desc: Property Owner
Entity Name: Sara Bombardier
Entity Title: Not reported
Affiliation Address: 27511 San Bernadino Ave, Suite 240
Affiliation City: Redlands
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92374
Affiliation Phone: (909) 654-3181

Affiliation Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

Affiliation Type Desc: Operator
Entity Name: Five Below, 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: (215) 207-2595

Affiliation Type Desc: Document Preparer
Entity Name: Amy Stelmaszyk
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported

FIVE BELOW INC (Continued) **S122499505**

Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Amy Stelmaszyk
Entity Title: Maintenance Coordinator
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 Corporation
Entity Name: Five Below, 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

HWTS:
Name: FIVE BELOW INC
Address: 27592 W LUGONIA AVE
Address 2: Not reported
City,State,Zip: REDLANDS, CA 92374
EPA ID: CAL000426894
Inactive Date: Not reported
Create Date: 04/18/2017
Last Act Date: 02/26/2021
Mailing Name: BUSINESS LICENSING
Mailing Address: 701 MARKET STREET
Mailing Address 2: SUITE 300
Mailing City,State,Zip: PHILADELPHIA, PA 191060000
Owner Name: FIVE BELOW, INC
Owner Address: 701 MARKET STREET
Owner Address 2: SUITE 300
Owner City,State,Zip: PHILADELPHIA, PA 19106
Contact Name: BUSINESS LICENSING DEPT.
Contact Address: 701 MARKET STREET
Contact Address 2: SUITE 300
City,State,Zip: PHILADELPHIA, PA 19106

NAICS:
EPA ID: CAL000426894
Create Date: 2017-04-18 11:07:28.963
NAICS Code: 45299
NAICS Description: All Other General Merchandise Stores
Issued EPA ID Date: 2017-04-18 11:07:28.94000
Inactive Date: Not reported
Facility Name: FIVE BELOW INC
Facility Address: 27592 W LUGONIA AVE
Facility Address 2: Not reported
Facility City: REDLANDS

FIVE BELOW INC (Continued) **S122499505**

Facility County:	Not reported
Facility State:	CA
Facility Zip:	92374

B11
SW
1/8-1/4
0.173 mi.
913 ft.

PARTY CITY #1510 REDLANDS
27588 LUGONIA AVE STE C
REDLANDS, CA 92374

San Bern. Co. Permit **S122499373**
N/A

Site 6 of 8 in cluster B

Relative:
Lower

Actual:
1267 ft.

San Bern. Co. Permit:

Name:	PARTY CITY #1510 REDLANDS
Address:	27588 LUGONIA AVE STE C
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0009473
Owner:	Party City Corporation
Permit Number:	PT0036872
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	02/28/2022

Name:	PARTY CITY #1510 REDLANDS
Address:	27588 LUGONIA AVE STE C
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0009473
Owner:	Party City Corporation
Permit Number:	PT0016196
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	02/28/2022

B12
SW
1/8-1/4
0.173 mi.
913 ft.

PARTY CITY #1510 REDLANDS
27588 W LUGONIA AVE STE C
REDLANDS, CA 92374

CERS HAZ WASTE **S124437235**
CERS **N/A**

Site 7 of 8 in cluster B

Relative:
Lower

Actual:
1267 ft.

CERS HAZ WASTE:

Name:	PARTY CITY #1510 REDLANDS
Address:	27588 W LUGONIA AVE STE C
City,State,Zip:	REDLANDS, CA 92374
Site ID:	141818
CERS ID:	10049980
CERS Description:	Hazardous Waste Generator

CERS:

Name:	PARTY CITY #1510 REDLANDS
Address:	27588 W LUGONIA AVE STE C
City,State,Zip:	REDLANDS, CA 92374
Site ID:	141818
CERS ID:	10049980
CERS Description:	Chemical Storage Facilities

PARTY CITY #1510 REDLANDS (Continued) **S124437235**

Violations:
Site ID: 141818
Site Name: Party City #1510 Redlands
Violation Date: 04-03-2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 05/30/2017. Failure to obtain a CUPA Hazardous Waste Generator Permit (SBCC 23.0602(b)(1)) CUPA hazardous waste generator permit not obtained.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: ROUTINE HANDLER INSPECTION FOR PARTY CITY.
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-02-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-02-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: ROUTINE GENERATOR INSPECTION FOR PARTY CITY.
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-17-2014
Violations Found: No
Eval Type: Routine done by local agency

PARTY CITY #1510 REDLANDS (Continued) **S124437235**

Eval Notes:	ROUTINE INSPECTION. EMAIL TO CORPORATE REGARDING HELIUM QUANTITY IN REGARDS TO INSPECTION. CERS INDICATE 8K CUFT AND ON SITE WAS 3K CUFT. EMAIL WAS IN REGARDS THE FLUCTUATION OF HELIUM.
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS

Enforcement Action:

Site ID:	141818
Site Name:	Party City #1510 Redlands
Site Address:	27588 W LUGONIA AVE STE C
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	04-03-2017
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	San Bernardino County Fire Department
Enf Action Program:	HW
Enf Action Source:	CERS

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	William Hendel
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Tyreen Torner
Entity Title:	Attorney for Party City Corporation
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:	Party City Corporation
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:	(973) 983-0888

Affiliation Type Desc:	Legal Owner
Entity Name:	Party City Corporation
Entity Title:	Not reported
Affiliation Address:	25 Green Pond Road, Suite #1

PARTY CITY #1510 REDLANDS (Continued) **S124437235**

Affiliation City:	Rockaway
Affiliation State:	NJ
Affiliation Country:	United States
Affiliation Zip:	07866
Affiliation Phone:	(973) 983-0888
Affiliation Type Desc:	CUPA District
Entity Name:	San Bernardino County Fire
Entity Title:	Not reported
Affiliation Address:	620 South E Street
Affiliation City:	San Bernardino
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92415-0153
Affiliation Phone:	(909) 386-8401
Affiliation Type Desc:	Environmental Contact
Entity Name:	Kimberly Philips
Entity Title:	Not reported
Affiliation Address:	25 Green Pond Road, Suite #1
Affiliation City:	Rockaway
Affiliation State:	NJ
Affiliation Country:	Not reported
Affiliation Zip:	07866
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	27588 Lugonia Ave.
Affiliation City:	Redlands
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	Party America
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

B13
SW
1/8-1/4
0.173 mi.
913 ft.

PARTY CITY CORPORATION #1510
27588 W LUGONIA AVE
REDLANDS, CA 92374

Site 8 of 8 in cluster B

RCRA NonGen / NLR **1024855350**
CAL000417880

Relative:
Lower

Actual:
1267 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20160608
Handler Name:	PARTY CITY CORPORATION #1510
Handler Address:	27588 W LUGONIA AVE
Handler City,State,Zip:	REDLANDS, CA 92374

PARTY CITY CORPORATION #1510 (Continued) **1024855350**

EPA ID: CAL000417880
Contact Name: MARGARET CASTILLO
Contact Address: 25 GREEN POND RD STE 1
Contact City,State,Zip: ROCKAWAY, NJ 07866
Contact Telephone: 973-453-8600
Contact Fax: Not reported
Contact Email: MCASTILLO@PARTYCITY.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: PO BOX 2513
Mailing City,State,Zip: TRUCKEE, CA 96160-2513
Owner Name: PARTY CITY CORPORATION
Owner Type: Other
Operator Name: MARGARET CASTILLO
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: Yes
Universal Waste Destination Facility: Yes
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: N
Sub-Part K Indicator: Not reported
Commercial TSD Indicator: No
Treatment Storage and Disposal Type: Not reported
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported
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

PARTY CITY CORPORATION #1510 (Continued) **1024855350**

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:	20180906
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	PARTY CITY CORPORATION
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	25 GREEN POND RD STE 1
Owner/Operator City,State,Zip:	ROCKAWAY, NJ 07866
Owner/Operator Telephone:	973-453-8600
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	MARGARET CASTILLO
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	25 GREEN POND RD STE 1
Owner/Operator City,State,Zip:	ROCKAWAY, NJ 07866
Owner/Operator Telephone:	973-453-8600
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20160608
Handler Name:	PARTY CITY CORPORATION #1510
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

PARTY CITY CORPORATION #1510 (Continued) **1024855350**

Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	45299
NAICS Description:	ALL OTHER GENERAL MERCHANDISE STORES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

C14 **NW** **1/8-1/4** **0.216 mi.** **1138 ft.**	**AL CALIFORNIA LLC DBA ALDI INC** **27641 SAN BERNARDINO AVE UNIT 2** **REDLANDS, CA 92374** **Site 1 of 2 in cluster C**	**RCRA NonGen / NLR**	**1025875701** **CAL000448837**

Relative: **Lower**

Actual: **1260 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:	20190916
Handler Name:	AL CALIFORNIA LLC DBA ALDI INC
Handler Address:	27641 SAN BERNARDINO AVE UNIT 2
Handler City,State,Zip:	REDLANDS, CA 92374
EPA ID:	CAL000448837
Contact Name:	JULIENNE OVERLAND VILLEGAS
Contact Address:	12661 ALDI PL
Contact City,State,Zip:	MORENO VALLEY, CA 92555
Contact Telephone:	951-530-5750
Contact Fax:	951-530-5777
Contact Email:	JULIENNE.OVERLAND-VILLEGAS@ALDI.US
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	12661 ALDI PL
Mailing City,State,Zip:	MORENO VALLEY, CA 92555
Owner Name:	JASON C HART
Owner Type:	Other
Operator Name:	JULIENNE OVERLAND VILLEGAS
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No

AL CALIFORNIA LLC DBA ALDI INC (Continued) **1025875701**

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: 20190927
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: JULIENNE OVERLAND VILLEGAS
Legal Status: Other
Date Became Current: Not reported

AL CALIFORNIA LLC DBA ALDI INC (Continued) **1025875701**

Date Ended Current:	Not reported
Owner/Operator Address:	12661 ALDI PL
Owner/Operator City,State,Zip:	MORENO VALLEY, CA 92555
Owner/Operator Telephone:	951-530-5750
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	JASON C HART
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	370 OAK ST
Owner/Operator City,State,Zip:	GLEN ELLYN, IL 60137
Owner/Operator Telephone:	951-530-5750
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20190916
Handler Name:	AL CALIFORNIA LLC DBA ALDI 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:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	493120
NAICS Description:	REFRIGERATED WAREHOUSING AND STORAGE

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

C15	**AL CALIFORNIA LLC DBA ALDI INC #40**	**CERS HAZ WASTE**	**S125545418**
NW	**27641 SAN BERNARDINO AVE UNIT 2**	**San Bern. Co. Permit**	**N/A**
1/8-1/4	**REDLANDS, CA 92374**	**CERS**	
0.216 mi.		**HWTS**	
1138 ft.	**Site 2 of 2 in cluster C**		

Relative:
Lower

Actual:
1260 ft.

CERS HAZ WASTE:

Name:	ALDI #40
Address:	27641 SAN BERNARDINO AVE STE 110
City,State,Zip:	REDLANDS, CA 92374
Site ID:	562419

AL CALIFORNIA LLC DBA ALDI INC #40 (Continued) **S125545418**

CERS ID: 10833121
CERS Description: Hazardous Waste Generator

San Bern. Co. Permit:

Name: ALDI #40
Address: 27641 SAN BERNARDINO AVE STE 110
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0018500
Owner: Al California LLC dba Aldi Inc
Permit Number: PT0039970
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: ACTIVE
Expiration Date: 03/31/2022

Name: ALDI #40
Address: 27641 SAN BERNARDINO AVE STE 110
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0018500
Owner: Al California LLC dba Aldi Inc
Permit Number: PT0039969
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 03/31/2022

CERS:

Name: ALDI #40
Address: 27641 SAN BERNARDINO AVE STE 110
City,State,Zip: REDLANDS, CA 92374
Site ID: 562419
CERS ID: 10833121
CERS Description: Chemical Storage Facilities

Violations:

Site ID: 562419
Site Name: Aldi #40
Violation Date: 03-04-2021
Citation: HSC 6.95 25508(a)(3) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(3)
Violation Description: Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.
Violation Notes: Returned to compliance on 03/08/2021. OBSERVATION: The Emergency Response/ Contingency Plan submitted on 2/23/2021 lists an incorrect CUPA phone number. Additionally, the local hospital is incorrectly identified as Riverside County Regional Medical Center. CORRECTIVE ACTION: Submit a complete and accurate emergency response plan and procedures for a release or threatened release of hazardous materials via CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:

Eval General Type: Compliance Evaluation Inspection

AL CALIFORNIA LLC DBA ALDI INC #40 (Continued) **S125545418**

Eval Date:	03-04-2021
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-04-2021
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Julienne Overland-Villegas
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	12661 Aldi Place
Affiliation City:	Moreno Valley
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92555
Affiliation Phone:	Not reported

Affiliation Type Desc:	Environmental Contact
Entity Name:	Caroline Rowe
Entity Title:	Not reported
Affiliation Address:	12661 Aldi Place
Affiliation City:	Moreno Valley
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92555
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Julienne Overland-Villegas
Entity Title:	Executive Assistant
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

AL CALIFORNIA LLC DBA ALDI INC #40 (Continued) **S125545418**

Affiliation Type Desc: Parent Corporation
Entity Name: AI Incorporated (ALDI)
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: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

Affiliation Type Desc: Legal Owner
Entity Name: AI California LLC dba Aldi Inc.
Entity Title: Not reported
Affiliation Address: 12661 Aldi Place
Affiliation City: Moreno Valley
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92555
Affiliation Phone: (951) 530-5750

Affiliation Type Desc: Operator
Entity Name: Aldi #40
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (951) 530-5750

HWTS:
Name: AL CALIFORNIA LLC DBA ALDI INC #40
Address: 27641 SAN BERNARDINO AVE UNIT 2
Address 2: Not reported
City,State,Zip: REDLANDS, CA 92374
EPA ID: CAL000448837
Inactive Date: Not reported
Create Date: 09/16/2019
Last Act Date: 07/20/2020
Mailing Name: Not reported
Mailing Address: 12661 ALDI PL
Mailing Address 2: Not reported
Mailing City,State,Zip: MORENO VALLEY, CA 92555
Owner Name: ALDI INCORPORATED
Owner Address: 12661 ALDI PL
Owner Address 2: Not reported

AL CALIFORNIA LLC DBA ALDI INC #40 (Continued) **S125545418**

Owner City,State,Zip: MORENO VALLEY, CA 92555
Contact Name: CAROLINE ROWE
Contact Address: 12661 ALDI PLACE
Contact Address 2: Not reported
City,State,Zip: MORENO VALLEY, CA 92555

NAICS:
EPA ID: CAL000448837
Create Date: 2019-09-16 09:31:10.167
NAICS Code: 493120
NAICS Description: Refrigerated Warehousing and Storage
Issued EPA ID Date: 2019-09-16 09:31:10.16700
Inactive Date: Not reported
Facility Name: AL CALIFORNIA LLC DBA ALDI INC #40
Facility Address: 27641 SAN BERNARDINO AVE UNIT 2
Facility Address 2: Not reported
Facility City: REDLANDS
Facility County: Not reported
Facility State: CA
Facility Zip: 92374

D16
WSW
1/8-1/4
0.219 mi.
1155 ft.

KOHL’S, INC. - STORE #631
27540 W LUGONIA AVE
REDLANDS, CA 92374

Site 1 of 7 in cluster D

CERS HAZ WASTE
San Bern. Co. Permit
CERS

S117896911
N/A

Relative:
Lower

Actual:
1262 ft.

CERS HAZ WASTE:
Name: KOHL’S, INC. - STORE #631
Address: 27540 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 273171
CERS ID: 10618603
CERS Description: Hazardous Waste Generator

San Bern. Co. Permit:
Name: KOHL’S, INC. - STORE #631
Address: 27540 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0016009
Owner: KOHL’S INC
Permit Number: PT0034739
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 05/31/2022

Name: KOHL’S, INC. - STORE #631
Address: 27540 W LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0016009
Owner: KOHL’S INC
Permit Number: PT0037129
Permit Category: HAZMAT HANDLER GENERAL ACT.(NB)
Facility Status: FEE EXEMPT
Expiration Date: 05/31/2017

KOHL'S, INC. - STORE #631 (Continued) **S117896911**

CERS:

Name:	KOHL'S, INC. - STORE #631
Address:	27540 W LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	273171
CERS ID:	10618603
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	273171
Site Name:	Kohl's, Inc. - Store #631
Violation Date:	08-21-2015
Citation:	HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description:	Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/21/2015. Failure to complete hazardous waste labels (CCR 66262.34(f)(3))
Violation Division:	San Bernardino County Fire Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	273171
Site Name:	Kohl's, Inc. - Store #631
Violation Date:	08-21-2015
Citation:	HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description:	Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/21/2015. Failure to label hazardous waste containers (CCR 66262.34(f)(3))
Violation Division:	San Bernardino County Fire Department
Violation Program:	HW
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-03-2021
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-20-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	08-21-2015
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION OF KOHLS IN REDLANDS.

KOHL’S, INC. - STORE #631 (Continued) **S117896911**

Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	273171
Site Name:	Kohl’s, Inc. - Store #631
Site Address:	27540 W LUGONIA AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	08-21-2015
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	San Bernardino County Fire Department
Enf Action Program:	HW
Enf Action Source:	CERS

Coordinates:

Site ID:	273171
Facility Name:	Kohl’s, Inc. - Store #631
Env Int Type Code:	HWG
Program ID:	10618603
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	34.073250
Longitude:	-117.202800

Affiliation:

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	P.O. Box 3155
Affiliation City:	Milwaukee
Affiliation State:	WI
Affiliation Country:	Not reported
Affiliation Zip:	53201
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Ryan Piedot
Entity Title:	Sr. Manager of Environmental Compliance
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:	Legal Owner
Entity Name:	Kohl’s, Inc.
Entity Title:	Not reported
Affiliation Address:	P.O. Box 3155
Affiliation City:	Milwaukee
Affiliation State:	WI
Affiliation Country:	United States

KOHL’S, INC. - STORE #631 (Continued) **S117896911**

Affiliation Zip: 53201
Affiliation Phone: (262) 703-7019

Affiliation Type Desc: Operator
Entity Name: Kohl’s, Inc. - Store #631
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: (262) 703-7019

Affiliation Type Desc: Parent Corporation
Entity Name: Kohl’s, 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: Document Preparer
Entity Name: Scott Smith
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 Piedot
Entity Title: Not reported
Affiliation Address: P.O. Box 3155
Affiliation City: Milwaukee
Affiliation State: WI
Affiliation Country: Not reported
Affiliation Zip: 53201
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

D17 **KOHL’S INC - STORE #631** **RCRA NonGen / NLR** **1024827150**
WSW **27540 LUGONIA AVE** **CAL000356155**
1/8-1/4 **REDLANDS, CA 92374**
0.219 mi.
1155 ft. **Site 2 of 7 in cluster D**

Relative:
Lower

Actual:
1262 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20200604
Handler Name: KOHL’S INC - STORE #631
Handler Address: 27540 LUGONIA AVE
Handler City,State,Zip: REDLANDS, CA 92374
EPA ID: CAL000356155
Contact Name: RYAN PIEDOT
Contact Address: W17000 RIDGEWOOD DR
Contact City,State,Zip: MENOMONEE FALLS, WI 53051
Contact Telephone: 262-703-7019
Contact Fax: Not reported
Contact Email: RYAN.PIEDOT@KOHLS.COM
Contact Title: SR MANAGER OF ENVIRONMENTAL COMPLIANCE
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: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 3156
Mailing City,State,Zip: MILWAUKEE, WI 53201-0000
Owner Name: Not reported
Owner Type: Not reported
Operator Name: KOHL’S INC
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: Yes
Universal Waste Destination Facility: Yes
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: N
Sub-Part K Indicator: Not reported
Commercial TSD Indicator: No
Treatment Storage and Disposal Type: Not reported
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported

KOHL’S INC - STORE #631 (Continued) **1024827150**

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:	20200611
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	KOHL’S INC
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	N56 W17000 RIDGEWOOD DR
Owner/Operator City,State,Zip:	MENOMONEE FALLS, WI 53051
Owner/Operator Telephone:	262-703-7019
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	KOHL’S DEPARTMENT STORES
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	N56 W17000 RIDGEWOOD DR
Owner/Operator City,State,Zip:	MENOMONEE FALLS, WI 53051-0000
Owner/Operator Telephone:	262-703-7019
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

KOHL’S INC - STORE #631 (Continued) **1024827150**

Owner/Operator Indicator:	Operator
Owner/Operator Name:	RYAN PIEDOT
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	N56 W17000 RIDGEWOOD DRIVE
Owner/Operator City,State,Zip:	MENOMONEE FALLS, WI 53051
Owner/Operator Telephone:	262-703-7019
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20100825
Handler Name:	KOHL’S DEPARTMENT STORES INC #631
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:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	20200604
Handler Name:	KOHL’S INC - STORE #631
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:	45211
NAICS Description:	DEPARTMENT STORES

NAICS Code:	45221
NAICS Description:	DEPARTMENT STORES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

D18 **WSW** **1/8-1/4** **0.221 mi.** **1165 ft.**	**MICHAELS STORES INC #4730** **27543 LUGONIA AVE** **REDLANDS, CA 94903** **Site 3 of 7 in cluster D**	**RCRA NonGen / NLR**	**1024832790** **CAL000371257**

Relative:
Lower

Actual:
1262 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20120131
Handler Name:	MICHAELS STORES INC #4730
Handler Address:	27543 LUGONIA AVE
Handler City,State,Zip:	REDLANDS, CA 94903
EPA ID:	CAL000371257
Contact Name:	RYAN DRAPER
Contact Address:	8000 BENT BRANCH DR
Contact City,State,Zip:	IRVING, TX 75063
Contact Telephone:	972-409-5786
Contact Fax:	972-409-5792
Contact Email:	DRAPERR@MICHAELS.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	8000 BENT BRANCH DR
Mailing City,State,Zip:	IRVING, TX 75063-0000
Owner Name:	MICHAELS STORES INC
Owner Type:	Other
Operator Name:	RYAN DRAPER
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported

MICHAELS STORES INC #4730 (Continued) **1024832790**

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:	20180906
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MICHAELS STORES INC
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8000 BENT BRANCH DR
Owner/Operator City,State,Zip:	IRVING, TX 75063-0000
Owner/Operator Telephone:	972-409-5777
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	RYAN DRAPER
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8000 BENT BRANCH DR
Owner/Operator City,State,Zip:	IRVING, TX 75063
Owner/Operator Telephone:	972-409-5786
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

MICHAELS STORES INC #4730 (Continued) **1024832790**

Historic Generators:
Receive Date: 20120131
Handler Name: MICHAELS STORES INC #4730
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 45112
NAICS Description: HOBBY, TOY, AND GAME STORES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

D19 **MICHAELS STORE #4730** **San Bern. Co. Permit** **S112142702**
WSW **27534 LUGONIA AVE** **N/A**
1/8-1/4 **REDLANDS, CA 92374**
0.225 mi.
1189 ft. **Site 4 of 7 in cluster D**

Relative:
Lower

Actual:
1261 ft.

San Bern. Co. Permit:
Name: MICHAELS STORE #4730
Address: 27534 LUGONIA AVE
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0009104
Owner: MICHAELS STORES INC.
Permit Number: PT0025547
Permit Category: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 09/30/2013

E20 **SEPHORA #1236** **RCRA NonGen / NLR** **1025873223**
West **27514 LUGONIA AVE** **CAL000446349**
1/8-1/4 **REDLANDS, CA 92374**
0.225 mi.
1189 ft. **Site 1 of 2 in cluster E**

Relative:
Lower

Actual:
1260 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20190528
Handler Name: SEPHORA #1236
Handler Address: 27514 LUGONIA AVE
Handler City,State,Zip: REDLANDS, CA 92374

SEPHORA #1236 (Continued) **1025873223**

EPA ID:	CAL000446349
Contact Name:	ASHLEY CAMPBELL
Contact Address:	5151 SAN FELIPE ST STE 1000
Contact City,State,Zip:	HOUSTON, TX 77056
Contact Telephone:	713-985-5472
Contact Fax:	Not reported
Contact Email:	ASHLEY.CAMPBELL@STERICYCLE.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	5151 SAN FELIPE ST STE 1000
Mailing City,State,Zip:	HOUSTON, TX 77056
Owner Name:	SEPHORA USA INC
Owner Type:	Other
Operator Name:	ASHLEY CAMPBELL
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:	Yes
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
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

SEPHORA #1236 (Continued) **1025873223**

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:	20190628
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	ASHLEY CAMPBELL
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	5151 SAN FELIPE ST STE 1000
Owner/Operator City,State,Zip:	HOUSTON, TX 77056
Owner/Operator Telephone:	713-985-5472
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	SEPHORA USA INC
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	575 MARKET ST 32ND FLR
Owner/Operator City,State,Zip:	SAN FRANCISCO, CA 94105
Owner/Operator Telephone:	415-384-3300
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20190528
Handler Name:	SEPHORA #1236
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

SEPHORA #1236 (Continued) **1025873223**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 453998
NAICS Description: ALL OTHER MISCELLANEOUS STORE RETAILERS (EXCEPT TOBACCO STORES)

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

E21 **SEPHORA #1236** **CERS HAZ WASTE** **S124931784**
West **27514 LUGONIA AVE** **HAZNET** **N/A**
1/8-1/4 **REDLANDS, CA 77570** **San Bern. Co. Permit**
0.225 mi. **HWTS**
1189 ft. **Site 2 of 2 in cluster E**

Relative:
Lower

Actual:
1260 ft.

CERS HAZ WASTE:
Name: SEPHORA #1236
Address: 27514 LUGONIA AVENUE
City,State,Zip: REDLANDS, CA 92374
Site ID: 563721
CERS ID: 10835977
CERS Description: Hazardous Waste Generator

Affiliation:
Affiliation Type Desc: Parent Corporation
Entity Name: Sephora
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: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

Affiliation Type Desc: Environmental Contact
Entity Name: ASHLEY CAMPBELL
Entity Title: Not reported
Affiliation Address: 9950 CHEMICAL ROAD
Affiliation City: PASADENA

SEPHORA #1236 (Continued) **S124931784**

Affiliation State:	TX
Affiliation Country:	Not reported
Affiliation Zip:	77507
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	SEPHORA USA, INC
Entity Title:	Not reported
Affiliation Address:	575 MARKET STREET, 32ND FLOOR
Affiliation City:	San Francisco
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94105
Affiliation Phone:	(415) 284-3300
Affiliation Type Desc:	Operator
Entity Name:	SEPHORA #1236
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:	(909) 570-0290
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	9950 CHEMICAL ROAD/ATTN: ASHLEY CAMPBELL
Affiliation City:	PASADENA
Affiliation State:	TX
Affiliation Country:	Not reported
Affiliation Zip:	77507
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	Ashley Campbell
Entity Title:	COMPLIANCE & REGULATORY AFFAIRS SPEC
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:	Document Preparer
Entity Name:	ASHLEY CAMPBELL
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

SEPHORA #1236 (Continued) **S124931784**

HAZNET:

Name:	SEPHORA #1236
Address:	27514 LUGONIA AVE
Address 2:	Not reported
City,State,Zip:	REDLANDS, CA 775700000
Contact:	ASHLEY CAMPBELL
Telephone:	7139855472
Mailing Name:	Not reported
Mailing Address:	9950 CHEMICAL ROAD
Year:	2019
Gepaid:	CAL000446349
TSD EPA ID:	CAD008364432
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.73500
Year:	2019
Gepaid:	CAL000446349
TSD EPA ID:	CAD008364432
CA Waste Code:	122 - Alkaline solution without metals pH >= 12.5
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.00250

San Bern. Co. Permit:

Name:	SEPHORA #1236
Address:	27514 LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0018503
Owner:	SEPHORA USA INC
Permit Number:	PT0039974
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	03/31/2022
Name:	SEPHORA #1236
Address:	27514 LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0018503
Owner:	SEPHORA USA INC
Permit Number:	PT0039973
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	03/31/2022

HWTS:

Name:	SEPHORA #1236
Address:	27514 LUGONIA AVE
Address 2:	Not reported
City,State,Zip:	REDLANDS, CA 92374
EPA ID:	CAL000446349

SEPHORA #1236 (Continued) **S124931784**

Inactive Date: Not reported
Create Date: 05/28/2019
Last Act Date: 08/13/2020
Mailing Name: Not reported
Mailing Address: 9950 CHEMICAL ROAD
Mailing Address 2: Not reported
Mailing City,State,Zip: PASADENA, TX 775700000
Owner Name: SEPHORA USA LLC
Owner Address: 525 MARKET ST.
Owner Address 2: 32ND FLOOR
Owner City,State,Zip: SAN FRANCISCO, CA 941050000
Contact Name: ASHLEY CAMPBELL
Contact Address: 9950 CHEMICAL RAOD
Contact Address 2: Not reported
City,State,Zip: PASADENA, TX 77507

NAICS:
EPA ID: CAL000446349
Create Date: 2019-05-28 15:25:32.173
NAICS Code: 453998
NAICS Description: All Other Miscellaneous Store Retailers (except Tobacco Stores)
Issued EPA ID Date: 2019-05-28 15:25:32.17300
Inactive Date: Not reported
Facility Name: SEPHORA #1236
Facility Address: 27514 LUGONIA AVE
Facility Address 2: Not reported
Facility City: REDLANDS
Facility County: Not reported
Facility State: CA
Facility Zip: 92374

D22
WSW
1/8-1/4
0.229 mi.
1211 ft.

BATH & BODY WORKS #2450
27530 W LUGONIA AVE STE A
REDLANDS, CA 92374

Site 5 of 7 in cluster D

CERS HAZ WASTE
HAZNET
San Bern. Co. Permit
CERS
HWTS

S124925924
N/A

Relative:
Lower

Actual:
1261 ft.

CERS HAZ WASTE:
Name: BATH & BODY WORKS #2450
Address: 27530 W LUGONIA AVE STE A
City,State,Zip: REDLANDS, CA 92374
Site ID: 560223
CERS ID: 10828966
CERS Description: Hazardous Waste Generator

HAZNET:
Name: BATH & BODY WORKS #2450
Address: 27530 W LUGONIA AVE SPC A
Address 2: Not reported
City,State,Zip: REDLANDS, CA 43230
Contact: MIKE RYAN
Telephone: 6144151769
Mailing Name: Not reported
Mailing Address: 2 LIMITED PKWY

Year: 2019
Gepaid: CAL000439637

BATH & BODY WORKS #2450 (Continued) **S124925924**

TSD EPA ID:	NVD980895338
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.41000
Year:	2019
Gepaid:	CAL000439637
TSD EPA ID:	AZR000515924
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	2.33200
Year:	2019
Gepaid:	CAL000439637
TSD EPA ID:	CAD008364432
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.17600
Year:	2018
Gepaid:	CAL000439637
TSD EPA ID:	NVD980895338
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.06500
Year:	2018
Gepaid:	CAL000439637
TSD EPA ID:	AZR000515924
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.69800

San Bern. Co. Permit:

Name:	BATH & BODY WORKS #2450
Address:	27530 W LUGONIA AVE STE A
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0018427
Owner:	BATH & BODY WORKS, LLC
Permit Number:	PT0039827
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	ACTIVE
Expiration Date:	12/31/2021

CERS:

Name:	BATH & BODY WORKS #2450
Address:	27530 W LUGONIA AVE STE A
City,State,Zip:	REDLANDS, CA 92374
Site ID:	560223

BATH & BODY WORKS #2450 (Continued) **S124925924**

CERS ID:	10828966
CERS Description:	Chemical Storage Facilities

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	San Bernardino County Fire
Entity Title:	Not reported
Affiliation Address:	620 South E Street
Affiliation City:	San Bernardino
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92415-0153
Affiliation Phone:	(909) 386-8401

Affiliation Type Desc:	Environmental Contact
Entity Name:	Mike Ryan
Entity Title:	Not reported
Affiliation Address:	2 LIMITED PARKWAY
Affiliation City:	COLUMBUS
Affiliation State:	OH
Affiliation Country:	Not reported
Affiliation Zip:	43230
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Ashley Campbell
Entity Title:	COMPLIANCE & REGULATORY AFFAIRS SPEC
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 Corporation
Entity Name:	L Brands
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:	Document Preparer
Entity Name:	ASHLEY CAMPBELL
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:	Legal Owner
Entity Name:	Bath & Body Works, LLC
Entity Title:	Not reported
Affiliation Address:	7 LIMITED PARKWAY

BATH & BODY WORKS #2450 (Continued) **S124925924**

Affiliation City:	REYNOLDSBURG
Affiliation State:	OH
Affiliation Country:	United States
Affiliation Zip:	43068
Affiliation Phone:	(614) 856-6000
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	2 LIMITED PARKWAY/ATTN: MIKE RYAN
Affiliation City:	COLUMBUS
Affiliation State:	OH
Affiliation Country:	Not reported
Affiliation Zip:	43230
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	BATH & BODY WORKS #2450
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:	(909) 283-7231

HWTS:

Name:	BATH & BODY WORKS #2450
Address:	27530 W LUGONIA AVE SPC A
Address 2:	Not reported
City,State,Zip:	REDLANDS, CA 92374
EPA ID:	CAL000439637
Inactive Date:	Not reported
Create Date:	10/04/2018
Last Act Date:	11/02/2020
Mailing Name:	Not reported
Mailing Address:	2 LIMITED PKWY
Mailing Address 2:	Not reported
Mailing City,State,Zip:	COLUMBUS, OH 43230
Owner Name:	BATH & BODY WORKS LLC
Owner Address:	7 LIMITED PKWY
Owner Address 2:	Not reported
Owner City,State,Zip:	REYNOLDSBURG, OH 43068
Contact Name:	MIKE RYAN
Contact Address:	2 LIMITED PKWY
Contact Address 2:	Not reported
City,State,Zip:	COLUMBUS, OH 43230

NAICS:

EPA ID:	CAL000439637
Create Date:	2018-10-04 15:34:02.577
NAICS Code:	453998
NAICS Description:	All Other Miscellaneous Store Retailers (except Tobacco Stores)
Issued EPA ID Date:	2018-10-04 15:34:02.57700
Inactive Date:	Not reported
Facility Name:	BATH & BODY WORKS #2450

BATH & BODY WORKS #2450 (Continued) **S124925924**

Facility Address: 27530 W LUGONIA AVE SPC A
Facility Address 2: Not reported
Facility City: REDLANDS
Facility County: Not reported
Facility State: CA
Facility Zip: 92374

D23
WSW
1/8-1/4
0.229 mi.
1211 ft.

BATH & BODY WORKS #2450
27530 W LUGONIA AVE SPC A
REDLANDS, CA 92374

RCRA NonGen / NLR

1024870993
CAL000439637

Site 6 of 7 in cluster D

Relative:
Lower

Actual:
1261 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20181004
Handler Name: BATH & BODY WORKS #2450
Handler Address: 27530 W LUGONIA AVE SPC A
Handler City,State,Zip: REDLANDS, CA 92374
EPA ID: CAL000439637
Contact Name: MIKE RYAN
Contact Address: 2 LIMITED PKWY
Contact City,State,Zip: COLUMBUS, OH 43230
Contact Telephone: 614-415-1769
Contact Fax: Not reported
Contact Email: MRYAN@LB.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 2 LIMITED PKWY
Mailing City,State,Zip: COLUMBUS, OH 43230
Owner Name: BATH & BODY WORKS LLC
Owner Type: Other
Operator Name: MIKE RYAN
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: Yes
Universal Waste Destination Facility: Yes
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported

BATH & BODY WORKS #2450 (Continued) **1024870993**

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:	20181120
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	BATH & BODY WORKS LLC
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	7 LIMITED PKWY
Owner/Operator City,State,Zip:	REYNOLDSBURG, OH 43068
Owner/Operator Telephone:	614-856-6000
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	MIKE RYAN
Legal Status:	Other

BATH & BODY WORKS #2450 (Continued) **1024870993**

Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	2 LIMITED PKWY
Owner/Operator City,State,Zip:	COLUMBUS, OH 43230
Owner/Operator Telephone:	614-415-1769
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20181004
Handler Name:	BATH & BODY WORKS #2450
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	453998
NAICS Description:	ALL OTHER MISCELLANEOUS STORE RETAILERS (EXCEPT TOBACCO STORES)

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

D24 **CHICK-FIL-A @ CITRUS PLAZA** **San Bern. Co. Permit** **S108724370**
WSW **27520 LUGONIA AVE** **N/A**
1/8-1/4 **REDLANDS, CA 92374**
0.239 mi.
1263 ft. **Site 7 of 7 in cluster D**

Relative:
Lower

Actual:
1260 ft.

San Bern. Co. Permit:

Name:	CHICK-FIL-A @ CITRUS PLAZA
Address:	27520 LUGONIA AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0011185
Owner:	CRUM, WILLIAM
Permit Number:	PT0019252
Permit Category:	BULK CO2 AT RETAIL FOOD FACILITIES
Facility Status:	INACTIVE
Expiration Date:	08/31/2010

F25
East
1/4-1/2
0.338 mi.
1786 ft.

WELL 31-A
1401 TEXAS ST
REDLANDS, CA 92373

Site 1 of 3 in cluster F

SWEEPS UST
HIST UST
CA FID UST
HIST CORTESE

S101619383
N/A

Relative:
Higher

Actual:
1324 ft.

SWEEPS UST:

Name:	WELL 31-A
Address:	1401 TEXAS ST
City:	REDLANDS
Status:	Active
Comp Number:	55070
Number:	9
Board Of Equalization:	Not reported
Referral Date:	09-10-91
Action Date:	09-10-91
Created Date:	02-29-88
Owner Tank Id:	28023
SWRCB Tank Id:	36-000-055070-000001
Tank Status:	A
Capacity:	250
Active Date:	07-01-85
Tank Use:	UNKNOWN
STG:	P
Content:	Not reported
Number Of Tanks:	1

HIST UST:

Name:	WELL 31-A
Address:	1401 TEXAS STREET
City,State,Zip:	REDLANDS, CA 92373
File Number:	00029CA8
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029CA8.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

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

WELL 31-A (Continued) **S101619383**

Container Construction Thickness:	Not reported
Leak Detection:	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
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:

CA FID UST:

Facility ID:	36000428
Regulated By:	UTNKA
Regulated ID:	00055070
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	30 CAJON ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	REDLANDS 92373
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active
Facility ID:	36000428
Regulated By:	UTNKA
Regulated ID:	00055071
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	30 CAJON ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	REDLANDS 92373
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported

WELL 31-A (Continued) **S101619383**

Comments: Not reported
Status: Active

HIST CORTESE:
edr_fname: R.F. WHITE CO.
edr_fadd1: 1401
City,State,Zip: REDLANDS, CA 92374
Region: CORTESE
Facility County Code: 36
Reg By: LTNKA
Reg Id: 083602328T

edr_fname: TEXAS STREET PUMPING PLAN
edr_fadd1: 1401
City,State,Zip: REDLANDS, CA 92374
Region: CORTESE
Facility County Code: 36
Reg By: LTNKA
Reg Id: 083602259T

F26	**TEXAS STREET PUMPING PLANT**	**LUST**	**U001575491**
East	**1401 TEXAS STREET**	**HIST UST**	**N/A**
1/4-1/2	**REDLANDS, CA 92374**	**EMI**	
0.338 mi.		**San Bern. Co. Permit**	
1786 ft.	**Site 2 of 3 in cluster F**	**CERS**	

Relative:
Higher

Actual:
1324 ft.

LUST:
Name: TEXAS STREET PUMPING PLANT
Address: 1401 TEXAS STREET
City,State,Zip: REDLANDS, CA 92374
Lead Agency: SAN BERNARDINO COUNTY
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100281
Global Id: T0607100281
Latitude: 34.0727362
Longitude: -117.1911947
Status: Completed - Case Closed
Status Date: 07/16/2004
Case Worker: Not reported
RB Case Number: 083602259T
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 93018
Potential Media Affect: Soil
Potential Contaminants of Concern: Waste Oil / Motor / Hydraulic / Lubricating
Site History: Not reported

LUST:
Global Id: T0607100281
Contact Type: Regional Board Caseworker
Contact Name: MIGUEL OVIEDO
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 Main Street, Suite 500
City: RIVERSIDE
Email: miguel.oviedo@waterboards.ca.gov
Phone Number: 9517823238

TEXAS STREET PUMPING PLANT (Continued) **U001575491**

LUST:
Global Id: T0607100281
Action Type: ENFORCEMENT
Date: 06/16/2004
Action: Closure/No Further Action Letter

Global Id: T0607100281
Action Type: Other
Date: 09/01/1991
Action: Leak Discovery

Global Id: T0607100281
Action Type: Other
Date: 05/18/1993
Action: Leak Reported

Global Id: T0607100281
Action Type: REMEDIATION
Date: 12/16/2002
Action: Ex Situ Physical/Chemical Treatment (other than P&T, SVE, or Excavation)

LUST:
Global Id: T0607100281
Status: Open - Case Begin Date
Status Date: 09/01/1991

Global Id: T0607100281
Status: Open - Site Assessment
Status Date: 05/18/1993

Global Id: T0607100281
Status: Open - Remediation
Status Date: 12/16/2002

Global Id: T0607100281
Status: Completed - Case Closed
Status Date: 07/16/2004

HIST UST:
Name: WELL 31-A
Address: 1401 TEXAS ST
City,State,Zip: REDLANDS, CA 92373
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000055070
Facility Type: Other
Other Type: WATER PUMPING PLANT
Contact Name: MICHAEL HUFFSTUTLER
Telephone: 7147932641
Owner Name: CITY OF REDLANDS
Owner Address: 30 CAJON STREET
Owner City,St,Zip: REDLANDS, CA 92373
Total Tanks: 0001

TEXAS STREET PUMPING PLANT (Continued) **U001575491**

Tank Num: 001
Container Num: 28023
Year Installed: 1967
Tank Capacity: 00000250
Tank Used for: PRODUCT
Type of Fuel: Not reported
Container Construction Thickness: .375
Leak Detection: Visual

EMI:
Name: REDLANDS CITY, MUNICIPAL UTILI
Address: 1401 TEXAS ST
City,State,Zip: REDLANDS, CA 92373
Year: 1995
County Code: 36
Air Basin: SC
Facility ID: 69179
Air District Name: SC
SIC Code: 4941
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 10
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 3
NOX - Oxides of Nitrogen Tons/Yr: 25
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Name: REDLANDS CITY, MUNICIPAL UTILI
Address: 1401 TEXAS ST
City,State,Zip: REDLANDS, CA 92373
Year: 1996
County Code: 36
Air Basin: SC
Facility ID: 69179
Air District Name: SC
SIC Code: 4941
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 27
Reactive Organic Gases Tons/Yr: 2
Carbon Monoxide Emissions Tons/Yr: 3
NOX - Oxides of Nitrogen Tons/Yr: 24
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

San Bern. Co. Permit:
Name: WELL #31-A
Address: 1401 TEXAS ST
City,State,Zip: REDLANDS, CA 92374
Region: SAN BERNARDINO
Facility ID: FA0007804

TEXAS STREET PUMPING PLANT (Continued) **U001575491**

Owner:	CITY OF REDLANDS WASTEWATER
Permit Number:	PT0013478
Permit Category:	EPCRA FACILITY
Facility Status:	INACTIVE
Expiration Date:	05/31/2012
Name:	WELL #31-A
Address:	1401 TEXAS ST
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007804
Owner:	CITY OF REDLANDS WASTEWATER
Permit Number:	PT0015169
Permit Category:	RMP INSPECTION - PROGRAM 2
Facility Status:	INACTIVE
Expiration Date:	05/31/2012
Name:	WELL #31-A
Address:	1401 TEXAS ST
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007804
Owner:	CITY OF REDLANDS WASTEWATER
Permit Number:	PT0013475
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	05/31/2012
Name:	WELL #31-A
Address:	1401 TEXAS ST
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0007804
Owner:	CITY OF REDLANDS WASTEWATER
Permit Number:	PT0013476
Permit Category:	CALARP FACILITY PERMIT
Facility Status:	INACTIVE
Expiration Date:	05/31/2012

CERS:

Name:	TEXAS STREET PUMPING PLANT
Address:	1401 TEXAS STREET
City,State,Zip:	REDLANDS, CA 92374
Site ID:	221629
CERS ID:	T0607100281
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	MIGUEL OVIEDO - SANTA ANA RWQCB (REGION 8)
Entity Title:	Not reported
Affiliation Address:	3737 Main Street, Suite 500
Affiliation City:	RIVERSIDE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	9517823238

F27 **East** **1/4-1/2** **0.338 mi.** **1786 ft.**	**TEXAS STREET PUMPING PLANT** **1401 TEXAS STREET** **REDLANDS, CA 92374** **Site 3 of 3 in cluster F**	**LUST** **Cortese**	**S105035775** **N/A**

Relative:
Higher

Actual:
1324 ft.

LUST REG 8:

Name:	TEXAS STREET PUMPING PLANT
Address:	1401 TEXAS STREET
City:	REDLANDS
Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083602259T
Local Case Num:	93018
Case Type:	Soil only
Substance:	Motor Oil
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	Not reported
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0607100281
How Stopped Date:	Not reported
Enter Date:	6/22/1993
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	Not reported
Discover Date:	9/1/1991
Enforcement Date:	Not reported
Close Date:	7/16/2004
Date Prelim Assessment Workplan Submitted:	5/18/1993
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	12/16/2002
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	6/22/1993
GW Qualifies:	Not reported
Soil Qualifies:	ND
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.072623
Longitude:	-117.1912191
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	0
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	TME
Staff Initials:	BM7
Lead Agency:	Local Agency

TEXAS STREET PUMPING PLANT (Continued) **S105035775**

Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported

Summary: NEW OIL 30W

CORTESE:

Name:	TEXAS STREET PUMPING PLANT
Address:	1401 TEXAS STREET
City,State,Zip:	REDLANDS, CA 92374
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0607100281
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

G28 **TELEDYNE BATTERY** **LUST** **S105035353**
SE **840 BROCKTON AVE** **N/A**
1/4-1/2 **REDLANDS, CA 92374**
0.341 mi.
1801 ft. **Site 1 of 4 in cluster G**

Relative: Higher

Actual: 1310 ft.

LUST REG 8:

Name:	TELEDYNE BATTERY
Address:	840 BROCKTON AVE
City:	REDLANDS
Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083600803T
Local Case Num:	90201
Case Type:	Soil only
Substance:	Heater Fuel
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	NEW YORK
Enf Type:	Not reported
Funding:	Not reported

TELEDYNE BATTERY (Continued) **S105035353**

How Discovered:	Subsurface Monitoring
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0607100086
How Stopped Date:	Not reported
Enter Date:	5/21/1987
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	Not reported
Discover Date:	3/30/1987
Enforcement Date:	Not reported
Close Date:	12/28/1990
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	3/29/1988
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	5/21/1987
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.0665603
Longitude:	-117.191792
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	Not Required to be Tested.
MTBE Class:	*
Staff:	VJJ
Staff Initials:	CR2
Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported

Summary: Not reported

G29	**TELEDYNE INC TELEDYNE BATTERY**	**CORRACTS**	**1000201836**
SE	**840 W BROCKTON AVE**	**RCRA-TSDF**	**CAD008386641**
1/4-1/2	**REDLANDS, CA 92373**	**RCRA-LQG**	
0.387 mi.		**2020 COR ACTION**	
2041 ft.	**Site 2 of 4 in cluster G**	**RAATS**	

Relative:
Higher

Actual:
1311 ft.

CORRACTS:

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W. BROCKTON
Address 2:	Not reported
EPA ID:	CAD008386641
Area Name:	ENTIRE FACILITY
Corrective Action:	CMS COMPLETE
Actual Date:	20040628

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W. BROCKTON
Address 2:	Not reported
EPA ID:	CAD008386641
Area Name:	ENTIRE FACILITY
Corrective Action:	CMI WORKPLAN APPROVED
Actual Date:	20040628
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W. BROCKTON
Address 2:	Not reported
EPA ID:	CAD008386641
Area Name:	ENTIRE FACILITY
Corrective Action:	RFA COMPLETED
Actual Date:	19870930
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W. BROCKTON
Address 2:	Not reported
EPA ID:	CAD008386641
Area Name:	ENTIRE FACILITY
Corrective Action:	DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NECESSARY
Actual Date:	19870930
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W. BROCKTON
Address 2:	Not reported
EPA ID:	CAD008386641
Area Name:	ENTIRE FACILITY
Corrective Action:	INVESTIGATION WORKPLAN APPROVED
Actual Date:	19951025
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W. BROCKTON
Address 2:	Not reported
EPA ID:	CAD008386641

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Area Name: WHSE SITE
Corrective Action: INVESTIGATION WORKPLAN APPROVED
Actual Date: 19851025
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W. BROCKTON
Address 2: Not reported
EPA ID: CAD008386641
Area Name: ENTIRE SITE
Corrective Action: INVESTIGATION COMPLETE
Actual Date: 20000119
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W. BROCKTON
Address 2: Not reported
EPA ID: CAD008386641
Area Name: ENTIRE FACILITY
Corrective Action: INVESTIGATION WORKPLAN APPROVED
Actual Date: 19921110
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W. BROCKTON
Address 2: Not reported
EPA ID: CAD008386641
Area Name: ENTIRE FACILITY
Corrective Action: INVESTIGATION COMPLETE
Actual Date: 19931217
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W. BROCKTON
Address 2: Not reported
EPA ID: CAD008386641
Area Name: ENTIRE FACILITY
Corrective Action: INVESTIGATION COMPLETE
Actual Date: 19930820
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: TELEDYNE BATTERY PRODUCTS

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Address: 840 W. BROCKTON
Address 2: Not reported
EPA ID: CAD008386641
Area Name: ENTIRE FACILITY
Corrective Action: REMEDY CONSTRUCTION-REMEDY CONSTRUCTED
Actual Date: 20111018
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

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

RCRA-LQG:
Date Form Received by Agency: 20200211
Handler Name: TELEDYNE BATTERY PRODUCTS
Handler Address: 840 W. BROCKTON
Handler City,State,Zip: REDLANDS, CA 92374-2902
EPA ID: CAD008386641
Contact Name: EDWIN RODRIGUEZ
Contact Address: W BROCKTON AVE
Contact City,State,Zip: REDLANDS, CA 92374
Contact Telephone: 909-712-4181 x4181
Contact Fax: Not reported
Contact Email: EDWIN.RODRIGUEZ@TELEDYNE.COM
Contact Title: EHS TECH
EPA Region: 09
Land Type: Private
Federal Waste Generator Description: Large Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities, Corrective Action Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: WEST BROCKTON AVE
Mailing City,State,Zip: REDLANDS, CA 92374
Owner Name: TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PR
Owner Type: Private
Operator Name: TELEDYNE BATTERY PRODUCTS
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: Yes
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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: Land Disposal, Storage
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported
Permit Workload Universe: Not reported
Permit Progress Universe: Land Disposal, Storage
Post-Closure Workload Universe: Not reported
Closure Workload Universe: Not reported
202 GPRA Corrective Action Baseline: Yes
Corrective Action Workload Universe: Yes
Subject to Corrective Action Universe: Yes
Non-TSDFs Where RCRA CA has Been Imposed Universe: No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe: No
TSDFs Only Subject to CA under Discretionary Auth Universe: Yes
Corrective Action Priority Ranking: No NCAPS ranking
Environmental Control Indicator: No
Institutional Control Indicator: No
Human Exposure Controls Indicator: Yes
Groundwater Controls Indicator: Yes
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: 20200211
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Biennial: List of Years
Year: 2019

Click Here for Biennial Reporting System Data:
Year: 2017

Click Here for Biennial Reporting System Data:
Year: 2015

Click Here for Biennial Reporting System Data:
Year: 2013

Click Here for Biennial Reporting System Data:
Year: 2011

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Click Here for Biennial Reporting System Data:
Year: 2009

Click Here for Biennial Reporting System Data:
Year: 2007

Click Here for Biennial Reporting System Data:
Year: 2005

Click Here for Biennial Reporting System Data:
Year: 2003

Click Here for Biennial Reporting System Data:
Year: 2001

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:

Waste Code: D000
Waste Description: Not Defined

Waste Code: D002
Waste Description: CORROSIVE WASTE

Waste Code: D006
Waste Description: CADMIUM

Waste Code: D007
Waste Description: CHROMIUM

Waste Code: D008
Waste Description: LEAD

Waste Code: D018
Waste Description: BENZENE

Handler - Owner Operator:

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC.
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip: THOUSAND OAKS, CA 91360
Owner/Operator Telephone: 805-373-4540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSAND OAKS, CA 91360
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	840 W BROCKTON AVE
Owner/Operator City,State,Zip:	REDLANDS, CA 92374
Owner/Operator Telephone:	909-793-3131
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSANDS OAKS, CA 92374
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE TECHNOLOGIES, INC.
Legal Status:	Private

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE INDUSTRIES INC
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1901 AVE OF THE STARS
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90067
Owner/Operator Telephone:	213-277-3311
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSAND OAKS, CA 91360
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSANDS OAKS, CA 92374
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE CONTINENTAL MOTORS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 840 W BROCKTON AVE
Owner/Operator City,State,Zip: REDLANDS, CA 92374
Owner/Operator Telephone: 909-793-3131
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE CONTINENTAL MOTORS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC.
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip: THOUSAND OAKS, CA 91360
Owner/Operator Telephone: 805-373-4540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 12333 W OLYMPIC BLVD
Owner/Operator City,State,Zip: LOS ANGELES, CA 90064
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	2049 CENTURY PARK EAST
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90067-3101
Owner/Operator Telephone:	310-551-4344
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	840 WEST BROCKTON AVENUE
Owner/Operator City,State,Zip:	REDLANDS, CA 92374
Owner/Operator Telephone:	909-793-3131
Owner/Operator Telephone Ext:	139
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	12333 WEST OLYMPIC BLVD.
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90064
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSAND OAKS, CA 91360
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator City,State,Zip:	THOUSANDS OAKS, CA 92374
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	840 W BROCKTON AVE
Owner/Operator City,State,Zip:	REDLANDS, CA 92374
Owner/Operator Telephone:	909-793-3131
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TYLEDYNE TECHNOLOGIES, INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE CONTINENTAL MOTORS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20100624
Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20120727

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20160301
Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20141022
Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20181022
Handler Name:	TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

Receive Date:	20200210
Handler Name:	TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 19960901
Handler Name: T C M BATTERY PRODUCTS OPERATION
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: 20000808
Handler Name: T C M BATTERY PRODUCTS OPERATION
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: 20200211
Handler Name: TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 19900405
Handler Name: TELEDYNE BATTERY PRODUCTS
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Electronic Manifest Broker: Not reported

Receive Date: 19920228
Handler Name: TELEDYNE BATTERY PRODUCTS
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: 19940318
Handler Name: TELEDYNE AIRCRAFT PRODUCTS
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: TELEDYNE BATTERY PRODUCTS
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: 20001012
Handler Name: TELEDYNE BATTERY PRODUCTS
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: 20020227
Handler Name: TELEDYNE CONTINENTAL MOTORS, BATTERY PRO
Federal Waste Generator Description: Large Quantity Generator

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

State District Owner: Not reported
Large Quantity Handler of Universal Waste: Yes
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: 20040903
Handler Name: TELEDYNE CONTINENTAL MOTORS BATTERY PROD
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: 20060307
Handler Name: TELEDYNE CONTINENTAL MOTORS, BATTERY PRO
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: 20080221
Handler Name: TELEDYNE BATTERY PRODUCTS
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: 335911
NAICS Description: STORAGE BATTERY MANUFACTURING

NAICS Code: 335912
NAICS Description: PRIMARY BATTERY MANUFACTURING

NAICS Code: 44131

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

NAICS Description: AUTOMOTIVE PARTS AND ACCESSORIES STORES

Facility Has Received Notices of Violation:
Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20180509
Actual Return to Compliance Date: 20180606
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19890112
Actual Return to Compliance Date:	19900227
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	006
Date of Enforcement Action:	19890525
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	70000
Final Monetary Amount:	70000
Paid Amount:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: 1
Final Amount: 70000

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19920626
Actual Return to Compliance Date: 19930311
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 010
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: 15000
Paid Amount: Not reported
Final Count: 1
Final Amount: 15000

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20101006
Actual Return to Compliance Date: 20110110
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 001
Date of Enforcement Action: 20101109
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19881208
Actual Return to Compliance Date: 19890209
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19890222
Enforcement Identifier: 005
Date of Enforcement Action: 19890120
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 010
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: 15000
Paid Amount: Not reported
Final Count: 1
Final Amount: 15000

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 010
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: 15000
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: 1
Final Amount: 15000

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 19930415
Actual Return to Compliance Date: 19930507
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 013
Date of Enforcement Action: 19930415
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19871120
Actual Return to Compliance Date: 19881108
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 003
Date of Enforcement Action: 19880414
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 19881208
Actual Return to Compliance Date: 19890209
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19890222
Enforcement Identifier: 005
Date of Enforcement Action: 19890120
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD IS-Ground-Water Monitoring
Date Violation was Determined: 19920706
Actual Return to Compliance Date: 19931207
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19901108
Actual Return to Compliance Date: 19910131
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19910123
Enforcement Identifier: 008
Date of Enforcement Action: 19901223
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20101006
Actual Return to Compliance Date: 20110110
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 001
Date of Enforcement Action: 20101208
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19911121
Actual Return to Compliance Date:	19930913
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	011
Date of Enforcement Action:	19920220
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	H
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19891130
Actual Return to Compliance Date:	19900202
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19900213
Enforcement Identifier:	007
Date of Enforcement Action:	19900112
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19871120
Actual Return to Compliance Date: 19881108
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 004
Date of Enforcement Action: 19880701
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19920310
Actual Return to Compliance Date: 19930311
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 009
Date of Enforcement Action: 19911121
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19871001
Actual Return to Compliance Date: 19871019
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19871015
Enforcement Identifier: 001
Date of Enforcement Action: 19871001
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19871120
Actual Return to Compliance Date: 19881108
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 002
Date of Enforcement Action: 19881230
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 009
Date of Enforcement Action: 19911121
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 19930415
Actual Return to Compliance Date: 19930507
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 014
Date of Enforcement Action: 19930714
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: 37725
Final Monetary Amount: 1000
Paid Amount: 1000
Final Count: 1
Final Amount: 1000

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 19881208
Actual Return to Compliance Date: 19890209
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19890222
Enforcement Identifier: 005
Date of Enforcement Action: 19890120
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Records/Reporting
Date Violation was Determined: 20180509
Actual Return to Compliance Date: 20180606
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 009
Date of Enforcement Action: 19911121
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19940804
Actual Return to Compliance Date: 19940929
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 015
Date of Enforcement Action: 19940804
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19920706
Actual Return to Compliance Date: 19931207
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD IS-Ground-Water Monitoring
Date Violation was Determined: 19890112
Actual Return to Compliance Date: 19900227
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 006
Date of Enforcement Action: 19890525
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: 70000
Final Monetary Amount: 70000
Paid Amount: Not reported
Final Count: 1
Final Amount: 70000

Evaluation Action Summary:
Evaluation Date: 20180509
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 20180606
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: 20190402
Evaluation Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940913
Evaluation Responsible Agency:	State Contractor/Grantee
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19890112
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	GROUNDWATER MONITORING EVALUATION
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19900227

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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: 19920626
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930311
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: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 20101006
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: 20110110
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: 19881208
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19890209
Scheduled Compliance Date: 19890222
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Date:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19930301
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930507
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:	19871120
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19881108
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:	19881208
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19890209
Scheduled Compliance Date: 19890222
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19870930
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19920326
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: OPERATION AND MAINTENANCE INSPECTION
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19931207
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: 19901108
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19910131
Scheduled Compliance Date: 19910123
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19880816
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20101006
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:	20110110
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:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19891130
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19900202
Scheduled Compliance Date:	19900213
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19901005
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19891128
Evaluation Responsible Agency:	State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Found Violation: No
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19871120
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19881108
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: 19950929
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 19920310
Evaluation Responsible Agency: EPA Contractor/Grantee
Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9EPA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930311

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19871001
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19871019
Scheduled Compliance Date:	19871015
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19871120
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19881108
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:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Date:	19940429
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930301
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930507
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:	19881208
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890209
Scheduled Compliance Date:	19890222
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19990105
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19881201
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 20161031
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 20180509
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 20180606
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: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 19940804
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19940929
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920326
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	OPERATION AND MAINTENANCE INSPECTION
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931207
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:	19890112
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	GROUNDWATER MONITORING EVALUATION
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19900227
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

RCRA-LQG:
Date Form Received by Agency: 20200211
Handler Name: TELEDYNE BATTERY PRODUCTS
Handler Address: 840 W. BROCKTON
Handler City,State,Zip: REDLANDS, CA 92374-2902
EPA ID: CAD008386641
Contact Name: EDWIN RODRIGUEZ
Contact Address: W BROCKTON AVE
Contact City,State,Zip: REDLANDS, CA 92374
Contact Telephone: 909-712-4181 x4181
Contact Fax: Not reported
Contact Email: EDWIN.RODRIGUEZ@TELEDYNE.COM
Contact Title: EHS TECH
EPA Region: 09
Land Type: Private
Federal Waste Generator Description: Large Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities, Corrective Action Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: WEST BROCKTON AVE
Mailing City,State,Zip: REDLANDS, CA 92374
Owner Name: TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRO
Owner Type: Private
Operator Name: TELEDYNE BATTERY PRODUCTS
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: Yes
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: Land Disposal, Storage
2018 GPRA Permit Baseline: Not on the Baseline
2018 GPRA Renewals Baseline: Not on the Baseline
Permit Renewals Workload Universe: Not reported
Permit Workload Universe: Not reported
Permit Progress Universe: Land Disposal, Storage
Post-Closure Workload Universe: Not reported
Closure Workload Universe: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

202 GPRA Corrective Action Baseline:	Yes
Corrective Action Workload Universe:	Yes
Subject to Corrective Action Universe:	Yes
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	Yes
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	Yes
Groundwater Controls Indicator:	Yes
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:	20200211
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years

Year: 2019

Click Here for Biennial Reporting System Data:
Year: 2017

Click Here for Biennial Reporting System Data:
Year: 2015

Click Here for Biennial Reporting System Data:
Year: 2013

Click Here for Biennial Reporting System Data:
Year: 2011

Click Here for Biennial Reporting System Data:
Year: 2009

Click Here for Biennial Reporting System Data:
Year: 2007

Click Here for Biennial Reporting System Data:
Year: 2005

Click Here for Biennial Reporting System Data:
Year: 2003

Click Here for Biennial Reporting System Data:
Year: 2001

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:

Waste Code:	D000
Waste Description:	Not Defined
Waste Code:	D002
Waste Description:	CORROSIVE WASTE
Waste Code:	D006
Waste Description:	CADMIUM
Waste Code:	D007
Waste Description:	CHROMIUM
Waste Code:	D008
Waste Description:	LEAD
Waste Code:	D018
Waste Description:	BENZENE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSAND OAKS, CA 91360
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip: THOUSAND OAKS, CA 91360
Owner/Operator Telephone: 805-373-4540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 840 W BROCKTON AVE
Owner/Operator City,State,Zip: REDLANDS, CA 92374
Owner/Operator Telephone: 909-793-3131
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip: THOUSANDS OAKS, CA 92374
Owner/Operator Telephone: 805-373-4540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE TECHNOLOGIES, INC.
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE INDUSTRIES INC
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 1901 AVE OF THE STARS

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator City,State,Zip:	LOS ANGELES, CA 90067
Owner/Operator Telephone:	213-277-3311
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSAND OAKS, CA 91360
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSANDS OAKS, CA 92374
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE CONTINENTAL MOTORS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	840 W BROCKTON AVE
Owner/Operator City,State,Zip:	REDLANDS, CA 92374
Owner/Operator Telephone:	909-793-3131
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE CONTINENTAL MOTORS
Legal Status:	Private

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip:	THOUSAND OAKS, CA 91360
Owner/Operator Telephone:	805-373-4540
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE BATTERY PRODUCTS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	12333 W OLYMPIC BLVD
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90064
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TELEDYNE TECHNOLOGIES INC
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	2049 CENTURY PARK EAST
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90067-3101
Owner/Operator Telephone:	310-551-4344
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 840 WEST BROCKTON AVENUE
Owner/Operator City,State,Zip: REDLANDS, CA 92374
Owner/Operator Telephone: 909-793-3131
Owner/Operator Telephone Ext: 139
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC.
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 12333 WEST OLYMPIC BLVD.
Owner/Operator City,State,Zip: LOS ANGELES, CA 90064
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC.
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip: THOUSAND OAKS, CA 91360
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: TELEDYNE TECHNOLOGIES INC, DBA TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 1049 CAMINO DOS RIOS
Owner/Operator City,State,Zip: THOUSANDS OAKS, CA 92374
Owner/Operator Telephone: 805-373-4540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: TELEDYNE BATTERY PRODUCTS
Legal Status: Private
Date Became Current: 19990823
Date Ended Current: Not reported
Owner/Operator Address: 840 W BROCKTON AVE
Owner/Operator City,State,Zip: REDLANDS, CA 92374
Owner/Operator Telephone: 909-793-3131
Owner/Operator Telephone Ext: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	TYLEDYNE TECHNOLOGIES, INC.
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	TELEDYNE CONTINENTAL MOTORS
Legal Status:	Private
Date Became Current:	19990823
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20100624
Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20120727
Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20160301
Handler Name:	TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description:	Large Quantity Generator

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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: 20141022
Handler Name: TELEDYNE BATTERY PRODUCTS
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: 20181022
Handler Name: TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20200210
Handler Name: TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 19960901
Handler Name: T C M BATTERY PRODUCTS OPERATION
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20000808
Handler Name: T C M BATTERY PRODUCTS OPERATION
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: 20200211
Handler Name: TELEDYNE BATTERY PRODUCTS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 19900405
Handler Name: TELEDYNE BATTERY PRODUCTS
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: 19920228
Handler Name: TELEDYNE BATTERY PRODUCTS
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Receive Date:	19940318
Handler Name:	TELEDYNE AIRCRAFT PRODUCTS
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:	TELEDYNE BATTERY PRODUCTS
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:	20001012
Handler Name:	TELEDYNE BATTERY PRODUCTS
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:	20020227
Handler Name:	TELEDYNE CONTINENTAL MOTORS, BATTERY PRO
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	Yes
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:	20040903
Handler Name:	TELEDYNE CONTINENTAL MOTORS BATTERY PROD
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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: 20060307
Handler Name: TELEDYNE CONTINENTAL MOTORS, BATTERY PRO
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: 20080221
Handler Name: TELEDYNE BATTERY PRODUCTS
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: 335911
NAICS Description: STORAGE BATTERY MANUFACTURING

NAICS Code: 335912
NAICS Description: PRIMARY BATTERY MANUFACTURING

NAICS Code: 44131
NAICS Description: AUTOMOTIVE PARTS AND ACCESSORIES STORES

Facility Has Received Notices of Violation:
Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20180509
Actual Return to Compliance Date: 20180606
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19890112
Actual Return to Compliance Date: 19900227
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 006
Date of Enforcement Action: 19890525
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: 70000
Final Monetary Amount: 70000
Paid Amount: Not reported
Final Count: 1
Final Amount: 70000

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19920626
Actual Return to Compliance Date: 19930311
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 010
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: 15000
Paid Amount: Not reported
Final Count: 1
Final Amount: 15000

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20101006
Actual Return to Compliance Date: 20110110
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 001
Date of Enforcement Action: 20101109
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: State
Violation Short Description: TSD - General
Date Violation was Determined: 19881208
Actual Return to Compliance Date: 19890209
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19890222
Enforcement Identifier: 005
Date of Enforcement Action: 19890120
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 010
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	15000
Paid Amount:	Not reported
Final Count:	1
Final Amount:	15000

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19911121
Actual Return to Compliance Date:	19930913
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	010
Date of Enforcement Action:	19920220
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	H
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	15000
Paid Amount:	Not reported
Final Count:	1
Final Amount:	15000

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	LDR - General
Date Violation was Determined:	19930415
Actual Return to Compliance Date:	19930507
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	013
Date of Enforcement Action:	19930415
Enforcement Responsible Agency:	State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19871120
Actual Return to Compliance Date: 19881108
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 003
Date of Enforcement Action: 19880414
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 19881208
Actual Return to Compliance Date: 19890209
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19890222
Enforcement Identifier: 005
Date of Enforcement Action: 19890120
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD IS-Ground-Water Monitoring
Date Violation was Determined:	19920706
Actual Return to Compliance Date:	19931207
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19901108
Actual Return to Compliance Date: 19910131
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19910123
Enforcement Identifier: 008
Date of Enforcement Action: 19901223
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20101006
Actual Return to Compliance Date: 20110110
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 001
Date of Enforcement Action: 20101208
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

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19891130
Actual Return to Compliance Date: 19900202
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19900213
Enforcement Identifier: 007
Date of Enforcement Action: 19900112
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19871120
Actual Return to Compliance Date: 19881108
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 004
Date of Enforcement Action: 19880701
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 011
Date of Enforcement Action: 19920220
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19920310
Actual Return to Compliance Date: 19930311
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 009
Date of Enforcement Action: 19911121
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19871001
Actual Return to Compliance Date:	19871019
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19871015
Enforcement Identifier:	001
Date of Enforcement Action:	19871001
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Financial Requirements
Date Violation was Determined:	19871120
Actual Return to Compliance Date:	19881108
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	002
Date of Enforcement Action:	19881230
Enforcement Responsible Agency:	State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 009
Date of Enforcement Action: 19911121
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 19930415
Actual Return to Compliance Date: 19930507
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 014
Date of Enforcement Action: 19930714
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	37725
Final Monetary Amount:	1000
Paid Amount:	1000
Final Count:	1
Final Amount:	1000

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	LDR - General
Date Violation was Determined:	19881208
Actual Return to Compliance Date:	19890209
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19890222
Enforcement Identifier:	005
Date of Enforcement Action:	19890120
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Records/Reporting
Date Violation was Determined: 20180509
Actual Return to Compliance Date: 20180606
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19911121
Actual Return to Compliance Date: 19930913
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 009
Date of Enforcement Action: 19911121
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: H
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19940804
Actual Return to Compliance Date: 19940929
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 015
Date of Enforcement Action: 19940804
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Financial Requirements
Date Violation was Determined: 19920706
Actual Return to Compliance Date: 19931207
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD IS-Ground-Water Monitoring
Date Violation was Determined: 19890112
Actual Return to Compliance Date: 19900227
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 006
Date of Enforcement Action: 19890525
Enforcement Responsible Agency: State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: 70000
Final Monetary Amount: 70000
Paid Amount: Not reported
Final Count: 1
Final Amount: 70000

Evaluation Action Summary:
Evaluation Date: 20180509
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 20180606
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: 20190402
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19940913
Evaluation Responsible Agency: State Contractor/Grantee
Found Violation: No

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 19890112
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: GROUNDWATER MONITORING EVALUATION
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19900227
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: 19920626
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930311
Scheduled Compliance Date: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 20101006
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: 20110110
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: 19881208
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19890209
Scheduled Compliance Date: 19890222
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Date:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19930301
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930507
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:	19871120
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19881108
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:	19881208
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890209
Scheduled Compliance Date:	19890222
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19870930
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19920326
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: OPERATION AND MAINTENANCE INSPECTION
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19931207
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: 19901108
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19910131
Scheduled Compliance Date: 19910123
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19880816
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 20101006
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: 20110110
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19891130
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19900202
Scheduled Compliance Date:	19900213
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19901005
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19891128
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19871120
Evaluation Responsible Agency:	State

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19881108
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: 19950929
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 19920310
Evaluation Responsible Agency: EPA Contractor/Grantee
Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9EPA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930311
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: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

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: 19871001
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19871019
Scheduled Compliance Date: 19871015
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19871120
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19881108
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: 19911011
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930913
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: 19940429
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Date: 19930301
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19930507
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: 19881208
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: 19890209
Scheduled Compliance Date: 19890222
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19990105
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 19881201
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier: R9STA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 20161031
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20180509
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20180606
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:	19911011
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930913
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:	19940804
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940929
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:	19920326
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	OPERATION AND MAINTENANCE INSPECTION
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931207
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19890112
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	GROUNDWATER MONITORING EVALUATION
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19900227
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

TELEDYNE INC TELEDYNE BATTERY (Continued) **1000201836**

2020 COR ACTION:

EPA ID:	CAD008386641
Region:	9
Action:	Remedy Construction

RAATS:

Entry No:	1
Facility ID:	CAD008386641
Type:	Not reported
Docket No:	RCRA-09-89-0026
Region:	09
Issue Date:	Not reported
Final Date:	02/24/1989
Status:	Unilateral Order (Corrective Action)
Additional:	Not reported
Action ID:	497
Action:	3008 (H)
Violation No:	Not reported
Viol No Cited:	0
Total No Cited:	Not reported
Reg Type:	Not reported
Prop. Penalty:	.00
Final Penalty:	.00
Total Prop. Penalty:	.00
Comments:	3008(H) ORDER (UNILATERAL)

G30
SE
1/4-1/2
0.387 mi.
2041 ft.

Relative:
Higher

Actual:
1311 ft.

TELEDYNE BATTERY
840 W BROCKTON AVE
REDLANDS, CA 92374

Site 3 of 4 in cluster G

ENVIROSTOR
LUST
CERS HAZ WASTE
SWEEPS UST
HIST UST
CA FID UST
Cortese
EMI
ICE
HWP
NPDES
San Bern. Co. Permit
CIWQS
CERS

1000201837
N/A

ENVIROSTOR:

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON
City,State,Zip:	REDLANDS, CA 92373
Facility ID:	36360017
Status:	Refer: RCRA
Status Date:	04/25/1995
Site Code:	400255
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:	* Mmonroy

TELEDYNE BATTERY (Continued) **1000201837**

Division Branch: Cleanup Cypress
Assembly: 40
Senate: 23
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 34.06743
Longitude: -117.1939
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD008386641
Alias Type: EPA Identification Number
Alias Name: 400255
Alias Type: Project Code (Site Code)
Alias Name: 36360017
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 01/24/1983
Comments: FACILITY IDENTIFIED ID VIA TELEPHONE DIRECTORY (1971) BATTERY PRODUCTS
Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 02/09/1995
Comments: NFA FOR SITE MITIGATION OPERATIONS, THIS IS A RCRA FACILITY.

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

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 923730000
Facility ID: 80001578
Status: No Further Action
Status Date: 09/07/2018
Site Code: 400255
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 5
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: WM

TELEDYNE BATTERY (Continued) **1000201837**

Program Manager:	Katherine Gould
Supervisor:	Eileen Mananian
Division Branch:	Cleanup Cypress
Assembly:	40
Senate:	23
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.06735
Longitude:	-117.1939
APN:	NONE SPECIFIED
Past Use:	BATTERY MANUFACTURING, BATTERY MANUFACTURING
Potential COC:	Lead Tetrachloroethylene (PCE 1,1,1-Trichloroethane (TCA Trichloroethylene (TCE
Confirmed COC:	Lead Tetrachloroethylene (PCE 1,1,1-Trichloroethane (TCA Trichloroethylene (TCE
Potential Description:	SOIL
Alias Name:	CAD008386641
Alias Type:	EPA Identification Number
Alias Name:	400255
Alias Type:	Project Code (Site Code)
Alias Name:	36360017
Alias Type:	Envirostor ID Number
Alias Name:	80001578
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Exposure Controlled
Completed Date:	05/15/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedy Construction Complete
Completed Date:	01/09/2012
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Exposure Controlled
Completed Date:	06/03/1999
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	RFI Report
Completed Date:	12/17/1993
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	RFI Workplan
Completed Date:	11/10/1992
Comments:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	RFI Workplan
Completed Date:	10/25/1995
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Corrective Measures Study Report
Completed Date:	06/28/2004
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Corrective Measure Implementation Workplan
Completed Date:	06/28/2004
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	RFI Report
Completed Date:	08/20/1993
Comments:	Not reported
Completed Area Name:	Sites With No Operable Unit
Completed Sub Area Name:	WHSE SITE
Completed Document Type:	RFI Workplan
Completed Date:	10/25/1985
Comments:	Not reported
Completed Area Name:	Sites With No Operable Unit
Completed Sub Area Name:	ENTIRE SITE
Completed Document Type:	RFI Report
Completed Date:	01/19/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	05/25/1989
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date:	05/01/1990
Comments:	Not reported
Completed Area Name:	Sites With No Operable Unit
Completed Sub Area Name:	SURFACE IMPOUNDMENTS
Completed Document Type:	Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date:	02/24/1989
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Historical Operating Permit Authority

TELEDYNE BATTERY (Continued) **1000201837**

Completed Date: 02/27/1990
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 02/27/1990
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 02/27/1990
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Construction Complete
Completed Date: 10/18/2011
Comments: document will be uploaded shortly.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Agreement
Completed Date: 06/29/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Construction Complete
Completed Date: 01/18/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Groundwater Migration Controlled
Completed Date: 05/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 09/30/1987
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 11/27/1996
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

LUST:

Name:	TELEDYNE BATTERY
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Lead Agency:	SAN BERNARDINO COUNTY
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100086
Global Id:	T0607100086
Latitude:	34.067435
Longitude:	-117.193912
Status:	Completed - Case Closed
Status Date:	12/28/1990
Case Worker:	CR2
RB Case Number:	083600803T
Local Agency:	SAN BERNARDINO COUNTY
File Location:	Not reported
Local Case Number:	90201
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Heating Oil / Fuel Oil
Site History:	Not reported

LUST:

Global Id:	T0607100086
Contact Type:	Local Agency Caseworker
Contact Name:	CATHERINE RICHARDS
Organization Name:	SAN BERNARDINO COUNTY
Address:	620 SOUTH E STREET
City:	SAN BERNARDINO
Email:	crichards@sbcfire.org
Phone Number:	9093868419

LUST:

Global Id:	T0607100086
Action Type:	ENFORCEMENT
Date:	12/28/1990
Action:	Referral to Regional Board

Global Id:	T0607100086
Action Type:	Other
Date:	03/30/1987
Action:	Leak Discovery

Global Id:	T0607100086
Action Type:	ENFORCEMENT
Date:	03/01/2000
Action:	Closure/No Further Action Letter

Global Id:	T0607100086
Action Type:	Other
Date:	05/15/1987
Action:	Leak Reported

TELEDYNE BATTERY (Continued) **1000201837**

LUST:
Global Id: T0607100086
Status: Open - Case Begin Date
Status Date: 03/30/1987

Global Id: T0607100086
Status: Open - Site Assessment
Status Date: 03/29/1988

Global Id: T0607100086
Status: Completed - Case Closed
Status Date: 12/28/1990

CERS HAZ WASTE:
Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 74280
CERS ID: 10045435
CERS Description: Hazardous Waste Generator

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 74280
CERS ID: 10045435
CERS Description: RCRA LQ HW Generator

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Site ID: 74280
CERS ID: 10045435
CERS Description: Hazardous Waste Onsite Treatment

SWEEPS UST:
Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City: REDLANDS
Status: Active
Comp Number: 717
Number: 9
Board Of Equalization: 44-019774
Referral Date: 03-23-92
Action Date: 03-23-92
Created Date: 02-29-88
Owner Tank Id: 1ABCD
SWRCB Tank Id: 36-000-000717-000001
Tank Status: A
Capacity: 42423
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: 7

TELEDYNE BATTERY (Continued) **1000201837**

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City:	REDLANDS
Status:	Active
Comp Number:	717
Number:	9
Board Of Equalization:	44-019774
Referral Date:	03-23-92
Action Date:	03-23-92
Created Date:	02-29-88
Owner Tank Id:	2
SWRCB Tank Id:	36-000-000717-000002
Tank Status:	A
Capacity:	5000
Active Date:	07-01-85
Tank Use:	UNKNOWN
STG:	W
Content:	Not reported
Number Of Tanks:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City:	REDLANDS
Status:	Active
Comp Number:	717
Number:	9
Board Of Equalization:	44-019774
Referral Date:	03-23-92
Action Date:	03-23-92
Created Date:	02-29-88
Owner Tank Id:	9
SWRCB Tank Id:	36-000-000717-000003
Tank Status:	A
Capacity:	1643
Active Date:	07-01-85
Tank Use:	UNKNOWN
STG:	P
Content:	Not reported
Number Of Tanks:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City:	REDLANDS
Status:	Active
Comp Number:	717
Number:	9
Board Of Equalization:	44-019774
Referral Date:	03-23-92
Action Date:	03-23-92
Created Date:	02-29-88
Owner Tank Id:	9A
SWRCB Tank Id:	36-000-000717-000004
Tank Status:	A
Capacity:	1643
Active Date:	07-01-85
Tank Use:	UNKNOWN
STG:	P

TELEDYNE BATTERY (Continued) **1000201837**

Content: Not reported
Number Of Tanks: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City: REDLANDS
Status: Active
Comp Number: 717
Number: 9
Board Of Equalization: 44-019774
Referral Date: 03-23-92
Action Date: 03-23-92
Created Date: 02-29-88
Owner Tank Id: 10
SWRCB Tank Id: 36-000-000717-000005
Tank Status: A
Capacity: 152
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City: REDLANDS
Status: Active
Comp Number: 717
Number: 9
Board Of Equalization: 44-019774
Referral Date: 03-23-92
Action Date: 03-23-92
Created Date: 02-29-88
Owner Tank Id: 10A
SWRCB Tank Id: 36-000-000717-000006
Tank Status: A
Capacity: 943
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: P
Content: Not reported
Number Of Tanks: Not reported

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City: REDLANDS
Status: Active
Comp Number: 717
Number: 9
Board Of Equalization: 44-019774
Referral Date: 03-23-92
Action Date: 03-23-92
Created Date: 02-29-88
Owner Tank Id: 10B
SWRCB Tank Id: 36-000-000717-000007
Tank Status: A
Capacity: 2394

TELEDYNE BATTERY (Continued) **1000201837**

Active Date:	07-01-85
Tank Use:	UNKNOWN
STG:	P
Content:	Not reported
Number Of Tanks:	Not reported

HIST UST:

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVENUE
City,State,Zip:	REDLANDS, CA 92374
File Number:	0002A75A
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002A75A.pdf
Region:	STATE
Facility ID:	00000000717
Facility Type:	Other
Other Type:	AIRCRAFT BATTERIES
Contact Name:	Not reported
Telephone:	7147933131
Owner Name:	TELEDYNE INDUSTRIES, INC.
Owner Address:	1901 AVENUE OF THE STARS
Owner City,St,Zip:	LOS ANGELES, CA 90067
Total Tanks:	0013
Tank Num:	001
Container Num:	1ABCD
Year Installed:	1967
Tank Capacity:	00042423
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	Visual
Tank Num:	002
Container Num:	2
Year Installed:	1977
Tank Capacity:	00005000
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	3/8
Leak Detection:	Visual
Tank Num:	003
Container Num:	6
Year Installed:	1980
Tank Capacity:	00003367
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	Visual
Tank Num:	004
Container Num:	7
Year Installed:	1980
Tank Capacity:	00000596
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	1/4

TELEDYNE BATTERY (Continued) **1000201837**

Leak Detection: Visual

Tank Num: 005
Container Num: 8
Year Installed: 1978
Tank Capacity: 00001496
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: Visual

Tank Num: 006
Container Num: 9
Year Installed: 1978
Tank Capacity: 00001643
Tank Used for: PRODUCT
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: Visual

Tank Num: 007
Container Num: 9A
Year Installed: 1978
Tank Capacity: 00001643
Tank Used for: PRODUCT
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: Visual

Tank Num: 008
Container Num: 10
Year Installed: 1978
Tank Capacity: 00000152
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: Visual

Tank Num: 009
Container Num: 10A
Year Installed: 1978
Tank Capacity: 00000943
Tank Used for: PRODUCT
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: Visual

Tank Num: 010
Container Num: 10B
Year Installed: 1978
Tank Capacity: 00002394
Tank Used for: PRODUCT
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: Visual

Tank Num: 011

TELEDYNE BATTERY (Continued) **1000201837**

Container Num:	11
Year Installed:	1980
Tank Capacity:	00000412
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	Visual
Tank Num:	012
Container Num:	12
Year Installed:	1980
Tank Capacity:	00001197
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	Visual
Tank Num:	013
Container Num:	13
Year Installed:	1980
Tank Capacity:	00130000
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	36 MIL
Leak Detection:	Visual, Groundwater Monitoring Well

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID:	36000274
Regulated By:	UTNKA
Regulated ID:	00000717
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	REDLANDS 92374
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

CORTESE:

Name:	TELEDYNE BATTERY
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0607100086
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED

TELEDYNE BATTERY (Continued) **1000201837**

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

EMI:

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON
City,State,Zip:	REDLANDS, CA 92374
Year:	1990
County Code:	36
Air Basin:	SC
Facility ID:	16732
Air District Name:	SC
SIC Code:	3691
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	TELEDYNE AIRCRAFT PRODS-BATTER
Address:	840 W BROCKTON
City,State,Zip:	REDLANDS, CA 92374
Year:	1995
County Code:	36
Air Basin:	SC
Facility ID:	16732
Air District Name:	SC
SIC Code:	3691
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

TELEDYNE BATTERY (Continued) **1000201837**

Name: TELEDYNE CONTINENTAL MOTORS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Year: 2008
County Code: 36
Air Basin: SC
Facility ID: 16732
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: .00434337
Part. Matter 10 Micrometers and Smllr Tons/Yr:.00249309438

Name: TELEDYNE AIRCRAFT PRODS-BATTER
Address: 840 W BROCKTON
City,State,Zip: REDLANDS, CA 92374
Year: 2009
County Code: 36
Air Basin: SC
Facility ID: 16732
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 4.4678299999999999E-3
Part. Matter 10 Micrometers and Smllr Tons/Yr:2.5645344199999999E-3

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Year: 2012
County Code: 36
Air Basin: SC
Facility ID: 16732
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0

TELEDYNE BATTERY (Continued) **1000201837**

Particulate Matter Tons/Yr: 0.02285986
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.01312155964

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Year: 2015
County Code: 36
Air Basin: SC
Facility ID: 173302
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0.27292698282
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.27292613814

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Year: 2017
County Code: 36
Air Basin: SC
Facility ID: 173302
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.15909090909
Reactive Organic Gases Tons/Yr: 0.07
Carbon Monoxide Emissions Tons/Yr: 0.49
NOX - Oxides of Nitrogen Tons/Yr: 1.96
SOX - Oxides of Sulphur Tons/Yr: 0.00917
Particulate Matter Tons/Yr: 0.0712552
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.0707204848

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Year: 2018
County Code: 36
Air Basin: SC
Facility ID: 173302
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.32526968182
Reactive Organic Gases Tons/Yr: 0.14311866

TELEDYNE BATTERY (Continued) **1000201837**

Carbon Monoxide Emissions Tons/Yr: 0.7155934
NOX - Oxides of Nitrogen Tons/Yr: 2.657912
SOX - Oxides of Sulphur Tons/Yr: 0.012267316
Particulate Matter Tons/Yr: 0.15334142265
Part. Matter 10 Micrometers and Smllr Tons/Yr:0.152421373

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Year: 2019
County Code: 36
Air Basin: SC
Facility ID: 173302
Air District Name: SC
SIC Code: 3691
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.24088884091
Reactive Organic Gases Tons/Yr: 0.10599109
Carbon Monoxide Emissions Tons/Yr: 0.5299546
NOX - Oxides of Nitrogen Tons/Yr: 1.968413
SOX - Oxides of Sulphur Tons/Yr: 0.009084955
Particulate Matter Tons/Yr: 0.11356187264
Part. Matter 10 Micrometers and Smllr Tons/Yr:0.11288050029

ICE:
Envirostor ID: 3001949
Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92373
EPA ID: CAD008386641
Site Type: INSPECTION
Facility Status: No Action

Inspection:
Action Type: Compliance Evaluation Inspection - Post-Closure
Action Date: 01/05/1999
Violation Class: No Violations
RTC Date: Not reported

HWP:
EPA ID: CAD008386641
Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
Cleanup Status: CLOSED
Latitude: 34.06735
Longitude: -117.1939
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Supervisor: Not reported
Site Code: 400255
Senate District: 23
Assembly District: 40
Public Information Officer: Not reported
Commercial Offsite Facility Types: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Quarterly Update: Entered 11/15/07. Teledyne Continental Motors, Battery Products Operations (TBP) is located in Redlands, CA and occupies approximately five acres of land surrounded by 15 acres of vacant land also owned by Teledyne. The TBP facility began operations at this location in 1967. TBP manufactures lead-acid storage batteries for aircraft, emergency lighting systems, and vehicles. TBP handled and stored hazardous materials or wastes on several locations at the facility. Environmental studies at the facility were carried out under two administrative processes; Resource Conservation and Recovery Act (RCRA) closure and RCRA corrective action. The results of soil, soil gas, and groundwater investigations conducted at the facility were presented in the RCRA Facility Investigation Report and Closure Reports which indicated the presence of chemical residues in different areas of the facility. Three areas required soil remediation prior to RCRA closure. The cleanup of the three areas included excavating soil with chemical residues and disposing the excavated soil at a permitted off-site disposal facility. Approximately 350 cubic yards of soil contaminated with lead and sulfate were excavated from the former evaporation pond and percolation pond. In addition, approximately 10 cubic yards of soil contaminated with lead, solvents (TCE, PCE, and 1,1,1-TCA), and sulfate were excavated from the Old Container Storage Unit. DTSC issued public notice of the proposed RCRA corrective action program cleanup plan for the TBP facility during two public notice periods between May 2000 and August 2000. DTSC required cleanup via excavation of small areas of lead residues at the Acid Scrubber Water Storage Tanks and Waste Water Treatment Plant. An Open House to receive comments on the soil removal plan was held on July 26, 2001. Approximately one cubic yard of soil was excavated and disposed of at an off-site hazardous waste disposal facility. Sampling conducted after excavation indicated that the levels of lead remaining after the excavation a

Project Manager Lead: Not reported
Project Manager: Not reported
Permit Type: RCRA
Permit Effective Date: Not reported
Permit Expiration Date: Not reported
Calenviroscreen Score: 86-90%
Total Planned Hours: Not reported
Total Planned Amount: Not reported
Total Actual Hours: Not reported

Activities:
EPA ID: CAD008386641
Facility Type: Historical - Non-Operating
Facility Name: TELEDYNE BATTERY PRODUCTS
Project Manager: Not reported
Project Manager Lead: Not reported
Supervisor: Not reported
Facility Status: CLOSED
Activity Type: New Operating Permit
Permit Being Renewed: Not reported
Permit Being Modified: Not reported
Final Date: 1986-06-27 00:00:00
Type: Not reported
Title Description: Imported 12/2011:PERMIT1
Due Date: Not reported
Comments: Not reported
Unit Names: CONTAIN1, PERCPOND1 (GPRA Unit), SLFRICTNK1, SLUDGETNK1 (GPRA Unit),

TELEDYNE BATTERY (Continued) **1000201837**

	SURFSTR1
Event Description:	New Operating Permit - APPLICATION PART A RECEIVED
Actual Date:	11/19/1980

EPA ID:	CAD008386641
Facility Type:	Historical - Non-Operating
Facility Name:	TELEDYNE BATTERY PRODUCTS
Project Manager:	Not reported
Project Manager Lead:	Not reported
Supervisor:	Not reported
Facility Status:	CLOSED
Activity Type:	New Operating Permit
Permit Being Renewed:	Not reported
Permit Being Modified:	Not reported
Final Date:	1986-06-27 00:00:00
Type:	Not reported
Title Description:	Imported 12/2011:PERMIT1
Due Date:	Not reported
Comments:	Not reported
Unit Names:	CONTAIN1, PERCPOND1 (GPRA Unit), SLFRICTNK1, SLUDGETNK1 (GPRA Unit), SURFSTR1
Event Description:	New Operating Permit - CALL-IN LETTER ISSUED
Actual Date:	10/03/1985

EPA ID:	CAD008386641
Facility Type:	Historical - Non-Operating
Facility Name:	TELEDYNE BATTERY PRODUCTS
Project Manager:	Not reported
Project Manager Lead:	Not reported
Supervisor:	Not reported
Facility Status:	CLOSED
Activity Type:	New Operating Permit
Permit Being Renewed:	Not reported
Permit Being Modified:	Not reported
Final Date:	1986-06-27 00:00:00
Type:	Not reported
Title Description:	Imported 12/2011:PERMIT1
Due Date:	Not reported
Comments:	INTENDS/CLOSED ALL WASTE HANDLING FACILITY, INTENDS/CLOSED ALL WASTE HANDLING FACILITY, Approved Request
Unit Names:	CONTAIN1, PERCPOND1 (GPRA Unit), SLFRICTNK1, SLUDGETNK1 (GPRA Unit), SURFSTR1
Event Description:	New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Actual Date:	10/02/1985

EPA ID:	CAD008386641
Facility Type:	Historical - Non-Operating
Facility Name:	TELEDYNE BATTERY PRODUCTS
Project Manager:	Not reported
Project Manager Lead:	Not reported
Supervisor:	Not reported
Facility Status:	CLOSED
Activity Type:	New Operating Permit
Permit Being Renewed:	Not reported
Permit Being Modified:	Not reported
Final Date:	1986-06-27 00:00:00
Type:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Title Description: Imported 12/2011:PERMIT1
Due Date: Not reported
Comments: INTENDS/CLOSED ALL WASTE HANDLING FACILITY, INTENDS/CLOSED ALL WASTE HANDLING FACILITY, Approved Request
Unit Names: CONTAIN1, PERCPOND1 (GPRA Unit), SLFRICTNK1, SLUDGETNK1 (GPRA Unit), SURFSTR1
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST ACKNOWLEDGED
Actual Date: 06/27/1986

Closure:
EPA ID: CAD008386641
Facility Type: Historical - Non-Operating
Facility Name: TELEDYNE BATTERY PRODUCTS
Project Manager: Not reported
Project Manager Lead: Not reported
Supervisor: Not reported
Facility Size: Not reported
Facility Status: CLOSED
Activity Type: Closure Final
Final Date: Not reported
Type: RCRA
Title Description: Closure
Due Date: Not reported
Comments: Not reported
Unit Names: CONTAIN1, PERCPOND1 (GPRA Unit), SLFRICTNK1, SLUDGETNK1 (GPRA Unit), SURFSTR1
Event Description: Closure Final - RECEIVE CLOSURE CERTIFICATION
Actual Date: 01/17/1996

EPA ID: CAD008386641
Facility Type: Historical - Non-Operating
Facility Name: TELEDYNE BATTERY PRODUCTS
Project Manager: Not reported
Project Manager Lead: Not reported
Supervisor: Not reported
Facility Size: Not reported
Facility Status: CLOSED
Activity Type: Closure Final
Final Date: Not reported
Type: RCRA
Title Description: Closure
Due Date: Not reported
Comments: Not reported
Unit Names: CONTAIN1, PERCPOND1 (GPRA Unit), SLFRICTNK1, SLUDGETNK1 (GPRA Unit), SURFSTR1
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION
Actual Date: 06/26/1995

Alias:
EPA ID: CAD008386641
Facility Type: Historical - Non-Operating
Facility Name: TELEDYNE BATTERY PRODUCTS
Facility Status: CLOSED
Project Manager: Not reported
Project Manager Lead: Not reported
Supervisor: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Alias Type: Envirostor ID Number
Alias: 36360017

EPA ID: CAD008386641
Facility Type: Historical - Non-Operating
Facility Name: TELEDYNE BATTERY PRODUCTS
Facility Status: CLOSED
Project Manager: Not reported
Project Manager Lead: Not reported
Supervisor: Not reported
Alias Type: Project Code (Site Code)
Alias: 400255

NPDES:
Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374
Facility Status: Not reported
NPDES Number: Not reported
Region: Not reported
Agency Number: Not reported
Regulatory Measure ID: Not reported
Place ID: Not reported
Order Number: Not reported
WDID: 8 36I023994
Regulatory Measure Type: Industrial
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Discharge Address: Not reported
Discharge Name: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
Status: Active
Status Date: 12/27/2012
Operator Name: Teledyne Technologies Incorporated dba Teledyne Battery Products
Operator Address: PO Box 7950
Operator City: Redlands
Operator State: California
Operator Zip: 92375

NPDES as of 03/2018:
NPDES Number: CAS000001
Status: Active
Agency Number: 0
Region: 8
Regulatory Measure ID: 433709
Order Number: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place ID: Not reported
WDID: 8 36I023994
Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Effective Date Of Regulatory Measure: 12/27/2012
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Teledyne Reynolds Inc
Discharge Address: PO Box 7950
Discharge City: Redlands
Discharge State: California
Discharge Zip: 92375
Received Date: Not reported
Processed Date: Not reported
Status: Not reported
Status Date: Not reported
Place Size: Not reported
Place Size Unit: Not reported
Contact: Not reported
Contact Title: Not reported
Contact Phone: Not reported
Contact Phone Ext: Not reported
Contact Email: Not reported
Operator Name: Not reported
Operator Address: Not reported
Operator City: Not reported
Operator State: Not reported
Operator Zip: Not reported
Operator Contact: Not reported
Operator Contact Title: Not reported
Operator Contact Phone: Not reported
Operator Contact Phone Ext: Not reported
Operator Contact Email: Not reported
Operator Type: Not reported
Developer: Not reported
Developer Address: Not reported
Developer City: Not reported
Developer State: Not reported
Developer Zip: Not reported
Developer Contact: Not reported
Developer Contact Title: Not reported
Constype Linear Utility Ind: Not reported
Emergency Phone: Not reported
Emergency Phone Ext: Not reported
Constype Above Ground Ind: Not reported
Constype Below Ground Ind: Not reported
Constype Cable Line Ind: Not reported
Constype Comm Line Ind: Not reported
Constype Commertial Ind: Not reported
Constype Electrical Line Ind: Not reported
Constype Gas Line Ind: Not reported
Constype Industrial Ind: Not reported
Constype Other Description: Not reported
Constype Other Ind: Not reported
Constype Recons Ind: Not reported
Constype Residential Ind: Not reported
Constype Transport Ind: Not reported
Constype Utility Description: Not reported
Constype Utility Ind: Not reported
Constype Water Sewer Ind: Not reported
Dir Discharge Uswater Ind: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	433709
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 36I023994
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	12/27/2012
Processed Date:	12/27/2012
Status:	Active
Status Date:	12/27/2012
Place Size:	4.75
Place Size Unit:	Acres
Contact:	Jesus Bueno Luna
Contact Title:	EHS Specialist
Contact Phone:	909-793-3131
Contact Phone Ext:	139
Contact Email:	Jesus.Luna@teledyne.com
Operator Name:	Teledyne Reynolds Inc
Operator Address:	PO Box 7950
Operator City:	Redlands
Operator State:	California
Operator Zip:	92375
Operator Contact:	Jesus Bueno Luna
Operator Contact Title:	EHS Specialist
Operator Contact Phone:	909-793-3131
Operator Contact Phone Ext:	139
Operator Contact Email:	Jesus.Luna@teledyne.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Santa Ana River
Certifier:	Jesus Luna
Certifier Title:	EHS Specialist
Certification Date:	17-JUN-15
Primary Sic:	3691-Storage Batteries
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Facility Status:	Active
NPDES Number:	CAS000001
Region:	8
Agency Number:	0
Regulatory Measure ID:	433709
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	8 36I023994
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/27/2012
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	PO Box 7950
Discharge Name:	Teledyne Technologies Incorporated dba Teledyne Battery Products
Discharge City:	Redlands
Discharge State:	California
Discharge Zip:	92375
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	433709
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 36I023994
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/27/2012
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Teledyne Reynolds Inc
Discharge Address:	PO Box 7950
Discharge City:	Redlands
Discharge State:	California
Discharge Zip:	92375
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	433709
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 36I023994
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	12/27/2012
Processed Date:	12/27/2012
Status:	Active
Status Date:	12/27/2012
Place Size:	4.75
Place Size Unit:	Acres
Contact:	Jesus Bueno Luna
Contact Title:	EHS Specialist
Contact Phone:	909-793-3131
Contact Phone Ext:	139
Contact Email:	Jesus.Luna@teledyne.com
Operator Name:	Teledyne Reynolds Inc
Operator Address:	PO Box 7950
Operator City:	Redlands
Operator State:	California
Operator Zip:	92375
Operator Contact:	Jesus Bueno Luna
Operator Contact Title:	EHS Specialist

TELEDYNE BATTERY (Continued) **1000201837**

Operator Contact Phone:	909-793-3131
Operator Contact Phone Ext:	139
Operator Contact Email:	Jesus.Luna@teledyne.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Santa Ana River
Certifier:	Jesus Luna
Certifier Title:	EHS Specialist
Certification Date:	17-JUN-15
Primary Sic:	3691-Storage Batteries
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

San Bern. Co. Permit:

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006608
Owner:	TELEDYNE TECHNOLOGIES INC.
Permit Number:	PT0001494
Permit Category:	HAZARDOUS MATERIALS 11-30 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2021

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006608

TELEDYNE BATTERY (Continued) **1000201837**

Owner:	TELEDYNE TECHNOLOGIES INC.
Permit Number:	PT0039088
Permit Category:	PBR ANNUAL FEE
Facility Status:	ACTIVE
Expiration Date:	09/30/2021

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006608
Owner:	TELEDYNE TECHNOLOGIES INC.
Permit Number:	PT0023956
Permit Category:	RCRA LARGE QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	09/30/2021

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006608
Owner:	TELEDYNE TECHNOLOGIES INC.
Permit Number:	PT0001495
Permit Category:	SUPER LARGE QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	09/30/2018

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006608
Owner:	TELEDYNE TECHNOLOGIES INC.
Permit Number:	PT0013335
Permit Category:	EPCRA FACILITY
Facility Status:	INACTIVE
Expiration Date:	09/30/2013

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Region:	SAN BERNARDINO
Facility ID:	FA0006608
Owner:	TELEDYNE TECHNOLOGIES INC.
Permit Number:	PT0016171
Permit Category:	REGULAR UST ANNUAL INSPECTION (PER TANK)
Facility Status:	INACTIVE
Expiration Date:	09/30/2005

CIWQS:

Name:	TELEDYNE BATTERY
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Agency:	Teledyne Continental Motors
Agency Address:	PO Box 7950, Redlands, CA 92375
Place/Project Type:	Industrial - Storage Batteries

TELEDYNE BATTERY (Continued) **1000201837**

SIC/NAICS:	3691
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	8 36I014715
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	11/02/1998
Termination Date:	12/24/2012
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.06648
Longitude:	-117.19183

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Agency:	Teledyne Technologies Incorporated dba Teledyne Battery Products
Agency Address:	PO Box 7950, Redlands, CA 92375
Place/Project Type:	Industrial - Storage Batteries
SIC/NAICS:	3691
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	8 36I023994
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	12/27/2012
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	1
Violations within 5 years:	1
Latitude:	34.06744
Longitude:	-117.19391

CERS:

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	74280
CERS ID:	10045435
CERS Description:	Chemical Storage Facilities

Violations:

TELEDYNE BATTERY (Continued) **1000201837**

Site ID: 74280
Site Name: TELEDYNE BATTERY PRODUCTS
Violation Date: 01-01-2018
Citation: 2014-0057-DWQ - Industrial General Permit
Violation Description: SW - Late Report
Violation Notes: The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Violation Division: Water Boards
Violation Program: INDSTW
Violation Source: SMARTS

Site ID: 74280
Site Name: TELEDYNE BATTERY PRODUCTS
Violation Date: 05-09-2018
Citation: 22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description: Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes: Returned to compliance on 06/06/2018. OBSERVATION: A written hazardous waste tank assessment has not been maintained for the water treatment tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the water treatment tank system in accordance with 22 CCR 15 66265.192 and submit a copy to the CUPA.
Violation Division: San Bernardino County Fire Department
Violation Program: HWLQG
Violation Source: CERS

Site ID: 74280
Site Name: TELEDYNE BATTERY PRODUCTS
Violation Date: 10-31-2016
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler’s operations that requires modification to any portion of the business plan.
Violation Notes: Returned to compliance on 11/30/2016. (1) 55 gallon drum of Ethylene Glycol was not reported as inventory. Site map to include hazardous materials storage and handling areas, emergency shut offs, emergency response equipment.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Site ID: 74280
Site Name: TELEDYNE BATTERY PRODUCTS
Violation Date: 05-09-2018

TELEDYNE BATTERY (Continued) **1000201837**

Citation:	HSC 6.5 25244.21 - California Health and Safety Code, Chapter 6.5, Section(s) 25244.21
Violation Description:	Failure to adequately complete, and maintain for review, all requirements of the source reduction evaluation review and plan (SB-14).
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A source reduction evaluation review and plan with all the required information has not been completed and maintained for review. CORRECTIVE ACTION: Complete a source reduction report with all the required information and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	PBR
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - RECYCLING WASTE
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-03-2016
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	The SWPPP, Monitoring Plan and log of inspections were reviewed at the facility. Generally the facility was clean during the inspection. The

TELEDYNE BATTERY (Continued) **1000201837**

facility has waste water treatment plant and recycles all waste water. Storm water is discharged from the front side. The facility yard was clean during the inspection.

Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-05-1999
Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Post-Closure
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - HW
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-05-2019
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	Regional Board staff Mr. Elliott and Ms. Mendoza were escorted through the facility by Mr. Vincent Jermany, Director of Operations. The SWPPP, daily tank inspections, and twice weekly sweeping logs were present. The last daily inspection log was dated 11/5/19 and the sweeping log was dated 10/29/19. The scrap metal roll off bin did not have a lid but Mr. Jermany indicated that a tarp is available to place over the bin when rain is forecast. Cardboard trash bins had lids that were closed. Housekeeping appeared to be well kept. The discharge sampling location was observed and appeared to be clear of trash, debris, and sediment. Mr. Jermany did not appear to be aware of the

TELEDYNE BATTERY (Continued) **1000201837**

required Level 2 ERA report due on January 1, 2020. The 2016-17 facility AdHoc average lead concentrations exceeded the NAL and a Level 1 ERA was submitted. The BMP recommendations appeared to be primarily focused on housekeeping improvements. "Use tarping or covered rolloff to cover the outdoor material storage. Increase frequency of sweeping the site with sweeper, in areas located away from air monitors, catch basins and sumps to be inspected monthly. Cleaning will be conducted immediately when significant sediment buildup is observed. Catch basins and sumps will be cleaned annually, at a minimum." The 2018-19 AdHoc reports average lead concentration of 0.30 mg/L exceeded the NAL of 0.262 mg/L. The Level 2 ERA report is due by January 1, 2020.

Eval Division: Water Boards
Eval Program: INDSTW
Eval Source: SMARTS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HWLQG
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-31-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: INSPECTION - BP
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-29-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Site Address:	840 W BROCKTON AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	09-13-2018
Enf Action Type:	Staff Enforcement Letter
Enf Action Description:	Staff Enforcement Letter
Enf Action Notes:	The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Enf Action Division:	Water Boards
Enf Action Program:	INDSTW
Enf Action Source:	SMARTS

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Site Address:	840 W BROCKTON AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	10-31-2016
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	San Bernardino County Fire Department
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Coordinates:

Site ID:	74280
Facility Name:	TELEDYNE BATTERY PRODUCTS
Env Int Type Code:	SMSWIND
Program ID:	820750
Coord Name:	Not reported
Ref Point Type Desc:	Unknown
Latitude:	34.067440
Longitude:	-117.193910

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Sudy Koupal
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:	Sudy Koupal

TELEDYNE BATTERY (Continued) **1000201837**

Entity Title: Not reported
Affiliation Address: PO BOX 7950
Affiliation City: REDLANDS
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92375
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 840 W BROCKTON AVE, P.O. BOX 7950
Affiliation City: REDLANDS
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92375
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: John D. Anderson
Entity Title: GENERAL 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: Owner/Operator
Entity Name: Teledyne Technologies Incorporated dba Teledyne Battery Products
Entity Title: Operator
Affiliation Address: PO Box 7950
Affiliation City: Redlands
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92375
Affiliation Phone: Not reported

Affiliation Type Desc: Company Official
Entity Name: vincent jermany
Entity Title: Directort of Operations
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Type Desc:	Facility Owner
Entity Name:	TELEDYNE TECHNOLOGIES INC
Entity Title:	Not reported
Affiliation Address:	1049 CAMINO DOS RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	913600000
Affiliation Phone:	3105742071
Affiliation Type Desc:	Onsite Treatment Unit Owner Operator
Entity Name:	Michael Volpone
Entity Title:	EHS 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:	Onsite Treatment Unit Owner Operator
Entity Name:	Vincent Jermany
Entity Title:	Operations Director
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:	Public Contact
Entity Name:	Melanie S. Cibik
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	8053734605
Affiliation Type Desc:	Facility Contact
Entity Name:	Mark Egbert
Entity Title:	Not reported
Affiliation Address:	5005 MCCONNELL AVE
Affiliation City:	LOS ANGELES
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	900660000
Affiliation Phone:	3105742071
Affiliation Type Desc:	Legal Owner
Entity Name:	TELEDYNE TECHNOLOGIES INC.
Entity Title:	Not reported
Affiliation Address:	1049 CAMINOS DO RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	United States

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Zip: 91360
Affiliation Phone: (808) 373-4602

Affiliation Type Desc: Operator
Entity Name: Teledyne Battery Products
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: (909) 793-3131

Affiliation Type Desc: Parent Company
Entity Name: TELEDYNE TECHNOLOGIES INC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Corporation
Entity Name: Teledyne Battery Products
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: Property Owner
Entity Name: TELEDYNE TECHNOLOGIES INC.
Entity Title: Not reported
Affiliation Address: 1049 CAMINOS DO RIOS
Affiliation City: THOUSAND OAKS
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 91360
Affiliation Phone: (808) 373-4602

Affiliation Type Desc: Technical Contact
Entity Name: Sudy Koupal
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: 9094063125

Name: TELEDYNE BATTERY PRODUCTS
Address: 840 W BROCKTON AVE
City,State,Zip: REDLANDS, CA 92374

TELEDYNE BATTERY (Continued) **1000201837**

Site ID:	74280
CERS ID:	820750
CERS Description:	Industrial Facility Storm Water

Violations:

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	01-01-2018
Citation:	2014-0057-DWQ - Industrial General Permit
Violation Description:	SW - Late Report
Violation Notes:	The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Violation Division:	Water Boards
Violation Program:	INDSTW
Violation Source:	SMARTS

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	05-09-2018
Citation:	22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description:	Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A written hazardous waste tank assessment has not been maintained for the water treatment tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the water treatment tank system in accordance with 22 CCR 15 66265.192 and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	10-31-2016
Citation:	HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler’s operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 11/30/2016. (1) 55 gallon drum of Ethylene Glycol was not reported as inventory. Site map to include hazardous materials storage and handling areas, emergency shut offs, emergency response equipment.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HMRRP
Violation Source:	CERS

TELEDYNE BATTERY (Continued) **1000201837**

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	05-09-2018
Citation:	HSC 6.5 25244.21 - California Health and Safety Code, Chapter 6.5, Section(s) 25244.21
Violation Description:	Failure to adequately complete, and maintain for review, all requirements of the source reduction evaluation review and plan (SB-14).
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A source reduction evaluation review and plan with all the required information has not been completed and maintained for review. CORRECTIVE ACTION: Complete a source reduction report with all the required information and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	PBR
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - RECYCLING WASTE
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-03-2016
Violations Found:	No

TELEDYNE BATTERY (Continued) **1000201837**

Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	The SWPPP, Monitoring Plan and log of inspections were reviewed at the facility. Generally the facility was clean during the inspection. The facility has waste water treatment plant and recycles all waste water. Storm water is discharged from the front side. The facility yard was clean during the inspection.
Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-05-1999
Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Post-Closure
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - HW
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-05-2019
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	Regional Board staff Mr. Elliott and Ms. Mendoza were escorted through the facility by Mr. Vincent Jermany, Director of Operations. The SWPPP, daily tank inspections, and twice weekly sweeping logs were present. The last daily inspection log was dated 11/5/19 and the sweeping log was dated 10/29/19. The scrap metal roll off bin did not have a lid but Mr. Jermany indicated that a tarp is available to place over the bin when rain is forecast. Cardboard trash bins had lids that

TELEDYNE BATTERY (Continued) **1000201837**

were closed. Housekeeping appeared to be well kept. The discharge sampling location was observed and appeared to be clear of trash, debris, and sediment. Mr. Jermany did not appear to be aware of the required Level 2 ERA report due on January 1, 2020. The 2016-17 facility AdHoc average lead concentrations exceeded the NAL and a Level 1 ERA was submitted. The BMP recommendations appeared to be primarily focused on housekeeping improvements. "Use tarping or covered rolloff to cover the outdoor material storage. Increase frequency of sweeping the site with sweeper, in areas located away from air monitors, catch basins and sumps to be inspected monthly. Cleaning will be conducted immediately when significant sediment buildup is observed. Catch basins and sumps will be cleaned annually, at a minimum." The 2018-19 AdHoc reports average lead concentration of 0.30 mg/L exceeded the NAL of 0.262 mg/L. The Level 2 ERA report is due by January 1, 2020.

Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - BP
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013

TELEDYNE BATTERY (Continued) **1000201837**

Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HW
Eval Source: CERS

Enforcement Action:
Site ID: 74280
Site Name: TELEDYNE BATTERY PRODUCTS
Site Address: 840 W BROCKTON AVE
Site City: REDLANDS
Site Zip: 92374
Enf Action Date: 09-13-2018
Enf Action Type: Staff Enforcement Letter
Enf Action Description: Staff Enforcement Letter
Enf Action Notes: The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Enf Action Division: Water Boards
Enf Action Program: INDSTW
Enf Action Source: SMARTS

Site ID: 74280
Site Name: TELEDYNE BATTERY PRODUCTS
Site Address: 840 W BROCKTON AVE
Site City: REDLANDS
Site Zip: 92374
Enf Action Date: 10-31-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: San Bernardino County Fire Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Coordinates:
Site ID: 74280
Facility Name: TELEDYNE BATTERY PRODUCTS
Env Int Type Code: SMSWIND
Program ID: 820750
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 34.067440
Longitude: -117.193910

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Sudy Koupal
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

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Type Desc: Environmental Contact
Entity Name: Sudy Koupal
Entity Title: Not reported
Affiliation Address: PO BOX 7950
Affiliation City: REDLANDS
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92375
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 840 W BROCKTON AVE, P.O. BOX 7950
Affiliation City: REDLANDS
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92375
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: John D. Anderson
Entity Title: GENERAL 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: Owner/Operator
Entity Name: Teledyne Technologies Incorporated dba Teledyne Battery Products
Entity Title: Operator
Affiliation Address: PO Box 7950
Affiliation City: Redlands
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92375
Affiliation Phone: Not reported

Affiliation Type Desc: Company Official
Entity Name: vincent jermany
Entity Title: Directort of Operations
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

Affiliation Type Desc: Facility Owner
Entity Name: TELEDYNE TECHNOLOGIES INC
Entity Title: Not reported
Affiliation Address: 1049 CAMINO DOS RIOS
Affiliation City: THOUSAND OAKS
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 913600000
Affiliation Phone: 3105742071

Affiliation Type Desc: Onsite Treatment Unit Owner Operator
Entity Name: Michael Volpone
Entity Title: EHS 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: Onsite Treatment Unit Owner Operator
Entity Name: Vincent Jermany
Entity Title: Operations Director
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: Public Contact
Entity Name: Melanie S. Cibik
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: 8053734605

Affiliation Type Desc: Facility Contact
Entity Name: Mark Egbert
Entity Title: Not reported
Affiliation Address: 5005 MCCONNELL AVE
Affiliation City: LOS ANGELES
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 900660000
Affiliation Phone: 3105742071

Affiliation Type Desc: Legal Owner
Entity Name: TELEDYNE TECHNOLOGIES INC.
Entity Title: Not reported
Affiliation Address: 1049 CAMINOS DO RIOS

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation City: THOUSAND OAKS
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 91360
Affiliation Phone: (808) 373-4602

Affiliation Type Desc: Operator
Entity Name: Teledyne Battery Products
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: (909) 793-3131

Affiliation Type Desc: Parent Company
Entity Name: TELEDYNE TECHNOLOGIES INC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Corporation
Entity Name: Teledyne Battery Products
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: Property Owner
Entity Name: TELEDYNE TECHNOLOGIES INC.
Entity Title: Not reported
Affiliation Address: 1049 CAMINOS DO RIOS
Affiliation City: THOUSAND OAKS
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 91360
Affiliation Phone: (808) 373-4602

Affiliation Type Desc: Technical Contact
Entity Name: Sudy Koupal
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: 9094063125

TELEDYNE BATTERY (Continued) **1000201837**

Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	74280
CERS ID:	CAD008386641
CERS Description:	Hazardous Waste

Violations:

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	01-01-2018
Citation:	2014-0057-DWQ - Industrial General Permit
Violation Description:	SW - Late Report
Violation Notes:	The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Violation Division:	Water Boards
Violation Program:	INDSTW
Violation Source:	SMARTS

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	05-09-2018
Citation:	22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description:	Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A written hazardous waste tank assessment has not been maintained for the water treatment tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the water treatment tank system in accordance with 22 CCR 15 66265.192 and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	10-31-2016
Citation:	HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler’s operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 11/30/2016. (1) 55 gallon drum of Ethylene Glycol was not reported as inventory. Site map to include hazardous materials storage and handling areas, emergency shut offs, emergency response equipment.

TELEDYNE BATTERY (Continued) **1000201837**

Violation Division:	San Bernardino County Fire Department
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	05-09-2018
Citation:	HSC 6.5 25244.21 - California Health and Safety Code, Chapter 6.5, Section(s) 25244.21
Violation Description:	Failure to adequately complete, and maintain for review, all requirements of the source reduction evaluation review and plan (SB-14).
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A source reduction evaluation review and plan with all the required information has not been completed and maintained for review. CORRECTIVE ACTION: Complete a source reduction report with all the required information and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	PBR
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - RECYCLING WASTE
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS

TELEDYNE BATTERY (Continued) **1000201837**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-03-2016
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	The SWPPP, Monitoring Plan and log of inspections were reviewed at the facility. Generally the facility was clean during the inspection. The facility has waste water treatment plant and recycles all waste water. Storm water is discharged from the front side. The facility yard was clean during the inspection.
Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-05-1999
Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Post-Closure
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - HW
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-05-2019
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	Regional Board staff Mr. Elliott and Ms. Mendoza were escorted through the facility by Mr. Vincent Jermany, Director of Operations. The SWPPP, daily tank inspections, and twice weekly sweeping logs were present. The last daily inspection log was dated 11/5/19 and the

TELEDYNE BATTERY (Continued) **1000201837**

sweeping log was dated 10/29/19. The scrap metal roll off bin did not have a lid but Mr. Jermany indicated that a tarp is available to place over the bin when rain is forecast. Cardboard trash bins had lids that were closed. Housekeeping appeared to be well kept. The discharge sampling location was observed and appeared to be clear of trash, debris, and sediment. Mr. Jermany did not appear to be aware of the required Level 2 ERA report due on January 1, 2020. The 2016-17 facility AdHoc average lead concentrations exceeded the NAL and a Level 1 ERA was submitted. The BMP recommendations appeared to be primarily focused on housekeeping improvements. "Use tarping or covered rolloff to cover the outdoor material storage. Increase frequency of sweeping the site with sweeper, in areas located away from air monitors, catch basins and sumps to be inspected monthly. Cleaning will be conducted immediately when significant sediment buildup is observed. Catch basins and sumps will be cleaned annually, at a minimum." The 2018-19 AdHoc reports average lead concentration of 0.30 mg/L exceeded the NAL of 0.262 mg/L. The Level 2 ERA report is due by January 1, 2020.

Eval Division: Water Boards
Eval Program: INDSTW
Eval Source: SMARTS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HWLQG
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-31-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: INSPECTION - BP
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: San Bernardino County Fire Department
Eval Program: HMRRP
Eval Source: CERS

TELEDYNE BATTERY (Continued) **1000201837**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Site Address:	840 W BROCKTON AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	09-13-2018
Enf Action Type:	Staff Enforcement Letter
Enf Action Description:	Staff Enforcement Letter
Enf Action Notes:	The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Enf Action Division:	Water Boards
Enf Action Program:	INDSTW
Enf Action Source:	SMARTS

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Site Address:	840 W BROCKTON AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	10-31-2016
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	San Bernardino County Fire Department
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Coordinates:

Site ID:	74280
Facility Name:	TELEDYNE BATTERY PRODUCTS
Env Int Type Code:	SMSWIND
Program ID:	820750
Coord Name:	Not reported
Ref Point Type Desc:	Unknown
Latitude:	34.067440
Longitude:	-117.193910

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Sudy Koupal
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	Sudy Koupal
Entity Title:	Not reported
Affiliation Address:	PO BOX 7950
Affiliation City:	REDLANDS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92375
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	840 W BROCKTON AVE, P.O. BOX 7950
Affiliation City:	REDLANDS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92375
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	John D. Anderson
Entity Title:	GENERAL 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:	Owner/Operator
Entity Name:	Teledyne Technologies Incorporated dba Teledyne Battery Products
Entity Title:	Operator
Affiliation Address:	PO Box 7950
Affiliation City:	Redlands
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92375
Affiliation Phone:	Not reported
Affiliation Type Desc:	Company Official
Entity Name:	vincent jermany
Entity Title:	Directort of Operations
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	Not reported
Affiliation Type Desc:	CUPA District
Entity Name:	San Bernardino County Fire
Entity Title:	Not reported
Affiliation Address:	620 South E Street

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation City:	San Bernardino
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92415-0153
Affiliation Phone:	(909) 386-8401
Affiliation Type Desc:	Facility Owner
Entity Name:	TELEDYNE TECHNOLOGIES INC
Entity Title:	Not reported
Affiliation Address:	1049 CAMINO DOS RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	913600000
Affiliation Phone:	3105742071
Affiliation Type Desc:	Onsite Treatment Unit Owner Operator
Entity Name:	Michael Volpone
Entity Title:	EHS 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:	Onsite Treatment Unit Owner Operator
Entity Name:	Vincent Jermany
Entity Title:	Operations Director
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:	Public Contact
Entity Name:	Melanie S. Cibik
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	8053734605
Affiliation Type Desc:	Facility Contact
Entity Name:	Mark Egbert
Entity Title:	Not reported
Affiliation Address:	5005 MCCONNELL AVE
Affiliation City:	LOS ANGELES
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	900660000
Affiliation Phone:	3105742071
Affiliation Type Desc:	Legal Owner

TELEDYNE BATTERY (Continued) **1000201837**

Entity Name:	TELEDYNE TECHNOLOGIES INC.
Entity Title:	Not reported
Affiliation Address:	1049 CAMINOS DO RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	91360
Affiliation Phone:	(808) 373-4602
Affiliation Type Desc:	Operator
Entity Name:	Teledyne Battery Products
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:	(909) 793-3131
Affiliation Type Desc:	Parent Company
Entity Name:	TELEDYNE TECHNOLOGIES INC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	Teledyne Battery Products
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:	Property Owner
Entity Name:	TELEDYNE TECHNOLOGIES INC.
Entity Title:	Not reported
Affiliation Address:	1049 CAMINOS DO RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	91360
Affiliation Phone:	(808) 373-4602
Affiliation Type Desc:	Technical Contact
Entity Name:	Sudy Koupal
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Phone:	9094063125
Name:	TELEDYNE BATTERY PRODUCTS
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	74280
CERS ID:	92374TLDYN840WE
CERS Description:	Toxic Release Inventory

Violations:

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	01-01-2018
Citation:	2014-0057-DWQ - Industrial General Permit
Violation Description:	SW - Late Report
Violation Notes:	The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Violation Division:	Water Boards
Violation Program:	INDSTW
Violation Source:	SMARTS
Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	05-09-2018
Citation:	22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description:	Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A written hazardous waste tank assessment has not been maintained for the water treatment tank system. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the water treatment tank system in accordance with 22 CCR 15 66265.192 and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS
Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	10-31-2016
Citation:	HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler’s operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 11/30/2016. (1) 55 gallon drum of Ethylene

TELEDYNE BATTERY (Continued) **1000201837**

Glycol was not reported as inventory. Site map to include hazardous materials storage and handling areas, emergency shut offs, emergency response equipment.

Violation Division:	San Bernardino County Fire Department
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Violation Date:	05-09-2018
Citation:	HSC 6.5 25244.21 - California Health and Safety Code, Chapter 6.5, Section(s) 25244.21
Violation Description:	Failure to adequately complete, and maintain for review, all requirements of the source reduction evaluation review and plan (SB-14).
Violation Notes:	Returned to compliance on 06/06/2018. OBSERVATION: A source reduction evaluation review and plan with all the required information has not been completed and maintained for review. CORRECTIVE ACTION: Complete a source reduction report with all the required information and submit a copy to the CUPA.
Violation Division:	San Bernardino County Fire Department
Violation Program:	HWLQG
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	PBR
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - RECYCLING WASTE

TELEDYNE BATTERY (Continued) **1000201837**

Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-03-2016
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation
Eval Notes:	The SWPPP, Monitoring Plan and log of inspections were reviewed at the facility. Generally the facility was clean during the inspection. The facility has waste water treatment plant and recycles all waste water. Storm water is discharged from the front side. The facility yard was clean during the inspection.
Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-05-1999
Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Post-Closure
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWRecycler
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - HW
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-05-2019
Violations Found:	No
Eval Type:	Industrial Storm Water Compliance Evaluation

TELEDYNE BATTERY (Continued) **1000201837**

Eval Notes:	Regional Board staff Mr. Elliott and Ms. Mendoza were escorted through the facility by Mr. Vincent Jermany, Director of Operations. The SWPPP, daily tank inspections, and twice weekly sweeping logs were present. The last daily inspection log was dated 11/5/19 and the sweeping log was dated 10/29/19. The scrap metal roll off bin did not have a lid but Mr. Jermany indicated that a tarp is available to place over the bin when rain is forecast. Cardboard trash bins had lids that were closed. Housekeeping appeared to be well kept. The discharge sampling location was observed and appeared to be clear of trash, debris, and sediment. Mr. Jermany did not appear to be aware of the required Level 2 ERA report due on January 1, 2020. The 2016-17 facility AdHoc average lead concentrations exceeded the NAL and a Level 1 ERA was submitted. The BMP recommendations appeared to be primarily focused on housekeeping improvements. "Use tarping or covered rolloff to cover the outdoor material storage. Increase frequency of sweeping the site with sweeper, in areas located away from air monitors, catch basins and sumps to be inspected monthly. Cleaning will be conducted immediately when significant sediment buildup is observed. Catch basins and sumps will be cleaned annually, at a minimum." The 2018-19 AdHoc reports average lead concentration of 0.30 mg/L exceeded the NAL of 0.262 mg/L. The Level 2 ERA report is due by January 1, 2020.
Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HWLQG
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-31-2016
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTION - BP
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-02-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2018
Violations Found:	No
Eval Type:	Routine done by local agency

TELEDYNE BATTERY (Continued) **1000201837**

Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-29-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Bernardino County Fire Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Site Address:	840 W BROCKTON AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	09-13-2018
Enf Action Type:	Staff Enforcement Letter
Enf Action Description:	Staff Enforcement Letter
Enf Action Notes:	The Teledyne Battery Products Level 1 ERA Report for Lead, Total (Recoverable) has not been submitted for the July 1, 2016 - June 30, 2017 reporting year.
Enf Action Division:	Water Boards
Enf Action Program:	INDSTW
Enf Action Source:	SMARTS
Site ID:	74280
Site Name:	TELEDYNE BATTERY PRODUCTS
Site Address:	840 W BROCKTON AVE
Site City:	REDLANDS
Site Zip:	92374
Enf Action Date:	10-31-2016
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	San Bernardino County Fire Department
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Coordinates:

Site ID:	74280
Facility Name:	TELEDYNE BATTERY PRODUCTS
Env Int Type Code:	SMSWIND
Program ID:	820750
Coord Name:	Not reported
Ref Point Type Desc:	Unknown
Latitude:	34.067440
Longitude:	-117.193910

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Sudy Koupal

TELEDYNE BATTERY (Continued) **1000201837**

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:	Sudy Koupal
Entity Title:	Not reported
Affiliation Address:	PO BOX 7950
Affiliation City:	REDLANDS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92375
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	840 W BROCKTON AVE, P.O. BOX 7950
Affiliation City:	REDLANDS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92375
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	John D. Anderson
Entity Title:	GENERAL 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:	Owner/Operator
Entity Name:	Teledyne Technologies Incorporated dba Teledyne Battery Products
Entity Title:	Operator
Affiliation Address:	PO Box 7950
Affiliation City:	Redlands
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92375
Affiliation Phone:	Not reported
Affiliation Type Desc:	Company Official
Entity Name:	vincent jermany
Entity Title:	Directort of Operations
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Type Desc: CUPA District
Entity Name: San Bernardino County Fire
Entity Title: Not reported
Affiliation Address: 620 South E Street
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92415-0153
Affiliation Phone: (909) 386-8401

Affiliation Type Desc: Facility Owner
Entity Name: TELEDYNE TECHNOLOGIES INC
Entity Title: Not reported
Affiliation Address: 1049 CAMINO DOS RIOS
Affiliation City: THOUSAND OAKS
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 913600000
Affiliation Phone: 3105742071

Affiliation Type Desc: Onsite Treatment Unit Owner Operator
Entity Name: Michael Volpone
Entity Title: EHS 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: Onsite Treatment Unit Owner Operator
Entity Name: Vincent Jermany
Entity Title: Operations Director
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: Public Contact
Entity Name: Melanie S. Cibik
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 92374
Affiliation Phone: 8053734605

Affiliation Type Desc: Facility Contact
Entity Name: Mark Egbert
Entity Title: Not reported
Affiliation Address: 5005 MCCONNELL AVE
Affiliation City: LOS ANGELES
Affiliation State: CA
Affiliation Country: Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation Zip:	900660000
Affiliation Phone:	3105742071
Affiliation Type Desc:	Legal Owner
Entity Name:	TELEDYNE TECHNOLOGIES INC.
Entity Title:	Not reported
Affiliation Address:	1049 CAMINOS DO RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	91360
Affiliation Phone:	(808) 373-4602
Affiliation Type Desc:	Operator
Entity Name:	Teledyne Battery Products
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:	(909) 793-3131
Affiliation Type Desc:	Parent Company
Entity Name:	TELEDYNE TECHNOLOGIES INC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	Teledyne Battery Products
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:	Property Owner
Entity Name:	TELEDYNE TECHNOLOGIES INC.
Entity Title:	Not reported
Affiliation Address:	1049 CAMINOS DO RIOS
Affiliation City:	THOUSAND OAKS
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	91360
Affiliation Phone:	(808) 373-4602
Affiliation Type Desc:	Technical Contact
Entity Name:	Sudy Koupal
Entity Title:	Not reported
Affiliation Address:	Not reported

TELEDYNE BATTERY (Continued) **1000201837**

Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	92374
Affiliation Phone:	9094063125

Name:	TELEDYNE BATTERY
Address:	840 W BROCKTON AVE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	237852
CERS ID:	T0607100086
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	VALERIE JAHN-BULL - SANTA ANA RWQCB (REGION 8)
Entity Title:	Not reported
Affiliation Address:	3737 MAIN STREET, SUITE 500
Affiliation City:	RIVERSIDE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	9517824903

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	CATHERINE RICHARDS - SAN BERNARDINO COUNTY
Entity Title:	Not reported
Affiliation Address:	620 SOUTH E STREET
Affiliation City:	SAN BERNARDINO
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	9093868419

G31 **TELEDYNE** **CPS-SLIC** **S108985932**
SE **840 W BROCKTON AVENUE** **N/A**
1/4-1/2 **REDLANDS, CA**
0.387 mi.
2041 ft. **Site 4 of 4 in cluster G**

Relative:
Higher

Actual:
1311 ft.

SLIC REG 8:

Name:	TELEDYNE
Address:	840 W BROCKTON AVENUE
City:	REDLANDS
Type:	Soil and Groundwater
Facility Status:	Post-Investigation/Remediation Monitoring
Staff:	XXX
Substance:	METALS,SOLV
Lead Agency:	Department of Toxic Substance Control
Location Code:	Not reported
Thomas Bros Code:	Not reported

32
SE
1/4-1/2
0.454 mi.
2398 ft.

STORM,REDLANDS
840 WEST BROCKTON AVE
REDLANDS CA, CA

WMUDS/SWAT **S104156513**
N/A

Relative:
Higher

Actual:
1322 ft.

WMUDS/SWAT:

Edit Date:	Not reported
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.
Primary Waste:	STORMS
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	CA0106640
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Private
Agency Name:	TELEDYNE BATTERY PRODUCTS
Agency Department:	Not reported
Agency Address:	840 W. BROCKTON AVENUE
Agency City,St,Zip:	REDLANDS CA 92374
Agency Contact:	JOHN JAMES
Agency Telephone:	9097933131
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	Not reported
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	8
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 Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	3692
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	False
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	True

STORM,REDLANDS (Continued) **S104156513**

Department of Defence:	False
Solid Waste Assessment Test Program:	Not reported
Threat to Water Quality:	Moderate Threat to Water Quality. A violation could have a major adverse impact on receiving biota, can cause aesthetic impairment to a significant human population, or render unusable a potential domestic or municipal water supply. Awsthetic impairment would include nuisance from a waste treatment facility.
Sub Chapter 15:	False
Regional Board Project Officer:	Not reported
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Yes
Waste Discharge Requirements:	H
Self-Monitoring Rept. Frequency:	Monthly Submittal
Waste Discharge System ID:	8 361483001
Solid Waste Information ID:	Not reported

33
NE
1/4-1/2
0.499 mi.
2634 ft.

REDLANDS FARMING COMPANY
780 WEST SAN BERNARDINO AVENUE
REDLANDS, CA 92373

ENVIROSTOR **1000277298**
N/A

Relative:
Higher

Actual:
1324 ft.

ENVIROSTOR:

Name:	REDLANDS FARMING COMPANY
Address:	780 WEST SAN BERNARDINO AVENUE
City,State,Zip:	REDLANDS, CA 92373
Facility ID:	36350019
Status:	Refer: Other Agency
Status Date:	08/22/1995
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:	* Mmonroy
Division Branch:	Cleanup Cypress
Assembly:	40
Senate:	23
Special Program:	* CERC2
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.07803
Longitude:	-117.1901
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	* Pesticides - Rinse Waters * Pesticides - Wastes From Production * CONTAMINATED SOIL * UNSPECIFIED OIL CONTAINING WASTE * WASTE OIL & MIXED OIL
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	REDLAND HEIGHTS DOLE
Alias Type:	Alternate Name
Alias Name:	CAD982360307

REDLANDS FARMING COMPANY (Continued) **1000277298**

Alias Type: EPA Identification Number
Alias Name: 36350019
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 06/20/1983
Comments: FACILITY IDENTIFIED ID VIA DRIVE BY FACILITY DRIVE-BY UNLINED POND WITH OILY WASTE ON SITE. PESTICIDE SPRAY TANKS ON SITE.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 10/27/1994
Comments: Database verification program confirmed the NFA status for DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/10/1989
Comments: SITE SCREENING DONE NO FURTHER ACTION UNDER CERCLA 10/28/88 NFA UNDER SITE MITIGATION

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 09/15/1987
Comments: PRELIM ASSESS DONE REDLANDS FARMING: HISTORY OF SITE WASTES DISPOSED OFF SITE,ANY OTHER CONTAMINATION IN LOW QUANITITES

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/20/1987
Comments: SITE SCREENING DONE FURTHER RECORD SEARCH NEEDED TO DETER- MINE EXACT TYPE OF OPERATION.

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

34 **NNE** **1/2-1** **0.672 mi.** **3549 ft.**	**NEW HIGH SCHOOL NO.3** **TEXAS STREET/W. PIONEER AVENUE** **REDLANDS, CA 92374**	**ENVIROSTOR** **SCH** **CERS**	**S107736878** **N/A**

Relative:
Higher

Actual:
1300 ft.

ENVIROSTOR:
Name: NEW HIGH SCHOOL NO.3
Address: TEXAS STREET/W. PIONEER AVENUE
City,State,Zip: REDLANDS, CA 92374
Facility ID: 36010062
Status: No Further Action
Status Date: 04/19/2007
Site Code: 404541
Site Type: School Investigation
Site Type Detailed: School
Acres: 55
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Assembly: 40
Senate: 23
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 34.08305
Longitude: -117.1936
APN: 167-061-04, 167-061-05, 167-061-06, 167-061-09, 167-061-10, 167-061-11, 167-061-12, 167-061-14, 167-061-15, 167-061-18, 167-061-19, 167-061-21, 167-061-22, 167-061-24, 167-061-25
Past Use: RESIDENTIAL AREA
Potential COC: Lead
Confirmed COC: 30013-NO
Potential Description: SOIL
Alias Name: Citrus Valley High School
Alias Type: Alternate Name
Alias Name: NEW HIGH SCHOOL NO. 3
Alias Type: Alternate Name
Alias Name: REDLANDS UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: REDLANDS USD-PROPOSED NEW HIGH SCHOOL 3
Alias Type: Alternate Name
Alias Name: 167-061-04
Alias Type: APN
Alias Name: 167-061-05
Alias Type: APN
Alias Name: 167-061-06
Alias Type: APN
Alias Name: 167-061-09
Alias Type: APN
Alias Name: 167-061-10
Alias Type: APN
Alias Name: 167-061-11
Alias Type: APN
Alias Name: 167-061-12

NEW HIGH SCHOOL NO.3 (Continued) **S107736878**

Alias Type:	APN
Alias Name:	167-061-14
Alias Type:	APN
Alias Name:	167-061-15
Alias Type:	APN
Alias Name:	167-061-18
Alias Type:	APN
Alias Name:	167-061-19
Alias Type:	APN
Alias Name:	167-061-21
Alias Type:	APN
Alias Name:	167-061-22
Alias Type:	APN
Alias Name:	167-061-24
Alias Type:	APN
Alias Name:	167-061-25
Alias Type:	APN
Alias Name:	404541
Alias Type:	Project Code (Site Code)
Alias Name:	36010062
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	07/21/2005
Comments:	PEA approved. SSI required for lead-based paint.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Supplemental Site Investigation Workplan
Completed Date:	01/08/2007
Comments:	DTSC concurred with the sampling plan proposed

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Supplemental Site Investigation Report
Completed Date:	04/09/2007
Comments:	DTSC determined based on the Supplemental Site Investigation report that " No Further Action" is required at this Site.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	07/09/2004
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	04/19/2007
Comments:	CRU Memo

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported

NEW HIGH SCHOOL NO.3 (Continued) **S107736878**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: NEW HIGH SCHOOL NO.3
Address: TEXAS STREET/W. PIONEER AVENUE
City,State,Zip: REDLANDS, CA 92374
Facility ID: 36010062
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 55
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Site Code: 404541
Assembly: 40
Senate: 23
Special Program Status: Not reported
Status: No Further Action
Status Date: 04/19/2007
Restricted Use: NO
Funding: School District
Latitude: 34.08305
Longitude: -117.1936
APN: 167-061-04, 167-061-05, 167-061-06, 167-061-09, 167-061-10, 167-061-11, 167-061-12, 167-061-14, 167-061-15, 167-061-18, 167-061-19, 167-061-21, 167-061-22, 167-061-24, 167-061-25
Past Use: RESIDENTIAL AREA
Potential COC: Lead
Confirmed COC: 30013-NO
Potential Description: SOIL
Alias Name: Citrus Valley High School
Alias Type: Alternate Name
Alias Name: NEW HIGH SCHOOL NO. 3
Alias Type: Alternate Name
Alias Name: REDLANDS UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: REDLANDS USD-PROPOSED NEW HIGH SCHOOL 3
Alias Type: Alternate Name
Alias Name: 167-061-04
Alias Type: APN
Alias Name: 167-061-05
Alias Type: APN
Alias Name: 167-061-06
Alias Type: APN
Alias Name: 167-061-09
Alias Type: APN
Alias Name: 167-061-10

NEW HIGH SCHOOL NO.3 (Continued) **S107736878**

Alias Type: APN
Alias Name: 167-061-11
Alias Type: APN
Alias Name: 167-061-12
Alias Type: APN
Alias Name: 167-061-14
Alias Type: APN
Alias Name: 167-061-15
Alias Type: APN
Alias Name: 167-061-18
Alias Type: APN
Alias Name: 167-061-19
Alias Type: APN
Alias Name: 167-061-21
Alias Type: APN
Alias Name: 167-061-22
Alias Type: APN
Alias Name: 167-061-24
Alias Type: APN
Alias Name: 167-061-25
Alias Type: APN
Alias Name: 404541
Alias Type: Project Code (Site Code)
Alias Name: 36010062
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 07/21/2005
Comments: PEA approved. SSI required for lead-based paint.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Workplan
Completed Date: 01/08/2007
Comments: DTSC concurred with the sampling plan proposed

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 04/09/2007
Comments: DTSC determined based on the Supplemental Site Investigation report that " No Further Action" is required at this Site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 07/09/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 04/19/2007
Comments: CRU Memo

NEW HIGH SCHOOL NO.3 (Continued) **S107736878**

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

CERS:

Name:	NEW HIGH SCHOOL NO.3
Address:	TEXAS STREET/W. PIONEER AVENUE
City,State,Zip:	REDLANDS, CA 92374
Site ID:	340563
CERS ID:	36010062
CERS Description:	School Investigation

Affiliation:

Affiliation Type Desc:	Lead Project Manager
Entity Name:	IVY OSORNIO
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:	Supervisor
Entity Name:	SHAHIR HADDAD
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

Count: 8 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CITY OF REDLANDS	1015730681	REDLANDS SMUDGE POT TANKS SITE	100 FEET WEST OF REDLANDS BLVD	92373	SEMS
REDLANDS	S126984098	ALABAMA STREET ILLEGAL DISPOSAL SI	ALABAMA ST. AND PIONEER AVE.	92374	SWF/LF
REDLANDS	S126984123	CHURCH STREET LANDFILL	N END OF CHURCH ST., N OF PION	92373	SWF/LF
REDLANDS	S121700414	ALPER EQUIPMENT INC	NEC CALIFORNIA ST	92373	DRYCLEANERS
REDLANDS	1003877955	UNIVERSAL RUNDEL	OPAL AVE-300 FT. N OF SAN BERN	92373	SEMS-ARCHIVE
REDLANDS	1008407740	EDISON/REDLANDS MGP	501-525 W REDLANDS AT KENDALL	92373	EDR MGP
REDLANDS	1003879085	REDLANDS FARMING CO	SAN BERNARDINO AVE E OF TEXAS	92373	SEMS-ARCHIVE
REDLANDS & VICINITY	S105960464	CRAFTON-REDLANDS AREA	BUNKER HILL GROUND WATER SUB-B	92374	CA BOND EXP. PLAN

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: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: N/A
Last EDR Contact: 12/01/2021
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 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: N/A
Last EDR Contact: 12/01/2021
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	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	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: 10/20/2021	Source: EPA
Date Data Arrived at EDR: 11/05/2021	Telephone: N/A
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/01/2021
Number of Days to Update: 24	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/24/2021	Telephone: 703-603-8704
Date Made Active in Reports: 09/20/2021	Last EDR Contact: 10/01/2021
Number of Days to Update: 88	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: 10/20/2021	Source: EPA
Date Data Arrived at EDR: 11/05/2021	Telephone: 800-424-9346
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/01/2021
Number of Days to Update: 24	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: 10/20/2021	Source: EPA
Date Data Arrived at EDR: 11/05/2021	Telephone: 800-424-9346
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/01/2021
Number of Days to Update: 24	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	Source: EPA
Date Data Arrived at EDR: 09/15/2021	Telephone: 800-424-9346
Date Made Active in Reports: 10/12/2021	Last EDR Contact: 12/17/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/04/2022
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/15/2021	Telephone: (415) 495-8895
Date Made Active in Reports: 10/12/2021	Last EDR Contact: 12/17/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/04/2022
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/15/2021	Telephone: (415) 495-8895
Date Made Active in Reports: 10/12/2021	Last EDR Contact: 12/17/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/04/2022
	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: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
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: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
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: 09/13/2021
Date Data Arrived at EDR: 09/21/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 85

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
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 inventory of solid waste disposal facilities or landfills. These may be active or inactive 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 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 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: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

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 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 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 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 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 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 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 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 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

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

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: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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	Source: California Regional Water Quality Control Board, Lahontan Region
Date Data Arrived at EDR: 09/07/2004	Telephone: 530-542-5574
Date Made Active in Reports: 10/12/2004	Last EDR Contact: 08/15/2011
Number of Days to Update: 35	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	Source: California Regional Quality Control Board, Colorado River Basin Region
Date Data Arrived at EDR: 11/29/2004	Telephone: 760-346-7491
Date Made Active in Reports: 01/04/2005	Last EDR Contact: 08/01/2011
Number of Days to Update: 36	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	Source: California Region Water Quality Control Board Santa Ana Region (8)
Date Data Arrived at EDR: 04/03/2008	Telephone: 951-782-3298
Date Made Active in Reports: 04/14/2008	Last EDR Contact: 09/12/2011
Number of Days to Update: 11	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	Source: California Regional Water Quality Control Board San Diego Region (9)
Date Data Arrived at EDR: 09/11/2007	Telephone: 858-467-2980
Date Made Active in Reports: 09/28/2007	Last EDR Contact: 08/08/2011
Number of Days to Update: 17	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	Source: FEMA
Date Data Arrived at EDR: 02/17/2021	Telephone: 202-646-5797
Date Made Active in Reports: 03/22/2021	Last EDR Contact: 11/01/2021
Number of Days to Update: 33	Next Scheduled EDR Contact: 01/17/2022
	Data Release Frequency: Varies

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/07/2021	Source: SWRCB
Date Data Arrived at EDR: 09/07/2021	Telephone: 916-341-5851
Date Made Active in Reports: 11/30/2021	Last EDR Contact: 12/07/2021
Number of Days to Update: 84	Next Scheduled EDR Contact: 03/21/2022
	Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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: 08/18/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 12/03/2021
Number of Days to Update: 86

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
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 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

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 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

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 04/04/2022
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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 07/22/2021	Telephone: 916-323-3400
Date Made Active in Reports: 10/08/2021	Last EDR Contact: 10/26/2021
Number of Days to Update: 78	Next Scheduled EDR Contact: 02/07/2022
	Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 07/08/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	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: 09/20/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 09/21/2021	Telephone: 916-323-7905
Date Made Active in Reports: 12/08/2021	Last EDR Contact: 12/16/2021
Number of Days to Update: 78	Next Scheduled EDR Contact: 04/04/2022
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/10/2021	Telephone: 202-566-2777
Date Made Active in Reports: 08/17/2021	Last EDR Contact: 12/08/2021
Number of Days to Update: 68	Next Scheduled EDR Contact: 03/28/2022
	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: 09/07/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 82

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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

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

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 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: 12/10/2021
Next Scheduled EDR Contact: 03/21/2022
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: 09/07/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 12/01/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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: 03/14/2022
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: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 12/01/2021
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: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
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: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
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: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/22/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 50	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/15/2021	Telephone: (415) 495-8895
Date Made Active in Reports: 10/12/2021	Last EDR Contact: 12/17/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/04/2022
	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	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 08/17/2021	Telephone: 202-528-4285
Date Made Active in Reports: 10/22/2021	Last EDR Contact: 11/16/2021
Number of Days to Update: 66	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	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 10/15/2021
Number of Days to Update: 62	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	Source: U.S. Geological Survey
Date Data Arrived at EDR: 04/11/2018	Telephone: 888-275-8747
Date Made Active in Reports: 11/06/2019	Last EDR Contact: 10/05/2021
Number of Days to Update: 574	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 11/08/2021
Number of Days to Update: 63	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/15/2021	Telephone: 202-566-1917
Date Made Active in Reports: 09/28/2021	Last EDR Contact: 12/17/2021
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/04/2022
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 11/01/2021
Number of Days to Update: 88	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/08/2018	Telephone: 703-308-4044
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 11/05/2021
Number of Days to Update: 73	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	Source: EPA
Date Data Arrived at EDR: 06/17/2020	Telephone: 202-260-5521
Date Made Active in Reports: 09/10/2020	Last EDR Contact: 12/17/2021
Number of Days to Update: 85	Next Scheduled EDR Contact: 03/28/2022
	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: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/01/2021
Next Scheduled EDR Contact: 03/14/2022
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: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 40

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 12/01/2021
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

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: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
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: 12/02/2021
Next Scheduled EDR Contact: 03/14/2022
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: 12/31/2019
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 12/14/2021
Number of Days to Update: 90

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
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: 12/09/2021
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: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/30/2021
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: 12/09/2021
Next Scheduled EDR Contact: 03/14/2022
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: 09/14/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 91

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 03/21/2022
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: 03/14/2022
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

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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2021	Telephone: 202-564-2280
Date Made Active in Reports: 09/28/2021	Last EDR Contact: 10/05/2021
Number of Days to Update: 89	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/21/2021	Telephone: 202-564-0527
Date Made Active in Reports: 08/11/2021	Last EDR Contact: 11/23/2021
Number of Days to Update: 82	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	Source: EPA
Date Data Arrived at EDR: 08/13/2021	Telephone: 800-385-6164
Date Made Active in Reports: 10/22/2021	Last EDR Contact: 11/15/2021
Number of Days to Update: 70	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	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	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: 09/20/2021	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 09/21/2021	Telephone: 916-323-3400
Date Made Active in Reports: 12/08/2021	Last EDR Contact: 12/16/2021
Number of Days to Update: 78	Next Scheduled EDR Contact: 04/04/2022
	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	Source: Livermore-Pleasanton Fire Department
Date Data Arrived at EDR: 05/14/2019	Telephone: 925-454-2361
Date Made Active in Reports: 07/17/2019	Last EDR Contact: 11/19/2021
Number of Days to Update: 64	Next Scheduled EDR Contact: 02/21/2022
	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	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 09/01/2021	Telephone: 916-327-4498
Date Made Active in Reports: 11/19/2021	Last EDR Contact: 12/08/2021
Number of Days to Update: 79	Next Scheduled EDR Contact: 03/14/2022
	Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 08/18/2021	Source: South Coast Air Quality Management District
Date Data Arrived at EDR: 08/23/2021	Telephone: 909-396-3211
Date Made Active in Reports: 11/12/2021	Last EDR Contact: 11/16/2021
Number of Days to Update: 81	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	Source: Antelope Valley Air Quality Management District
Date Data Arrived at EDR: 08/25/2021	Telephone: 661-723-8070
Date Made Active in Reports: 11/17/2021	Last EDR Contact: 11/23/2021
Number of Days to Update: 84	Next Scheduled EDR Contact: 03/14/2022
	Data Release Frequency: Varies

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019	Source: California Air Resources Board
Date Data Arrived at EDR: 06/10/2021	Telephone: 916-322-2990
Date Made Active in Reports: 08/27/2021	Last EDR Contact: 12/17/2021
Number of Days to Update: 78	Next Scheduled EDR Contact: 03/28/2022
	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	Source: State Water Resoruces Control Board
Date Data Arrived at EDR: 04/20/2021	Telephone: 916-445-9379
Date Made Active in Reports: 07/07/2021	Last EDR Contact: 11/04/2021
Number of Days to Update: 78	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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 04/15/2021	Telephone: 916-255-3628
Date Made Active in Reports: 07/06/2021	Last EDR Contact: 10/05/2021
Number of Days to Update: 82	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	Source: California Integrated Waste Management Board
Date Data Arrived at EDR: 08/13/2021	Telephone: 916-341-6066
Date Made Active in Reports: 11/05/2021	Last EDR Contact: 11/16/2021
Number of Days to Update: 84	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	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 04/15/2020	Telephone: 916-255-1136
Date Made Active in Reports: 07/02/2020	Last EDR Contact: 10/08/2021
Number of Days to Update: 78	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	Source: Department of Toxic Subsances Control
Date Data Arrived at EDR: 08/13/2021	Telephone: 877-786-9427
Date Made Active in Reports: 11/08/2021	Last EDR Contact: 11/15/2021
Number of Days to Update: 87	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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/22/2009	Telephone: 916-323-3400
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/22/2009
Number of Days to Update: 76	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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 08/13/2021	Telephone: 916-323-3400
Date Made Active in Reports: 11/08/2021	Last EDR Contact: 11/15/2021
Number of Days to Update: 87	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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 07/01/2021	Telephone: 916-440-7145
Date Made Active in Reports: 09/24/2021	Last EDR Contact: 10/05/2021
Number of Days to Update: 85	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: 09/07/2021	Source: Department of Conservation
Date Data Arrived at EDR: 09/07/2021	Telephone: 916-322-1080
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/07/2021
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/21/2022
	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: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
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: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
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: 11/29/2021
Next Scheduled EDR Contact: 03/21/2022
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: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
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: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 09/07/2021	Source: State Water Resource Control Board
Date Data Arrived at EDR: 09/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/07/2021
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/21/2022
	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	Source: RWQCB, Central Valley Region
Date Data Arrived at EDR: 07/01/2021	Telephone: 559-445-5577
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 10/08/2021
Number of Days to Update: 90	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	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 11/15/2021
Number of Days to Update: 9	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	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 12/14/2021
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/04/2022
	Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 09/07/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 09/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/07/2021
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/21/2022
	Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 09/07/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 09/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/07/2021
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/21/2022
	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: 09/07/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 12/01/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
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: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
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: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 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

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

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 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

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: 09/30/2021
Date Data Arrived at EDR: 10/01/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 75

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	Source: Public Health Department
Date Data Arrived at EDR: 04/25/2017	Telephone: 530-538-7149
Date Made Active in Reports: 08/09/2017	Last EDR Contact: 09/30/2021
Number of Days to Update: 106	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: 09/15/2021	Source: Calveras County Environmental Health
Date Data Arrived at EDR: 09/16/2021	Telephone: 209-754-6399
Date Made Active in Reports: 12/09/2021	Last EDR Contact: 12/14/2021
Number of Days to Update: 84	Next Scheduled EDR Contact: 04/04/2022
	Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020	Source: Health & Human Services
Date Data Arrived at EDR: 04/23/2020	Telephone: 530-458-0396
Date Made Active in Reports: 07/10/2020	Last EDR Contact: 10/29/2021
Number of Days to Update: 78	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	Source: Contra Costa Health Services Department
Date Data Arrived at EDR: 07/20/2021	Telephone: 925-646-2286
Date Made Active in Reports: 10/11/2021	Last EDR Contact: 10/22/2021
Number of Days to Update: 83	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	Source: Del Norte County Environmental Health Division
Date Data Arrived at EDR: 07/23/2021	Telephone: 707-465-0426
Date Made Active in Reports: 10/08/2021	Last EDR Contact: 10/29/2021
Number of Days to Update: 77	Next Scheduled EDR Contact: 02/07/2022
	Data Release Frequency: Varies

EL DORADO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/30/2021	Source: El Dorado County Environmental Management Department
Date Data Arrived at EDR: 08/03/2021	Telephone: 530-621-6623
Date Made Active in Reports: 10/26/2021	Last EDR Contact: 11/16/2021
Number of Days to Update: 84	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	Source: Dept. of Community Health
Date Data Arrived at EDR: 06/23/2021	Telephone: 559-445-3271
Date Made Active in Reports: 09/17/2021	Last EDR Contact: 10/01/2021
Number of Days to Update: 86	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	Source: Glenn County Air Pollution Control District
Date Data Arrived at EDR: 01/24/2018	Telephone: 830-934-6500
Date Made Active in Reports: 03/14/2018	Last EDR Contact: 07/13/2021
Number of Days to Update: 49	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	Source: Humboldt County Environmental Health
Date Data Arrived at EDR: 08/12/2021	Telephone: N/A
Date Made Active in Reports: 11/08/2021	Last EDR Contact: 11/11/2021
Number of Days to Update: 88	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	Source: San Diego Border Field Office
Date Data Arrived at EDR: 07/15/2021	Telephone: 760-339-2777
Date Made Active in Reports: 10/06/2021	Last EDR Contact: 10/15/2021
Number of Days to Update: 83	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	Source: Lassen County Environmental Health
Date Data Arrived at EDR: 08/21/2020	Telephone: 530-251-8528
Date Made Active in Reports: 11/09/2020	Last EDR Contact: 11/11/2021
Number of Days to Update: 80	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	Source: N/A
Date Data Arrived at EDR: 03/31/2009	Telephone: N/A
Date Made Active in Reports: 10/23/2009	Last EDR Contact: 12/08/2021
Number of Days to Update: 206	Next Scheduled EDR Contact: 03/28/2022
	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	Source: Department of Public Works
Date Data Arrived at EDR: 07/09/2021	Telephone: 626-458-3517
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 10/15/2021
Number of Days to Update: 82	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	Source: La County Department of Public Works
Date Data Arrived at EDR: 07/09/2021	Telephone: 818-458-5185
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 10/08/2021
Number of Days to Update: 82	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	Source: Engineering & Construction Division
Date Data Arrived at EDR: 02/18/2021	Telephone: 213-473-7869
Date Made Active in Reports: 05/10/2021	Last EDR Contact: 10/05/2021
Number of Days to Update: 81	Next Scheduled EDR Contact: 01/24/2022
	Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 06/25/2019	Telephone: 213-978-3800
Date Made Active in Reports: 08/22/2019	Last EDR Contact: 12/16/2021
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/04/2022
	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: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
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: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
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: 12/14/2021
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	Source: Health Care Agency
Date Data Arrived at EDR: 08/03/2021	Telephone: 714-834-3446
Date Made Active in Reports: 10/26/2021	Last EDR Contact: 10/29/2021
Number of Days to Update: 84	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	Source: Health Care Agency
Date Data Arrived at EDR: 08/03/2021	Telephone: 714-834-3446
Date Made Active in Reports: 10/26/2021	Last EDR Contact: 10/29/2021
Number of Days to Update: 84	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	Source: Health Care Agency
Date Data Arrived at EDR: 07/29/2021	Telephone: 714-834-3446
Date Made Active in Reports: 10/19/2021	Last EDR Contact: 10/29/2021
Number of Days to Update: 82	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: 09/07/2021	Source: Placer County Health and Human Services
Date Data Arrived at EDR: 09/09/2021	Telephone: 530-745-2363
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 11/23/2021
Number of Days to Update: 81	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	Source: Plumas County Environmental Health
Date Data Arrived at EDR: 04/23/2019	Telephone: 530-283-6355
Date Made Active in Reports: 06/26/2019	Last EDR Contact: 10/14/2021
Number of Days to Update: 64	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: 09/29/2021	Source: Department of Environmental Health
Date Data Arrived at EDR: 09/30/2021	Telephone: 951-358-5055
Date Made Active in Reports: 12/14/2021	Last EDR Contact: 12/08/2021
Number of Days to Update: 75	Next Scheduled EDR Contact: 03/28/2022
	Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 09/29/2021	Source: Department of Environmental Health
Date Data Arrived at EDR: 09/30/2021	Telephone: 951-358-5055
Date Made Active in Reports: 12/15/2021	Last EDR Contact: 12/08/2021
Number of Days to Update: 76	Next Scheduled EDR Contact: 03/28/2022
	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: 06/18/2021	Source: Sacramento County Environmental Management
Date Data Arrived at EDR: 09/28/2021	Telephone: 916-875-8406
Date Made Active in Reports: 12/14/2021	Last EDR Contact: 09/28/2021
Number of Days to Update: 77	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	Source: Sacramento County Environmental Management
Date Data Arrived at EDR: 08/04/2021	Telephone: 916-875-8406
Date Made Active in Reports: 11/02/2021	Last EDR Contact: 10/01/2021
Number of Days to Update: 90	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	Source: San Benito County Environmental Health
Date Data Arrived at EDR: 07/28/2021	Telephone: N/A
Date Made Active in Reports: 10/21/2021	Last EDR Contact: 10/29/2021
Number of Days to Update: 85	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	Source: San Bernardino County Fire Department Hazardous Materials Division
Date Data Arrived at EDR: 08/12/2021	Telephone: 909-387-3041
Date Made Active in Reports: 11/08/2021	Last EDR Contact: 11/01/2021
Number of Days to Update: 88	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: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
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: 12/08/2021
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	Source: Department Of Public Health San Francisco County
Date Data Arrived at EDR: 09/19/2008	Telephone: 415-252-3920
Date Made Active in Reports: 09/29/2008	Last EDR Contact: 11/01/2021
Number of Days to Update: 10	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	Source: Department of Public Health
Date Data Arrived at EDR: 08/05/2021	Telephone: 415-252-3920
Date Made Active in Reports: 10/29/2021	Last EDR Contact: 10/31/2021
Number of Days to Update: 85	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	Source: Environmental Health Department
Date Data Arrived at EDR: 06/26/2018	Telephone: N/A
Date Made Active in Reports: 07/11/2018	Last EDR Contact: 09/09/2021
Number of Days to Update: 15	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	Source: San Luis Obispo County Public Health Department
Date Data Arrived at EDR: 08/11/2021	Telephone: 805-781-5596
Date Made Active in Reports: 11/08/2021	Last EDR Contact: 11/11/2021
Number of Days to Update: 89	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	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 02/20/2020	Telephone: 650-363-1921
Date Made Active in Reports: 04/24/2020	Last EDR Contact: 12/10/2021
Number of Days to Update: 64	Next Scheduled EDR Contact: 03/21/2022
	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	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 03/29/2019	Telephone: 650-363-1921
Date Made Active in Reports: 05/29/2019	Last EDR Contact: 12/02/2021
Number of Days to Update: 61	Next Scheduled EDR Contact: 03/21/2022
	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	Source: Shasta County Department of Resource Management
Date Data Arrived at EDR: 06/19/2017	Telephone: 530-225-5789
Date Made Active in Reports: 08/09/2017	Last EDR Contact: 11/11/2021
Number of Days to Update: 51	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	Source: Solano County Department of Environmental Management
Date Data Arrived at EDR: 06/06/2019	Telephone: 707-784-6770
Date Made Active in Reports: 08/13/2019	Last EDR Contact: 11/23/2021
Number of Days to Update: 68	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: 09/15/2021	Source: Solano County Department of Environmental Management
Date Data Arrived at EDR: 09/16/2021	Telephone: 707-784-6770
Date Made Active in Reports: 12/09/2021	Last EDR Contact: 11/23/2021
Number of Days to Update: 84	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	Source: County of Sonoma Fire & Emergency Services Department
Date Data Arrived at EDR: 07/06/2021	Telephone: 707-565-1174
Date Made Active in Reports: 07/14/2021	Last EDR Contact: 12/14/2021
Number of Days to Update: 8	Next Scheduled EDR Contact: 04/04/2022
	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	Source: Department of Health Services
Date Data Arrived at EDR: 06/30/2021	Telephone: 707-565-6565
Date Made Active in Reports: 09/24/2021	Last EDR Contact: 12/14/2021
Number of Days to Update: 86	Next Scheduled EDR Contact: 04/04/2022
	Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 05/14/2021	Source: Stanislaus County Department of Ennvironmental Protection
Date Data Arrived at EDR: 05/17/2021	Telephone: 209-525-6751
Date Made Active in Reports: 08/03/2021	Last EDR Contact: 10/06/2021
Number of Days to Update: 78	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	Source: Sutter County Environmental Health Services
Date Data Arrived at EDR: 08/25/2021	Telephone: 530-822-7500
Date Made Active in Reports: 11/17/2021	Last EDR Contact: 11/23/2021
Number of Days to Update: 84	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	Source: Tehama County Department of Environmental Health
Date Data Arrived at EDR: 01/14/2021	Telephone: 530-527-8020
Date Made Active in Reports: 04/06/2021	Last EDR Contact: 12/08/2021
Number of Days to Update: 82	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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 07/15/2021	Telephone: 760-352-0381
Date Made Active in Reports: 10/06/2021	Last EDR Contact: 10/15/2021
Number of Days to Update: 83	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	Source: Tulare County Environmental Health Services Division
Date Data Arrived at EDR: 04/28/2021	Telephone: 559-624-7400
Date Made Active in Reports: 07/13/2021	Last EDR Contact: 11/01/2021
Number of Days to Update: 76	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	Source: Divison of Environmental Health
Date Data Arrived at EDR: 04/25/2018	Telephone: 209-533-5633
Date Made Active in Reports: 06/25/2018	Last EDR Contact: 10/14/2021
Number of Days to Update: 61	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	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 07/19/2021	Telephone: 805-654-2813
Date Made Active in Reports: 10/08/2021	Last EDR Contact: 10/18/2021
Number of Days to Update: 81	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	Source: Environmental Health Division
Date Data Arrived at EDR: 12/01/2011	Telephone: 805-654-2813
Date Made Active in Reports: 01/19/2012	Last EDR Contact: 09/23/2021
Number of Days to Update: 49	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	Source: Environmental Health Division
Date Data Arrived at EDR: 06/24/2008	Telephone: 805-654-2813
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 11/05/2021
Number of Days to Update: 37	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	Source: Ventura County Resource Management Agency
Date Data Arrived at EDR: 07/19/2021	Telephone: 805-654-2813
Date Made Active in Reports: 10/07/2021	Last EDR Contact: 10/18/2021
Number of Days to Update: 80	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: 07/26/2021	Source: Environmental Health Division
Date Data Arrived at EDR: 09/08/2021	Telephone: 805-654-2813
Date Made Active in Reports: 11/29/2021	Last EDR Contact: 12/07/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 03/21/2022
	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: 09/23/2021	Source: Yolo County Department of Health
Date Data Arrived at EDR: 09/28/2021	Telephone: 530-666-8646
Date Made Active in Reports: 12/15/2021	Last EDR Contact: 09/23/2021
Number of Days to Update: 78	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	Source: Yuba County Environmental Health Department
Date Data Arrived at EDR: 07/20/2021	Telephone: 530-749-7523
Date Made Active in Reports: 10/08/2021	Last EDR Contact: 10/22/2021
Number of Days to Update: 80	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	Source: Department of Energy & Environmental Protection
Date Data Arrived at EDR: 08/10/2021	Telephone: 860-424-3375
Date Made Active in Reports: 11/08/2021	Last EDR Contact: 11/12/2021
Number of Days to Update: 90	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	Source: Department of Environmental Protection
Date Data Arrived at EDR: 04/10/2019	Telephone: N/A
Date Made Active in Reports: 05/16/2019	Last EDR Contact: 10/05/2021
Number of Days to Update: 36	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	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 04/29/2020	Telephone: 518-402-8651
Date Made Active in Reports: 07/10/2020	Last EDR Contact: 10/29/2021
Number of Days to Update: 72	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	Source: Department of Environmental Protection
Date Data Arrived at EDR: 07/19/2019	Telephone: 717-783-8990
Date Made Active in Reports: 09/10/2019	Last EDR Contact: 10/07/2021
Number of Days to Update: 53	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	Source: Department of Environmental Management
Date Data Arrived at EDR: 02/11/2021	Telephone: 401-222-2797
Date Made Active in Reports: 02/24/2021	Last EDR Contact: 11/29/2021
Number of Days to Update: 13	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	Source: Department of Natural Resources
Date Data Arrived at EDR: 06/19/2019	Telephone: N/A
Date Made Active in Reports: 09/03/2019	Last EDR Contact: 12/06/2021
Number of Days to Update: 76	Next Scheduled EDR Contact: 03/21/2022
	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
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.

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

Â© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

TARGET PROPERTY COORDINATES

Latitude (North):	34.072432 - 34˚ 4’ 20.76’’
Longitude (West):	117.198606 - 117˚ 11’ 54.98’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	481674.3
UTM Y (Meters):	3770010.2
Elevation:	1286 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12014994 REDLANDS, 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.

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).

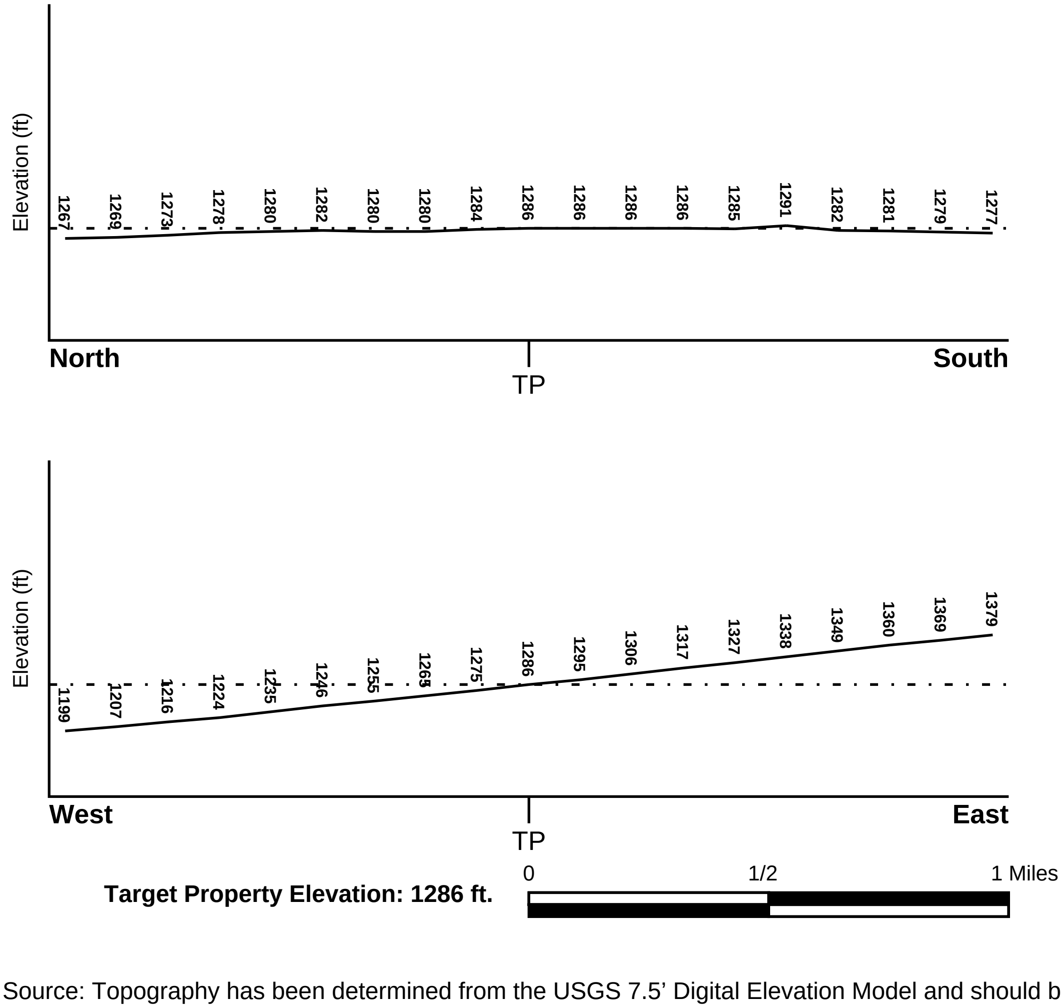
TOPOGRAPHIC INFORMATION

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 West

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 1286 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
06071C8704H	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06071C8708H	FEMA FIRM Flood data
06065C0090G	FEMA FIRM Flood data
06071C8716H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

---

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

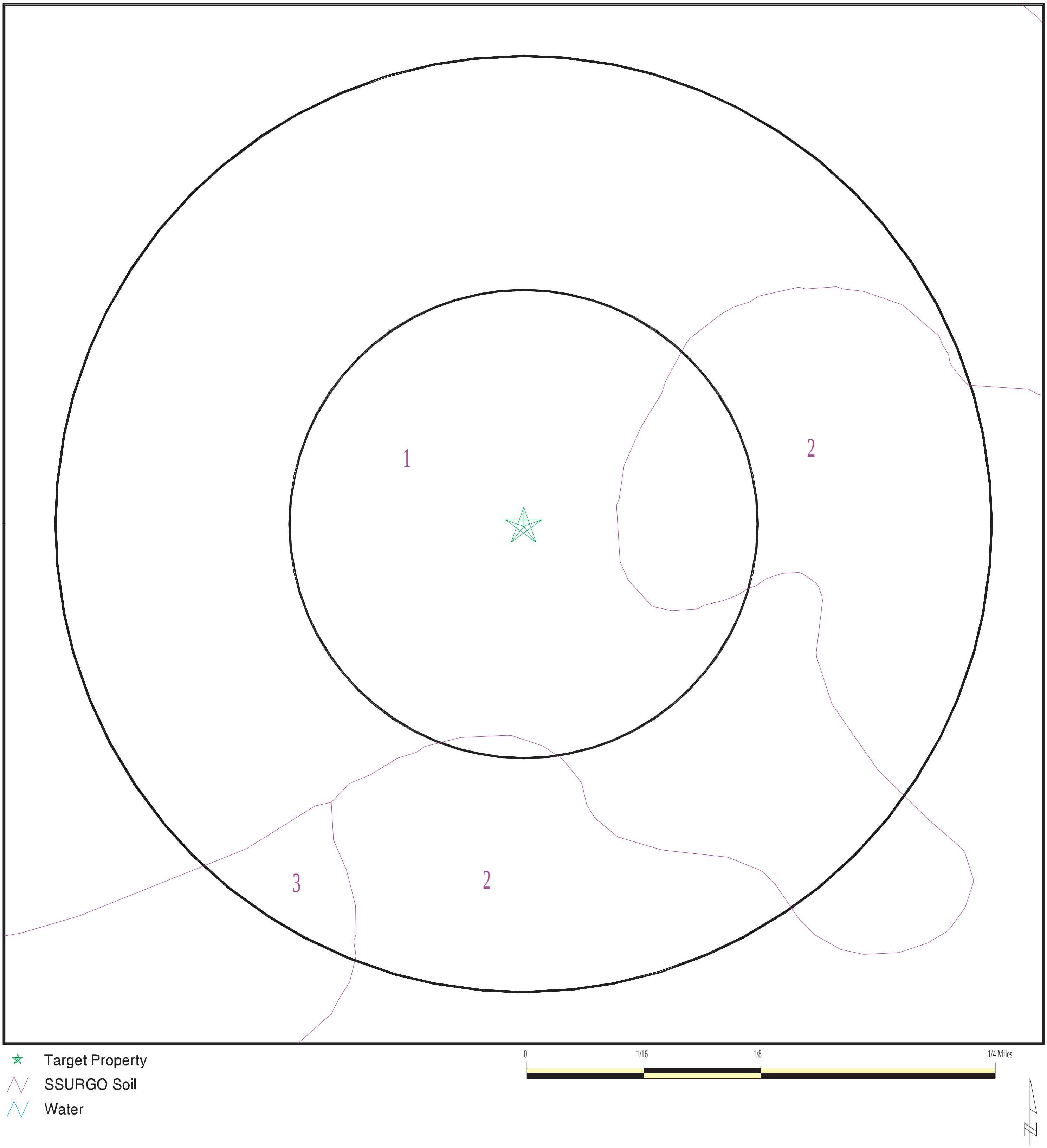
GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT		**GEOLOGIC AGE IDENTIFICATION**	
Era:	Cenozoic	Category:	Stratifed Sequence
System:	Quaternary		
Series:	Quaternary		
Code:	Q *(decoded above as Era, System & Series)*		

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 - 06794904.2r



SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands CA 92374
LAT/LONG: 34.072432 / 117.198606

CLIENT: Petra Geotechnical Inc
CONTACT: Edward Lump
INQUIRY #: 06794904.2r
DATE: December 20, 2021 6:26 pm

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:	HANFORD
Soil Surface Texture:	sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status: Not hydric	
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**		**Soil Reaction (pH)**
1	0 inches	11 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6
2	11 inches	59 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6

Soil Map ID: 2

Soil Component Name:	TUJUNGA
Soil Surface Texture:	gravelly loamy sand
Hydrologic Group:	Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.
Soil Drainage Class:	Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
1	0 inches	18 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1
2	18 inches	59 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

Soil Map ID: 3

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
1	0 inches	11 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6
2	11 inches	59 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000140538	0 - 1/8 Mile South
A3	USGS40000140568	1/8 - 1/4 Mile East
A5	USGS40000140551	1/8 - 1/4 Mile ESE
B7	USGS40000140537	1/8 - 1/4 Mile ESE
B8	USGS40000140524	1/4 - 1/2 Mile ESE
B9	USGS40000140525	1/4 - 1/2 Mile ESE
D16	USGS40000140628	1/4 - 1/2 Mile NE
E19	USGS40000140508	1/4 - 1/2 Mile WSW
F21	USGS40000140583	1/4 - 1/2 Mile East

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
F22	USGS40000140590	1/4 - 1/2 Mile ENE
F23	USGS40000140589	1/4 - 1/2 Mile ENE
F24	USGS40000140592	1/4 - 1/2 Mile ENE
F25	USGS40000140591	1/4 - 1/2 Mile ENE
G30	USGS40000140474	1/4 - 1/2 Mile SW
35	USGS40000140657	1/4 - 1/2 Mile NW
H36	USGS40000140559	1/4 - 1/2 Mile West
37	USGS40000140444	1/4 - 1/2 Mile SSW
I38	USGS40000140518	1/4 - 1/2 Mile WSW
J42	USGS40000140602	1/2 - 1 Mile West
J43	USGS40000140614	1/2 - 1 Mile WNW
K44	USGS40000140557	1/2 - 1 Mile West
L46	USGS40000140734	1/2 - 1 Mile North
48	USGS40000140730	1/2 - 1 Mile NNE
49	USGS40000140405	1/2 - 1 Mile South
M51	USGS40000140745	1/2 - 1 Mile North
O54	USGS40000140733	1/2 - 1 Mile NNE
N56	USGS40000140739	1/2 - 1 Mile NNW
Q62	USGS40000140343	1/2 - 1 Mile South
66	USGS40000140588	1/2 - 1 Mile East
P70	USGS40000140712	1/2 - 1 Mile NE
R71	USGS40000140701	1/2 - 1 Mile WNW
S76	USGS40000140406	1/2 - 1 Mile SW
U80	USGS40000140729	1/2 - 1 Mile NE
82	USGS40000140303	1/2 - 1 Mile South

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
40	CA3000849	1/2 - 1 Mile NE

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

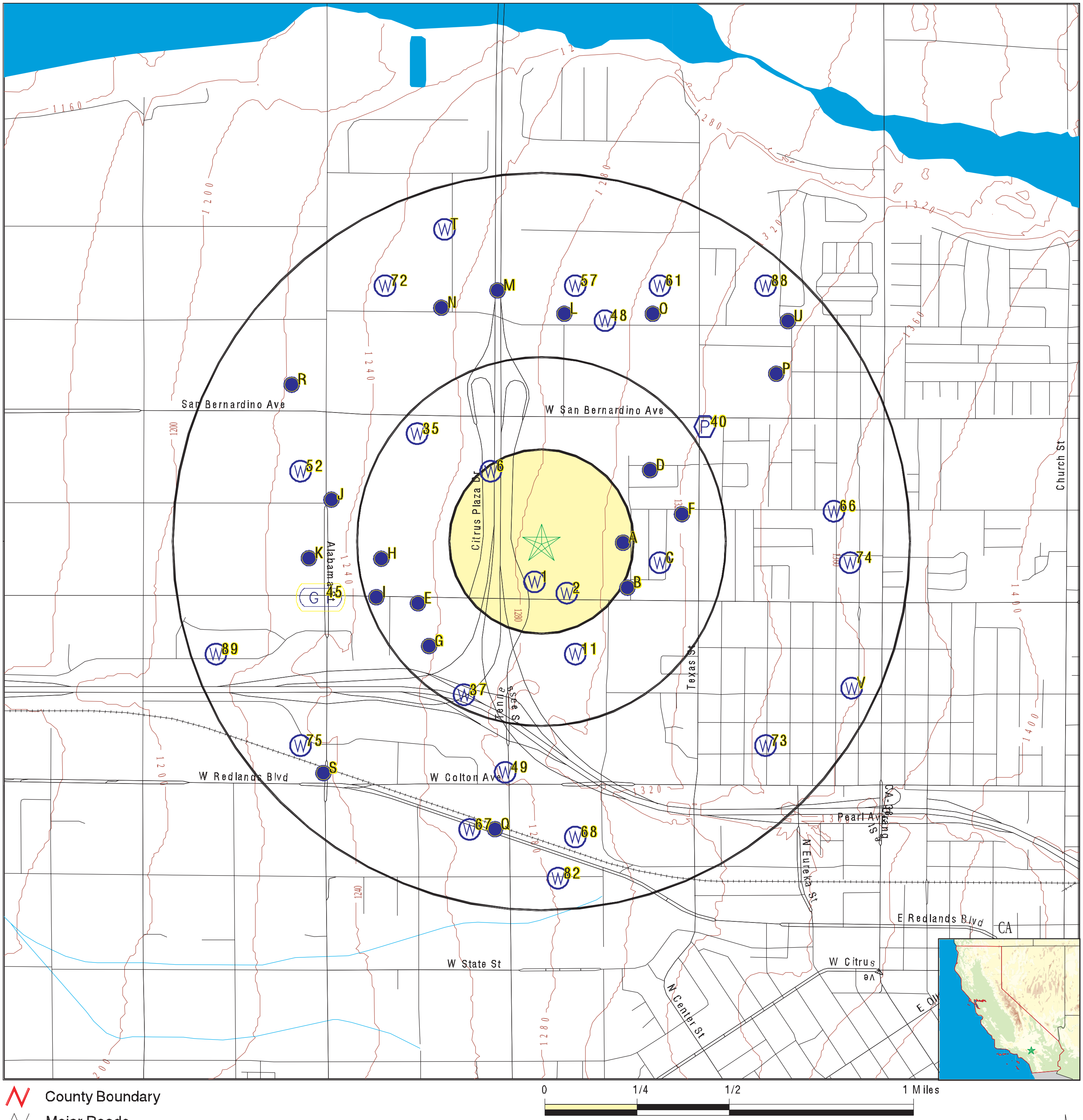
MAP ID	WELL ID	LOCATION FROM TP
2	CADPR0000005112	1/8 - 1/4 Mile SSE
A4	CAUSGSN00005086	1/8 - 1/4 Mile East
6	CADWR0000032622	1/8 - 1/4 Mile NW
B10	CAUSGSN00013593	1/4 - 1/2 Mile ESE
11	CADWR0000000222	1/4 - 1/2 Mile SSE
C12	CADWR0000032561	1/4 - 1/2 Mile East
C13	CADWR0000022998	1/4 - 1/2 Mile East
C14	CADWR0000011134	1/4 - 1/2 Mile East
C15	CADWR0000011042	1/4 - 1/2 Mile East
E17	CAUSGSN00018297	1/4 - 1/2 Mile WSW
D18	CADWR0000037343	1/4 - 1/2 Mile ENE
F20	CADWR9000006638	1/4 - 1/2 Mile East

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
F26	CAUSGSN00018448	1/4 - 1/2 Mile East
F27	CADDW0000004193	1/4 - 1/2 Mile East
F28	CAUSGSN00002426	1/4 - 1/2 Mile ENE
F29	CAUSGSN00014188	1/4 - 1/2 Mile ENE
G31	CAUSGSN00011123	1/4 - 1/2 Mile SW
H32	CADWR0000022985	1/4 - 1/2 Mile West
H33	CADWR0000037348	1/4 - 1/2 Mile West
H34	CADWR0000034947	1/4 - 1/2 Mile West
I39	CAUSGSN00019035	1/4 - 1/2 Mile WSW
J41	CAUSGSN00001888	1/2 - 1 Mile West
L47	CAUSGSN00012213	1/2 - 1 Mile North
K50	CADWR0000028975	1/2 - 1 Mile West
52	CADWR0000037282	1/2 - 1 Mile WNW
N53	CAUSGSN00003719	1/2 - 1 Mile NNW
O55	CAUSGSN00012992	1/2 - 1 Mile NNE
57	CADWR0000036203	1/2 - 1 Mile North
M58	CADWR0000024116	1/2 - 1 Mile North
M59	CADWR0000032543	1/2 - 1 Mile North
P60	CADWR0000025347	1/2 - 1 Mile NE
61	CADWR0000011045	1/2 - 1 Mile NNE
R63	CADWR0000031374	1/2 - 1 Mile NW
R64	CADWR0000000975	1/2 - 1 Mile NW
Q65	CADWR0000031427	1/2 - 1 Mile South
67	CADWR9000006569	1/2 - 1 Mile SSW
68	CADWR0000014324	1/2 - 1 Mile South
R69	CAUSGSN00017827	1/2 - 1 Mile WNW
72	CADWR0000007430	1/2 - 1 Mile NNW
73	CADWR0000005059	1/2 - 1 Mile SE
74	CADWR0000008655	1/2 - 1 Mile East
75	CADWR0000030194	1/2 - 1 Mile SW
S77	CAUSGSN00006873	1/2 - 1 Mile SW
T78	CADDW0000014763	1/2 - 1 Mile NNW
T79	18784	1/2 - 1 Mile NNW
U81	CAUSGSN00012838	1/2 - 1 Mile NE
V83	18786	1/2 - 1 Mile ESE
V84	18785	1/2 - 1 Mile ESE
V85	818	1/2 - 1 Mile ESE
V86	820	1/2 - 1 Mile ESE
V87	819	1/2 - 1 Mile ESE
88	CADWR0000018197	1/2 - 1 Mile NE
89	CADWR0000036205	1/2 - 1 Mile WSW
V90	CADDW0000004009	1/2 - 1 Mile ESE
V91	CADDW0000018414	1/2 - 1 Mile ESE

PHYSICAL SETTING SOURCE MAP - 06794904.2r



- **N** County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- ◎ Earthquake epicenter, Richter 5 or greater
- Ⓦ Water Wells
- Ⓟ Public Water Supply Wells
- ● Cluster of Multiple Icons

- ↑ Groundwater Flow Direction
- (GI) Indeterminate Groundwater Flow at Location
- (GV) Groundwater Flow Varies at Location
- (HD) Closest Hydrogeological Data
- ● Oil, gas or related wells

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands CA 92374
LAT/LONG: 34.072432 / 117.198606

CLIENT: Petra Geotechnical Inc
CONTACT: Edward Lump
INQUIRY #: 06794904.2r
DATE: December 20, 2021 6:26 pm

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **South** **0 - 1/8 Mile** **Lower**	**FED USGS**	**USGS40000140538**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21G001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19270101	Well Depth:	262
Well Depth Units:	ft	Well Hole Depth:	274
Well Hole Depth Units:	ft		

---

2 **SSE** **1/8 - 1/4 Mile** **Higher**	**CA WELLS**	**CADPR0000005112**

Well ID:	85208	Well Type:	UNK
Source:	Department of Pesticide Regulation		
Other Name:	85208	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=85208&store_num=		
GeoTracker Data:	Not Reported		

A3 **East** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS40000140568**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21H001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19290101	Well Depth:	426
Well Depth Units:	ft	Well Hole Depth:	426
Well Hole Depth Units:	ft		

A4 **East** **1/8 - 1/4 Mile** **Higher**	**CA WELLS**	**CAUSGSN00005086**

Well ID:	USGS-340422117113801	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340422117113801	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-340422117113801&store_num=
GeoTracker Data:	Not Reported

A5
ESE
1/8 - 1/4 Mile
Higher

FED USGS **USGS40000140551**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21H002S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	233
Well Depth Units:	ft	Well Hole Depth:	233
Well Hole Depth Units:	ft		

6
NW
1/8 - 1/4 Mile
Lower

CA WELLS **CADWR0000032622**

Well ID:	01S03W21C001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21C001S	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=01S03W21C001S&store_num=		
GeoTracker Data:	Not Reported		

B7
ESE
1/8 - 1/4 Mile
Higher

FED USGS **USGS40000140537**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21H003S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19130101	Well Depth:	237
Well Depth Units:	ft	Well Hole Depth:	237
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation	Database	EDR ID Number
B8 **ESE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000140524**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21H005S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	412
Well Depth Units:	ft	Well Hole Depth:	480
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation	Database	EDR ID Number
B9 **ESE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000140525**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21H006S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19580101	Well Depth:	500
Well Depth Units:	ft	Well Hole Depth:	500
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation	Database	EDR ID Number
B10 **ESE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CAUSGSN00013593**

Well ID:	USGS-340414117113702	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340414117113702	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-340414117113702&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
11 **SSE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADWR0000000222**

Well ID:	01S03W21K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21K001S	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=01S03W21K001S&store_num=
GeoTracker Data:	Not Reported

C12
East
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000032561**

Well ID:	01S03W21H001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21H001S	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=01S03W21H001S&store_num=		
GeoTracker Data:	Not Reported		

C13
East
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000022998**

Well ID:	01S03W21H002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21H002S	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=01S03W21H002S&store_num=		
GeoTracker Data:	Not Reported		

C14
East
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000011134**

Well ID:	01S03W21H007S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21H007S	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=01S03W21H007S&store_num=		
GeoTracker Data:	Not Reported		

C15
East
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000011042**

Well ID:	01S03W21H003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21H003S	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=01S03W21H003S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
D16 **NE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000140628**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21A001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19480101	Well Depth:	338
Well Depth Units:	ft	Well Hole Depth:	350
Well Hole Depth Units:	ft		

E17 **WSW** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CAUSGSN00018297**

Well ID:	USGS-340412117121301	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340412117121301	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-340412117121301&store_num=		
GeoTracker Data:	Not Reported		

D18 **ENE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADWR0000037343**

Well ID:	01S03W21A001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21A001S	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=01S03W21A001S&store_num=		
GeoTracker Data:	Not Reported		

E19 **WSW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000140508**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21M002S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19280101	Well Depth:	270
Well Depth Units:	ft	Well Hole Depth:	304
Well Hole Depth Units:	ft		

F20
East **CA WELLS** **CADWR9000006638**
1/4 - 1/2 Mile
Higher

State Well #:	01S03W21H007S	Station ID:	46645
Well Name:	Well #31A	Basin Name:	San Bernardino
Well Use:	Residential	Well Type:	Single Well
Well Depth:	743	Well Completion Rpt #:	NA

F21
East **FED USGS** **USGS40000140583**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21H007S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	723
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

F22
ENE **FED USGS** **USGS40000140590**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	HOLE-01 LYSIMETER AT 60		
Type:	Well: Test hole not completed as a well		
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
F23 **ENE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000140589**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	HOLE-01 LYSIMETER AT 30		
Type:	Well: Test hole not completed as a well		
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

F24 **ENE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000140592**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	HOLE-01 LYSIMETER AT 187		
Type:	Well: Test hole not completed as a well		
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

F25 **ENE** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000140591**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	HOLE-01 LYSIMETER AT 110		
Type:	Well: Test hole not completed as a well		
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
F26 **East** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CAUSGSN00018448**

Well ID: USGS-340424117112801
Well Type: UNK
Source: United States Geological Survey
Other Name: USGS-340424117112801
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-340424117112801&store_num=
GeoTracker Data: Not Reported

F27 **East** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADDW0000004193**

Well ID: 3610037-044
Well Type: MUNICIPAL
Source: Department of Health Services
Other Name: WELL 31A - 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=3610037-044&store_num=
GeoTracker Data: Not Reported

F28 **ENE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CAUSGSN00002426**

Well ID: USGS-340425117112801
Well Type: UNK
Source: United States Geological Survey
Other Name: USGS-340425117112801
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-340425117112801&store_num=
GeoTracker Data: Not Reported

F29 **ENE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CAUSGSN00014188**

Well ID: USGS-340425117112804
Well Type: UNK
Source: United States Geological Survey
Other Name: USGS-340425117112804
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-340425117112804&store_num=
GeoTracker Data: Not Reported

Map ID Direction Distance Elevation	Database	EDR ID Number
G30 **SW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000140474**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	SANDYS RESTURANT	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
G31 **SW** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CAUSGSN00011123**

Well ID:	USGS-340406117121101	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340406117121101	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-340406117121101&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
H32 **West** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CADWR0000022985**

Well ID:	01S03W21E006S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21E006S	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=01S03W21E006S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
H33 **West** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CADWR0000037348**

Well ID:	01S03W21E001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21E001S	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=01S03W21E001S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
H34 **West** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CADWR0000034947**

Well ID:	01S03W21E005S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W21E005S	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=01S03W21E005S&store_num=		
GeoTracker Data:	Not Reported		

---

35 **NW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000140657**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21C001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	167
Well Depth Units:	ft	Well Hole Depth:	167
Well Hole Depth Units:	ft		

H36 **West** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000140559**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21E003S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19110101	Well Depth:	306
Well Depth Units:	ft	Well Hole Depth:	306
Well Hole Depth Units:	ft		

---

37 **SSW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000140444**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21P001S	Type:	Well

Description:	Not Reported	HUC:	18070203
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:	19350101	Well Depth:	356
Well Depth Units:	ft	Well Hole Depth:	368
Well Hole Depth Units:	ft		

I38
WSW **FED USGS** **USGS40000140518**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21E002S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19440101	Well Depth:	264
Well Depth Units:	ft	Well Hole Depth:	264
Well Hole Depth Units:	ft		

I39
WSW **CA WELLS** **CAUSGSN00019035**
1/4 - 1/2 Mile
Lower

Well ID:	USGS-340413117122001	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340413117122001	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-340413117122001&store_num=		
GeoTracker Data:	Not Reported		

40
NE **FRDS PWS** **CA3000849**
1/2 - 1 Mile
Higher

Epa region:	09	State:	CA
Pwsid:	CA3000849	Pwsname:	ANACO RANCH
Cityserved:	Not Reported	Stateserved:	CA
Zipserved:	Not Reported	Fipscounty:	06059
Status:	Closed	Retpopsrvd:	50
Pwssvcconn:	1	Psource longname:	Groundwater
Pwstype:	TNCWS	Owner:	Private
Contact:	ANACO RANCH	Contactorgname:	Not Reported
Contactphone:	Not Reported	Contactaddress1:	ANACO RANCH
Contactaddress2:	14242 WINSTON RD	Contactcity:	ANAHEIM
Contactstate:	CA	Contactzip:	92806
Pwsactivitycode:	N		

PWS ID:	CA3000849	PWS type:	System Owner/Responsible Party
PWS name:	ANACO RANCH	PWS address:	Not Reported
PWS city:	ANAHEIM	PWS state:	CA
PWS zip:	92806	PWS ID:	CA3000849
Activity status:	Active	Date system activated:	8404
Date system deactivated:	Not Reported	Retail population:	00000050
System name:	ANACO RANCH	System address:	ANACO RANCH
System address:	14242 WINSTON RD	System city:	ANAHEIM
System state:	CA	System zip:	92806
Population served:	Under 101 Persons	Treatment:	Untreated
Latitude:	340437	Longitude:	1171124

J41
West
1/2 - 1 Mile
Lower

CA WELLS **CAUSGSN00001888**

Well ID:	USGS-340426117122701	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340426117122701	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-340426117122701&store_num=		
GeoTracker Data:	Not Reported		

J42
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000140602**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21E005S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

J43
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140614**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W20A001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19030101	Well Depth:	Not Reported

Well Depth Units:	Not Reported	Well Hole Depth:	195
Well Hole Depth Units:	ft		

K44
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000140557**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W20H005S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19610101	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	500
Well Hole Depth Units:	ft		

45
WSW
1/2 - 1 Mile
Lower

AQUIFLOW **50240**

Site ID:	083601119T
Groundwater Flow:	Not Reported
Shallow Water Depth:	80 ft
Deep Water Depth:	150
Average Water Depth:	Not Reported
Date:	12/21/1993

L46
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000140734**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W16K001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19360101	Well Depth:	351
Well Depth Units:	ft	Well Hole Depth:	351
Well Hole Depth Units:	ft		

L47
North
1/2 - 1 Mile
Lower

CA WELLS **CAUSGSN00012213**

Well ID:	USGS-340453117114801	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340453117114801	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-340453117114801&store_num=		
GeoTracker Data:	Not Reported		

48
NNE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140730**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W16K002S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19040101	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	256
Well Hole Depth Units:	ft		

49
South
1/2 - 1 Mile
Lower

FED USGS **USGS40000140405**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W21P002S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19150101	Well Depth:	212
Well Depth Units:	ft	Well Hole Depth:	212
Well Hole Depth Units:	ft		

K50
West
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000028975**

Well ID:	01S03W20H003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W20H003S	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=01S03W20H003S&store_num=		
GeoTracker Data:	Not Reported		

M51
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000140745**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W16L002S	Type:	Well

Description:	Not Reported	HUC:	18070203
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:	19290101	Well Depth:	430
Well Depth Units:	ft	Well Hole Depth:	430
Well Hole Depth Units:	ft		

52
WNW **CA WELLS** **CADWR0000037282**
1/2 - 1 Mile
Lower

Well ID:	01S03W20A001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W20A001S	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=01S03W20A001S&store_num=		
GeoTracker Data:	Not Reported		

N53
NNW **CA WELLS** **CAUSGSN00003719**
1/2 - 1 Mile
Lower

Well ID:	USGS-340454117120902	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340454117120902	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-340454117120902&store_num=		
GeoTracker Data:	Not Reported		

O54
NNE **FED USGS** **USGS40000140733**
1/2 - 1 Mile
Higher

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W16J001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19310101	Well Depth:	388
Well Depth Units:	ft	Well Hole Depth:	400
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation	Database	EDR ID Number
O55 **NNE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CAUSGSN00012992**

Well ID:	USGS-340453117113301	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340453117113301	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-340453117113301&store_num=		
GeoTracker Data:	Not Reported		

N56 **NNW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000140739**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W16L004S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

57 **North** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADWR0000036203**

Well ID:	01S03W16K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W16K001S	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=01S03W16K001S&store_num=		
GeoTracker Data:	Not Reported		

M58 **North** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR0000024116**

Well ID:	01S03W16L002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W16L002S	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=01S03W16L002S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
M59 **North** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR0000032543**

Well ID:	01S03W16L004S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W16L004S	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=01S03W16L004S&store_num=		
GeoTracker Data:	Not Reported		

P60 **NE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADWR0000025347**

Well ID:	01S03W15N001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W15N001S	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=01S03W15N001S&store_num=		
GeoTracker Data:	Not Reported		

---

61 **NNE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADWR0000011045**

Well ID:	01S03W16J001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W16J001S	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=01S03W16J001S&store_num=		
GeoTracker Data:	Not Reported		

Q62 **South** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000140343**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W28C001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	1928	Well Depth:	309
Well Depth Units:	ft	Well Hole Depth:	309
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	40	Level reading date:	2004-10-26
Feet below surface:	165.74	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	2004-04-21	Feet below surface:	154.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-10-22	Feet below surface:	154.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-04-23	Feet below surface:	142.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-10-30	Feet below surface:	146.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-04-08	Feet below surface:	132.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-10-24	Feet below surface:	129.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-04-17	Feet below surface:	111.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-10-24	Feet below surface:	116.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-04-12	Feet below surface:	103.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-10-18	Feet below surface:	102.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-04-15	Feet below surface:	89.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-10-22	Feet below surface:	98.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-04-06	Feet below surface:	99.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-10-28	Feet below surface:	112.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-04-14	Feet below surface:	102.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-10-10	Feet below surface:	109.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-04-24	Feet below surface:	99.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-10-25	Feet below surface:	109.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-04-18	Feet below surface:	104.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-10-25	Feet below surface:	125.40

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-04-18	Feet below surface:	120.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-10-19	Feet below surface:	139.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-04-13	Feet below surface:	143.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-10-29	Feet below surface:	160.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-06-12	Feet below surface:	152.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-11-27	Feet below surface:	153.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-06-17	Feet below surface:	143.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-12-03	Feet below surface:	140.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-06-27	Feet below surface:	131.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-12-01	Feet below surface:	124.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-11-22	Feet below surface:	111.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-07-05	Feet below surface:	103.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-12-08	Feet below surface:	90.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-07-15	Feet below surface:	91.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1955-03-25	Feet below surface:	126.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1954-04-21	Feet below surface:	Not Reported
Feet to sea level:	Not Reported	Note:	The site was being pumped.
Level reading date:	1936-07-31	Feet below surface:	127.6
Feet to sea level:	Not Reported	Note:	The site was being pumped.
Level reading date:	1936-04-14	Feet below surface:	108.1
Feet to sea level:	Not Reported	Note:	The site was being pumped.
Level reading date:	1928-06-09	Feet below surface:	69.7
Feet to sea level:	Not Reported	Note:	Not Reported

Map ID Direction Distance Elevation	Database	EDR ID Number
R63 **NW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR0000031374**

Well ID:	01S03W17R001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W17R001S	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=01S03W17R001S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
R64 **NW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR0000000975**

Well ID:	01S03W17R002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W17R002S	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=01S03W17R002S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
Q65 **South** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR0000031427**

Well ID:	01S03W28C001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W28C001S	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=01S03W28C001S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
66 **East** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000140588**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W22F002S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	426
Well Depth Units:	ft	Well Hole Depth:	440
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation	Database	EDR ID Number
67 **SSW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR9000006569**

State Well #:	01S03W28C001S	Station ID:	27319
Well Name:	Not Reported	Basin Name:	San Bernardino
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

68 **South** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADWR0000014324**

Well ID:	01S03W28B001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W28B001S	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=01S03W28B001S&store_num=		
GeoTracker Data:	Not Reported		

R69 **WNW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CAUSGSN00017827**

Well ID:	USGS-340442117123601	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340442117123601	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-340442117123601&store_num=		
GeoTracker Data:	Not Reported		

P70 **NE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000140712**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W15N001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19270101	Well Depth:	249
Well Depth Units:	ft	Well Hole Depth:	271
Well Hole Depth Units:	ft		

Map ID Direction Distance Elevation		Database	EDR ID Number
R71 **WNW** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS40000140701**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W17R001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19130101	Well Depth:	360
Well Depth Units:	ft	Well Hole Depth:	360
Well Hole Depth Units:	ft		

---

72 **NNW** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**CADWR0000007430**

Well ID:	01S03W16M001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W16M001S	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=01S03W16M001S&store_num=		
GeoTracker Data:	Not Reported		

---

73 **SE** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**CADWR0000005059**

Well ID:	01S03W22N001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W22N001S	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=01S03W22N001S&store_num=		
GeoTracker Data:	Not Reported		

---

74 **East** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**CADWR0000008655**

Well ID:	01S03W22F001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W22F001S	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=01S03W22F001S&store_num=		
GeoTracker Data:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
75 **SW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR0000030194**

Well ID:	01S03W20R002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W20R002S	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=01S03W20R002S&store_num=		
GeoTracker Data:	Not Reported		

S76 **SW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000140406**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W20R001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19200101	Well Depth:	301
Well Depth Units:	ft	Well Hole Depth:	318
Well Hole Depth Units:	ft		

S77 **SW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CAUSGSN00006873**

Well ID:	USGS-340348117122901	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340348117122901	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-340348117122901&store_num=		
GeoTracker Data:	Not Reported		

T78 **NNW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADDW0000014763**

Well ID:	3610037-054	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	CHURCH STREET 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=3610037-054&store_num=		
GeoTracker Data:	Not Reported		

Map ID
Direction
Distance
Elevation

Map ID / Direction / Distance / Elevation	Database	EDR ID Number
T79 **NNW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**18784**

Seq:	18784	Prim sta c:	3610037-054
Frds no:	3610037054	County:	36
District:	13	User id:	TAN
System no:	3610037	Water type:	G
Source nam:	CHURCH STREET WELL	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	340505.0	Longitude:	1171210.0
Precision:	3	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3610037	System nam:	Redlands City Mud-Water Div
Hqname:	Not Reported	Address:	PO BOX 3005
City:	REDLANDS	State:	CA
Zip:	92373	Zip ext:	Not Reported
Pop serv:	69300	Connection:	18447
Area serve:	REDLANDS		

Sample date:	15-FEB-18	Finding:	5.1
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	28-DEC-17	Finding:	4.7671
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	30-NOV-17	Finding:	4.8948
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	21-NOV-17	Finding:	4.7321
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	16-NOV-17	Finding:	4.7993
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	07-NOV-17	Finding:	4.8689
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	26-OCT-17	Finding:	4.5855
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	19-OCT-17	Finding:	4.704
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	07-SEP-17	Finding:	4.6647
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	31-AUG-17	Finding:	440.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	31-AUG-17	Finding:	4.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	24-AUG-17	Finding:	4.6827
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	10-AUG-17	Finding:	5.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	03-AUG-17	Finding:	4.5846
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	03-AUG-17	Finding:	4.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	28-JUL-17	Finding:	4.6
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	20-JUL-17	Finding:	4.6017
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	22-JUN-17	Finding:	4.9502
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	18-MAY-17	Finding:	4.4238
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	18-MAY-17	Finding:	140.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	170.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	2.3e-002
Chemical:	DIBROMOCHLOROPROPANE (DBCP)	Report units:	UG/L
Dlr:	1.e-002		
Sample date:	18-MAY-17	Finding:	280.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	04-MAY-17	Finding:	4.3742
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	20-APR-17	Finding:	0.7
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L

Dlr:	0.1		
Sample date:	20-APR-17	Finding:	32.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	20-APR-17	Finding:	21.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	4.7
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	20-APR-17	Finding:	7.6
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	20-APR-17	Finding:	380.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	20-APR-17	Finding:	0.16
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	20-APR-17	Finding:	58.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	13.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	14.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	2.1
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	6.55
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	20-APR-17	Finding:	0.412
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	1.06
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	20-APR-17	Finding:	200.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	14-APR-17	Finding:	4.4177
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date: 05-APR-17 Finding: 4.4468
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 30-MAR-17 Finding: 4.41
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 17-NOV-16 Finding: 4.1994
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 28-SEP-16 Finding: 4.203
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 22-SEP-16 Finding: 4.2091
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 15-SEP-16 Finding: 4.2371
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 08-SEP-16 Finding: 4.269
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 01-SEP-16 Finding: 4.3306
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 25-AUG-16 Finding: 4.3691
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 18-AUG-16 Finding: 4.4363
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 11-AUG-16 Finding: 4.4558
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 28-JUL-16 Finding: 4.6
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 28-JUL-16 Finding: 400.
Chemical: SPECIFIC CONDUCTANCE Report units: US
Dlr: 0.

Sample date: 07-JUL-16 Finding: 3.5539
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 30-JUN-16 Finding: 4.4085
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 16-JUN-16 Finding: 2.9635
Chemical: NITRATE (AS N) Report units: MG/L

Dlr: 0.4

Sample date: 03-MAR-16 Finding: 3.1956
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 14-JAN-16 Finding: 3.2
Chemical: NITRATE + NITRITE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 14-JAN-16 Finding: 3.2
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 14-JAN-16 Finding: 2.9581
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 01-OCT-15 Finding: 20.
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 17-SEP-15 Finding: 20.
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 02-JUL-15 Finding: 4.2013
Chemical: NITRATE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 07-AUG-14 Finding: 440.
Chemical: SPECIFIC CONDUCTANCE Report units: US
Dlr: 0.

Sample date: 07-AUG-14 Finding: 8.1
Chemical: PH, LABORATORY Report units: Not Reported
Dlr: 0.

Sample date: 07-AUG-14 Finding: 110.
Chemical: ALKALINITY (TOTAL) AS CACO3 Report units: MG/L
Dlr: 0.

Sample date: 07-AUG-14 Finding: 140.
Chemical: BICARBONATE ALKALINITY Report units: MG/L
Dlr: 0.

Sample date: 07-AUG-14 Finding: 190.
Chemical: HARDNESS (TOTAL) AS CACO3 Report units: MG/L
Dlr: 0.

Sample date: 07-AUG-14 Finding: 54.
Chemical: CALCIUM Report units: MG/L
Dlr: 0.

Sample date: 07-AUG-14 Finding: 13.
Chemical: MAGNESIUM Report units: MG/L
Dlr: 0.

Sample date: 07-AUG-14 Finding: 14.
Chemical: SODIUM Report units: MG/L
Dlr: 0.

Sample date:	07-AUG-14	Finding:	1.9
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		

Sample date:	07-AUG-14	Finding:	23.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		

Sample date:	07-AUG-14	Finding:	30.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		

Sample date:	07-AUG-14	Finding:	0.7
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		

Sample date:	07-AUG-14	Finding:	2.9
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	07-AUG-14	Finding:	2.5e-002
Chemical:	DIBROMOCHLOROPROPANE (DBCP)	Report units:	UG/L
Dlr:	1.e-002		

Sample date:	07-AUG-14	Finding:	240.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		

Sample date:	07-AUG-14	Finding:	0.94
Chemical:	LANGELIER INDEX @ 60 C	Report units:	Not Reported
Dlr:	0.		

Sample date:	07-AUG-14	Finding:	7.4e-002
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		

Sample date:	07-AUG-14	Finding:	3.
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	22-MAY-14	Finding:	20.152
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	12-SEP-13	Finding:	20.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	03-JUL-13	Finding:	20.225
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	16-MAY-13	Finding:	20.062
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	23-JAN-13	Finding:	23.838
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	14-JAN-13	Finding:	20.716
Chemical:	NITRATE (AS NO3)	Report units:	MG/L

Dlr: 2.

Sample date: 10-JAN-13 Finding: 20.132
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 03-JAN-13 Finding: 4600.
Chemical: NITRATE + NITRITE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 03-JAN-13 Finding: 20.
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 15-NOV-12 Finding: 20.676
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 08-NOV-12 Finding: 20.099
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 25-OCT-12 Finding: 20.021
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 18-OCT-12 Finding: 20.003
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 27-SEP-12 Finding: 20.
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 06-SEP-12 Finding: 20.852
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 30-AUG-12 Finding: 21.062
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 23-AUG-12 Finding: 20.82
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 16-AUG-12 Finding: 21.085
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 09-AUG-12 Finding: 23.
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date: 09-AUG-12 Finding: 5200.
Chemical: NITRATE + NITRITE (AS N) Report units: MG/L
Dlr: 0.4

Sample date: 19-JUL-12 Finding: 21.667
Chemical: NITRATE (AS NO3) Report units: MG/L
Dlr: 2.

Sample date:	12-JUL-12	Finding:	21.071
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	05-JUL-12	Finding:	21.871
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	03-JUL-12	Finding:	2.9
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	03-JUL-12	Finding:	0.19
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		

Sample date:	03-JUL-12	Finding:	3.
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	03-JUL-12	Finding:	5.2
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		

Sample date:	31-MAY-12	Finding:	22.243
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	24-MAY-12	Finding:	24.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	16-MAY-12	Finding:	22.402
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	08-MAY-12	Finding:	23.966
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	03-MAY-12	Finding:	24.025
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	30-APR-12	Finding:	24.12
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	23-APR-12	Finding:	24.113
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

U80
NE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140729**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W15M003S	Type:	Well
Description:	Not Reported	HUC:	18070203

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:	19300101	Well Depth:	382
Well Depth Units:	ft	Well Hole Depth:	396
Well Hole Depth Units:	ft		

U81
NE
1/2 - 1 Mile
Higher

CA WELLS **CAUSGSN00012838**

Well ID:	USGS-340452117111001	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-340452117111001	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-340452117111001&store_num=		
GeoTracker Data:	Not Reported		

82
South
1/2 - 1 Mile
Lower

FED USGS **USGS40000140303**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	001S003W28B001S	Type:	Well
Description:	Not Reported	HUC:	18070203
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:	19320101	Well Depth:	283
Well Depth Units:	ft	Well Hole Depth:	412
Well Hole Depth Units:	ft		

V83
ESE
1/2 - 1 Mile
Higher

CA WELLS **18786**

Seq:	18786	Prim sta c:	3610037-101GACR
Frds no:	3610037101	County:	36
District:	13	User id:	TAN
System no:	3610037	Water type:	G
Source nam:	TEXAS STREET GAC RAW INFLUENT	Station ty:	COMP/WELL/INTAKE
Latitude:	340400.0	Longitude:	1171100.0
Precision:	3	Status:	CR
Comment 1:	GAC INFLUENT	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:	3610037	System nam:	Redlands City Mud-Water Div
Hqname:	Not Reported	Address:	PO BOX 3005

City:	REDLANDS	State:	CA
Zip:	92373	Zip ext:	Not Reported
Pop serv:	69300	Connection:	18447
Area serve:	REDLANDS		

V84
ESE **CA WELLS 18785**
1/2 - 1 Mile
Higher

Seq:	18785	Prim sta c:	3610037-100GACT
Frds no:	3610037100	County:	36
District:	13	User id:	TAN
System no:	3610037	Water type:	G
Source nam:	TEXAS STREET GAC TREATED	Station ty:	COMP/WELL/SUPPLY
Latitude:	340400.0	Longitude:	1171100.0
Precision:	3	Status:	CT
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	TEXAS STREET GAC PLANT	Comment 4:	TREATED EFFLUENT
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3610037	System nam:	Redlands City Mud-Water Div
Hqname:	Not Reported	Address:	PO BOX 3005
City:	REDLANDS	State:	CA
Zip:	92373	Zip ext:	Not Reported
Pop serv:	69300	Connection:	18447
Area serve:	REDLANDS		

V85
ESE **CA WELLS 818**
1/2 - 1 Mile
Higher

Seq:	818	Prim sta c:	01S/03W-21H01 S
Frds no:	3610037045	County:	36
District:	13	User id:	TAN
System no:	3610037	Water type:	G
Source nam:	WELL 32	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	340400.0	Longitude:	1171100.0
Precision:	8	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3610037	System nam:	Redlands City Mud-Water Div
Hqname:	Not Reported	Address:	PO BOX 3005
City:	REDLANDS	State:	CA
Zip:	92373	Zip ext:	Not Reported
Pop serv:	69300	Connection:	18447
Area serve:	REDLANDS		

Map ID Direction Distance Elevation	Database	EDR ID Number
V86 **ESE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**820**

Seq:	820	Prim sta c:	01S/03W-21H07 S
Frds no:	3610037044	County:	36
District:	13	User id:	TAN
System no:	3610037	Water type:	G
Source nam:	WELL 31A	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	340400.0	Longitude:	1171100.0
Precision:	3	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3610037	System nam:	Redlands City Mud-Water Div
Hqname:	Not Reported	Address:	PO BOX 3005
City:	REDLANDS	State:	CA
Zip:	92373	Zip ext:	Not Reported
Pop serv:	69300	Connection:	18447
Area serve:	REDLANDS		

Sample date:	21-NOV-13	Finding:	9.1
Chemical:	PERCHLORATE	Report units:	UG/L
Dlr:	4.		

Sample date:	21-NOV-13	Finding:	3800.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		

V87 **ESE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**819**

Seq:	819	Prim sta c:	01S/03W-21H06 S
Frds no:	3610037043	County:	36
District:	13	User id:	TAN
System no:	3610037	Water type:	G
Source nam:	WELL 30A - AGRICULTURAL	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	340400.0	Longitude:	1171100.0
Precision:	8	Status:	AG
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:	3610037	System nam:	Redlands City Mud-Water Div
Hqname:	Not Reported	Address:	PO BOX 3005
City:	REDLANDS	State:	CA
Zip:	92373	Zip ext:	Not Reported
Pop serv:	69300	Connection:	18447
Area serve:	REDLANDS		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

88
NE
1/2 - 1 Mile
Higher
CA WELLS **CADWR0000018197**

Well ID:	01S03W15M003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W15M003S	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=01S03W15M003S&store_num=		
GeoTracker Data:	Not Reported		

89
WSW
1/2 - 1 Mile
Lower
CA WELLS **CADWR0000036205**

Well ID:	01S03W20K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	01S03W20K001S	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=01S03W20K001S&store_num=		
GeoTracker Data:	Not Reported		

V90
ESE
1/2 - 1 Mile
Higher
CA WELLS **CADDW0000004009**

Well ID:	3610037-045	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 32 - 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=3610037-045&store_num=		
GeoTracker Data:	Not Reported		

V91
ESE
1/2 - 1 Mile
Higher
CA WELLS **CADDW0000018414**

Well ID:	3610037-043	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 30A - 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=3610037-043&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1G **WSW** **1/2 - 1 Mile** **Lower**	Site ID:	083601119T	**AQUIFLOW**	**50240**
	Groundwater Flow:	Not Reported		
	Shallow Water Depth:	80 ft		
	Deep Water Depth:	150		
	Average Water Depth:	Not Reported		
	Date:	12/21/1993		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92374	85	0

Federal EPA Radon Zone for SAN BERNARDINO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 92374

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.500 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

LPA Redlands Project
NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 6794904.3
December 20, 2021

Certified Sanborn® Map Report

EDR®

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

Certified Sanborn® Map Report

12/20/21

Site Name:

LPA Redlands Project
NEC Tennessee St. and W. Lu
Redlands, CA 92374
EDR Inquiry # 6794904.3

Client Name:

Petra Geotechnical Inc
40880 County Center Drive, Suite M
Temecula, CA 92591
Contact: Edward Lump

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Petra Geotechnical Inc 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 #	0A65-4732-A367
PO #	21-458
Project	LPA Redlands Project

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 #: 0A65-4732-A367

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™

Limited Permission To Make Copies

Petra Geotechnical Inc (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

LPA Redlands Project
NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 6794904.4
December 20, 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

12/20/21

Site Name:	**Client Name:**
LPA Redlands Project	Petra Geotechnical Inc
NEC Tennessee St. and W. Lu	40880 County Center Drive, Suite M
Redlands, CA 92374	Temecula, CA 92591
EDR Inquiry # 6794904.4	Contact: Edward Lump

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Petra Geotechnical Inc 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.#	21-458
Project:	LPA Redlands Project

Coordinates:

Latitude:	34.072432 34° 4' 21" North
Longitude:	-117.198606 -117° 11' 55" West
UTM Zone:	Zone 11 North
UTM X Meters:	481674.73
UTM Y Meters:	3770204.94
Elevation:	1285.31' above sea level

Maps Provided:

2018
2015
2012
1996
1988
1980
1975
1973
1967
1954
1901
1899

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets

Redlands
2018
7.5-minute, 24000

2015 Source Sheets

Redlands
2015
7.5-minute, 24000

2012 Source Sheets

Redlands
2012
7.5-minute, 24000

1996 Source Sheets

Redlands
1996
7.5-minute, 24000
Aerial Photo Revised 1994

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1988 Source Sheets

Redlands
1988
7.5-minute, 24000
Aerial Photo Revised 1985

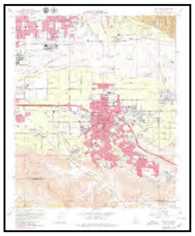
1980 Source Sheets

Redlands
1980
7.5-minute, 24000
Aerial Photo Revised 1978

1975 Source Sheets

Redlands
1975
7.5-minute, 24000
Aerial Photo Revised 1975

1973 Source Sheets

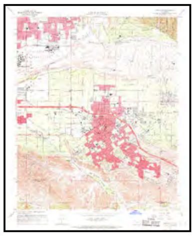


Redlands
1973
7.5-minute, 24000
Aerial Photo Revised 1973

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1967 Source Sheets



Redlands
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1954 Source Sheets

Redlands
1954
7.5-minute, 24000
Aerial Photo Revised 1952

1901 Source Sheets

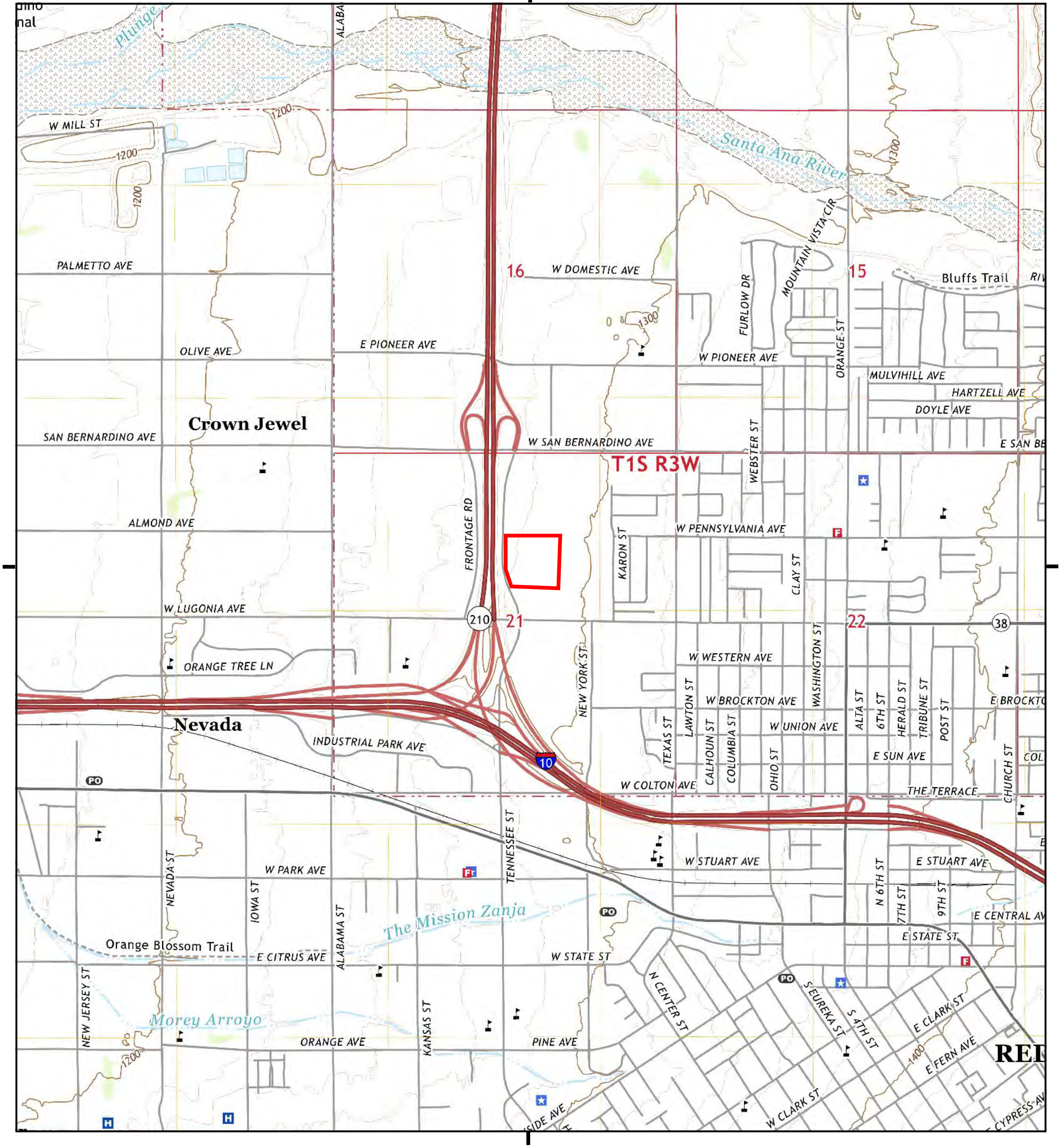
Redlands
1901
15-minute, 62500

1899 Source Sheets

Redlands
1899
15-minute, 62500

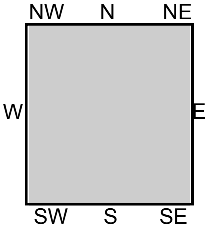
Historical Topo Map

2018



0 Miles 0.25 0.5 1 1.5

This report includes information from the following map sheet(s).

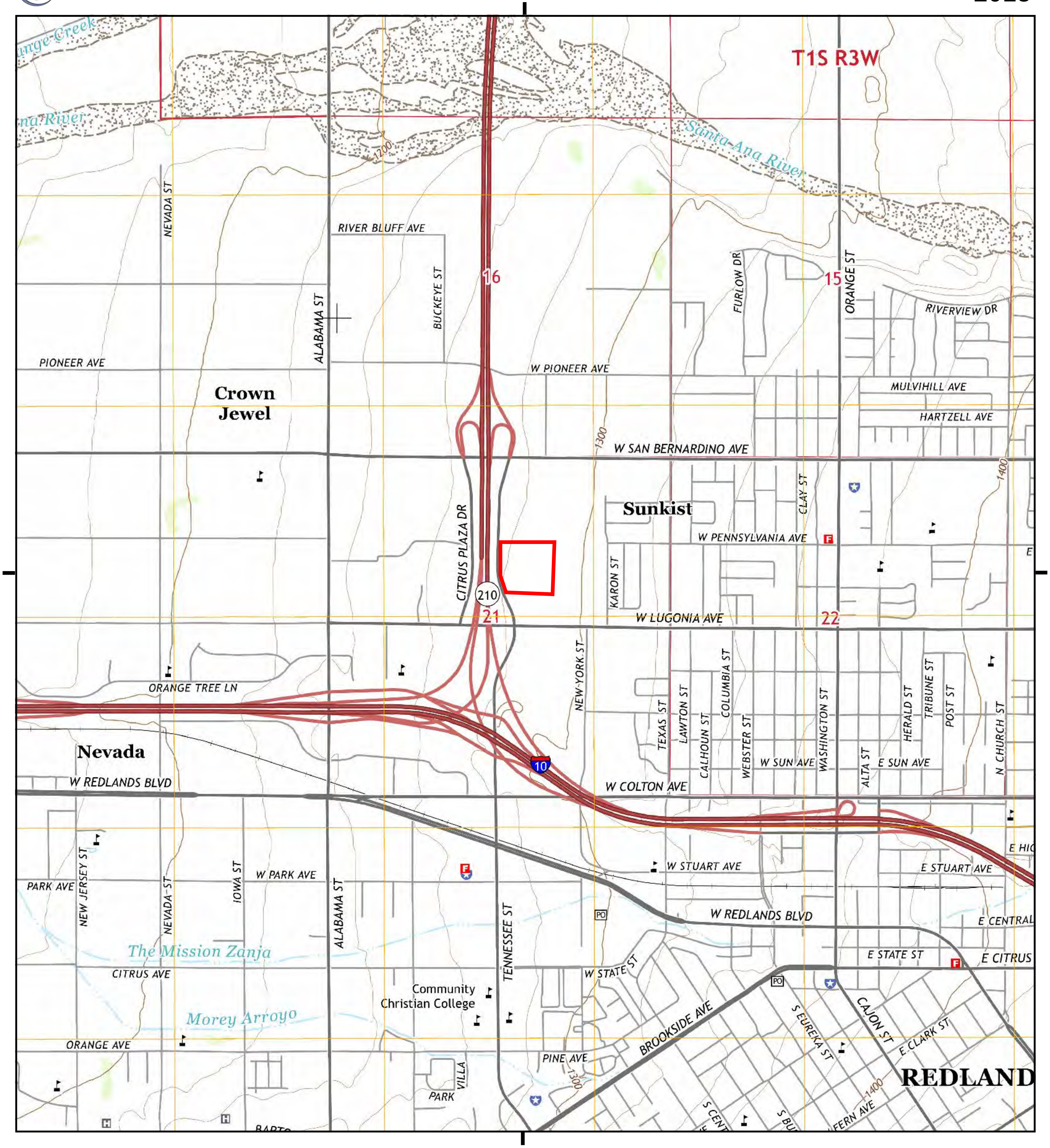


TP, Redlands, 2018, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

Historical Topo Map

2015



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

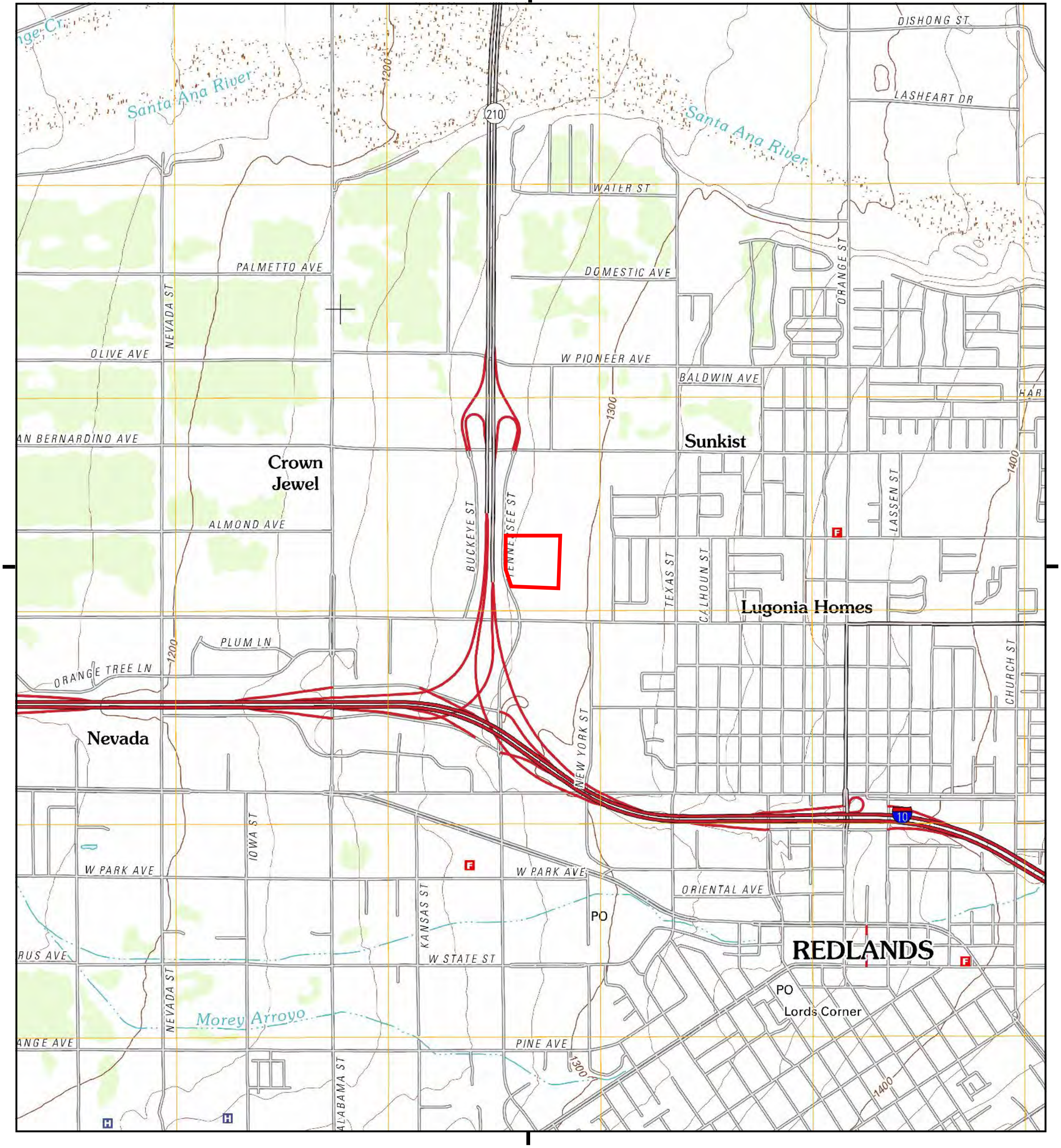
NW N NE
W E
SW S SE

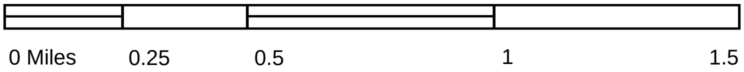
TP, Redlands, 2015, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

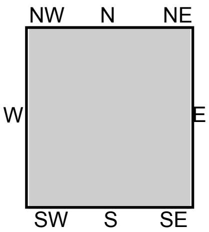
Historical Topo Map

2012





This report includes information from the following map sheet(s).

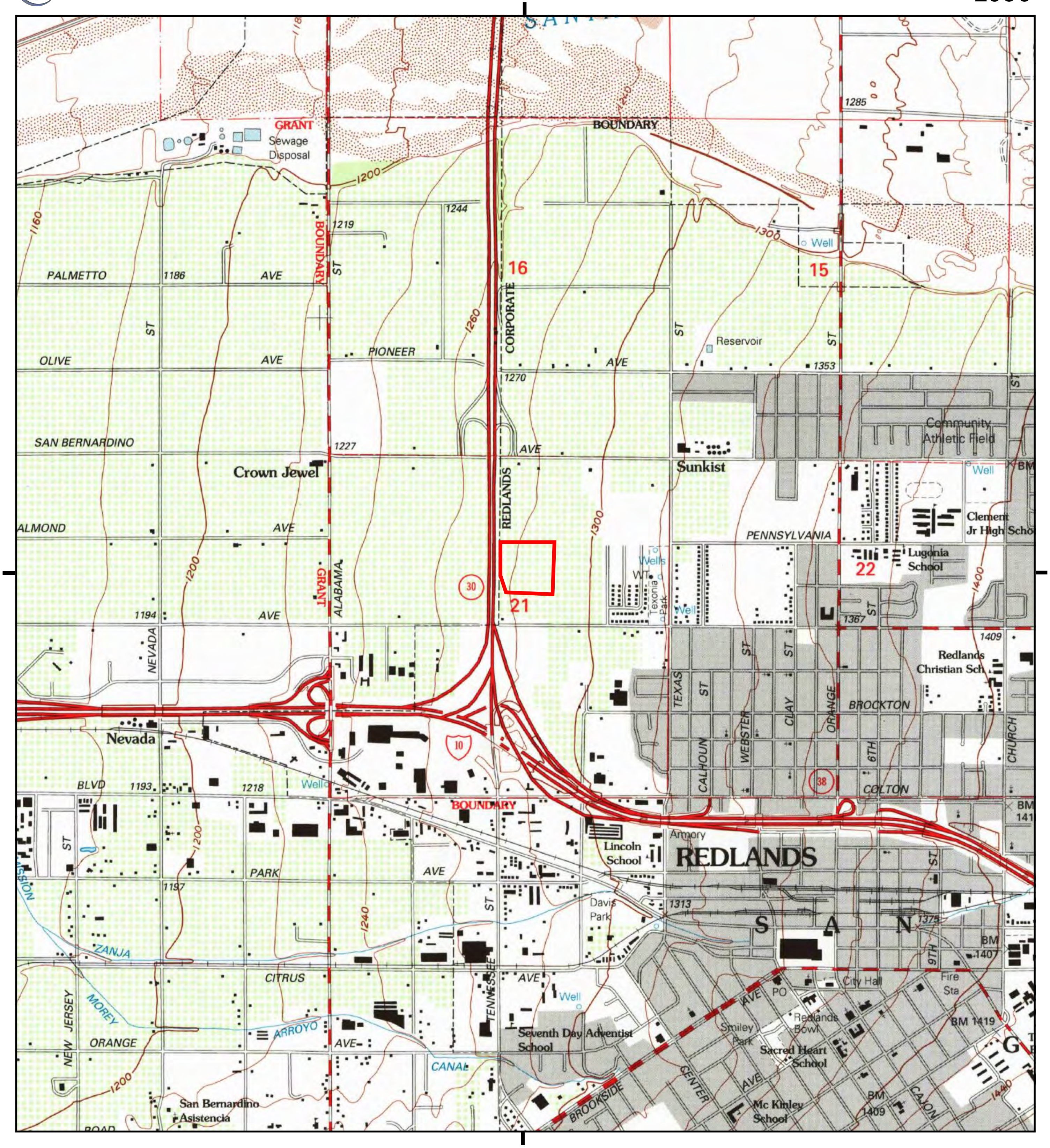


TP, Redlands, 2012, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

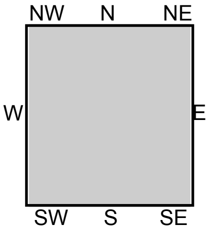
Historical Topo Map

1996



0 Miles	0.25	0.5	1	1.5

This report includes information from the following map sheet(s).

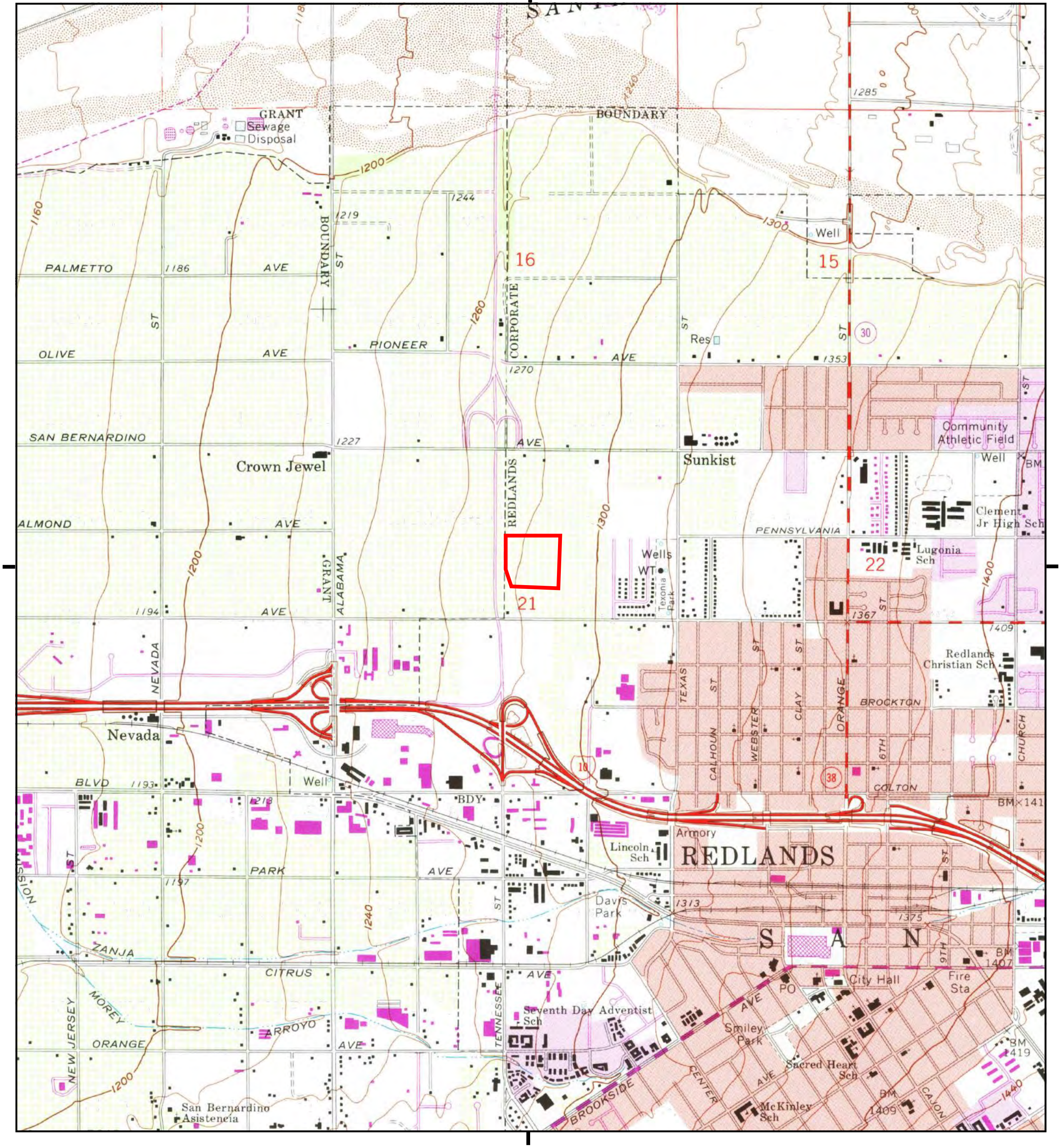


TP, Redlands, 1996, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

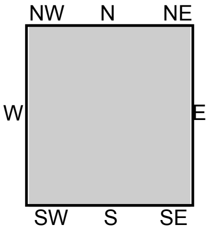
Historical Topo Map

1988



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



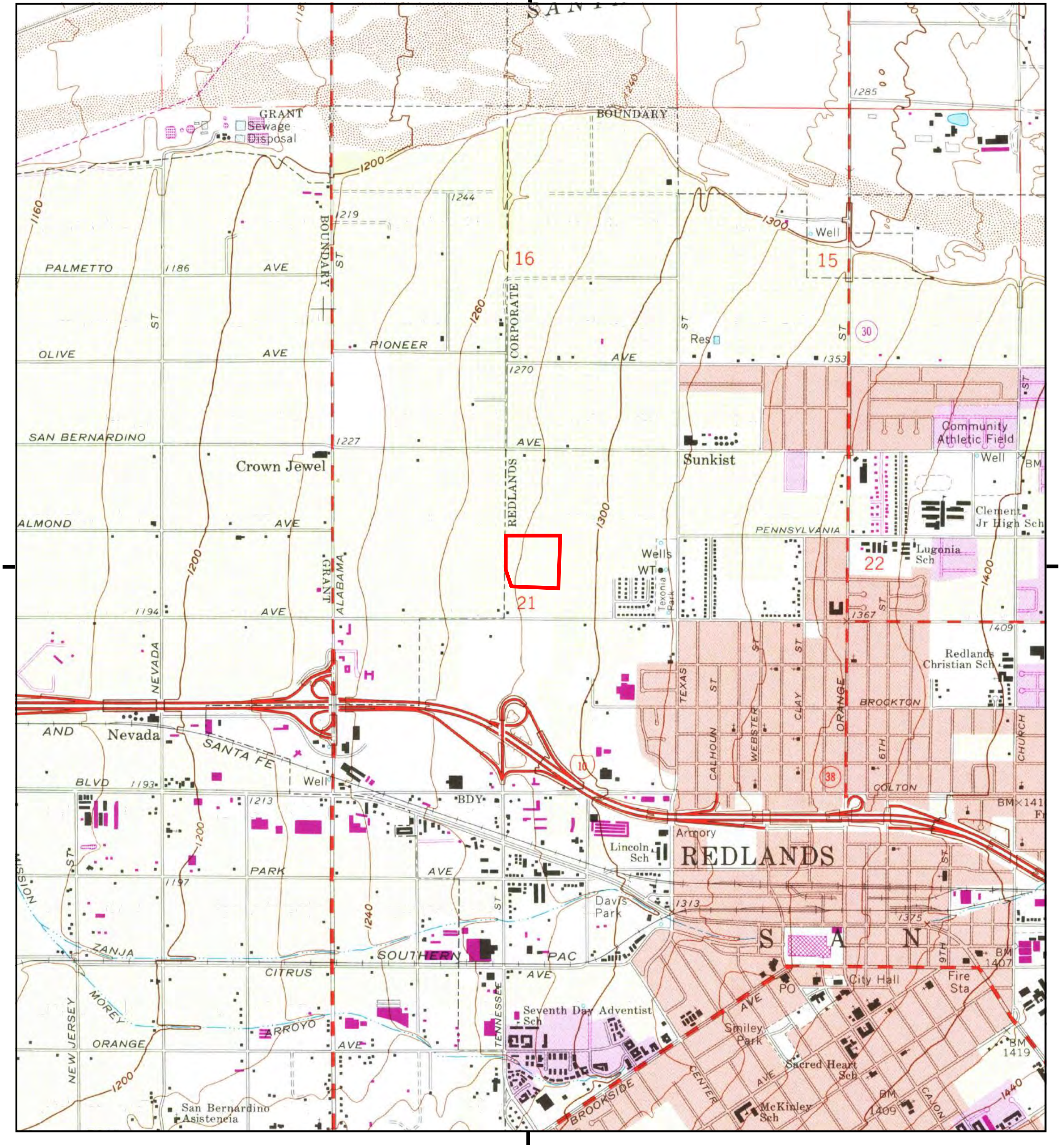
TP, Redlands, 1988, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

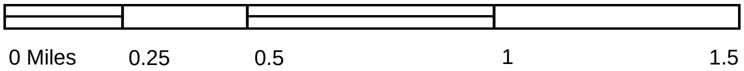
N

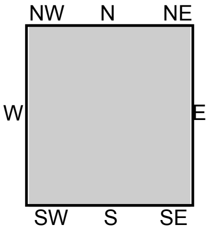
Historical Topo Map

1980



This report includes information from the following map sheet(s).



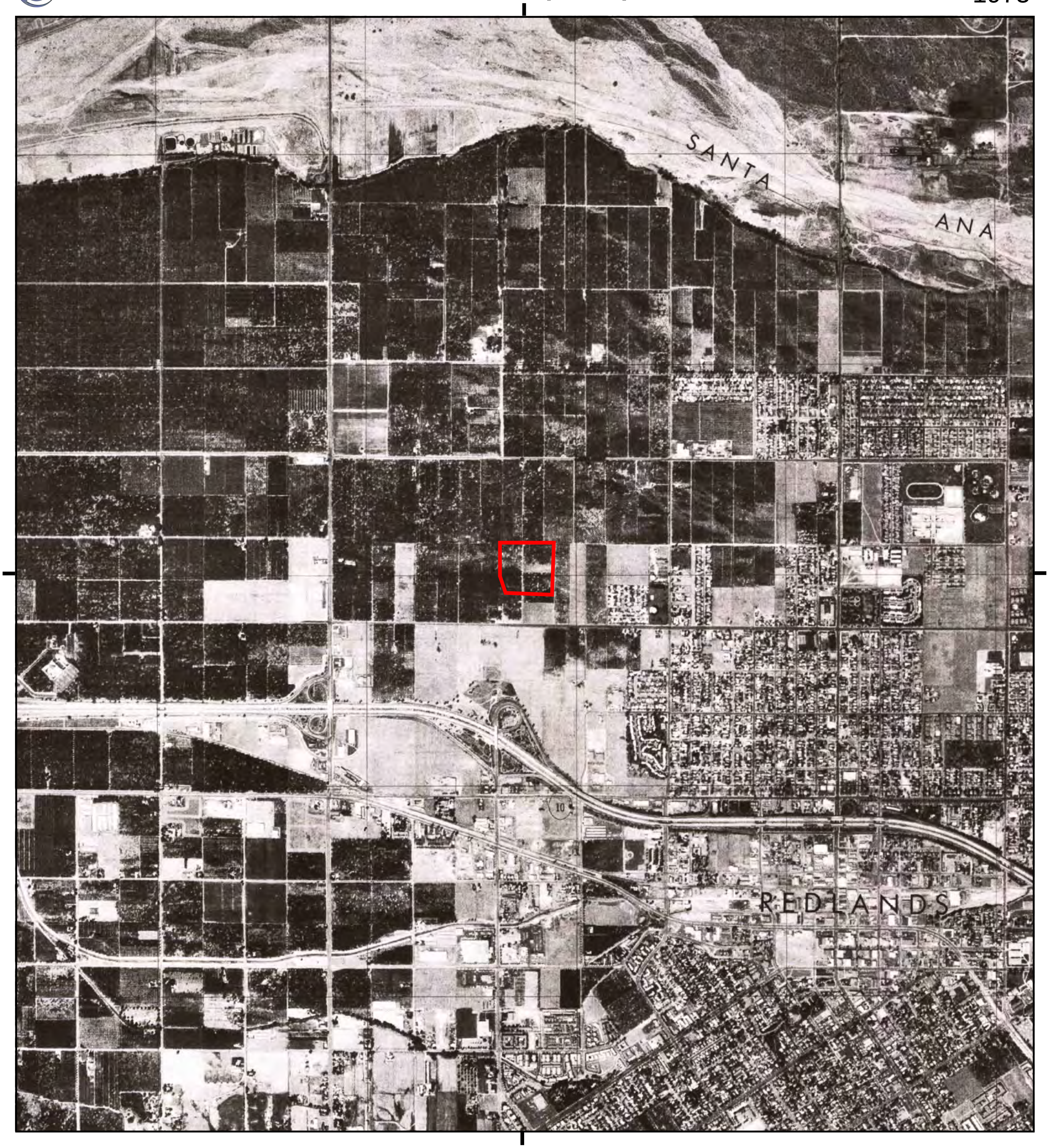


TP, Redlands, 1980, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

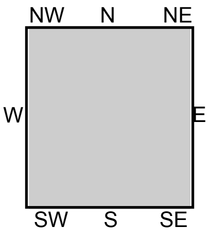
Historical Topo Map

1975



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

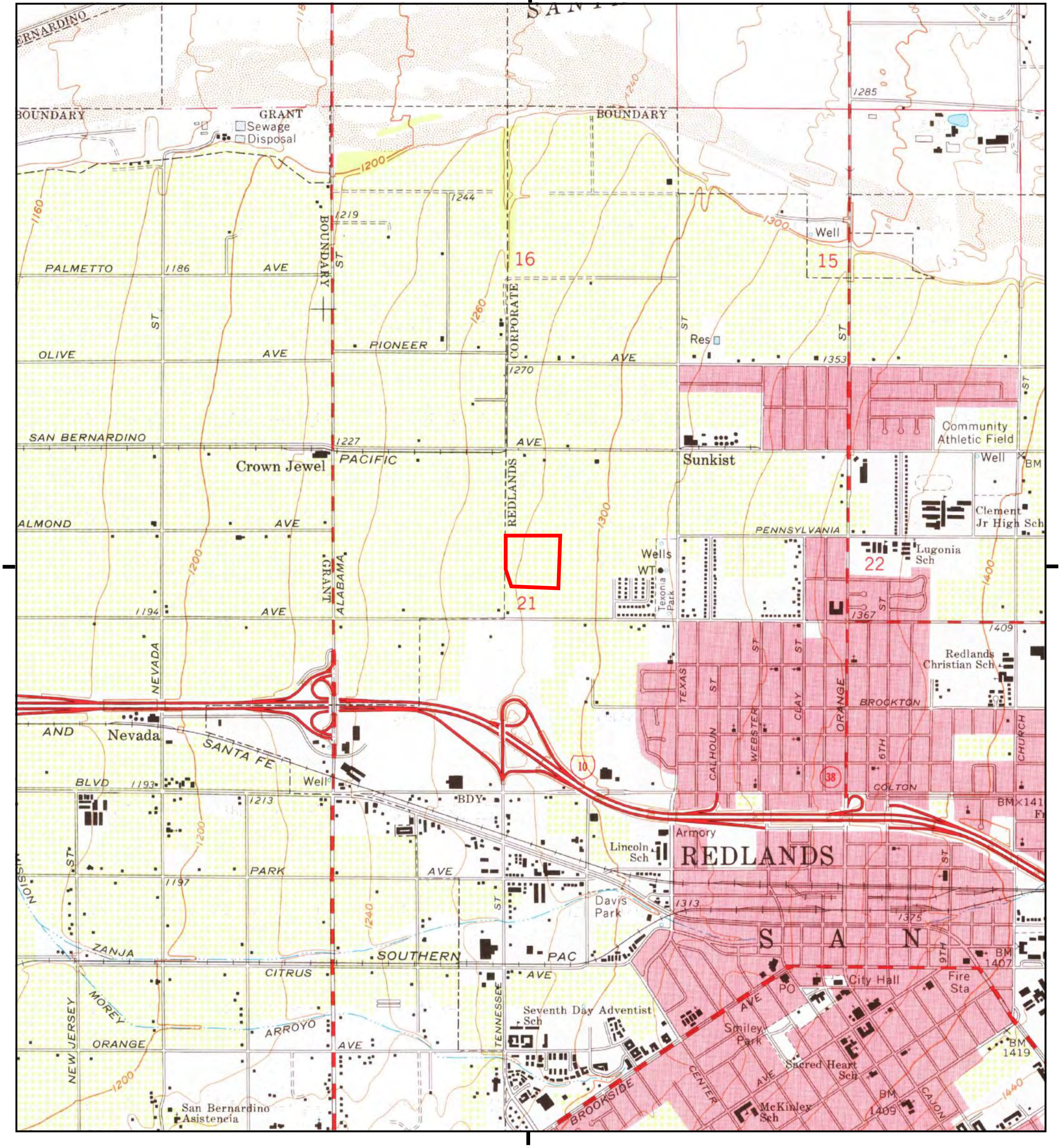


TP, Redlands, 1975, 7.5-minute

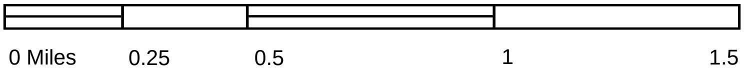
SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

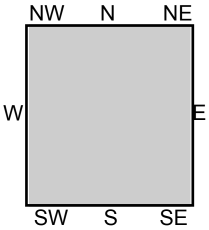
Historical Topo Map

1973



This report includes information from the following map sheet(s).



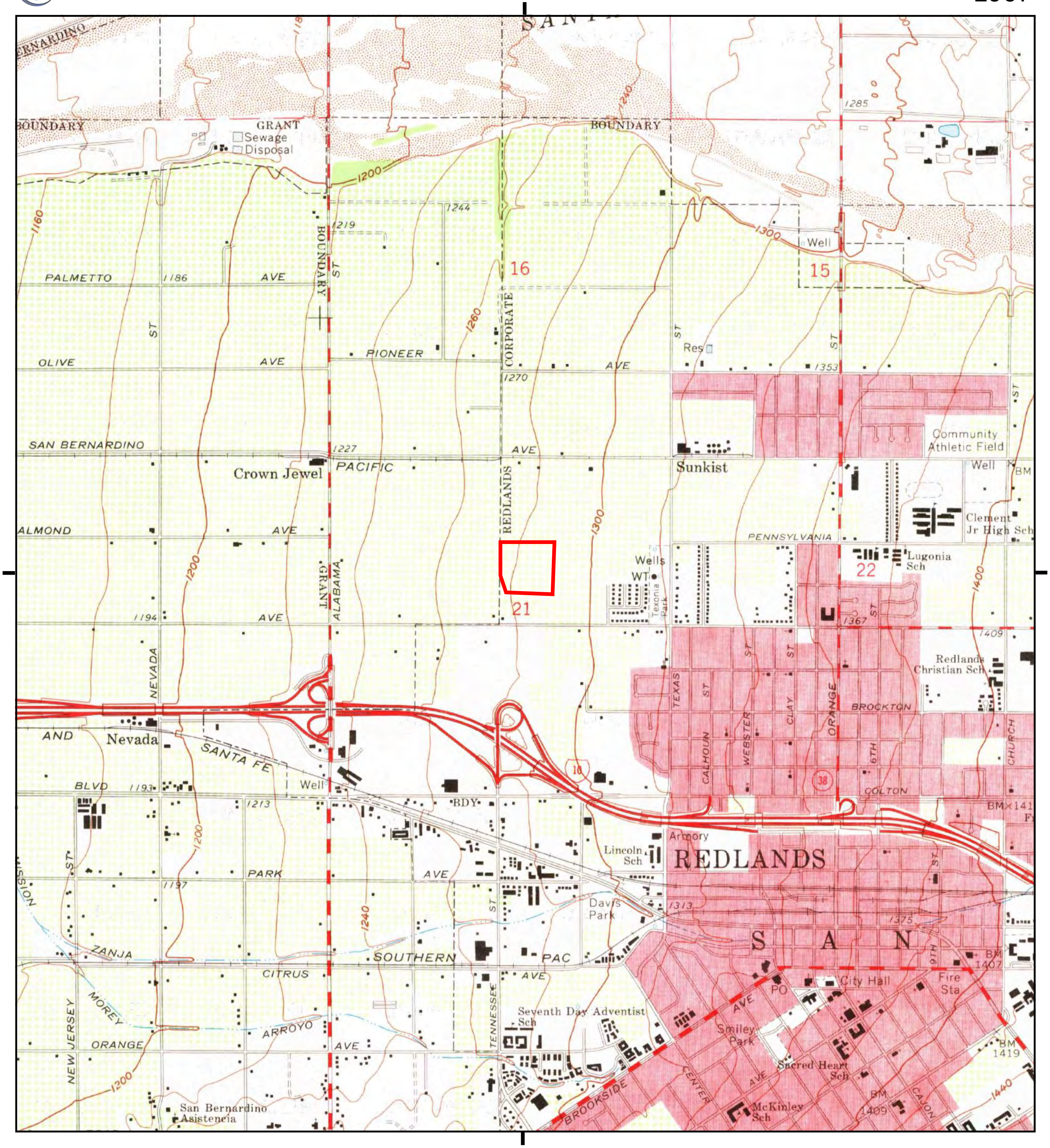


TP, Redlands, 1973, 7.5-minute

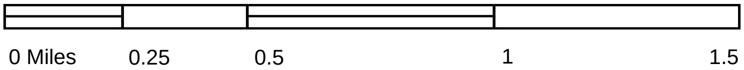
SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

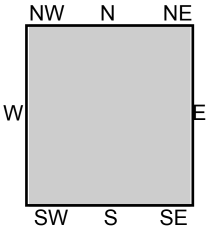
Historical Topo Map

1967



This report includes information from the following map sheet(s).



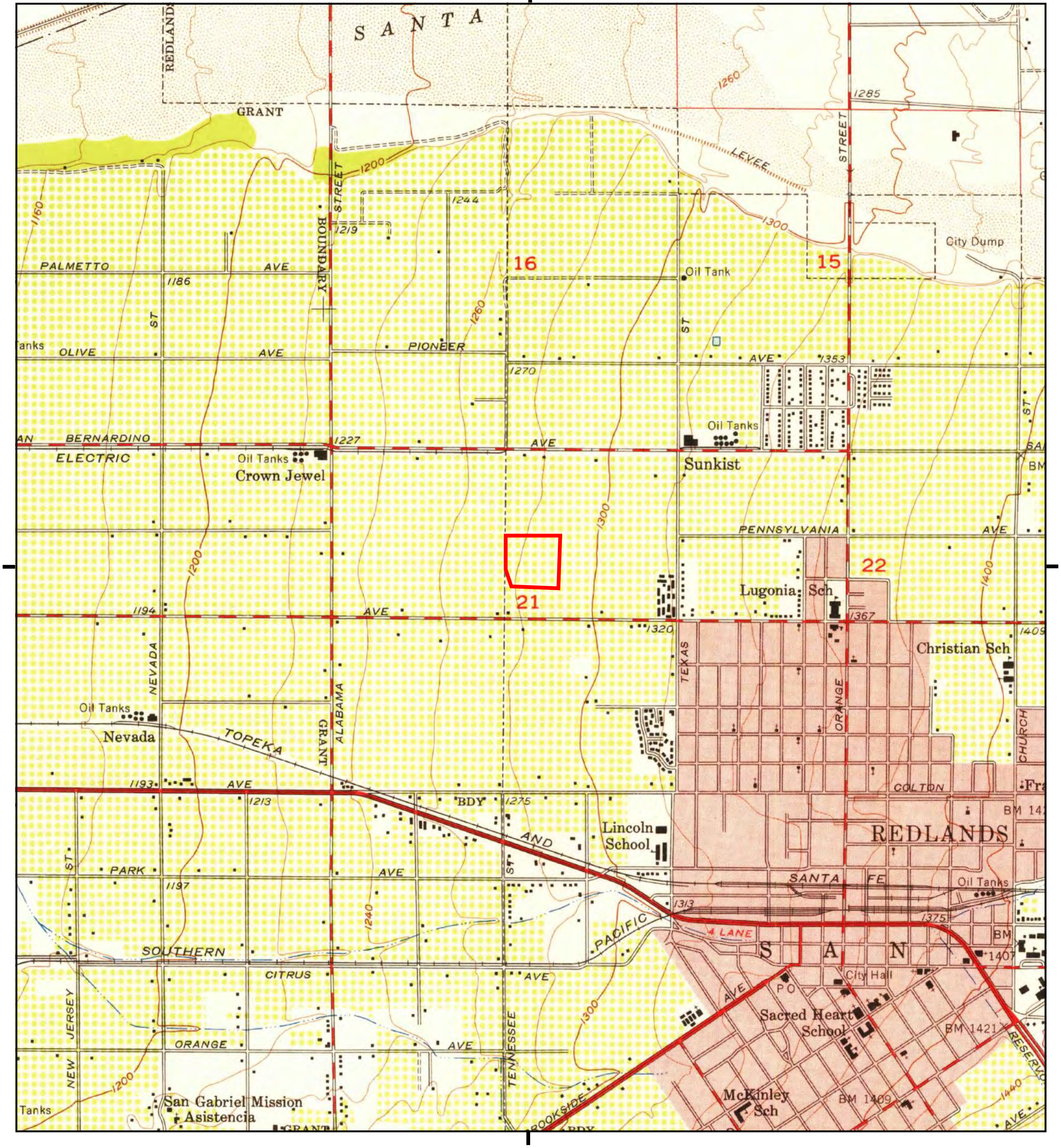


TP, Redlands, 1967, 7.5-minute

SITE NAME:	LPA Redlands Project
ADDRESS:	NEC Tennessee St. and W. Lugonia Ave Redlands, CA 92374
CLIENT:	Petra Geotechnical Inc

Historical Topo Map

1954



0 Miles 0.25 0.5 1 1.5

This report includes information from the following map sheet(s).

NW N NE

W E

SW S SE

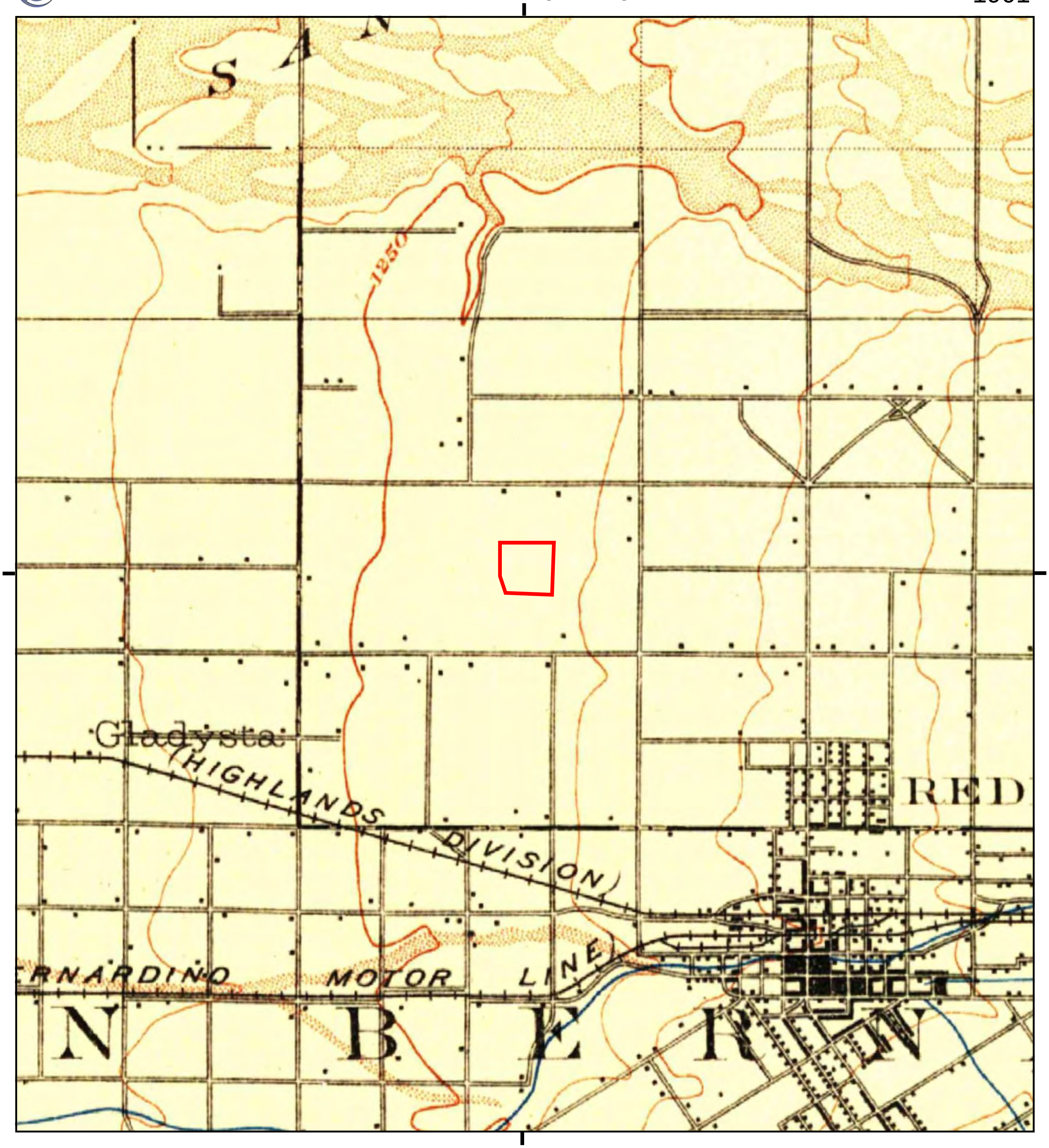
TP, Redlands, 1954, 7.5-minute

SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

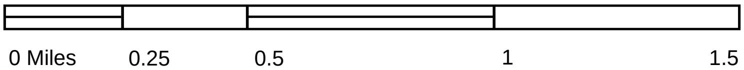
N

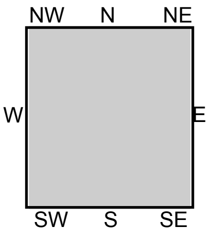
Historical Topo Map

1901



This report includes information from the following map sheet(s).



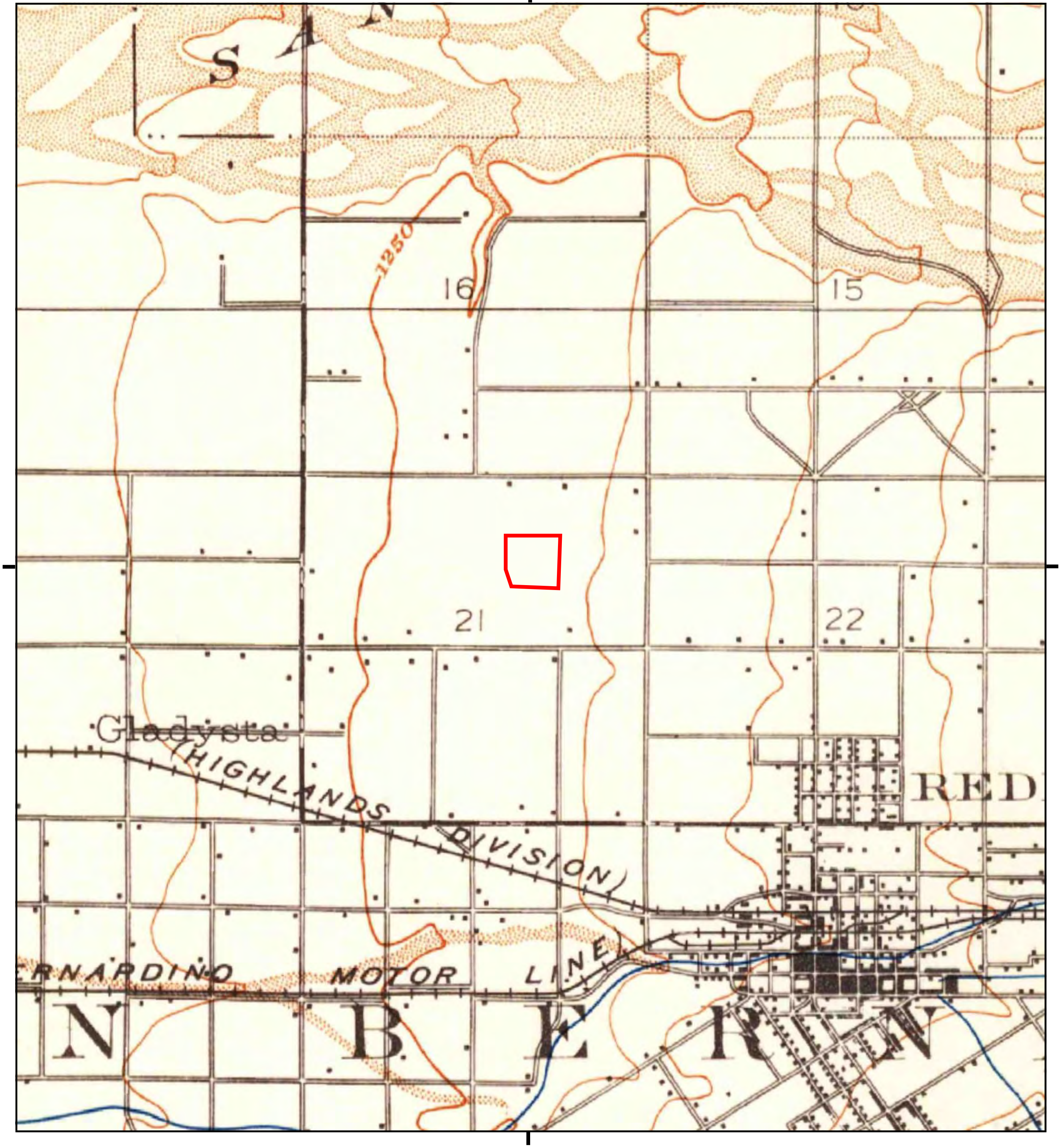


TP, Redlands, 1901, 15-minute

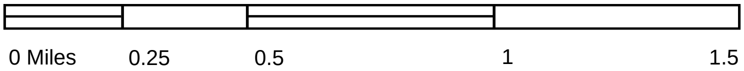
SITE NAME: LPA Redlands Project
ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374
CLIENT: Petra Geotechnical Inc

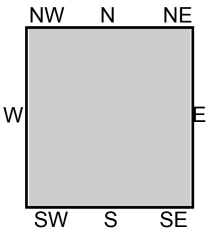
Historical Topo Map

1899



This report includes information from the following map sheet(s).





TP, Redlands, 1899, 15-minute

SITE NAME: LPA Redlands Project

ADDRESS: NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

CLIENT: Petra Geotechnical Inc

LPA Redlands Project
NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 6794904.5
December 21, 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.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

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
1980	☑	☑	Haines Criss-Cross Directory
1976	☑	☑	Haines Criss-Cross Directory
1971	☑	☑	Haines Criss-Cross Directory
1965	☑	☑	Luskey Brothers & Co. Publications

FINDINGS

TARGET PROPERTY STREET

NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Year	*CD Image*	*Source*
TENESSEE ST		
1986	pg A57	Haines Criss-Cross Directory
1986	pg A58	Haines Criss-Cross Directory
1980	pg A61	Haines Criss-Cross Directory
1976	pg A63	Haines Criss-Cross Directory
1976	pg A64	Haines Criss-Cross Directory
1971	pg A66	Haines Criss-Cross Directory
1971	pg A67	Haines Criss-Cross Directory
1965	pg A69	Luskey Brothers & Co. Publications
1965	pg A70	Luskey Brothers & Co. Publications
TENNESSEE ST		
2017	pg A2	EDR Digital Archive
2014	pg A15	EDR Digital Archive
2010	pg A24	EDR Digital Archive
2005	pg A32	EDR Digital Archive
2000	pg A40	EDR Digital Archive
1995	pg A47	EDR Digital Archive
1992	pg A53	EDR Digital Archive

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*
W LUGONIA AVE		
2017	pg. A8	EDR Digital Archive
2014	pg. A21	EDR Digital Archive
2010	pg. A29	EDR Digital Archive
2005	pg. A38	EDR Digital Archive
2000	pg. A45	EDR Digital Archive
1995	pg. A51	EDR Digital Archive
1992	pg. A56	EDR Digital Archive
1986	pg. A59	Haines Criss-Cross Directory
1986	pg. A60	Haines Criss-Cross Directory
1980	pg. A62	Haines Criss-Cross Directory
1976	pg. A65	Haines Criss-Cross Directory
1971	pg. A68	Haines Criss-Cross Directory
1965	pg. A71	Luskey Brothers & Co. Publications
1965	pg. A72	Luskey Brothers & Co. Publications

City Directory Images

TENNESSEE ST 2017

2	BRUNO, CHARLENE D
	DAVIS, DARIUS
	ROATH, BRIAN
	WILLIAMS, ROBIN E
6	DAMEWOOD, VICKI L
	KREITZER, MATTHEW
8	DAKE, THOMAS M
	GRAY, STEVEN
	HOPKINS, LARRY R
	SAMAYOA, STEVEN
11	ABALLI, DANAE A
	ABITIA, JOSEPH C
	ADAB, LEILA
	ALVARAEZ, SERVANDO
	ARREOLA, LUIS
	AYON, VALARIE E
	BAKER, GEORGE
	BAKER, MELISSA
	BELL, BRIAN
	BLACKWELL, DREW
	BOGH, JASON
	BROWNELL, CASSANDRA D
	BYERS, JILL L
	CABALDA, VIRGILIO
	CARCANO, ROBERT Q
	CARPER, STEVEN L
	CERQUETTINI, GINA M
	CERQUETTINI, JOSEPH
	CHAVARIN, ANA
	CORNEJO, LUAMY G
	CRAIN, CATHERINE
	CRUZ, MICHAEL A
	DAVIDSON, PIPER
	DAY, COLIN N
	DAY, KRISTINA
	DEGUILLEN, ROBERT
	DUNFEE, CHANTILLY M
	DUNLOP, NANETTE R
	ENGLISH, VANESSA J
	ENOPIA, M
	FORREST, HEATHER J
	FORTUNE, HEATHER
	GARCIA, LIMNDA
	GILL, NE
	GOINGS, HAROLD
	GONZALES, MELODY
	GRESHAM, LUCINDA
	HART, JASON E
	HORTON, ASHLEY
	HORTON, DANIEL R

TENNESSEE ST 2017 (Cont'd)

11 JACKSON, DEBRA E
JINKS, ERIK R
JOHNSON, SAMANTHA J
JOIMAE, GUBALANE
JUSTINE, B
KHALEGHI, S
KHAPTAB, ANWAR
LIN, YUSHIU
LITTRELL, HANNAH
LOWE, DAVID J
LUNA, LESLIE
MADGULKAR, JAIDEV V
MADISON, BRENDA
MARANGAKIS, JERI L
MARTINEZ, VIRGINIA
MARTING, E
MCKINSTRY, PATRICK
MEDINA, CHRISTOPHER M
MEJIA, NICOLE
MEYER, GARY L
NABHAN, CAMERON
NGO, JESSECA
NICELY, JOHN G
NICHOLS, SUSAN H
OMONIYI, ELIZABETH
PATTERSON, TAVAE L
PEREZ, MARIO A
PETTIT, DAVID B
POOLE, CARLOTTA N
RAMBING, IRA
RAMIREZ, RICARDO R
RAMIREZ, STEVE
RED OAK VILLAS
RIFFLE, TREVOR
RIZK, MOHAMED
ROBERTS, ABBY
ROMERO, ANDREA
ROSE, CATHRYN A
SALAS, KEVIN
SALISBURY, KELLIE A
SHAUGHNESSY, MARCELA
SHAW, CARINA
SINGLA, VIKAS
SWONKE, SCOTT
TAN, WEIQUAN
TORREY, DANIEL
VALLES, ANTHONY
VASQUEZ, SAMUEL
VILLAGOMEZ, ELVIRA
VIVIAN, PACHECO

TENNESSEE ST 2017 (Cont'd)

11	VO, JIM
	WATSON, ANNA
	WEALS, MICHAEL A
	WEEKLEY, JOHN
	WILEY, LINDA
	WRIGHT, AMBER M
	XIE, JINGXIAN
	YDARRA, RUDY
	YONTOSH, JONE
	ZHANG, MAN
12	CADENA, MICHAEL B
	SAMAYOA, LYNDA K
14	HOOVER, CHRIS
	PHIPPS, PATRICK
63	KANO, TOMA
75	BROOKSIDE FREE METHODIST CHURCH
85	ALLEN, BERNADETT
	BARNAT, MARIA
	GOTTA, STACI R
	LANDA, CRISTINA V
	SMITH, STEPHEN G
87	BAKER, NICKI A
	CHAKRAVARTHY, VIKRAM B
	CHANEY, BURT
	TIPTON, ALEXANDER M
89	HERRING, ANN
	HERRING, JOHNAND M
	JOHNSTON, TRACEY
	MAHNKE, KENNETH M
	MATTIE, REBEKAH S
	PARK-MIYASATO, LORETTA O
	WELDON, LESLIE A
91	BULEY, ROCHELLE R
	CLEGHORN, CHERYL A
	GREENE, WANDA J
	MANTILLA, ROLANDO
	MCKEEVER, RYAN
93	HILL, SHERRY L
	HUTAGAOL, HENDRIK
	TAN, RICKY
	WULFF, TODD R
95	BEISHLINE, MATTHEW F
	KARLAVAGE, ROBYN S
	LINN, DEBRA A
	MEACHAM, LESLIE J
	ROLLBERG, UDO H
97	GIMBEL, BRITTANY
	SANDERS, LISA R
100	ALMEIDA, THOMAS
	BICONDOVA, DAVID M

TENNESSEE ST 2017 (Cont'd)

100	BRANDSGARD, LILLIAN
	BROWN, KEVIN L
	BROWN, TERRY
	DAY, C H
	DEARTH, STEVE
	DELANEY, BRANDON
	DEMERITT, NANETTE L
	DIAZ, JOSEPH
	DRISKILL, JAMES W
	ECHEVERRIA, ISMAEL
	FLORES, DIEGO L
	FUSANO, DORIS E
	HALL, LANCE W
	HERNANDEZ, MARK L
	HOFFMAN, KRISTA
	HUFF, CARI A
	HUSTON, TIFFANY
	LARSON, KRISTER P
	LIDO PALMS APARTMENTS
	LIDO PALMS DEVELOPERS
	LITTELL, ADRIAN K
	LOEWY, CHRISTIAN
	LUCAS, TROY
	MARTINEZ, MOISES
	NEGRETE, ABRINA
	NEHF, JACQUELINE B
	NOERR, CAMERON D
	PETTIT, BRUCE L
	RUIZ, GIGI
	SLATEN, SELINA
	SMITH, ASHLEY E
	SMITH, CHRISTOPHER
	SMITH, DYLAN
	SOTELLO, ROD
	SPEARS, DOUGLAS R
	WILLIS, CORTNEY C
	YOUNAN, MAHA
105	ARROWHEAD CHRISTIAN ACADEMY
130	REDLANDS ADVENTIST ACADEMY
251	COMMUNITY CHRISTIAN COLLEGE
278	AAA ALARM SYSTEMS
	AFFORDABLE PARALEGAL SERVICES
	FALLBROOK ALARM
	INDEPENDENCE ASSISTANCE
	REDLANDS TRANSPORT INC
	TBM SERVICES INCORPORATED
294	INHERITANCE ARMS INC
298	CYBER TECH SYSTEMS
300	WESLEY RAY & SON INC
301	LAZBOY FURNITURE

TENNESSEE ST 2017 (Cont'd)

412	COVENTRY PET RESORT & TRAINING CENTE
414	3H BUSINESS SERVICES INC
	ALBERTINE INSURANCE AGENCY
	BODYWORKS
	DEBORA HICKMAN DPT WCS
	DOUGLAS ENGINEERING
	DUTCH GIRL CLEANERS & LAUNDRY
	EMERALD REAL ESTATE
	INTERNATIONAL PRODUCTIVITY SOLUTIONS
	KINSHIP CENTER
	ONE ON ONE TUTORING
	SMILE BRIGHT DENTAL
	THE LAST TANGLE
	ULTIMATE KICKBOXING & FITNESS
	WEST COAST WINDOW CLEANING
415	CYCLERY USA
	FARMERS INSURANCE
	HARVEY, L
	INTERNATIONAL BROTHERHOOD OF ELECTRI
	J & L DAYCARE CENTERS
	PAUL H LEE INSURANCE AGENCY
	PLAN TECH INC
	SELAH CHRISTIAN STORE
446	MG TRANMISSION PHX
450	CALIFORNIA RIDER
460	G & G SMOG ONLY
461	A & D TAILORING
	BEST LITTLE BARBER SHOP IN REDLANDS
	EASTERN CLASSIC THAI RESTAURANT
	HAIRDRESSERS
	HOCKRIDGE FLORIST
	HOME INSTEAD SENIOR CARE
	ISLAND TANNING
	J & L DAYCARE
	MOONGLOW BEADS
	PAINTED LADY QUILT SHOP
	PORCELYNNES FABRIC BOUT
520	WOOD, DANICA
611	EXCEL AUTOMOTIVE
615	MICHELLES
619	TENNESSEE GARDEN
620	BURGESONS HEATING & AIR CONDITIONIN
716	ROYAL MARKET
720	MID EASTERN BAKERY
724	AARON FUNK & BRENT BANNS TATTOO REVO
732	REDLANDS CIGAR
758	FOSTERS DONUTS
762	MOBIL
766	SUBWAY
770	PAPA JOHNS MAIN NUMBER

TENNESSEE ST 2017 (Cont'd)

770	PAPA JOHNS PIZZA
1180	MATTS EXPRESS CAR WASH

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2017

20	REDLANDS UNIFIED SCHOOL DISTRICT
102	WOOD, GARY L
108	SELESKA, RUSSELL G
111	CITY OF REDLANDS
112	CHRISTIANSEN, TODD
116	BACA, LARRY L
120	NOLAN, STEVEN
206	VENTURA, MARIA
219	RIVAS, ABELARDO
220	PEREZ, IZTAC H
224	YNIGUEZ, JESUS
301	CASTRO, MARTHA
302	GUTIERREZ, RAFAEL
305	ESPARZA, SONIA M
308	AVILA, CARLOS M
309	SALDIVAR, RAUDEL
311	MONDRAGON, MARIA
312	FERNANDEZ, JOLANDA F
313	REYNA, SAMUEL
315	FREEMAN, DANIEL D
320	ZAVALA, ZULMA
503	THOMAS, EVELYAN
507	BATRES, ELIAS F
511	GOMEZ, MARIA M
520	CHARRE, YOLANDA G
604	GARCIA, FELIX
615	GONZALES, MANUEL A
619	HERNANDEZ, ROMMEL A
705	REYNA, ANNA M
709	GANO, TERESA
803	GONZALEZ, ADAM
805	QUINTANA, SANDRA A
818	KAUNANG, LEXY N
821	PETTY, PAULA M
822	RODRIGUEZ, ISABEL
830	RIVAS, MANUEL C
831	CABRAL, ALFRED R
834	WEIR, TERRY A
838	CANDELARIO, DANIEL M
842	RAMIREZ, ROBERT J
846	ALONZO, SHELLEY A
850	BROOKS, JERI A
854	RICHARDSON, C D
1141	JACK IN THE BOX
1151	HOME SERVICES AT THE HOME DEPOT THE HOME DEPOT
1161	7ELEVEN REDBOX
1425	ALTA VISTA CREDIT UNION RICHARD GONZALEZ ATTY

W LUGONIA AVE 2017 (Cont'd)

1425	THE LAW OFFICE OF RICHARD I GONZALE
1519	STOWAWAY SELF STORAGE
1605	ONO HAWAIIAN BBQ
1615	SKIN CARE CENTER
1619	SUBWAY
1625	JOANN FABRICS & CRAFTS
1635	MARSHALLS
1637	TOTALLY NAIL & SPA
1643	AT&T
1647	INTERNATIONAL UNION OPERATING ENGINE
1705	BRAKE MASTERS
	CALIFORNIA STAR SMOG
1711	LENVIE
	RESTORE PUB
	TACO VILLAGE RESTAURANT
	THE THREADING ZONE
1811	LUGUNIA OFFICES LLC
1901	ADVANCE AMBULATORY SURGERY CENTER LL
	ARROWHEAD ORTHOPAEDICS
	ARROWHEAD ORTHOPAEDICS PHYSICAL THER
	ORTHOPAEDICS IMAGING CENTER LLC
	REDLANDS PROSTHETIC & ORTHOTIC GROUP
	RENOVIS SURGICAL TECHNOLOGIES
1981	SOUTHERN CALIFORNIA GAS COMPANY
	THE GAS CO
2185	REDLANDS 52 DEVELOPMENT LLC
	TIAA
2250	MCSHANE CONSTRUCTION COMPANY
2255	REDLANDS 52 DEVELOPMENT LLC
2351	ASCEND PHARMACEUTICALS
	CALIFORNIA MIXER
	DONKEY PUNCH BREWERY
	GE APPLIANCES FACTORY SERVICE
	NATIONWIDE DENTAL LABORATORY
	OF CHINO THE CITY
	WESTCAR CONSTRUCTION
2354	DALTILE SALES SERVICE CENTER
2411	LAWSON, MICHAEL K
2415	ALFARO, CARLOS D
2419	ORTEGA, KENNETH
2423	NOTSURE, LANCE
2427	LOPEZ, ROSA
2456	IRON MOUNTAIN
2466	POLARIS INDUSTRIES INC
2470	GRANT & BOWMAN INC
	WAKANAMA
27000	ABALLI, TRAVIS M
	ABDALLA, MAISA
	AGUIRRE, DAYANARA
	AHMED, MAHMOUD

W LUGONIA AVE 2017 (Cont'd)

27000 ALABADI, ALAA
ALBUKHARI, ABRAR
ALLRED, MARY A
APEL, SEAN
ARAGON, DESTINY N
BALDI, JENNIFER
BARNES, DONALD T
BAUER, ZACHARY
BAUM, BRANDON
BELL, KAREN
BELL, KAREN D
BERMUDEZ, CESAR R
BERTRESSE, EVELYN
BIGUEUR, JESSICA
BODEY, LEVI A
BRAUER, JULIENNE R
BREDEN, HALEY
BROOKS, AMID
BROWN, AMY C
BURKE, MATTHEW D
BYRNE, LAUREN
CARLTON, WHITNEY
CARTER, DAYANNE A
CELO, EDWARD D
CHAVEZ, JOSHUA
CHOI, AUDREY
CHOU, MEI Y
CIRCA
CLARKE, CAMILLE
CLUMPNER, CORI I
CORCORAN, KELLI
COUGHLIN, PHILIP E
DAFFORD, JANIE
DALE, STANLEY J
DARDEN, KRISTEN R
DARKENS, TRISHA
DAWN, KATELYN
DEBRUYNE, TABITHA A
DEGUIA, MICHAEL V
DESOUSA, JEANETTE
DIEKMANN, TRACY S
DIEZ, WILLIAM
DIMAANO, JONATHAN P
DINNING, CLARALYNN S
DOBSON, JENNIFER L
DOWDELL, SHASTA M
DRAKE, JASON
ELLIS, KEITH V
FARLEY, DAVID
FERNANDEZ, ENGERS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2017 (Cont'd)

27000	FIRST RC CORP
	FISHER, MICHAEL P
	FLETCHER, ARIELLE
	FLETCHER, OSWALD D
	FLORES, NATASHA
	FONKEN, KATY
	FONOSCH, VICTOR
	GERREN, NICOLE S
	GILMOUR, DUNCAN
	GOLDMAN, JUDY
	GONZALEZ, JUAN
	GRIMALDO, JOSE D
	GROFT, ANDREW
	GUINASSO, REMO L
	HAFIZ, AMMAR
	HAGGERTY, HEATHER M
	HANSEN, HANS J
	HATHORNE, DEJON
	HICKS, KYLE
	HO, CHRISTINE
	HONG, SAMUEL
	HOWARD, SHAWN
	HUGHES, JUSTIN
	HUNTER, NIJA
	JESSEN, BREATA
	JOHAL, GURJOT
	JOHNSEN, SUSAN G
	JONES, POMERNE W
	JOO, HALEMAN G
	JUAREV, GABRIEL
	JUNG, EUNJUNG J
	KAPLOVITZ, KEVIN
	KEENY, KELLY
	KIM, DAVID
	KOPASZ, DAVID A
	KRUEGER, OLIVIA
	LANG, ROXANA
	LEAVITT, CHRISTOPHER D
	LIM, FRANCES J
	LISSON, JUSTIN N
	LOPEZ, COLE V
	LUM, GREGORY C
	LUM, GREOGORY
	MAGSINO, MIKAELA
	MAHMOODI, ROYA
	MARQUEZ, MARIE L
	MARRUFFO, R
	MARTINEZ, GLORIA
	MCLAIN, VIRGINIA
	MCMILLON, DANIKA

W LUGONIA AVE 2017 (Cont'd)

27000	MEIER, BRINA
	MELENDREZ, JAVIER
	MONGA, NATASHA
	MOORE, LAURIE
	MOROCCO, TERRY L
	MULFINGER, NOAH
	NAVARRE, MICHAEL A
	NG, CHRISTINA
	OGAZ, CHRISTOPHER L
	ORTEGA, ANDREAS
	OSUNSANMI, BOLA
	OTTO, BRADLEY
	PALACIOS, ARNOLD
	PAPANTONIOU, CONSTANTINOS
	PARTOW, ROD
	PATTERSON, MATTHEW
	PINON, JOSHUA C
	PORTELL, BRENT A
	POULSEN, JENIFER L
	POWELL, ROBERT M
	PRESNALL, JEFFREY M
	PRICE, DANIEL
	PUENTES, YASMINE
	QUIGLEY, JEFF E
	RAMIREZ, GABRIELLE N
	RAMOS, PERCIVAL T
	RATHFELDER, GREGORY J
	REEDER, STEVE
	RIBCIRO, DERRICK
	RIBEIRO, DERRICK B
	RILEY, JOHN
	RITCHIE, DAVID
	ROBERSON, SHABREE
	ROBERTSON, STEVE M
	SANFORD, ZACHARY
	SANTANA-PENA, RAFAEL
	SAUCEDO, ALYSSA
	SCHIEWE, TYLER J
	SCHMIDT, BRODY
	SCHULTZ, STEVE
	SERHAL, ASIL
	SHIM, JOHN M
	SHORTS, ERICA H
	SMITH, BRYAN
	SMITH, ROY C
	SOLOMON, JASON
	SOOD, ANU R
	SOULTAN, DIMA
	SRINIDHI, SRINIVASA K
	STCLAIR, BRIAN M

W LUGONIA AVE 2017 (Cont'd)

27000	STONE, CHELSEA K
	SWEEDEN, AMANDA M
	TANG, THIEN T
	THAM, ANH
	THOMAS, STEFFON
	TILLERY, KERIENA
	TRAN, LINDA
	UNIVERSITY CROSSING SBR
	UNIVERSITY CROSSINGS SBR LLC
	URENA, KIMBERLY
	VASQUEZ, MICHAEL
	VIRINAIN, BRANDON
	WASHINGTON, ALONZO M
	WASYLUCHA, CONNOR
	WATER LEAK EMERGENCY REPAIR
	WELCH, CANDICE M
	WESTERLIN, LORI D
	WIBERT, MALLORY
	WICKLER, ERIC S
	WULDEAREGAY, MINTIWAB M
	WYROSTOK, JESSICA
	ZUGELDER, MIKE C
27300	76
	REDBOX
27310	SPRINT
	THE VITAMIN SHOPPE
27320	TARGET
27430	DRESSBARN
	FAMOUS FOOTWEAR
	STUDER, JOAN R
27440	COST PLUS WORLD MARKET
27460	BARNES & NOBLE
27470	CATHERINES
27476	RED ROBIN
27480	WELLS FARGO BANK
27490	ROMANOS MACARONI GRILL
27510	CAFE RIO
	JAMBA JUICE
	MAGIC WOK
	NIKO NIKO SUSHI
27512	COLD STONE CREAMERY
	GAMESTOP
	STARBUCKS
	STARBUCKS COFFEE
	VERIZON WIRELESS
27520	CHICKFILA
27530	MAJESTIC REALTY
	MENS WEARHOUSE
	MENS WEARHOUSE & TUX
27532	PIER 1 IMPORTS

W LUGONIA AVE 2017 (Cont'd)

27534	MICHAELS
27536	DSW
27550	SPORT CHALET
27580	PETCO
27588	BEVERAGES & MORE
	BEVMO
	PARTY CITY
27592	DAVIDS BRIDAL

TENNESSEE ST 2014

2	COSTON, TUCKER
	GOTT, SHANNON C
	JOHLMAN, STACEY E
	ROATH, BRIAN
6	KREITZER, MATTHEW
	MELIKIAN, GEORGE T
	PHILLIPS, SHERESE M
8	CUTLER, P
	GRAY, RAYMOND W
	HOPKINS, LARRY R
	RODRIGUEZ, RICARDO
	SACHS, JENNIFER
	SAMAYOA, STEVEN
10	OCCUPANT UNKNOWN,
11	ALTINGAS, ELISABETH
	ARCHIBALD, TRENTON
	ARMSTER, RENEE M
	ASHMORE, DONALD G
	AVILA, ADELITA
	BARBA, RIGOBERTO
	BATTAGLIA, AMY R
	BEST, PHILLIP Q
	BETZLER, AMBER L
	BHATTARAI, SMITA
	BLANKENBECKLER, JUSTINE
	BREW, SALLY
	BROWN, STEPHANIE
	BRUINS, KATHERINE
	BRUNNER, RALPH E
	BUGBY, MIKE J
	BUSHA, CHERYL L
	BUTRYN, KENDRA
	CABALDA, VIRGILIO
	CAMBRONERO, IVANHIA
	CARCANO, ROBERT Q
	CLARK, DANIELLE N
	DANIELS, MOLLY A
	DAVIS, CHER A
	DAY, KRISTINA
	DESMET, GREG
	DIETRICH, JOHN K
	DIJKSTRA, JUUL H
	DOHERTY, PAUL
	DORSEY, THOMAS R
	DUNFEE, CHANTILLY M
	DUNN, KATHLEEN A
	EARNHART, FREDRICK
	ENGLISH, VANESSA J
	FELIPE, VILLALOBOS
	FORD, HERMAN V

TENNESSEE ST 2014 (Cont'd)

11	FORREST, HEATHER J
	GALICIA, GILBERT
	GILL, NE
	GREER, NEIL A
	GRESHAM, LUCINDA
	GROSS, JENNIFER
	GRULLON, LUIS
	GUEVARRA, ANTHONY R
	HATFIELD, CRISTA
	HAYNES, KENNETH
	HEFNAWY, MONA E
	IRIZARRY, WILLIAM
	JIMENEZ, RONY
	JINKS, ERIK R
	JONES, KS
	KILIC, HELENA
	KOCH, JEFFREY M
	LANG, AIMEE
	LEDBETTER, FREDERICK V
	LIGHTFOOT, MICHELLE A
	LONG, ORA L
	MA, YIWEI
	MADGULKAR, JAIDEV V
	MARTING, E
	MEJIA, NICOLE
	MEYER, GARY L
	MILLER, PIPER
	MORGAN, PATRICIA L
	NESBITT, JACKIE M
	NICELY, ANDREW D
	NICHOLS, DAVID
	PACHECO, JOSEPH M
	PALAAD, KENNETH
	PARKER, AARON B
	PEREZ, MARIO A
	POOLE, CARLOTTA N
	PUGLIESE, SILVINA B
	RAMIREZ, RICARDO R
	RAMOS, HECTOR A
	RANDA, STEFANIE Y
	RED OAK VILLAS
	REDLANDS HUMANE SOCIETY
	RIZERA, MYRNA
	ROBERTS, TANNER C
	ROETHLE, RICHARD
	RUSSELL, M D
	SALAZAR, CLAUDIA
	SALISBURY, KELLIE A
	SEGURA, ASHLEY
	SHILA, LEILANIE

TENNESSEE ST 2014 (Cont'd)

11	SMITH, JEFF
	SMITH, LINDA L
	SOLIS, BRYAN
	STALLINGS, MELISSA
	STOFFEL, JEFF
	SWONKE, SCOTT
	TAURAN, ROGER M
	TREJO, SYLVIA H
	WARE, JANELL
	WAREHAM, LAUREN
	WENTZELL, TASIA
	WILLMING, AARON
	WINGATE, ERVAN H
	WRIGHT, AMBER M
	XIE, JINGXIAN
	YOUNG, BERT W
	YOUNG, JENNIFER
	ZAMORA, AURELIA
12	JOSHUA, JANELLE N
	SAMAYOA, LYNDA K
	TORRES, JEREMY
63	EDSEL, CANDACE C
75	BROOKSIDE FREE METHODIST CHURCH
85	BARNAT, MARIA
	GOTTA, STACI R
	GUY, CHANTEIL L
	NADEAU, J
	SMITH, STEPHEN G
87	BAKER, NICKI A
	CHU, DEREK C
	ROMO, D
89	DAVIS, KELLI S
	DAY, SUSAN
	HALE, MELISSA N
	LAWSON, KEVIN L
	PARK-MIYASATO, LORETTA E
91	CLEGHORN, CHERYL A
	DAVIDSON, KYLE
	GREENE, WANDA J
	LAACK, CHRISTIAN V
	MCKEEVER, RYAN
	SMITH, JENNIFER M
93	HILL, SHERRY L
	JANSSEN, MEIKE L
	LUKE, HAROLD P
	WULFF, TODD R
95	BEISHLINE, MATTHEW F
	CHU, CURTIS B
	KARLAVAGE, ROBYN S
	MACAYA, GLENN C

TENNESSEE ST 2014 (Cont'd)

95	MEACHAM, LESLIE J
97	ERVIN, TYRONE
	WASBOTTEN, MICHAEL J
100	ALMEIDA, THOMAS
	BENNETT, RYAN
	BROWN, KEVIN L
	CLARK, DAVID
	DEMERITT, NANETTE L
	DOSS, JACK
	EVANS, MARION
	FLORES, DIEGO L
	FLORES, SAMANTHA J
	GUILFOYLE, GARY L
	HALL, LANCE
	HUSTON, TIFFANY
	LACEY, MARSHA E
	LIDO PALMS APARTMENTS
	LITTELL, LARRY J
	MORENO, CLAUDIA P
	MUHLENKAMP, EDWARD
	NEHF, JACQUELINE B
	PETTIT, BRUCE L
	RENEER, ELMO F
	RINCON, RAMON
	ROCH, TRACY
	SANTOSO, MAITRY W
	SMITH, CHRISTOPHER
	SOTELLO, ROD
	SOTO, FERNANDO
	WILLIS, CORTNEY C
	WILSON, MEGAN
251	COMMUNITY CHRISTIAN COLLEGE
278	AAA ALARM SYSTEMS
	AFFORDABLE PARALEGAL SERVICES
	INDEPENDENCE ASSISTANCE
	REDLANDS TRANSPORT INC
	TBM SERVICES INCORPORATED
298	CYBER TECH SYSTEMS
300	RAY WESLEY & SON INC
301	LAZBOY FURNITURE
412	COVENTRY PET RESORT & TRAINING CENTE
	OBRIENS PET LODGING
414	ALBERTINE INSURANCE AGENCY
	AMERIHEALTH HOSPICE PROVIDER
	AMSWOP
	ARROYO SKIN CARE INSTITUTE
	BALANCE FOR LIFE INSURANCE
	BRIGHT SKY HOSPICE
	COMFORCARE HOME CARE
	DEBORA HICKMAN DPT WCS

TENNESSEE ST 2014 (Cont'd)

414	DOUGLAS ENGINEERING
	DUTCH GIRL CLEANERS & LAUNDRY
	FUNCTION ABILITY PHYSICAL THERAPY
	INTERNATIONAL PRODUCTIVITY SOLUTIONS
	KINSHIP CENTER
	NURSEFINDERS
	ONE ON ONE TUTORING
	REDLANDS FAMILY WELLNESS CEN
	REDLANDS VECTOR MARKETING
	ROSINAS BEAUTY & WELLNESS CENTER
	SMILE BRIGHT DENTAL
	THE LAST TANGLE
	ULTIMATE KICKBOXING & FITNESS
415	CYCLERY USA
	DALLASWHITE CORPORATION
	DOUGLASS CHRISTIAN MUSIC
	FARMERS INSURANCE GROUP
	J & L DAYCARE CENTERS
	LIGHT JAMES A
	PAUL H LEE INSURANCE AGENCY
	PIP PRINTING & MARKETING SERVICES
	PLAN TECH INC
	REDLANDS BICYCLE CLASSIC
	REDLANDS CYCLERY USA
	SELAH CHRISTIAN BOOK STORE
	SOUNDTHEOLOGY
446	MG TRANMISSION PHX
448	TALON SERVICES INC
450	CALIFORNIA RIDER
460	G & G SMOG ONLY
461	A & D TAILORING
	A FORMAL AFFAIRE
	BEST LITTLE BARBER SHOP IN REDLANDS
	EASTERN CLASSIC THAI RESTAURANT
	HAIRDRESSERS
	ISLAND TANNING
	J & L DAYCARE
	MOONGLOW BEADS
	OFLANARYS EMPORIUM
	PAINTED LADY QUILT SHOP
	SOLALITE
504	RIVERA, STACY A
520	WOOD, DANICA
610	PRO INSULATION INC
611	EXCEL AUTOMOTIVE
615	MICHELLES
	OCCUPANT UNKNOWN,
619	REDLAND FLORIST
	REDLANDS TENNESSEE FLORIST
	TENNESSEE GARDEN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TENNESSEE ST 2014 (Cont'd)

620	BURGESONS HEATING & AIR CONDITIONIN
	BURGESONS HTG & AC INC
716	ROYAL MARKET
724	AARON FUNK & BRENT BANNS TATTOO REVO
	TATTOO REVOLUTION
732	REDLANDS CIGAR
736	THE ADULT SHOP
758	FOSTERS DONUTS
762	PACIFIC WIRELESS DBA BOOST MOBIL
766	SUBWAY SANDWICHES
770	PAPA JOHNS PIZZA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2014

20	REDLANDS UNIFIED SCHOOL DIST
102	WOOD, GARY L
108	SELESKA, RUSSELL G
112	CHRISTIANSEN, TODD
116	BACA, LARRY L
	LARRYS CARPET & UPHOLSTERY CLEANING
120	OCCUPANT UNKNOWN,
206	FEENSTRA, BEN
210	VENTURA, KEILA
215	OCCUPANT UNKNOWN,
219	RIVAS, ABELARDO
220	MELCHOR, SALVADOR
224	INIQUEZ, LUIS M
301	CASTRO, MARTHA
302	GUTIERREZ, RAFAEL
305	FERNANDO, VILLALPANDO
308	GRINDLE, GREGORY G
311	DURAN, GILBERTO I
	RAPID ROOFING
312	FERNANDEZ, JOLANDA F
313	REYNA, SAMUEL
315	OCCUPANT UNKNOWN,
316	STEGENGA, DAVID
320	OCCUPANT UNKNOWN,
405	MIRANDA, EDILBERTO
407	ROMERO, AGUSTIN
503	THOMAS, EVELYAN
507	REYES, CASANDRA Z
511	GOMEZ, MARIA M
520	CHARRE, YOLANDA G
604	SANDOVAL, EDWARD A
615	OCCUPANT UNKNOWN,
617	DIAZ, EVELIA
619	SMITH, GREGORY J
705	OCCUPANT UNKNOWN,
709	BETANCOURT, KAROL
716	RUBIO, JOSEPH
803	GONZALEZ, ADAM
805	NAVARRO, ERICA
818	TORRES, JESSIE G
821	PETTY, PAULA M
822	MARTINEZ, CHARLIE J
830	RIVAS, MANUEL C
831	CABRAL, SADIE R
834	WEIR, TERRY A
838	CANDELARIO, DANIELA
842	BUTLER, EDWARD W
846	OCCUPANT UNKNOWN,
850	BROOKS, JERI A
854	GARCIA, JAIME

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2014 (Cont'd)

1141	JACK IN THE BOX
1151	THE HOME DEPOT
1161	7ELEVEN
1425	ALTA VISTA CREDIT UNION
	GONZALEZ RICHARD ATTY
	RELIABLE PERMIT SOLUTIONS
1519	A STORAGE PLACE
	STOWAWAY SELF STORAGE
1605	ONO HAWAIIAN BBQ
1615	SKIN CARE CENTER
1619	SUBWAY SANDWICHES
1625	JOANN FABRICS & CRAFTS
1635	MARSHALLS
1637	TOTALLY NAIL & SPA
1643	OCEANVIEW WIRELESS
1647	INTERNATIONAL UNION OPERATING ENGINE
1659	REDLANDS DMV OFFICE
1705	BRAKE MASTERS
	RAPID SMOG
1711	CAROLYNS CAFE
	LENVIE
	TACO VILLAGE RESTAURANT
1811	LUGUNIA OFFICES LLC
1901	ADVANCE AMBULATORY SURGERY CENTER LL
	ARROWHEAD ORTHOPAEDICS
	ARROWHEAD ORTHOPAEDICS PHYSICAL THER
	BIAMA RICHARD A
	BURTON PAUL
	FRYKMAN GRAY K
	GHAZAL RONNY G
	GRAMES BARRY MD FAAOS
	LEE JONATHAN
	MATIKO JAMES D MD FAAOS
	MERKEL CLIFFORD MD FAAOS
	ORTHOPAEDICS IMAGING CENTER LLC
	REDLANDS PROSTHETIC & ORTHOTIC GROUP
	RENOVIS SURGICAL TECHNOLOGIES
	STEINMANN JOHN C DO FAOAO
1981	SOUTHERN CALIFORNIA GAS COMPANY
2351	CALIFORNIA MIXER
	DONKEY PUNCH BREWERY
	NATIONWIDE DENTAL LABORATORY
	OF CHINO THE CITY
	SERVICE MASTER
	WESTCOR CONSTRUCTION
2354	DALTILE
2411	LAWSON, MICHAEL K
2415	DEJESUS, ALFARO C
2419	OCCUPANT UNKNOWN,
2423	NOTSURE, LANCE

W LUGONIA AVE 2014 (Cont'd)

2427	LOPEZ, ROSA
2456	IRON MOUNTAIN
2470	WAKANAMA
27300	GOLDEN STATE PETROLEUM INC
27310	OCCUPANT UNKNOWN,
	SPRINT
	THE VITAMIN SHOPPE
27320	TARGET
27430	DRESSBARN
	FAMOUS FOOTWEAR
	OCCUPANT UNKNOWN,
27440	COST PLUS WORLD MARKET
27450	BED BATH & BEYOND
27460	BARNES & NOBLE
27470	CATHERINES
27476	RED ROBIN
27480	WELLS FARGO
	WELLS FARGO BANK
27500	FAMOUS DAVES
	FAMOUS DAVES BBQ REDL
27510	CAFE RIO
	JAMBA JUICE
	MAGIC WOK
	NIKO NIKO SUSHI
27512	COLD STONE OF REDLANDS
	GAMESTOP
	STARBUCKS COFFEE
	VERIZON WIRELESS
27514	OCCUPANT UNKNOWN,
27520	CHICKFILA
27530	MAJESTIC REALTY
	MENS WEARHOUSE
27532	PIER 1 IMPORTS
27534	MICHAELS
27536	DSW
27540	KOHLS
27550	SPORT CHALET
27580	PETCO
27588	BEVERAGES & MORE
	PARTY CITY
27592	DAVIDS BRIDAL

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TENNESSEE ST 2010

2	BRINK, KAREN
	BRUNO, CHARLENE D
	HEINOLD, STEVEN
6	MELIKIAN, GEORGE T
8	GRAY, LYNDA K
	GRAY, RAYMOND W
	HOPKINS, LARRY R
10	OCCUPANT UNKNOWN,
11	ALTENAU, MYRA M
	ALVARADO, NINA
	ARZOLA, MARY A
	BANUELOS, VASTI
	BARTON, EMILIA
	BEVIS, MCIKEY P
	BOGH, JASON
	BOSTROM, RON
	BROOK, GARI
	BRUINS, KATHERINE
	BRUNNER, RALPH E
	BUGBY, MIKE
	CAMPBELL, SHARON E
	CAULFIELD, TOM L
	COMPARAN, MANUEL
	CORLEY, DOUGLAS M
	CRANE, LOUIS J
	CROMER, WILL
	CUEVAS, ROGER V
	DAVIS, CHER A
	DESMET, GREG
	FAKHERI, PEDRAM
	FORREST, HEATHER J
	FORTNEY, JENNIFER R
	FRY, DAVID
	GALINDO, FAVRICIO
	GALVAN, MELISSA
	GONZALES, JOSEPH
	GONZALEZ, MELISSA
	GRAHAM, ELIZABETH M
	HENSON, JENNIFER S
	HOBBS, ERIN L
	ISHII, TINA
	KANNDY, WENSWORTH
	KELLIE, BRASWELL L
	KRABILL, RICHARD E
	LALEZARZADEH, FARIBORZ
	LANG, AIMEE
	LEACH, PORSCHE
	LOPEZ, EDWIN F
	MANDEY, SUMMER
	MATTHEWS, L

TENNESSEE ST 2010 (Cont'd)

11	MCDONNAL, BRANDI
	MILLER, PIPER
	MIOC, MATTHEW
	MORTSON, GEOFFREY A
	NESBITT, JACKIE M
	ONO, KIMBERLY
	ORAM, SHARON L
	PALEN, JEREMY D
	PIRES, DEDRA
	POULIN, GARY E
	POWELL, BENJAMIN
	RAVENSCROFT, DESHANNA
	RED OAK VILLAS
	REYES, BIANCA
	REYES, RICO
	ROETHLE, RICHARD
	ROSA, SIERRA
	ROSE, VANESSA
	SCHIFFBAUER, MICHAEL A
	SHAW, CARINA
	SHEPARD, MARK R
	SMITH, BRYCE R
	TAYLOR, RYAN
	THOMAS, TOM R
	THOMPSON, BEN M
	VILLA, JOSE M
	VILLALVA, NATASHA
	WRIGHT, AMBER M
	XIE, JINGXIAN
	YOUNG, RONALD L
	ZIEPKE, MELISSAA
12	CLARK, DONNA L
	JOHNS, CAROLYN R
	JOSHUA, JANELLE N
14	MIZE, DOUGLAS A
75	BROOKSIDE FREE METHODIST CHR
85	BARNAT, MARIA
	DEHART, SHEILA
	GERRICK, J
	HADNOT, BENNARD
	JENSON, C D
	MOODIE, RENALDO R
	SMITH, STEPHEN G
87	BAKER, CLIFTON
	CERVANTES, LESLIE
	NEWELL, LEROY
89	CRISOSTOMO, DULCE Y
	DAVIS, KELLI S
	MAYNES, LINCOLN J
	WELDON, LESLIE A

TENNESSEE ST 2010 (Cont'd)

91	GREENE, WANDA J
	HANSON, JEAN M
	HOEHN, BRIAN
	MCKEEVER, REBECCA A
	OEI, JIMMY B
93	ACERES, CLAYTON U
	CERVANTES, DAVID M
	GRIER, DONNA J
	HILL, SHERRY L
	JANSSEN, MEIKE L
	STUBBS, NANCY G
95	BEAN, ERIC A
	CHU, PEK S
	COOK, MARJORIE L
	DEHART, BARBIE P
	MACAYA, GLENN C
	MEACHAM, LESLIE J
	STOREY, KAREN L
97	LINDSAY, MELANIE
	WASBOTTEN, MICHAEL J
100	AGURTO, ANA M
	BROWN, DEBORAH A
	CALENDER, DARWIN
	COTARELL, HAYLEY
	COVER, MARSH
	DAVIS, IRENE L
	DAY, C
	DEMERITT, NANETTE L
	DRISKILL, JAMES W
	EDENHOFER, DANIEL J
	FINN, MARYANN A
	FLORES, DIEGO L
	FLORES, SAMANTHA
	FUSANO, DORIS E
	GONZALEZ, CHRISTY
	HALL, LANCE
	HUSTON, TIFFANY
	LIDO PALMS APARTMENTS
	MCCORKLE, JANET L
	MULVIHILL, BETSY M
	RENEER, ELMO
	SANTOSO, MAITRY W
	SCHRADER, RUTH
	SOHN, SANG Y
	SOTELLO, ROD
	SOTO, FERNANDO
	STEWARD, BRANDON
	VASQUEZ, ROSE M
105	ARROWHEAD CHRISTIAN ACADEMY
130	REDLANDS JUNIOR ACADEMY

TENNESSEE ST 2010 (Cont'd)

251	COMMUNITY CHRISTIAN COLLEGE
278	INDEPENDENCE ASSISTANCE
	TBM SVC INC
288	SCE REDLANDS GARAGE
290	OUR PLACE
300	RAY WESLEY & SON INC
412	COVENTRY PET RESORT & TRAINING
414	3 H BUSINESS SVC INC
	ALBERTINE INSURANCE
	ARROYO SKIN CARE INSTITUTE
	BALANCE FOR LIFE INSURANCE SVC
	CARING TOUCH DENTAL
	DOUGLAS ENGINEERING
	DUTCH GIRL CLEANERS & LAUNDRY
	ELECTROLYSIS BY GAYLEEN
	EMERALD REAL ESTATE
	ETHOS HOUSE OF PRAYER MINISTRY
	FUNCTION ABILITY PHYSICAL
	INTL PRODUCTIVITY SOLUTIONS
	KINGS GATE COMMUNITY CHURCH
	KINSHIP CENTER
	LAST TANGLE
	NAIL BOX
	NURSEFINDERS
	ONE ON ONE TUTORING
	PARADISE DENTAL
	ROSINAS BEAUTY & WELLNESS CTR
	SHILOH CHRISTIAN CTR
	ULTIMATE KICKBOXING & FITNESS
	X CELL LAB INC
415	J & L DAYCARE CTR
	JIM LIGHT INSURANCE
	PAUL H LEE INSURANCE
	PIP PRINTING
	PLAN TECH INC
	REDLANDS BICYCLE CLASSIC
	REDLANDS CYCLERY USA
	SELAH CHRISTIAN BOOK STORE
	SOUNDTHEOLOGY
	UPHOLSTERY IN MOTION
448	MC GAVIN GARY
450	CALIFORNIA RIDER
452	SIMPLY TOYOTA
460	G & G SMOG ONLY
461	A & D TAILORING
	A FORMAL AFFAIRE
	BEST LITTLE BARBER SHOP
	CALI CLOTHING OUTLET
	CALICO HORSE
	CURVES

TENNESSEE ST 2010 (Cont'd)

461	EASTERN CLASSIC THAI RSTRNT
	ELEANOR RIGBYS GIFT CO
	HAIRDRESSERS
	INLAND EMPIRE NULITE INC
	ISLAND TANNING
	J & L DAYCARE
	REDLANDS VENDING
504	RIVERA, STACY A
516	OCCUPANT UNKNOWN,
520	OCCUPANT UNKNOWN,
	PRIMERICA FINANCIAL SVC
610	WENDYS VINTAGE AUTO RSTRTN
611	AUTOMOTIVE TECHNOLOGY
615	MICHELLES
	OCCUPANT UNKNOWN,
619	REDLAND FLORIST
	TENNESSEE GARDEN
716	ROYAL MARKET
	SOUTH CALIFORNIA FURNITURE
720	CRYSTAL CLEANERS
724	FUNK & BANNS TATTOO REVOLUTION
736	ADULT SHOP
758	FOSTERS DONUTS
762	THUNDER INSURANCE SVC
766	SUBWAY
770	PAPA JOHNS PIZZA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2010

102	WOOD, GARY L
108	SELESKA, RUSSELL G
111	REDLANDS COMMUNITY CTR
	REDLANDS SENIOR NUTRITION CTR
112	CHRISTIANSEN, TODD
116	BACA, LARRY L
	LARRYS CARPET & UPHOLSTERY
202	OCCUPANT UNKNOWN,
206	VASQUEZ, SOFIA
210	VENTURA, MERARI
215	OCCUPANT UNKNOWN,
219	RIVAS, ABELARDO
220	MELCHOR, SOLEDAD
224	YNIGUEZ, JESUS
300	OCCUPANT UNKNOWN,
301	OCCUPANT UNKNOWN,
302	GUTIERREZ, RAFAEL
305	BAKER, MATTHEW
308	REYNA, BEN J
309	OCCUPANT UNKNOWN,
311	RAPID ROOFING
	WILSON, LINDA F
312	KOOIMAN, CHRISTINE
313	REYNA, SAMUEL
315	OCCUPANT UNKNOWN,
316	STEGENGA, DAVID
320	ZUPET, DESTINY
405	MIRANDA, EDILBERTO
407	ROMERO, AGUSTIN
503	OCCUPANT UNKNOWN,
507	RODRIGUEZ, JESUS
511	FIGUEROA, MICHAEL
520	BOTELLO, ANDRES B
607	MEJIA, ROBERT M
615	GONZALES, MANUEL A
617	DIAZ, EVELIA
619	HERNANDEZ, ROMMEL
705	OCCUPANT UNKNOWN,
709	VILLALPANDO, ANGELINA
716	OCCUPANT UNKNOWN,
803	FLORES, MARGIL R
805	NAVARRO, ERICA
818	TORRES, LEONARD F
821	PETTY, PAULA M
822	MARTINEZ, CHARLIE J
830	RIVAS, MANUEL C
834	WEIR, TERRY E
838	VANDERKALLEN, PETER R
842	BUTLER, EDWARD W
846	ALONZO, RICARDO C

W LUGONIA AVE 2010 (Cont'd)

850	BROOKS, JERI A
854	GARCIA, JAIME
1141	JACK IN THE BOX
1151	HOME DEPOT
1161	7ELEVEN
1167	H&R BLOCK
1425	ALTA VISTA CREDIT UNION
1519	STOWAWAY SELF STORAGE
1605	ONO HAWAIIAN BBQ
1615	SKIN CARE CTR
1619	SUBWAY
1625	JOANN FABRICS & CRAFTS
	VIKING SEW FUN CTR OF REDLANDS
1635	MARSHALLS
1637	TOTALLY NAIL & SPA
1641	CITI FINANCIAL
1647	IUOE
1655	KNIGHT, DAVID B
1705	BRAKE MASTERS
	SMOG BUSTERS TEST ONLY
1711	CAROLYNS CAFE
	JENNYS DONUTS
	SAFELINE INSURANCE SVC
1901	A WEST DERMATOLOGY & SURGERY
	ADVANCE AMBULATORY SURGERY CTR
	ARROWHEAD ORTHOPAEDICS PHYSCL
	ARROWHEAD ORTHOPEDIC
	ORTHOPEDIC IMAGING CTR
	REDLANDS PROSTHETIC & ORTHOTIC
	RICOH BUSINESS SOLUTIONS
	SYNERGY SURGICAL TECHNOLOGIES
	WEST DERMATOLOGY
2351	NATIONWIDE DENTAL LAB
	OFFICE COURT CAFE
	QUEST NINE INC
	SERVICE MASTER ANYTIME LLC
2354	DALTILE
2411	LAWSONS TRUCK REPAIR
	YARNELL, DOUGLAS
2415	ALFARO, CARLOS D
2423	ROYSE, JULIE
2427	OCCUPANT UNKNOWN,
2456	IRON MOUNTAIN
27310	OCCUPANT UNKNOWN,
	SPRINT
	VITAMIN SHOPPE
27320	STARBUCKS
	TARGET
27430	DRESS BARN
	FAMOUS FOOTWEAR

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2010 (Cont'd)

27430	OCCUPANT UNKNOWN,
27440	COST PLUS WORLD MARKET
27450	BED BATH & BEYOND
27460	BARNES & NOBLE
27476	RED ROBIN GOURMET BURGERS
27480	WELLS FARGO BANK
27490	ROMANOS MACARONI GRILL
27500	FAMOUS DAVES
27510	ESTRADA, GREGORIA
	JAMBA JUICE
	MAGIC WOK
	NIKO NIKO SUSHI
27512	COLD STONE CREAMERY
	GAMESTOP
	STARBUCKS
	VERIZON WIRELESS
	Z PIZZA
27514	GREAT CLIPS
	OCCUPANT UNKNOWN,
	PAPILLON BEAUTY SPA
	REBEL SKATE & SURF
27530	MARYS HALLMARK
	MENS WEARHOUSE
27532	PIER 1 IMPORTS
27534	MICHAELS ARTS & CRAFTS
27536	DSW SHOE WAREHOUSE
27540	KOHLS DEPARTMENT STORE
27550	SPORT CHALET
27580	PETCO
27588	BEVMO
	PARTY AMERICA
27592	DAVIDS BRIDAL

TENNESSEE ST 2005

1	MARINO, DEWEY
2	BRUNO, CHARLENE D
	GOSS, JAMES F
8	GRAY, RAYMOND W
	HOPKINS, LARRY R
11	ADAMS, SAMANTHA
	AHN, HO K
	ANDERSON, JEREMY J
	BACHAR, WENDY
	BELZMAN, DARYL J
	BIPOLAR CLOTHING INDUSTRIES
	BROOK, GARI
	BRUNNER, RALPH
	BUGBY, MIKE
	BURNS, JAIME P
	CRANE, LOUIS J
	CROFT, KRISTA L
	DESMET, GREG
	DOLLINS, ELLEN C
	DONNELLY, AMANDA
	DUBIN, RONALD M
	DYLAN WITH PAINT
	EASTMAN, S M
	ELLIS, SHERI L
	ENDRICKSON, JEFFREY
	ESTABEN, MARCO A
	FORREST, HEATHER J
	FORTNEY, JAMES H
	FRANCIS, JOHN D
	GISH, CAROLYN C
	GRANADO, BRENDA J
	GRAY, R
	GRIFFITHS, MARLEEN L
	HOELLE, JODY R
	HOROWITZ, ERIC L
	HUDSON, LEIGHANN A
	HUFF, C
	JACKSON, SHAWN
	JAMARTA, JULIE A
	JASPER, DELANO
	JUDSON, EMILY
	KRABILL, RICHARD
	KRUSE, SUZAN C
	L & J TRUCKING
	LENE, CLAUDIA
	LIU, CHUNLIN
	LOOK, ROGER L
	LUBISICH, PETER
	LUTHER, CHARLES W
	MALGIN, SERGEY

TENNESSEE ST 2005 (Cont'd)

11	MARINO, DEWEY W
	MARTINEZ, STEVEN C
	MATTHEWS, LORI L
	MEADER, JILL A
	MILLER, SEAN
	MORRIS, KIMBERLY A
	NEILL, JAMES R
	OBRIEN, B
	OPSAHL, MARIAN D
	PALACIOS, MAGAN
	PARKER, JEFF
	PEASE, JONATHAN
	PEREZ, CINTIA
	PIEPEL, CARSTEN S
	PRINGLE, CLIFFORD
	PROPHETS & LIARS OF REDLANDS
	RARAI, TAKEHIRO
	RAYMOND, DOUGLAS C
	RBIZAGASTEGUI, S U
	RED OAK VILLAS
	RICE, JIM W
	RODRIGUEZ, FABIAN
	ROGOZENSKI, ALISON
	ROSS, JAMEL A
	RUSSELL, ANGELA B
	SADLER, DAVID P
	SALEM, LINDA
	SANTSCHI, DARRELL R
	SCHWAB, KARA M
	SLATER, JAMIE
	STEWART, KELLY J
	SUBBIAH, MURUGAN
	TAUVAGA, SILI L
	TERLECKI, AUGUST H
	THOMAS, SHEILA
	TIDWELL, R D
	TROUT, STEPHEN N
	VASQU, DANIEL
	VESPREMI, DAVID
	WALLACE, KASSIDY L
	WANG, SHUTANG
	WATTS, MICHAEL B
	WELCH, ROGER
	WIATER, TALULA G
	WILSON, EDNA M
	WREN, KARLA
	YANG, JEAN
	ZAMORES, ROBERT E
12	CARLSTROM, KARI M
	CTR STAGE COMMUNICATIONS

TENNESSEE ST 2005 (Cont'd)

12	KRUGER, TIMOTHY J
14	MARCHUS, DAVID D
63	HANY DANIEL TALYA
75	BROOKSIDE FREE METHODIST CHURCH
	COMMUNITY CHRISTIAN COLLEGE
85	DEHART, SHEILA
	FISCHER, ANNE
	JENSEN, CAROL D
	JENSON, C D
	MOODIE, RENALDO
	SMITH, STEPHEN G
87	BAKER, CLIFTON
	BRINKER, JACK A
	DEKONING, LINDA D
	KELLER WILLIAMS REALTY REDLANDS MARK
	TSOU, SIUKING W
89	DAVIS, JUDY L
	DUERBECK, ELLEN M
	MAYNES, LINCOLN J
	MIYASATO, LORETTA
	PARK-MIYASATO, LORETTA
	WELDON, JOHN R
91	ALSOP, NIKKI
	GREENE, WANDA J
	HANSON, JEAN M
	KHALAJESTANI, FARIDEH P
	MCKEEVER, REBECCA A
	MEEHAN, MICHELLE T
	OEI, JIMMY B
93	HAWKINS, JUDITH B
	HILL, SHERRY L
	JANSSEN, MEIKE
	STUBBS, NANCY G
95	ALDACO, ERLINDA N
	CHU, BRIAN
	MEACHAM, LESLIE J
	STOREY, KAREN
97	STANNERS, JEFFREY B
	WASBOTTEN, MICHAEL J
100	BATTLE, STEPHANIE D
	BILLINGS, LYNN M
	BROWN, DOROTHY W
	COFFIELD, JASON G
	DAVIS, IRENE
	DAY, CAROLYN H
	DRISKILL, JAMES W
	FERGUSON, RACHEL
	FUSANO, MICHAEL C
	GRABLE, SANDRA L
	GREENWAY, H

TENNESSEE ST 2005 (Cont'd)

100	HERNANDEZ, NIKKI M
	HUSTON, THOMAS
	KASLER, SALLY D
	KINNIRY, JEFF
	LIDO PALMS APARTMENTS
	MCCORKLE, JANET L
	MCMANAWAY, KENNETH R
	MULVIHILL, BETSY M
	PACE, JENI
	PALMER, SUE M
	PIRKLE, LARRY
	RENEER, ELMO
	SCRIBE PRESS
	STEMWEDEL, HILTON H
	THE BOUNCE HOUSE JUMPERS
	WOOD, WILLIAM H
	ZYLSTRA, MILLIE E
105	ARROWHEAD CHRISTIAN ACADEMY
130	REDLANDS JUNIOR ACADEMY
278	COVENANT FAMILY CHURCH
	GLENVIEW DEVELOPMENT CO
	JOSEPH STOREHO
	MURONE, TIMOTHY
	NEW VENTURE FOUNDATION
	NORTHSTAR WIRELESS
	SPECIAL OCCASIONS SERVICES
	T B M SERVICES INC
	T B M SERVICES INC ELECTRICAL
	TOKYO MASSAGE THERAPY
293	OUR PLACE CLUBHO
	OUR PLACE CLUBHOUSE
	VISTA GUIDANCE CENTERS
	VISTA GUIDANCE CENTERS OUR PLACE CLU
300	WESLEY RAY & SON INC
301	LA Z BOY WEST
	LAZBOY
414	3 H BUSINESS SERVICES INC
	ALBERTINE INSURANCE AGENCY
	ALBREKTSON LAW OFFICES
	CARING TOUCH DENTAL
	DIAZ, JOE
	ETHNOS HOUSE OF PRAYER MINISTRIES IN
	KINSHIP CENTER
	LAKOTA ENTERTAINMENT INC
	LAST TANGLE THE
	NURSEFINDERS OF REDLANDS INC
	NURSEFINDERS STAFFING INC
	ONE ON ONE TUTORING
	REDNAP INC
	SERENITE SKIN CARE

TENNESSEE ST 2005 (Cont'd)

414	STAR OFFICE STAFFING
	THE NAIL BOX
	ULTIMATE ARBIC KICK BOXING CENTER
	ULTIMATE KICKBOXING & FITNESS
	X CELL LAB INC
415	DECORATIVE DIMENSIONS
	DOUGLASS, CHRISTIAN M
	ENCHANTED UNICORN
	J & L DAYCARE CENTERS
	LIGHT, JAMES A
	LONG YALE INSURANCE
	P I P PRINTING OF REDLANDS
	PLAN TECH INC
	REDLANDS BICYCLE CLASSIC
	REDLANDS CYCLERY USA
	SELAH CHRISTIAN BOOKSTORE
	SOUNDTHEOLOGY
	W I T CONSTRUCTION
446	OASIS POOL & SPA
	OASIS POOL SERVICE
450	CALIFORNIA RIDER
452	ANDYS FORD SPECIALTIES
460	G & G SMOG ONLY
461	A & D TAILORING
	A & D TAILORING AND A FORMAL AFFAIRE
	A FORMAL AFFAIRE
	BEST LITTLE BARBER SHOP IN REDLANDS
	CALICO HORSE THE
	CURVES FOR WOMEN
	EASTERN CLASSIC RESTAURANT
	ELEANOR RIGBYS GIFT CO
	GOOD SCENTS
	HAIRDRESSERS
	HINGER, RONALD E
	ISLAND TANNING
	J & L DAYCARE
	NAIL ROOM THE
	NU LITE CO
	ON CALL EVENT SERVICES
	REDLANDS COLOR LAB
	SOLA, TUBE
504	RIVERA, RAMON
516	RODRIGUEZ, ROY G
520	CAL TILE
	KVC CONSTRUCTION
	OCCUPANT UNKNOWN,
	W WOOD & ASSOCIATES
610	UNIQUE AUTO DUNE BUGGY SUPPLY INC
611	EXCEL AUTOMOTIVE
615	EXCLUSIVELY CAKES BY MICHELLES

TENNESSEE ST 2005 (Cont'd)

615	EXCLUSIVLEY CAKES BY MCHLS
	OCCUPANT UNKNOWN,
619	ROZEMA, LOUIS
	TENNES GARDEN
	TENNESSEE GARDENS
620	BURGESONS HEATING AND AC INC
716	GOLDEN ACUPRESSURE
	ROYAL MARKET LIQUOR
720	CRYSTAL CLEANERS
724	TATTOO REVOLUTION
728	SAN BERDOO BOOKS
736	THE ADULT SHOP
762	THUNDER INSURANCE SERVICES
770	PAPA JOHNS PIZZA
	PJ SAN BERN INC

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2005

20	REDLANDS UNIFIED SCHOOL DISTRICT
102	WOOD, PATRICIA
108	SELESKA, RUSSELL G
112	CHRISTIANSEN, TODD
116	BACA, LARRY L
	LARRYS CARPET & UPHOLSTERY CLG
120	WALLACE, T
202	OCCUPANT UNKNOWN,
206	VASQUEZ, SOFIA
215	OCCUPANT UNKNOWN,
219	ARAIZA, LEONCIO R
220	MELCHOR, SALVADOR
224	YNIGUEZ, JESUS
300	OCCUPANT UNKNOWN,
301	DOWNING, SHERRI R
302	GUTIERREZ, MIGUEL
305	WILLIAMS, DAVID R
308	REYNA, BEN I
309	DURAN, ANGEL
311	CABRAL, DARLENE D
312	KOOIMAN, NELVIN
313	REYNA, SAMUEL
315	ROBINSON, WILLIAM H
316	PRIDE, CLARICE
320	ADAMO, HEATHER
405	MIRANDA, EDILBERTO
407	ROMERO, AGUSTIN
502	MCWHIRT, JANEL
503	MAXEY, BOBBIE N
511	GOMEZ, MARIA T
520	BOTELLO TRUCKING INC
	BOTELLO, ANDRES B
604	COBIAN, RUBEN J
607	MEJIA, ROBERT M
615	GONZALES, MANUEL J
617	TAI, K
619	OCCUPANT UNKNOWN,
705	KOUZOUNIAN, MARAL
709	VILLALPANDO, ANGELINA
716	HERRING, EDITH
803	FLORES, MARGIL R
805	LUERA, R
818	TORRES, LEONARD M
821	PETTY, PAULA M
822	SAENZ, JULIO O
825	HAMERNIK, KRISTIE M
830	RIVAS, MANUEL C
834	WEIR, TERRY E
838	GARCIA, ROBERT V
842	BUTTER, EDWARD W

W LUGONIA AVE 2005 (Cont'd)

846	ALONZO, RICARDO C
850	JERIS UNIFORMS
	REEDER, ANNA B
854	GARCIA, JAIME
1141	JACK IN THE BOX
1647	IUOE LOCAL 12
1655	KNIGHT, DAVID B
1901	ARROWHEAD BONE HEALTH INSTITUTE
	ARROWHEAD BONE HEALTH INSTTT
	ARROWHEAD ORTHOPAEDIC
	ARROWHEAD ORTHOPAEDICS
	NIEMEYER AGNIESZKA J MD
	ORTHOPEDIC IMAGING CENTER LLC
	PACIFIC ORTHOTICS & PROSTHETICS INC
	REDLANDS PROSTHETIC
	S C O R
	SCOR
	SEVEN OAKS MEDICAL CTR
	SHIELL RONALD D MD
	WEST DERMATOLOGY
	WEST J ROBERT MD
1981	SOUTHERN CALIFORNIA GAS
2351	NATIONWIDE DENTAL LAB
	OFFICE COURT
	SERVICEMASTER ANYTIME LLC
	SERVICEMASTER CLEAN
2411	LAWSON, MICHAEL K
	LAWSONS TRUCK REPAIR
2415	ATKINSON, LOREN E
2419	VIVEROS, RACHEL
2423	OCCUPANT UNKNOWN,
2427	OCCUPANT UNKNOWN,
27310	NEXTEL RETAIL STORE
27440	COST PLUS WORLD MARKET
27450	BED BATH & BEYOND
27460	BARNES & NOBLE
27490	ROMANOS MACARONI GRILL
27530	AFTER HOURS FORMALWEAR
27532	PIER 1 IMPORTS
27534	MICHAELS ARTS & CRAFTS
	MICHAELS ARTS AND CRAFTS
	MICHAELS CRAFTS ARTS
27536	DSW SHOE WAREHO
	DSW SHOE WAREHOUSE
27546	KOHLS
27550	SPORT CHALET
27580	PETCO
27592	DAVIDS BRIDAL

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TENNESSEE ST 2000

2	ARTEAGA, JAMES R
	GOSS, JAMES
6	OCCUPANT UNKNOWN,
8	KEBBAS, B
	MASONGSONG, BRENDA
11	AHN, HO K
	ALVAREZ, ALVARO
	ATTKISSON, PATRICK E
	BADIS, ISAAC I
	BARNA, ANGELA
	BARTLETT, L
	BEAUDOIN, RICHARD P
	BINA, CYRUS
	BLUTH, C P
	BLYTH, PHILIP J
	CAMPBELL, AMITY S
	DESMET, GREG
	DUBIN, GREGORY P
	FEDERIS, JOHN O
	FLOWERS, TERI
	GORDINIER, WAYNE
	GUCILATAR, V
	HALTON, DOROTHY B
	HAMON, LANCE L
	HAUGHT, ROSE M
	HOLCOMB, JEFF
	HOLLAND, LEE R
	HOPP, PHILLIP E
	ISENBERG, KATHY J
	JACQUES, TAMARA K
	KONOVALOV, A
	KRABILL, RICHARD
	KURUNATHAN, C
	KUSZCZAK, MARTA H
	LAFAVE, MARK
	LEACH, CARY W
	LUSHINSKY, TODD
	MACDONALD, SHAWN D
	MEJIA, FLAVIO R
	ONORATO, FRANK J
	PAGDILAO, CANDICE C
	POULIN, GARY
	RAJCEVICH, JAY J
	RED OAK VILLAS
	ROZOBERMUDEZ, SANDRA
	SHEBIEL, DENA M
	SHEPHERD, GREG
	SIGDESTAD, CAROL
	SMOCK, J J
	TABER, DAVID R

TENNESSEE ST 2000 (Cont'd)

11	TISSAN, RAYD N
	TUCKER, NORMAN
	WASS, ADAM M
	WELCH, HAZEL
	WHITAKER, RICHARD M
	WHITMORE, MICHAEL K
	ZHENG, LIJIANG
	ZHUANG, CHENG
14	ARIAS, ANTONIO
	KARLIN, BETH M
	SANTOS, ARLENE C
	STEPHENS, M
63	MOSHI, HELEN
75	BROOKSIDE FREE METHODIST CHURCH
85	CHENEY, CRAIG S
	COLE, MARGIE L
	HENDRICKSON, ANGELA
	KNEALE, G S
	LOOKABAUGH, KAREN J
	MULLER, DOROTHY E
	RIDGELY, ALLEN R
87	CARDENAS, JESUS A
	GRUPPOSO, MARC A
	HASH, JAMES G
	HUTCHINSON, NATALIE K
89	DUERBECK, CHARLES A
	PARK, M L
	VASQUEZ, EDWARD R
	WELDON, REBECCA
	WORCH, RANDAL L
91	ALSOP, NICK
	BRINKER, HAYLEY S
	CARTWRIGHT, JIM
	GREENE, WANDA J
	HANSON, JEAN M
	MASSARO, LORI A
	SALDANA, T M
92	OCCUPANT UNKNOWN,
93	HAWKINS, JUDITH B
	HILL, SHERRY L
	IMBRIANI, R L
	LESSER, HARVEY L
	SIMON, HAL H
	SOWERS, P L
	STUBBS, NANCY G
	VOLZ, GARY R
95	ALDACO, ERLINDA
	MCDERMOTT, KELLY J
	RUBIO, MAUREEN R
	RUCKER, DONNA

TENNESSEE ST 2000 (Cont'd)

95	VINSKI, PISARIC N
97	AITKEN, JILL M
	STANNERS, JEFFREY
99	IANCU, LUCIA
100	BAKER, NICKI A
	BROWN, TERRY
	CAVE, MIRIAM N
	CHESTNUT, JODY
	DAY, C S
	GORE, JAMES H
	HIGGASON, ANGELA K
	HOOD, K E
	LIDO PALMS APARTMENTS
	MALM, KRISTA R
	MATTA, THERESA
	MCGINN, JOSEPH
	MCMANAWAY, RANDY
	MEYER, JOLENE G
	PRESCOTT, BRENT A
	PRICE, STEWART
	REHM, RUTH
	REMEZOV, DENIS V
	SOTO, LOUIS
	STEWARD, WILTON A
	STRAHAN, JAMES P
	SYED, SAMITA
	THEODORE, JOHN G
	WELLARD, CHRIS M
105	ARROWHEAD CHRISTIAN ACADEMY
130	REDLANDS JUNIOR ACADEMY
185	OCCUPANT UNKNOWN,
251	CALIFORNIA CHRISTIAN TECHNOLOGY INSTITUTE
	COMMUNITY CHRISTIAN COLLEGE
	MOUNTAIN VIEW SERVICES
278	T B M SERVICES INCORPORATED
	THE ELECTRIC OUTLET
290	CENTRUM ANALYTICAL LABORATORIES
300	OCCUPANT UNKNOWN,
301	LA-Z-BOY WEST
340	CANDY BOUQUET
	OCCUPANT UNKNOWN,
412	OBRIEN, GEORGE J
	OBRIENS PET LODGING
414	AERTS, HOMER L
	BATES ASSOCIATES
	CHARTWELL LEARNING ABILITIES IMPROVEMENT
	COLTON RADIO
	COX, CHERYL
	CURRENT ENTERPRISES
	ESCO ELECTRONICS

TENNESSEE ST 2000 (Cont'd)

414	GEOHEALTH INCORPORATED
	HANOVER & SCHNITZER
	HESS, DAVID M
	JACOB SALLY CPA
	JAZZERCISE
	LAPALOMA RESTAURANT
	NAIL BOX THE
	ON SITE COMPUTER SALES & SERVICE
	RASKEY CHIROPRACTIC
	STAR STAFFING SOLUTIONS INCORPORATED
	STRESS BUSTERS THE
	SUPERIOR COUNSELING
	TRIPLE H ENTERPRISES
415	DOUGLASS CHRISTIAN MUSIC
	ENCHANTED UNICORN THE
	FARMERS INSURANCE GROUP AGENTS
	FESTIVAL BALLET
	J & L DAYCARE CENTERS
	N B I GENERAL CONTRACTORS INCORPORATED
	OLAN MILLS PORTRAIT STUDIO
	PIP PRINTING
	PLAN TECHNOLOGY INCORPORATED
	REDLANDS BICYCLE CLASSIC
	REDLANDS SCHWINN CYCERY
	SELAH CHRISTIAN BOOK STORE
	SOUNDTHEOLOGY
	THRALLS MASSAGE THERAPY
	TURN OF THE CENTURY
446	AUTO ANALYSTS
448	CYNTHIA & DENISE UPHOLSTERY
450	BROWN ENTERPRISES CAR GAUGE
458	REDLANDS ANTIQUE AUCTION
460	INLAND PERFORMANCE
	OCCUPANT UNKNOWN,
461	A & D TAILORING
	A FORMAL AFFAIRE
	AMRIX INSURANCE AGENCY
	BEST LITTLE BARBER SHOP IN TOWN
	CALICO HORSE THE
	EASTERN CLASSIC
	ELEANOR RIGBYS GIFT COMPANY
	HAIRDRESSERS
	ISLAND TANNING
	NAIL ROOM THE
	NU LITE COMPANY
	REDLANDS COLOR LABORATORY
	SOCIAL SECURITY ADMINISTRATION
	SOLA TUBE
	SPORTS IMMORTALS
504	OCCUPANT UNKNOWN,

TENNESSEE ST 2000 (Cont'd)

516	RODRIGUEZ, ROY
610	UNIQUE AUTO DUNE BUGGY SUPPLY INCORPORATED
620	BURGESONS HEATING & AIR CONDITIONING INCORPORATED
716	ADULT SHO THE
	ROYAL MARKET
	SAN BERDOO BOOKS INCORPORATED
720	CRYSTAL CLEANERS
758	FOSTERS DONUTS
766	SUBWAY SANDWICHES AND SALADS
770	PAPA JOHNS
	PAPA, JOHNS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 2000

20	REDLANDS UNIFIED SCHOOL DIST ADULT EDUCATION
	REDLANDS UNIFIED SCHOOL DIST PERSONNEL VACANCY LISTING
	REDLANDS UNIFIED SCHOOL DISTRICT
52	OCCUPANT UNKNOWN,
79	OCCUPANT UNKNOWN,
102	OCCUPANT UNKNOWN,
108	SELESKA, RUSSELL
111	BOYS & GIRLS CLUB OF REDLANDS
	REDLANDS CITY OF COMMUNITY CENTER
	REDLANDS CITY OF PUBLIC WORKS DEPARTMENT
	REDLANDS CITY OF SENIOR NUTRITION CENTER
	SAN BERNARDINO COUNTY OF COMMUNITY SERVICES DEPARTMENT
	SENIOR INFORMATION AND ASSISTANCE
112	OCCUPANT UNKNOWN,
116	BACA, LARRY
206	VASQUEZ, SOFIA
210	OCCUPANT UNKNOWN,
215	OCCUPANT UNKNOWN,
219	ARAIZA, LEONCIO
220	OCCUPANT UNKNOWN,
224	YNIGUEZ, JESUS
300	PRIDE, CLARICE
301	ALFRED, BETTY
305	OCCUPANT UNKNOWN,
308	REYNA, BEN I
309	OCCUPANT UNKNOWN,
311	CABRAL, DARLENE
312	KOOIMAN, NELVIN
313	REYNA, SABINA
315	SPELL, MICHAEL J
316	IONESCU, ION L
320	ADAMO, SCOTT
405	OCCUPANT UNKNOWN,
407	OCCUPANT UNKNOWN,
416	SERRANO, A
426	AIKEN, M
503	MAXEY, BOBBIE N
507	MEJIA, P L
511	OCCUPANT UNKNOWN,
518	OCCUPANT UNKNOWN,
520	OCCUPANT UNKNOWN,
604	COBIAN, RUBEN
709	VILLALPANDO, A
803	FLORES, MARGIL R
805	QUINTANA, TONY
818	TORRES, LEONARD M
821	OCCUPANT UNKNOWN,
822	SAENZ, JULIO
830	RIVAS, MANUEL C
831	ALMARAZ, GINA

W LUGONIA AVE 2000 (Cont'd)

831	CABRAL, RICHARD
834	IVORY, NAOMI D
838	OCCUPANT UNKNOWN,
842	BUTLER, ED
846	ALONZO, RICARDO C
850	GUYNES, DORIS M
854	GARCIA, EMILIO B
917	OCCUPANT UNKNOWN,
919	OCCUPANT UNKNOWN,
946	FORRESTER, JAMES L
954	RIVAS, D
1005	OCCUPANT UNKNOWN,
1010	OCCUPANT UNKNOWN,
1011	OCCUPANT UNKNOWN,
1021	ZINGELMANN, MICHAEL S
1030	OCCUPANT UNKNOWN,
1031	DABNEY, LORENE
1051	AHLERS, DAVID B
1519	STOW A WAY SELF STORAGE
	U HAUL COMPANY INDEPENDENT DEALERS
1659	CALIFORNIA STATE OF MOTOR VEHICLES DEPARTMENT
2411	LAWSONS TRUCK REPAIR
2415	ATKINSON, LOREN E
2419	OCCUPANT UNKNOWN,
2427	KINCAID, ROLAND I

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TENNESSEE ST 1995

2	GARRETT, CYNTHIA
6	TABURA, STANLEY
8	EISENBEISZ, STEVE
11	ALVAREZ, ALVARO
	AUCOIN, CECILE
	BAILEY, J
	BAYLINK, PAUL
	CARUSO, DENNIS
	CHAPMAN, BRIAN
	DELGADO, NINA
	ENDICOTT, WILLIAM
	FINGER, LISA
	HANEY, LEANNA
	HAUSER, THOMAS B
	HITCHCOCK, JILL
	HJERSTEDT, DORA
	HOLT, JERRY
	JENSON, ERIC
	KENDEL, A
	KURUNATHAN, C
	MACMURRAY, JAMES P
	MAJ, E
	MAYADAS, KIM
	MOORE, BEVERLY
	NEWVILLE, MICHELE
	NOGUCHI, HIROJI
	PASCHALL, STEVEN
	PICKERING, VICKI
	PLACIAL, CYNTHIA
	PLANTZ, ROBYN
	RACHMAN, RUSDI
	RED OAK VILLAS
	RICHARDSON, TIM
	ROBERTS, THERESA
	SAVAGE, JANUS
	STIERINGER, F
	TAYLOR, ROBERT E
	THAYER, SEAN
	THORSEN, RICHARD C
	TUCKER, NORMAN
	VASILESCU, VIOREL
	WALES, JANET
	WALL, ROBERT
	WALTERS, M
	WHITAKER, RICHARD M
	WHITMORE, MICHAEL K
	WIRTHLIN, JACOB
	WOODGATE, TODD
	WYATT, ROSA
	YU, JANKUNG

TENNESSEE ST 1995 (Cont'd)

75	BROOKSIDE FREE METHODIST
85	CHENEY, CRAIG S
	COLE, MARGIE L
	KONTRA, ALAN
	RIDGELY, ALLEN R
	THRALLS, KAREN J
87	HASH, JAMES G
	HUTCHINSON, NATALIE K
	TOMKO, PETER W
89	TARLTON, AARON W
	TEUBNER, DALE R
	TRIPLETT, WALTER
	VASQUEZ, EDWARD R
	WORCH, RANDAL
91	BLENZ, PAUL J
	FARNI, JIMMIE
	LINDAHL, MARK L
	MCCOLLUM, JAMES
	SALDANA, T M
	SEELY, GARY
	ZDOR, DONNA
93	IMBRIANI, R L
	MORRIS, ROBERT B
	SIMON, HAL H
95	LEONARD, DYKE W
	MOORE, SARAH A
	RUCKER, DONNA
97	AITKEN, JILL M
	CHAPMAN, MALCOLM O
	MEGENNEY, WILLIAM H
	MERCADO, SERGIO
	RICHTER, JASON
100	ANDERSONS PAINTING
	BITAR, WALID
	BROWN, TERRY
	CHESTER, JODY
	DAY, C S
	LIDO PALMS APARTMENTS
	LOWRIMORE, FRANCES
	MULVIHILL, BETSY
	OBMANN, MARK
	PEDERSON, DOROTHY
	PEIRCEY, L L
	PRICE, DONNA
	SHARP, THOMAS L
	SHAWVER, JODY
	SPARACIO, JACK A
	STEPHENS, MICHAEL M
	STEWARD, WILTON
	STRAHAN, JAMES P

TENNESSEE ST 1995 (Cont'd)

100	TURNEY, MARY
	ZYLSTRA, BERNARD
105	ARROWHEAD CHRISTIAN ACADEMY
130	REDLANDS JUNIOR ACADEMY
251	WINWARD PRODUCTIONS
278	TBM ELECTRIC INC
287	SOUTHERN CALIFORNIA EDISON CO
290	CENTRUM ANALYTICAL LABS
300	OCCUPANT UNKNOWNN
	RAY WESLEY & SONS INC
340	OCCUPANT UNKNOWNN
412	OBRIEN, GEORGE J
	OBRIENS PET LODGING
414	ARROYO SKIN CARE INSTITUTE
	BATES ASSOCIATES
	CHERCHEZ LA FEMME
	CURTIS, SALLEY
	CUTTING CREW
	ESCO ELECTRONICS CORP
	FREDERICK W VON ARX INC
	HESS, DAVID M
	HOME & LAND MAGAZINE
	JACOBBICHER, SALLY
	JAZZERCISE
	MINAS RESTAURANT
	NAIL BOX
	NATURES FINISH
	P F INK
	PAGESTATION NETWORK INC
	PARKWEST INSURANCE SVC
	SALLY JACOB BICHER CPA
	SAN PLUMBING SUPPLY
	SHERI L WOLF
	TRIPLE H ENTERPRISES
	VILLENA INSURANCE SVC
415	CROWN FIRE PROTECTION
	DECORATIVE DIMENSIONS
	ELEANOR RIGBYS GIFT CO
	ENCHANTED UNICORN
	OLAN MILLS PORTRAIT STUDIO
	OTI
	PUGNER, ANN
	REDLANDS SCHWINN CYCLERY
	ROBERT KNUDSEN CONSTRUCTION
	SIDELINES SPORTS DELI
	SOCCER STORE N MORE
	TURN OF THE CENTURY
446	AUTO ANALYSTS
	OCCUPANT UNKNOWNN
448	AVALOS, MIRIAM

TENNESSEE ST 1995 (Cont'd)

450	BROWN ENTERPRISES CAR GAUGE
452	ALLENS FORD SPECIALTIES
	DARLENE, JULIA
461	A & D TAILORING
	BARRY L MORGAN
	BEST LITTLE BARBER SHOP
	CALICO HORSE
	DONS DOLL HOUSE & MINIATURES
	DOROTHY M GREGORY DC
	DOUGLASS CHRISTIAN MUSIC
	FARMERS INSURANCE GROUP
	FLATERS CHRISTIAN BOOK STORE
	HAIRDRESSERS
	IZZYS FOOD & SPIRITS
	NAIL ROOM
	PIP PRINTING
504	OCCUPANT UNKNOWNN
516	RODRIGUEZ, ROY
610	UNIQUE AUTO DUNE BUGGY SUPPLY
611	CHUCKS AUTO REPAIR
615	ROZEMA, RALPH
619	MOORE, THOMAS C
620	BURGESONS HEATING & AIR COND
716	ROYAL MARKET
720	CRYSTAL CLEANERS
758	FOSTERS DONUTS
762	MARYS A ONE CLEANERS
766	REDLANDS COLOR LAB
770	CHIEF AUTO PARTS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 1995

20	REDLANDS UNIFIED SCHOOL DIST
108	SELESKA, RUSSELL
111	REDLANDS COMMUNITY CTR
112	OCCUPANT UNKNOWNN
116	BACA, LARRY
	LARRYS CARPET & UPHOLSTERY
219	FEENSTRA, J
220	OCCUPANT UNKNOWNN
224	YNIGUEZ, JESUS
300	PRIDE, CLARICE
301	OCCUPANT UNKNOWNN
302	OCCUPANT UNKNOWNN
305	OCCUPANT UNKNOWNN
308	VERBECK, KATHY
309	PEREZ, N
311	LOPEZ, DURAN A
312	KOOIMAN, NELVIN
313	REYNA, SABINA
315	OCCUPANT UNKNOWNN
320	LESSLEY, IDUS C
326	OCCUPANT UNKNOWNN
503	OCCUPANT UNKNOWNN
507	MEJIA, ROBERT
511	OCCUPANT UNKNOWNN
520	NEAMY, BARBARA A
604	COBIAN, RUBEN
605	OUELLETTE, LISA A
615	KEEFER, BERNICE A
617	OCCUPANT UNKNOWNN
705	WILKERSON, KENNY V
716	HERRING, NORMAN C
805	QUINTANA, TONY JR
818	OCCUPANT UNKNOWNN
821	OCCUPANT UNKNOWNN
822	SAENZ, JULIO
830	RIVAS, MANUEL C
831	CABRAL, RICHARD
834	IVORY, NAOMI D
842	BUTLER, ED
846	ALONZO, RICARDO C
850	GUYNES, DORIS M
854	GARCIA, EMILIO B
1519	STOW A WAY SELF STORAGE
	U HAUL CO
1659	MOTOR VEHICLE DEPT
1981	SOUTHERN CALIFORNIA GAS CO
2407	CHEEK, HAROLD
2411	LAWSONS TRUCK REPAIR
	OCCUPANT UNKNOWNN
2415	ATKINSON, M A

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W LUGONIA AVE 1995 (Cont'd)

2419	KINCAID, ROLAND I
2423	OCCUPANT UNKNOWNN
2427	KINCAID, ROLAND

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

TENNESSEE ST 1992

2	MOORE, RALPH
6	BAKER, I D
	LI, TAO
	MOUW, GARRETT L
8	CARDEN, PAULA M
	HEDRICK, GREG
11	ALDRIGDGE, JAMES E
	BURT, JAMES
	CALLES, VINCENT
	ELLIS, GREGORY
	HASSELBECK, THOMAS
	HAYNES, J
	KURUNATHAN, C
	MAJ, E
	MORALES, JOHN
	PIERCE, JOHN L
	POST, CHARLES A JR
	RED OAK VILLAS
	RETALLICK, MICHAEL
	SAULPAUGH, DAVE
	SKAGGS, SAM
	TAYLOR, ROBERT E
	WELSH, PAUL
12	SARDY, LEAH
75	BROOKSIDE FREE MTHD
85	TAKEUCHI, DAVID
	WILSON, SHANDA
87	MARTIN, THOMAS
89	KEARNEY, JOHN
	WORCH, RANDAL
91	LINDAHL, MARK
	MCCOLLUM, JAMES
	SEELY, GARY
93	PHILLIPS, ALEXIS
97	HI POWER SHOP
	MERCADO, SERGIO
100	ANDERSONS PAINTING
	LIDO PALMS APTS
	OSBORNE, STUART
	SIMONDES, EDWARD A
	THARALDSON, LONNIE
	TRAWICK, SUE
105	WINDWARD PRDCTNS
130	REDLND JUNIOR ACDMY
251	MOUNTAIN VW SERVICE
278	T B M ELECTRIC
287	SOUTHRN CA EDISON
290	CENTRUM&ANALYTICAL
300	RAY WESLEY&SONS
301	LA Z BOY WEST

TENNESSEE ST 1992 (Cont'd)

412	ALLMAN KENNELS
	OBRIEN, GEORGE J
414	ARROYO SKIN CARE
	BATES ASSOCIATES
	CUTTING CREW
	ESCO ELECTRONICS
	HESS DAVID M
	HESS, DAVID M
	JAZZERCISE
	MINAS RESTAURANT
	NAIL BOX THE
	PAGESTATION NETWORK
	PARKWEST INS SERV
	PHOTO FINISH
	QUALITY ALARM INC
	REDLND VLY REHBLTN
	SAN PLUMBING SUPPLY
	TWO FRIENDS EMBRDRY
	VILLENA INS SERVICE
	WOLF SHERI L
	WOLF, SHERI L
	WORKMAN STEPHEN CPA
415	BUSINESS PAGES
	CROWN FIRE PRTCTN
	DECORATIVE DIMENSNS
	DIAL A RIDE
	ELEANOR RIGBYS GIFT
	GRAPHIC SERVICES
	OLAN MILLS STUDIO
	REDLND SCHWINN CYCL
	SIDELINES
	STAUFFERS LANDSCAPE
	TURN OF THE CENTURY
	UNICORN ENCHANTED
446	AUTO ANALYSTS
448	OSBORNE, P N
450	BROWN ENTERPRISES
452	ALLENS FORD SPCLTY
461	A&D TAILORING
	AMISTADI GALXY TRVL
	BEST LITTLE BARBER
	BLACKBERRY COTTAGE
	CALICO HORSE THE
	FARMERS INS
	HAIRDRESSERS
	HOAG&HOAG INS AGNCY
	MORGAN B L ATTY LAW
	MR KS
	NAIL ROOM THE
	P I P PRINTING

TENNESSEE ST 1992 (Cont'd)

461	REDLND CHRISTN BOOK
	SWANSON P A ATTY
516	RODRIGUEZ, ROY
610	UNIQUE AUTO BUGGY
611	CHUCKS AUTO REPAIR
615	ROZEMA, RALPH
620	BURGESONS HTG&AIR
716	SEVEN 11 FOOD 27134
720	CRYSTAL CLEANERS
736	ACCUPRESS
758	FOSTERS DONUTS
762	MARYS A ONE CLEANER
766	REDLND COLOR LAB
770	CHIEF AUTO PARTS
1002	LACY, V
1004	STEWARD, WILTON
1005	TRAUGOTT, CHARLES L
1007	SHAWVER, JODY
1008	PRESTIDGE, ODELL
1009	MULVIHILL, BETSY
10016	ZYLSTRA, BERNARD
10033	BROWN, TERRY
10035	DAY, C S
10040	CARTER, CRAIG B
10042	CANTRALL, BARBARA
	CROTEAU, EDWARD
	PEIRCEY, L L
10044	STEPHENS, MICHAEL M
10048	STRAHAN, JAMES P
11104	GREEN, TRACI
11105	GIPSON, E L
11110	CRAWFORD, CLAYTON
11125	MACMURRAY, JAMES P
11144	FISCHER, KENNETH
11165	GREENWALD, DAVID
11175	STIEBER, VOLKER W JR
11179	ANDERSON, ROSIE L
11182	ALVAREZ, ALVARO
	BUCKLEY, DAVID
11183	WHITMORE, MICHAEL K
11195	SAVAGE, JANUS
11196	TREMAINE, SHAWN
11200	MURRAY, DOUG
11220	VANLINDEN, ROBERT

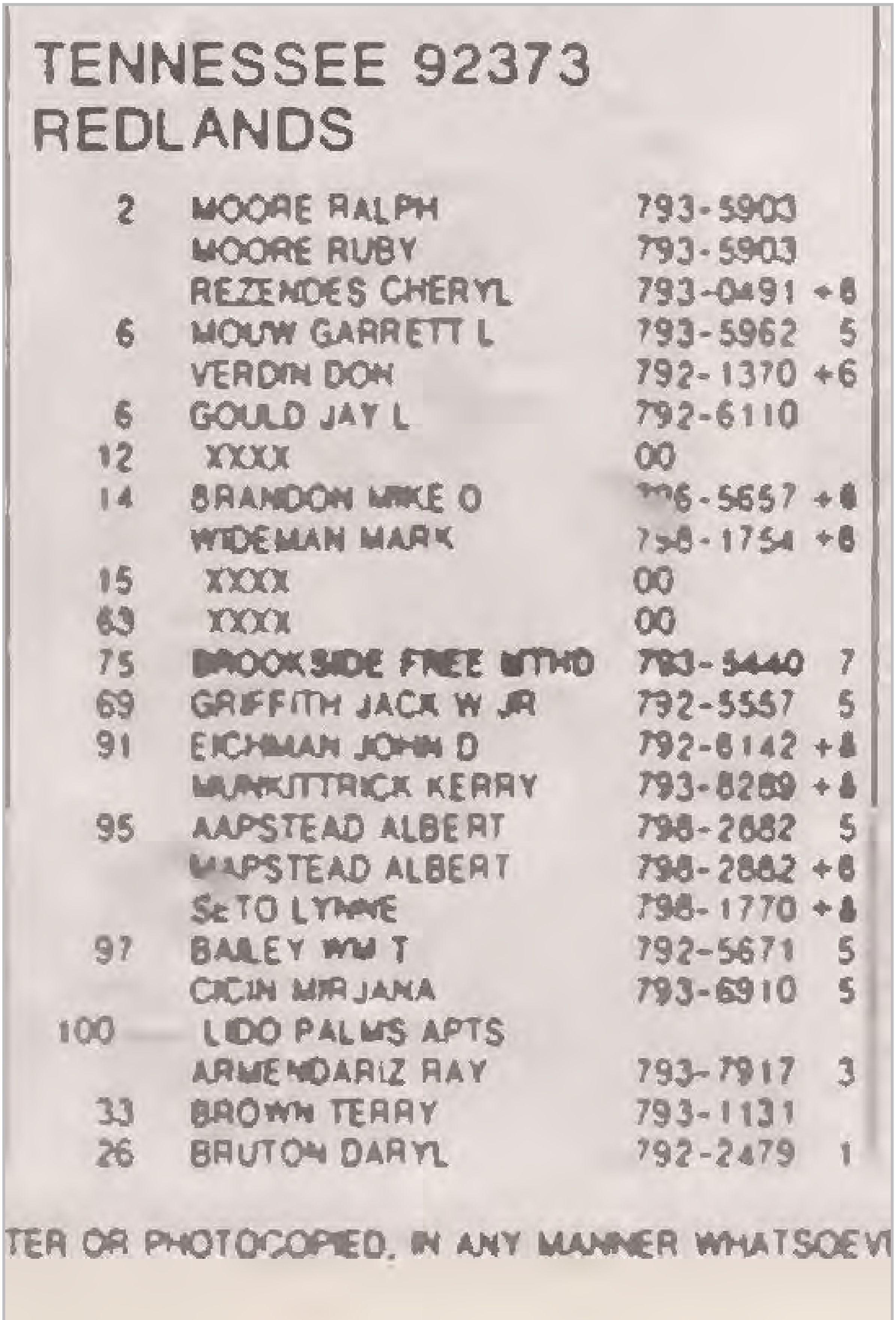
Target Street	**Cross Street**	**Source**
-	✓	EDR Digital Archive

W LUGONIA AVE 1992

20	REDLND SC PERSONNEL
108	SELESKA, RUSSELL
111	REDLND SAFE RIDES
	REDLNDS CTY REC CTR
116	BACA, LARRY
	LARRYS CARPET CLNG
202	LIPSKEY, ALBERT
219	FEENSTRA, J
300	ANDERSON, ADDIE
308	VANMEETEREN, BETH
311	LOPEZDURAN, ANGEL
312	KOOIMAN, NELVIN
313	REYNA, SABINA
320	LESSLEY, I C
407	MAPRIGAL, F
507	MEJIA, ROBERT
520	HYMAN, JOHN R
604	COBIAN, RUBEN
605	TYLER, DARLENE F
716	HERRING, NORMAN C
805	QUINTANA, TONY JR
830	RIVAS, MANUEL C
842	BUTLER, ED
850	GUYNES, DORIS M
1021	GIRON, RAFAEL
1504	KASLER CORP
1519	STOW A WAY
	U HAUL CO
1659	CA ST MTR VHCLS
1981	SOUTHRN CA GAS DIVS
2407	CHEEK, HAROLD K
2411	LAWSONS TRUCK RPR
2415	ATKINSON, M A
2427	KINCAID, ROLAND

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

TENESSEE ST 1986



TENNESSEE 92373
REDLANDS

2	MOORE RALPH	793-5903	
	MOORE RUBY	793-5903	
	REZENDES CHERYL	793-0491	+8
6	MOUW GARRETT L	793-5962	5
	VERDIN DON	792-1370	+6
6	GOULD JAY L	792-6110	
12	XXXX	00	
14	BRANDON MIKE O	796-5657	+8
	WIDEMAN MARK	798-1754	+8
15	XXXX	00	
63	XXXX	00	
75	BROOKSIDE FREE MTHD	793-5440	7
69	GRIFFITH JACK W JR	792-5557	5
91	EICHMAN JOHN D	792-6142	+8
	MUNKITTRICK KERRY	793-8269	+8
95	AAPSTEAD ALBERT	798-2682	5
	MAPSTEAD ALBERT	798-2882	+8
	SETO LYNNE	798-1770	+8
97	BAILEY WM T	792-5671	5
	CICIN MIRJANA	793-6910	5
100	LIDO PALMS APTS		
	ARMENDARIZ RAY	793-7917	3
33	BROWN TERRY	793-1131	
26	BRUTON DARYL	792-2479	1

TER OR PHOTOCOPIED, IN ANY MANNER WHATSOEV

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

TENESSEE ST 1986

TENNESSEE		92373 CONT	
	BURNES S E	798-1733	+8
	DAWSON DAVID	793-9900	4
	ELGIN GRAZIA K	798-4283	4
	GREINER JAS M	798-0447	5
	HENRY MATTHEW B	793-9606	4
10	HUNTINGTON PARKER	792-2083	
	JOHNSON KAREN	793-9424	5
	KNUDSEN GLENN	798-3111	
	KNUDSEN KATHY	798-3111	3
35	KOLTER C S	792-4888	7
1	LIDO PALMS APTS	792-7018	
11	MAITLAND A	792-3064	
	MARKS ROGER D	793-5810	+8
39	MARTIN G E	793-5175	7
	OSBORNE STUART	793-7905	+8
	PRESTIDGE ODELL	798-3773	3
	PRESTIDGE ONA JO	798-3773	
	ROBERTSEN E W	793-7904	2
	SHAWVER JODY	793-7045	2
34	SIMONDES EDW A	793-9810	1
	STEWARD WILTON A	798-5355	5
6	STONE JAS B	793-3558	
	STRAHAN JAS F	792-6975	3
	ZYLSTRA BERNARD	797-6191	+8
100			
105	COLTON REDLNDS PRGM	793-3115	0
	COLTON RGNL PRGRM	793-7187	
	R D P	793-3115	
	REGIONAL OCCPTNL PR	793-3115	9
130	REDLND JUNIOR ACDMY	793-1000	2
	REDLND JUNIOR ACDMY	792-8012	2
150	XXXX	00	
251	PIONEER CONSULTANTS	793-2891	4
	PIONEER DRILLING	793-6811	
	PIONEER MANAGEMENT	798-5373	5
	SHERARD&TURNER ENGR	793-2894	
276	T B M ELECTRIC CO	792-6572	2
267	SOUTHRN CA EDISON	793-2153	+8
	SOUTHRN CA EDISON	793-2081	+8
300	RAY WESLEY&SON INC	792-2208	
301	LA Z BOY WEST	793-3204	
312	XXXX	00	
346	XXXX	00	
350	XXXX	00	
404	XXXX	00	
412	ALLMAN KENNELS	792-1163	
	OBRIEN GEO J	792-8884	5
414	RADCO	793-6436	2
	REDLANDS AUTO DSMTL	884-3914	
	REDLND AUTO DSMNTLR	793-2776	2
415	BUILDING		
	ANDERSENS FLOWERS	798-0400	3
	BROWN DANL A	793-7099	3
	EAST VLY MNTL HLTH	793-0638	+8
	ENCHANTED UNICORN	792-2048	3
	FREDRICKSEN JACK	793-5011	5
	GREGORY DOROTHY DC	793-9084	3
	JEWELL FNCL CORP	793-6218	+8
	KELLER MEDICAL INC	798-4383	5
	LUNCHIN COUNTRY	798-4947	+8
	MURREY J CONSTR INC	793-4887	+8
	OLAN MILLS PORTRAIT	793-1598	5
	OLAN MILLS STUDIO	793-1585	4
	PARK WEST PRINTING	798-2261	4
	RAE JEANS GIFTS	793-8252	3
	REDLNDS CYCLERY	792-2444	3
	SOMMER KIRK SALES	793-9554	3
	SUNSHINE TREE THE	792-1887	+8
	UNICORN ENCHANTED	792-2048	3
415			
416	XXXX	00	
420	XXXX	00	
431	NORDING BERNDT	886-4953	+8
446	HERITAGE PNY CR PRT	798-4166	3
	PADDOCK WEST	798-4166	4
446A	A&B TOWING	798-4883	+8
A	PAULS SERVICE&RPR	793-1877	5
B	K C PROFESSIONAL	798-1252	5
450	XXXX	00	
452	CHUCKS AUTO RPR&SV	798-4800	4
454	UGLY DUCKLING RENT	792-3550	+8
461	BUILDING		
	ALLANS CUSTOM SHADS	793-6643	1
	ALVINOS MXCN REST 1	798-1566	2
	ANIMALS UNIQUE	793-1815	3
	ANIMALS UNIQUE PET	793-1815	
	B&G POOLS INC	793-2088	4
	BEST LITTLE BARBER	792-8815	1
	CALICO HORSE THE	824-8198	5
	CALICO HORSE THE	793-1868	5
	DONS DOLL HOUSE	798-1078	5
	FARMERS INS	792-9117	+8
	HAIR AWAY	798-5051	+8
	HAIRDRESSERS	793-0092	3
	HESS DAVID M	792-4071	1
	NAIL ROOM THE	798-4162	3
	PERFORMANCE PRODUCT	798-5108	5
	PETTY C L FLR CVRNG	792-3091	0
	TRIPLE H ENTPRS	792-4071	1
	US HLTH SOCL SCRTY	793-7830	4
	WAYFARER TRAVEL LTD	793-7777	1
	WILLIAMS JIM	792-9117	5
461			
501	XXXX	00	
516	RODRIGUEZ ROY	792-2233	9
520	DONNA CO THE	793-1022	2
	DONNA CO THE	824-2263	4

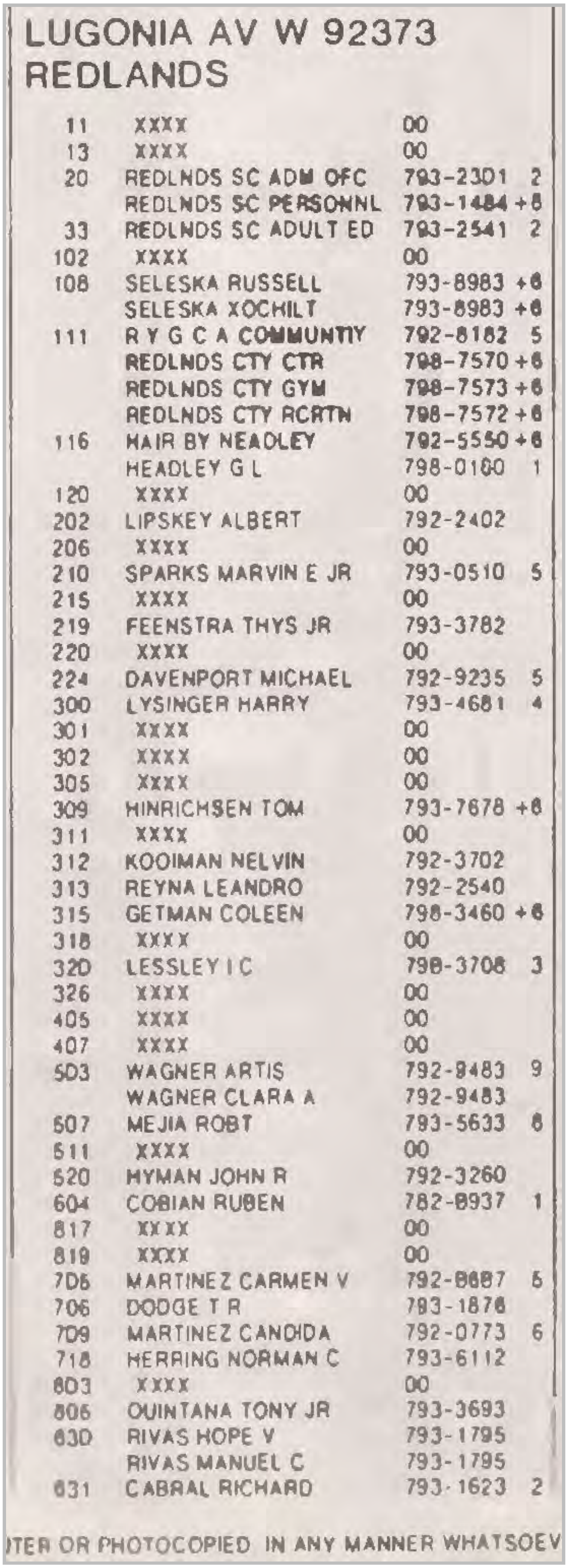
ZIP CODE 92374

610	UNIQUE AUTO BUGGY	793-0212	9
	UNIQUE AUTO DUNE	825-4060	3
611	CHUCKS AUTO REPAIR	793-9076	9
615	XXXX	00	
619	ROZEMA RALPH	793-4922	
620	BURGESONS HTG&AIR	793-3685	8
758	FOSTER DONUTS NO 18	798-1820	+8
	FOSTERS DONUTS	792-9073	3
762	E R A JOLLY REALTY	798-0383	3
	JOLLY REALTY ERA	798-0383	4
766	REDLND COLOR LAB	793-0890	4
770	CHIEF AUTO PARTS	793-7434	3

* 78 BUS 59 RES 25 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

W LUGONIA AVE 1986

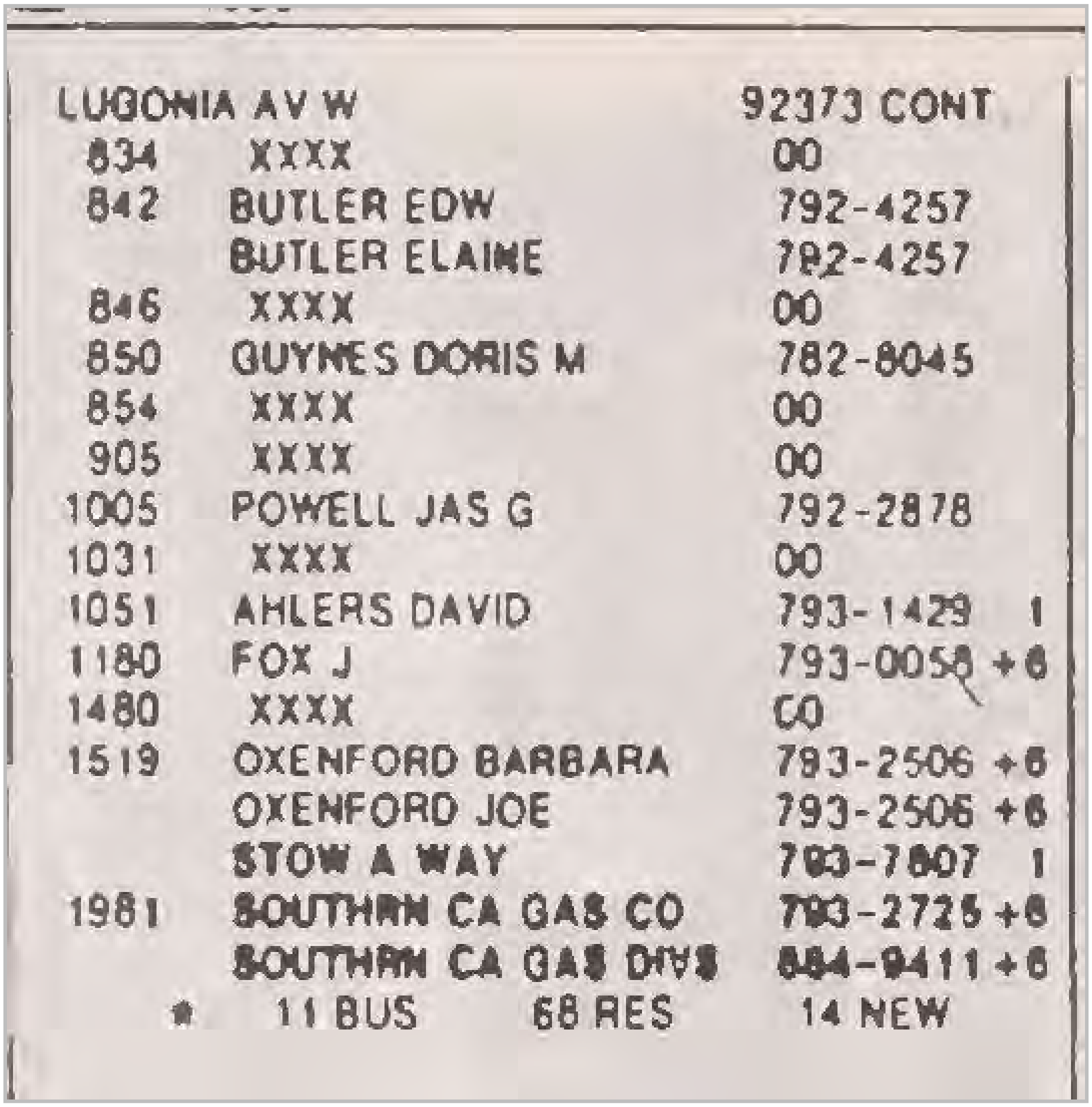


LUGONIA AV W 92373
REDLANDS

11	XXXX	00	
13	XXXX	00	
20	REDLNDS SC ADM OFC	793-2301	2
	REDLNDS SC PERSONNL	793-1484	+8
33	REDLNDS SC ADULT ED	793-2541	2
102	XXXX	00	
108	SELESKA RUSSELL	793-8983	+8
	SELESKA XOCHILT	793-8983	+8
111	R Y G C A COMMUNTIY	792-8182	5
	REDLNDS CTY CTR	798-7570	+8
	REDLNDS CTY GYM	798-7573	+8
	REDLNDS CTY RCRTN	798-7572	+8
116	HAIR BY NEADLEY	792-5550	+8
	HEADLEY G L	798-0100	1
120	XXXX	00	
202	LIPSKEY ALBERT	792-2402	
206	XXXX	00	
210	SPARKS MARVIN E JR	793-0510	5
215	XXXX	00	
219	FEENSTRA THYS JR	793-3782	
220	XXXX	00	
224	DAVENPORT MICHAEL	792-9235	5
300	LYSINGER HARRY	793-4681	4
301	XXXX	00	
302	XXXX	00	
305	XXXX	00	
309	HINRICHSEN TOM	793-7678	+8
311	XXXX	00	
312	KOOIMAN NELVIN	792-3702	
313	REYNA LEANDRO	792-2540	
315	GETMAN COLEEN	798-3460	+8
318	XXXX	00	
320	LESSLEY I C	798-3708	3
326	XXXX	00	
405	XXXX	00	
407	XXXX	00	
503	WAGNER ARTIS	792-9483	9
	WAGNER CLARA A	792-9483	
507	MEJIA ROBT	793-5633	8
511	XXXX	00	
520	HYMAN JOHN R	792-3260	
604	COBIAN RUBEN	782-8937	1
817	XXXX	00	
819	XXXX	00	
706	MARTINEZ CARMEN V	792-8887	5
706	DODGE T R	793-1876	
709	MARTINEZ CANDIDA	792-0773	6
718	HERRING NORMAN C	793-6112	
803	XXXX	00	
806	OUINTANA TONY JR	793-3693	
830	RIVAS HOPE V	793-1795	
	RIVAS MANUEL C	793-1795	
831	CABRAL RICHARD	793-1623	2

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

W LUGONIA AVE 1986

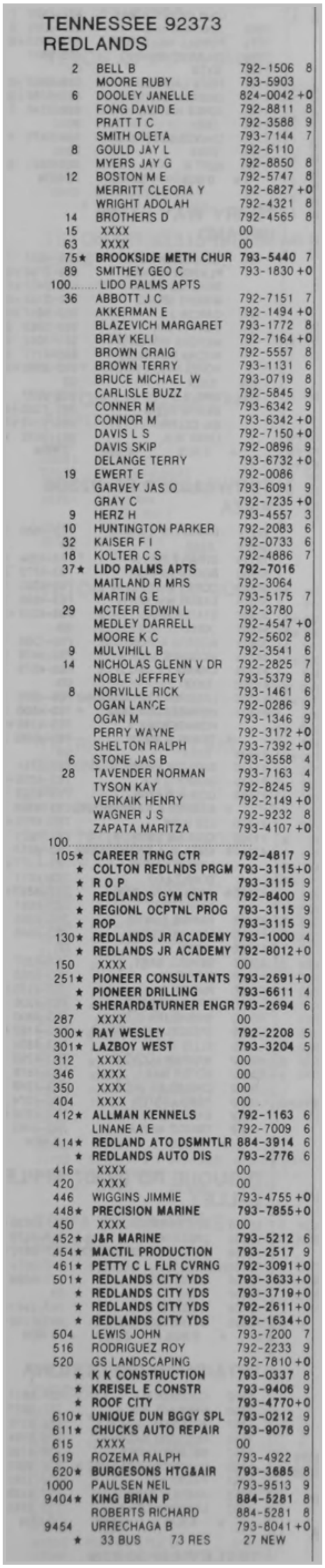


LUGONIA AV W		92373 CONT	
834	XXXX	00	
842	BUTLER EDW	792-4257	
	BUTLER ELAINE	792-4257	
846	XXXX	00	
850	GUYNES DORIS M	782-8045	
854	XXXX	00	
905	XXXX	00	
1005	POWELL JAS G	792-2878	
1031	XXXX	00	
1051	AHLERS DAVID	793-1429	1
1180	FOX J	793-0058	+6
1480	XXXX	00	
1519	OXENFORD BARBARA	793-2506	+6
	OXENFORD JOE	793-2506	+6
	STOW A WAY	793-7807	1
1981	SOUTHRN CA GAS CO	793-2725	+6
	SOUTHRN CA GAS DIVS	884-9411	+6

* 11 BUS 68 RES 14 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

TENESSEE ST 1980

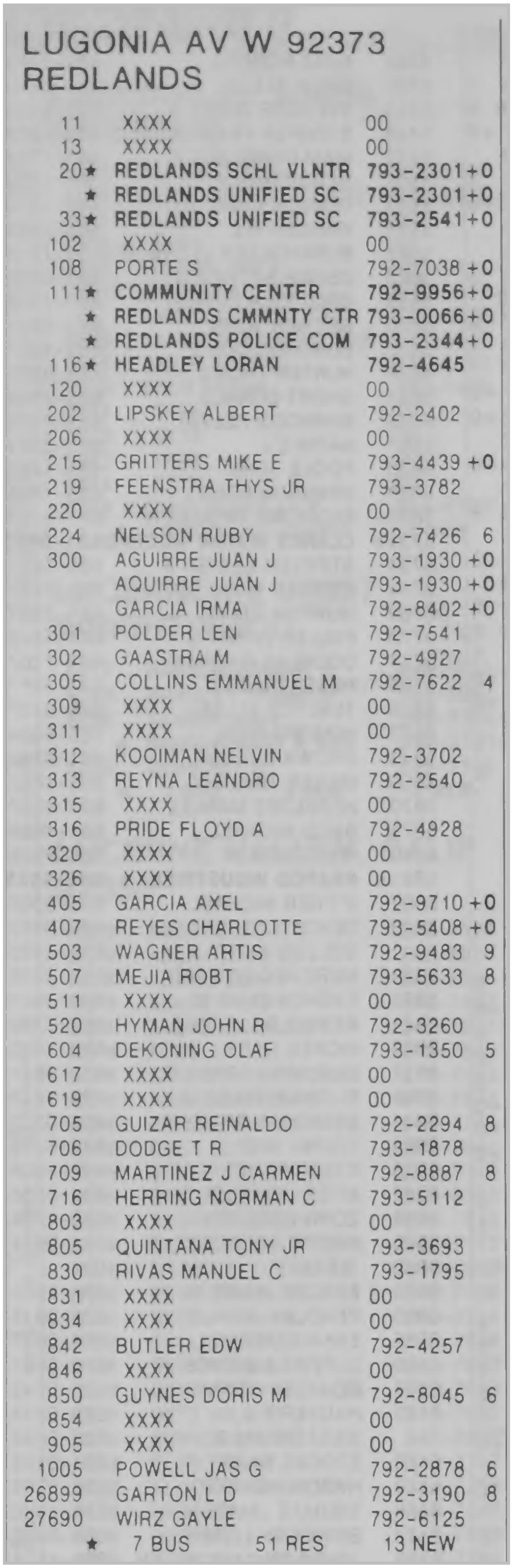


TENNESSEE 92373
REDLANDS

2	BELL B	792-1506	8
	MOORE RUBY	793-5903	
6	DOOLEY JANELLE	824-0042	+0
	FONG DAVID E	792-8811	8
	PRATT T C	792-3588	9
	SMITH OLETA	793-7144	7
8	GOULD JAY L	792-6110	
	MYERS JAY G	792-8850	8
12	BOSTON M E	792-5747	8
	MERRITT CLEORA Y	792-6827	+0
	WRIGHT ADOLAH	792-4321	8
14	BROTHERS D	792-4565	8
15	XXXX	00	
63	XXXX	00	
75★	**BROOKSIDE METH CHUR**	**793-5440**	7
89	SMITHEY GEO C	793-1830	+0
100........	LIDO PALMS APTS		
36	ABBOTT J C	792-7151	7
	AKKERMAN E	792-1494	+0
	BLAZEVICH MARGARET	793-1772	8
	BRAY KELI	792-7164	+0
	BROWN CRAIG	792-5557	8
	BROWN TERRY	793-1131	6
	BRUCE MICHAEL W	793-0719	8
	CARLISLE BUZZ	792-5845	9
	CONNER M	793-6342	9
	CONNOR M	793-6342	+0
	DAVIS L S	792-7150	+0
	DAVIS SKIP	792-0896	9
	DELANGE TERRY	793-6732	+0
19	EWERT E	792-0086	
	GARVEY JAS O	793-6091	9
	GRAY C	792-7235	+0
9	HERZ H	793-4557	3
10	HUNTINGTON PARKER	792-2083	6
32	KAISER F I	792-0733	6
18	KOLTER C S	792-4886	7
37★	**LIDO PALMS APTS**	**792-7016**	
	MAITLAND R MRS	792-3064	
	MARTIN G E	793-5175	7
29	MCTEER EDWIN L	792-3780	
	MEDLEY DARRELL	792-4547	+0
	MOORE K C	792-5602	8
9	MULVIHILL B	792-3541	6
14	NICHOLAS GLENN V DR	792-2825	7
	NOBLE JEFFREY	793-5379	8
8	NORVILLE RICK	793-1461	6
	OGAN LANCE	792-0286	9
	OGAN M	793-1346	9
	PERRY WAYNE	792-3172	+0
	SHELTON RALPH	793-7392	+0
6	STONE JAS B	793-3558	4
28	TAVENDER NORMAN	793-7163	4
	TYSON KAY	792-8245	9
	VERKAIK HENRY	792-2149	+0
	WAGNER J S	792-9232	8
	ZAPATA MARITZA	793-4107	+0
100..			
105★	**CAREER TRNG CTR**	**792-4817**	9
★	**COLTON REDLNDS PRGM**	**793-3115**	+0
★	**R O P**	**793-3115**	9
★	**REDLANDS GYM CNTR**	**792-8400**	9
★	**REGIONL OCPTNL PROG**	**793-3115**	9
★	**ROP**	**793-3115**	9
130★	**REDLANDS JR ACADEMY**	**793-1000**	4
★	**REDLANDS JR ACADEMY**	**792-8012**	+0
150	XXXX	00	
251★	**PIONEER CONSULTANTS**	**793-2691**	+0
★	**PIONEER DRILLING**	**793-6611**	4
★	**SHERARD&TURNER ENGR**	**793-2694**	6
287	XXXX	00	
300★	**RAY WESLEY**	**792-2208**	5
301★	**LAZBOY WEST**	**793-3204**	5
312	XXXX	00	
346	XXXX	00	
350	XXXX	00	
404	XXXX	00	
412★	**ALLMAN KENNELS**	**792-1163**	6
	LINANE A E	792-7009	6
414★	**REDLAND ATO DSMNTLR**	**884-3914**	6
★	**REDLANDS AUTO DIS**	**793-2776**	6
416	XXXX	00	
420	XXXX	00	
446	WIGGINS JIMMIE	793-4755	+0
448★	**PRECISION MARINE**	**793-7855**	+0
450	XXXX	00	
452★	**J&R MARINE**	**793-5212**	6
454★	**MACTIL PRODUCTION**	**793-2517**	9
461★	**PETTY C L FLR CVRNG**	**792-3091**	+0
501★	**REDLANDS CITY YDS**	**793-3633**	+0
★	**REDLANDS CITY YDS**	**793-3719**	+0
★	**REDLANDS CITY YDS**	**792-2611**	+0
★	**REDLANDS CITY YDS**	**792-1634**	+0
504	LEWIS JOHN	793-7200	7
516	RODRIGUEZ ROY	792-2233	9
520	GS LANDSCAPING	792-7810	+0
★	**K K CONSTRUCTION**	**793-0337**	8
★	**KREISEL E CONSTR**	**793-9406**	9
★	**ROOF CITY**	**793-4770**	+0
610★	**UNIQUE DUN BGGY SPL**	**793-0212**	9
611★	**CHUCKS AUTO REPAIR**	**793-9076**	9
615	XXXX	00	
619	ROZEMA RALPH	793-4922	
620★	**BURGESONS HTG&AIR**	**793-3685**	8
1000	PAULSEN NEIL	793-9513	9
9404★	**KING BRIAN P**	**884-5281**	8
	ROBERTS RICHARD	884-5281	8
9454	URRECHAGA B	793-8041	+0
★	33 BUS 73 RES	27 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

W LUGONIA AVE 1980

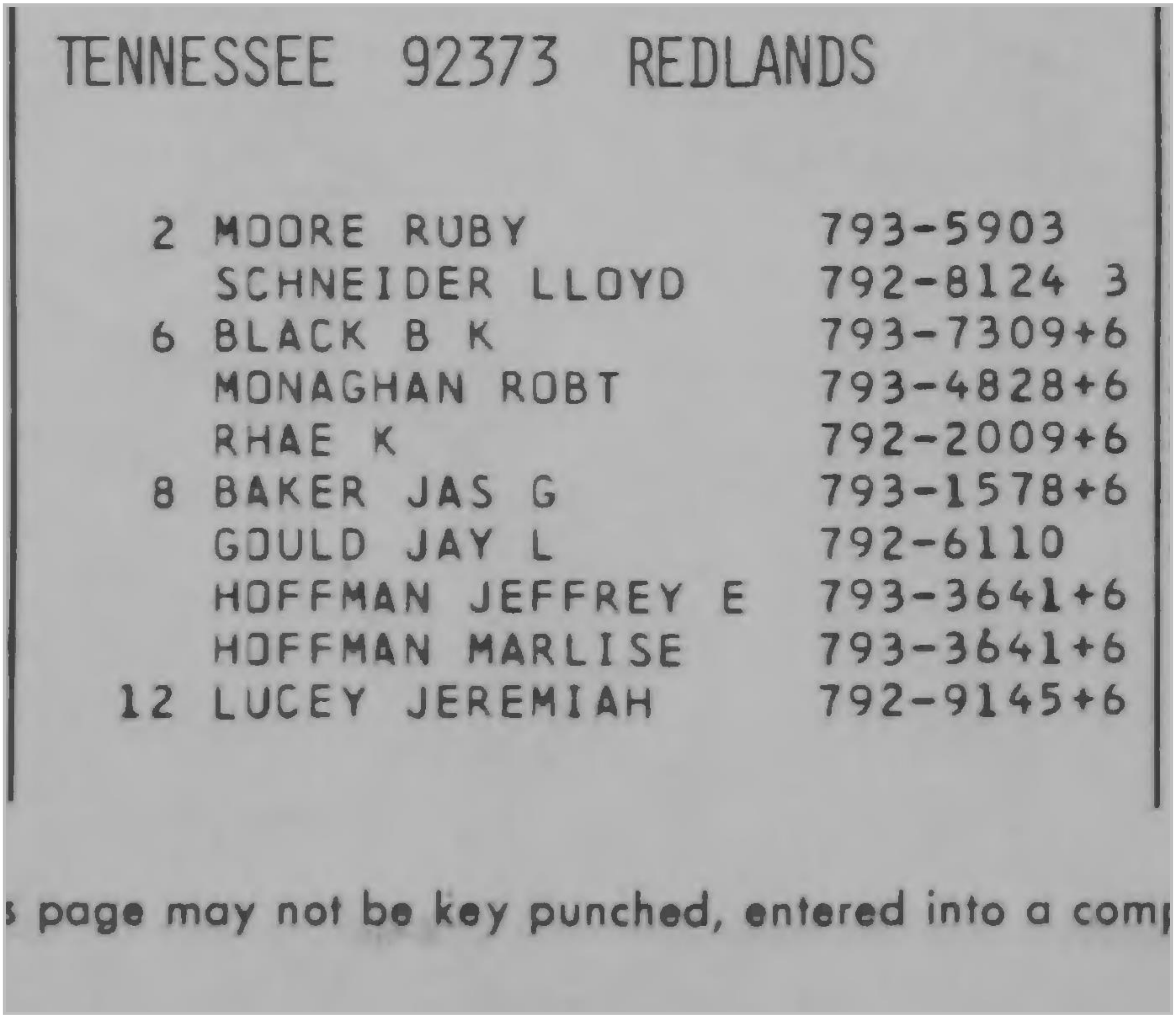


LUGONIA AV W 92373
REDLANDS

11	XXXX	00	
13	XXXX	00	
20★	**REDLANDS SCHL VLNTR**	**793-2301**	**+0**
★	**REDLANDS UNIFIED SC**	**793-2301**	**+0**
33★	**REDLANDS UNIFIED SC**	**793-2541**	**+0**
102	XXXX	00	
108	PORTE S	792-7038	+0
111★	**COMMUNITY CENTER**	**792-9956**	**+0**
★	**REDLANDS CMMNTY CTR**	**793-0066**	**+0**
★	**REDLANDS POLICE COM**	**793-2344**	**+0**
116★	**HEADLEY LORAN**	**792-4645**	
120	XXXX	00	
202	LIPSKEY ALBERT	792-2402	
206	XXXX	00	
215	GRITTERS MIKE E	793-4439	+0
219	FEENSTRA THYS JR	793-3782	
220	XXXX	00	
224	NELSON RUBY	792-7426	6
300	AGUIRRE JUAN J	793-1930	+0
	AQUIRRE JUAN J	793-1930	+0
	GARCIA IRMA	792-8402	+0
301	POLDER LEN	792-7541	
302	GAASTRA M	792-4927	
305	COLLINS EMMANUEL M	792-7622	4
309	XXXX	00	
311	XXXX	00	
312	KOOIMAN NELVIN	792-3702	
313	REYNA LEANDRO	792-2540	
315	XXXX	00	
316	PRIDE FLOYD A	792-4928	
320	XXXX	00	
326	XXXX	00	
405	GARCIA AXEL	792-9710	+0
407	REYES CHARLOTTE	793-5408	+0
503	WAGNER ARTIS	792-9483	9
507	MEJIA ROBT	793-5633	8
511	XXXX	00	
520	HYMAN JOHN R	792-3260	
604	DEKONING OLAF	793-1350	5
617	XXXX	00	
619	XXXX	00	
705	GUIZAR REINALDO	792-2294	8
706	DODGE T R	793-1878	
709	MARTINEZ J CARMEN	792-8887	8
716	HERRING NORMAN C	793-5112	
803	XXXX	00	
805	QUINTANA TONY JR	793-3693	
830	RIVAS MANUEL C	793-1795	
831	XXXX	00	
834	XXXX	00	
842	BUTLER EDW	792-4257	
846	XXXX	00	
850	GUYNES DORIS M	792-8045	6
854	XXXX	00	
905	XXXX	00	
1005	POWELL JAS G	792-2878	6
26899	GARTON L D	792-3190	8
27690	WIRZ GAYLE	792-6125	
★	7 BUS	51 RES	13 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

TENESSEE ST 1976

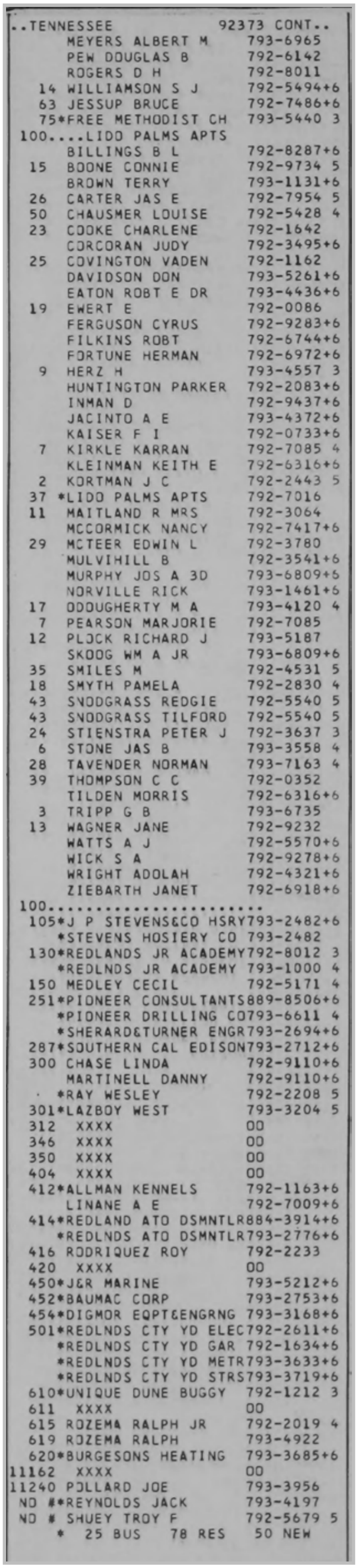


TENNESSEE 92373 REDLANDS

2	MOORE RUBY	793-5903
	SCHNEIDER LLOYD	792-8124 3
6	BLACK B K	793-7309+6
	MONAGHAN ROBT	793-4828+6
	RHAE K	792-2009+6
8	BAKER JAS G	793-1578+6
	GOULD JAY L	792-6110
	HOFFMAN JEFFREY E	793-3641+6
	HOFFMAN MARLISE	793-3641+6
12	LUCEY JEREMIAH	792-9145+6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

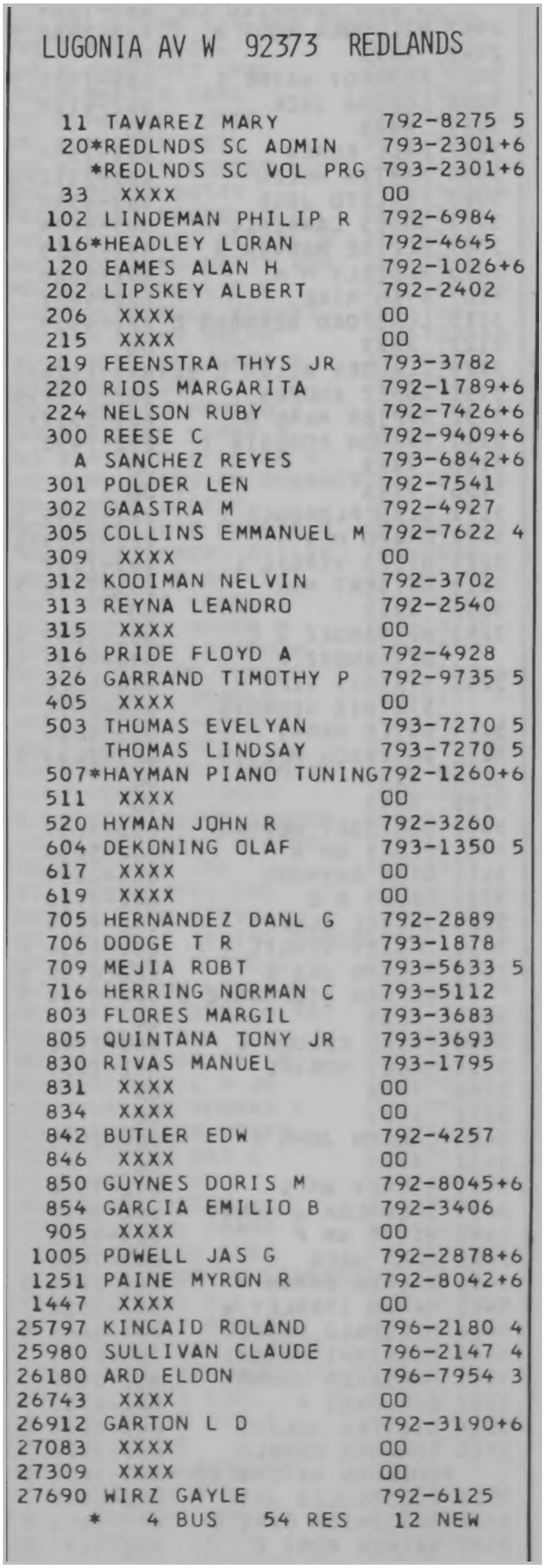
TENESSEE ST 1976



```
..TENNESSEE          92373 CONT..
      MEYERS ALBERT M    793-6965
      PEW DOUGLAS B      792-6142
      ROGERS D H         792-8011
   14 WILLIAMSON S J     792-5494+6
   63 JESSUP BRUCE       792-7486+6
   75*FREE METHODIST CH  793-5440 3
 100....LIDO PALMS APTS
      BILLINGS B L       792-8287+6
  15  BOONE CONNIE       792-9734 5
      BROWN TERRY        793-1131+6
  26  CARTER JAS E       792-7954 5
  50  CHAUSMER LOUISE    792-5428 4
  23  COOKE CHARLENE     792-1642
      CORCORAN JUDY      792-3495+6
  25  COVINGTON VADEN    792-1162
      DAVIDSON DON       793-5261+6
      EATON ROBT E DR    793-4436+6
  19  EWERT E            792-0086
      FERGUSON CYRUS     792-9283+6
      FILKINS ROBT       792-6744+6
      FORTUNE HERMAN     792-6972+6
   9  HERZ H             793-4557 3
      HUNTINGTON PARKER  792-2083+6
      INMAN D            792-9437+6
      JACINTO A E        793-4372+6
      KAISER F I         792-0733+6
   7  KIRKLE KARRAN      792-7085 4
      KLEINMAN KEITH E   792-6316+6
   2  KORTMAN J C        792-2443 5
  37 *LIDO PALMS APTS    792-7016
  11  MAITLAND R MRS     792-3064
      MCCORMICK NANCY    792-7417+6
  29  MCTEER EDWIN L     792-3780
      MULVIHILL B        792-3541+6
      MURPHY JOS A 3D    793-6809+6
      NORVILLE RICK      793-1461+6
  17  ODOUGHERTY M A     793-4120 4
   7  PEARSON MARJORIE   792-7085
  12  PLOCK RICHARD J    793-5187
      SKOOG WM A JR      793-6809+6
  35  SMILES M           792-4531 5
  18  SMYTH PAMELA       792-2830 4
  43  SNODGRASS REDGIE   792-5540 5
  43  SNODGRASS TILFORD  792-5540 5
  24  STIENSTRA PETER J  792-3637 3
   6  STONE JAS B        793-3558 4
  28  TAVENDER NORMAN    793-7163 4
  39  THOMPSON C C       792-0352
      TILDEN MORRIS      792-6316+6
   3  TRIPP G B          793-6735
  13  WAGNER JANE        792-9232
      WATTS A J          792-5570+6
      WICK S A           792-9278+6
      WRIGHT ADOLAH      792-4321+6
      ZIEBARTH JANET     792-6918+6
 100........................
  105*J P STEVENS&CO HSRY793-2482+6
     *STEVENS HOSIERY CO 793-2482
  130*REDLANDS JR ACADEMY792-8012 3
     *REDLNDS JR ACADEMY 793-1000 4
  150 MEDLEY CECIL       792-5171 4
  251*PIONEER CONSULTANTS889-8506+6
     *PIONEER DRILLING CO793-6611 4
     *SHERARD&TURNER ENGR793-2694+6
  287*SOUTHERN CAL EDISON793-2712+6
  300 CHASE LINDA        792-9110+6
      MARTINELL DANNY    792-9110+6
     *RAY WESLEY         792-2208 5
  301*LAZBOY WEST        793-3204 5
  312  XXXX              00
  346  XXXX              00
  350  XXXX              00
  404  XXXX              00
  412*ALLMAN KENNELS     792-1163+6
      LINANE A E         792-7009+6
  414*REDLAND ATO DSMNTLR884-3914+6
     *REDLNDS ATO DSMNTLR793-2776+6
  416 RODRIQUEZ ROY      792-2233
  420  XXXX              00
  450*J&R MARINE         793-5212+6
  452*BAUMAC CORP        793-2753+6
  454*DIGMOR EQPT&ENGRNG 793-3168+6
  501*REDLNDS CTY YD ELEC792-2611+6
     *REDLNDS CTY YD GAR 792-1634+6
     *REDLNDS CTY YD METR793-3633+6
     *REDLNDS CTY YD STRS793-3719+6
  610*UNIQUE DUNE BUGGY  792-1212 3
  611  XXXX              00
  615 ROZEMA RALPH JR    792-2019 4
  619 ROZEMA RALPH       793-4922
  620*BURGESONS HEATING  793-3685+6
11162  XXXX              00
11240 POLLARD JOE        793-3956
 ND #*REYNOLDS JACK      793-4197
 ND # SHUEY TROY F       792-5679 5
     *  25 BUS    78 RES   50 NEW
```

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

W LUGONIA AVE 1976



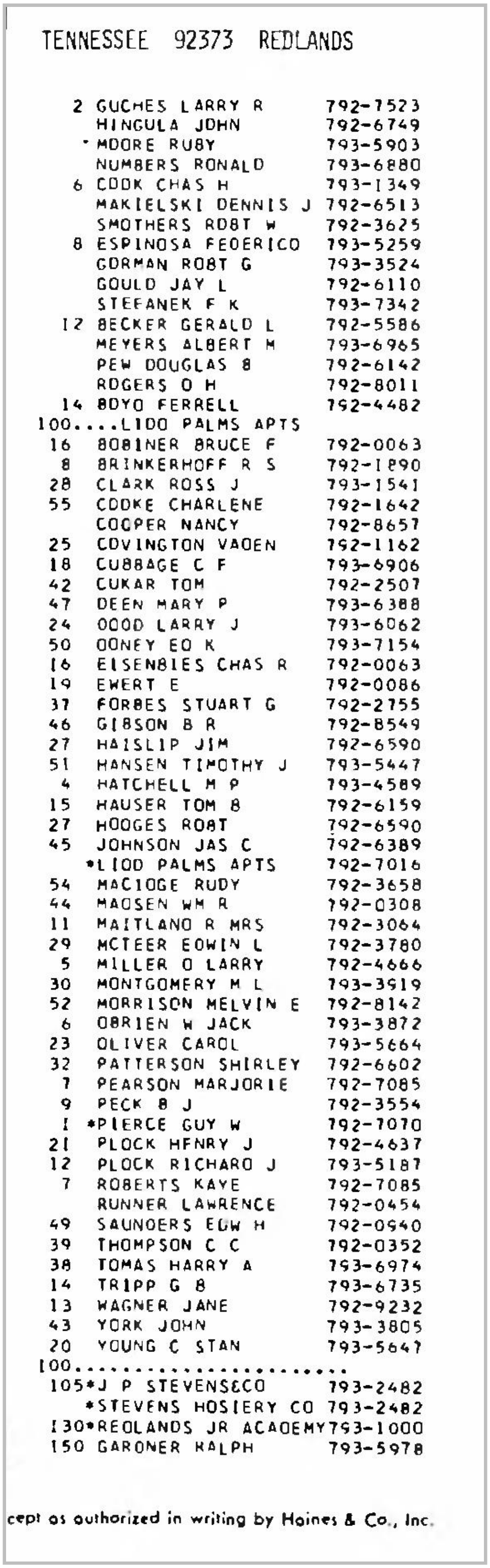
LUGONIA AV W 92373 REDLANDS

11	TAVAREZ MARY	792-8275 5
20	*REDLNDS SC ADMIN	793-2301+6
	*REDLNDS SC VOL PRG	793-2301+6
33	XXXX	00
102	LINDEMAN PHILIP R	792-6984
116	*HEADLEY LORAN	792-4645
120	EAMES ALAN H	792-1026+6
202	LIPSKEY ALBERT	792-2402
206	XXXX	00
215	XXXX	00
219	FEENSTRA THYS JR	793-3782
220	RIOS MARGARITA	792-1789+6
224	NELSON RUBY	792-7426+6
300	REESE C	792-9409+6
A	SANCHEZ REYES	793-6842+6
301	POLDER LEN	792-7541
302	GAASTRA M	792-4927
305	COLLINS EMMANUEL M	792-7622 4
309	XXXX	00
312	KOOIMAN NELVIN	792-3702
313	REYNA LEANDRO	792-2540
315	XXXX	00
316	PRIDE FLOYD A	792-4928
326	GARRAND TIMOTHY P	792-9735 5
405	XXXX	00
503	THOMAS EVELYAN	793-7270 5
	THOMAS LINDSAY	793-7270 5
507	*HAYMAN PIANO TUNING	792-1260+6
511	XXXX	00
520	HYMAN JOHN R	792-3260
604	DEKONING OLAF	793-1350 5
617	XXXX	00
619	XXXX	00
705	HERNANDEZ DANL G	792-2889
706	DODGE T R	793-1878
709	MEJIA ROBT	793-5633 5
716	HERRING NORMAN C	793-5112
803	FLORES MARGIL	793-3683
805	QUINTANA TONY JR	793-3693
830	RIVAS MANUEL	793-1795
831	XXXX	00
834	XXXX	00
842	BUTLER EDW	792-4257
846	XXXX	00
850	GUYNES DORIS M	792-8045+6
854	GARCIA EMILIO B	792-3406
905	XXXX	00
1005	POWELL JAS G	792-2878+6
1251	PAINE MYRON R	792-8042+6
1447	XXXX	00
25797	KINCAID ROLAND	796-2180 4
25980	SULLIVAN CLAUDE	796-2147 4
26180	ARD ELDON	796-7954 3
26743	XXXX	00
26912	GARTON L D	792-3190+6
27083	XXXX	00
27309	XXXX	00
27690	WIRZ GAYLE	792-6125

* 4 BUS 54 RES 12 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

TENESSEE ST 1971



TENNESSEE 92373 REDLANDS

2	GUCHES LARRY R	792-7523
	HINGULA JOHN	792-6749
	*MOORE RUBY	793-5903
	NUMBERS RONALD	793-6880
6	COOK CHAS H	793-1349
	MAKIELSKI DENNIS J	792-6513
	SMOTHERS ROBT W	792-3625
8	ESPINOSA FEDERICO	793-5259
	GORMAN ROBT G	793-3524
	GOULD JAY L	792-6110
	STEFANEK F K	793-7342
12	BECKER GERALD L	792-5586
	MEYERS ALBERT M	793-6965
	PEW DOUGLAS B	792-6142
	ROGERS D H	792-8011
14	BOYD FERRELL	792-4482
100....LIDO PALMS APTS		
16	BOBINER BRUCE F	792-0063
8	BRINKERHOFF R S	792-1890
28	CLARK ROSS J	793-1541
55	COOKE CHARLENE	792-1642
	COOPER NANCY	792-8657
25	COVINGTON VADEN	792-1162
18	CUBBAGE C F	793-6906
42	CUKAR TOM	792-2507
47	DEEN MARY P	793-6388
24	DODD LARRY J	793-6062
50	DONEY ED K	793-7154
16	EISENBIES CHAS R	792-0063
19	EWERT E	792-0086
37	FORBES STUART G	792-2755
46	GIBSON B R	792-8549
27	HAISLIP JIM	792-6590
51	HANSEN TIMOTHY J	793-5447
4	HATCHELL M P	793-4589
15	HAUSER TOM B	792-6159
27	HODGES ROBT	792-6590
45	JOHNSON JAS C	792-6389
	*LIDO PALMS APTS	792-7016
54	MACIOGE RUDY	792-3658
44	MADSEN WM R	792-0308
11	MAITLAND R MRS	792-3064
29	MCTEER EDWIN L	792-3780
5	MILLER D LARRY	792-4666
30	MONTGOMERY M L	793-3919
52	MORRISON MELVIN E	792-8142
6	OBRIEN W JACK	793-3872
23	OLIVER CAROL	793-5664
32	PATTERSON SHIRLEY	792-6602
7	PEARSON MARJORIE	792-7085
9	PECK B J	792-3554
1	*PIERCE GUY W	792-7070
21	PLOCK HENRY J	792-4637
12	PLOCK RICHARD J	793-5187
7	ROBERTS KAYE	792-7085
	RUNNER LAWRENCE	792-0454
49	SAUNDERS EDW H	792-0940
39	THOMPSON C C	792-0352
38	TOMAS HARRY A	793-6974
14	TRIPP G B	793-6735
13	WAGNER JANE	792-9232
43	YORK JOHN	793-3805
20	YOUNG C STAN	793-5647
100........................		
105	*J P STEVENS&CO	793-2482
	*STEVENS HOSIERY CO	793-2482
130	*REDLANDS JR ACADEMY	793-1000
150	GARDNER RALPH	793-5978

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

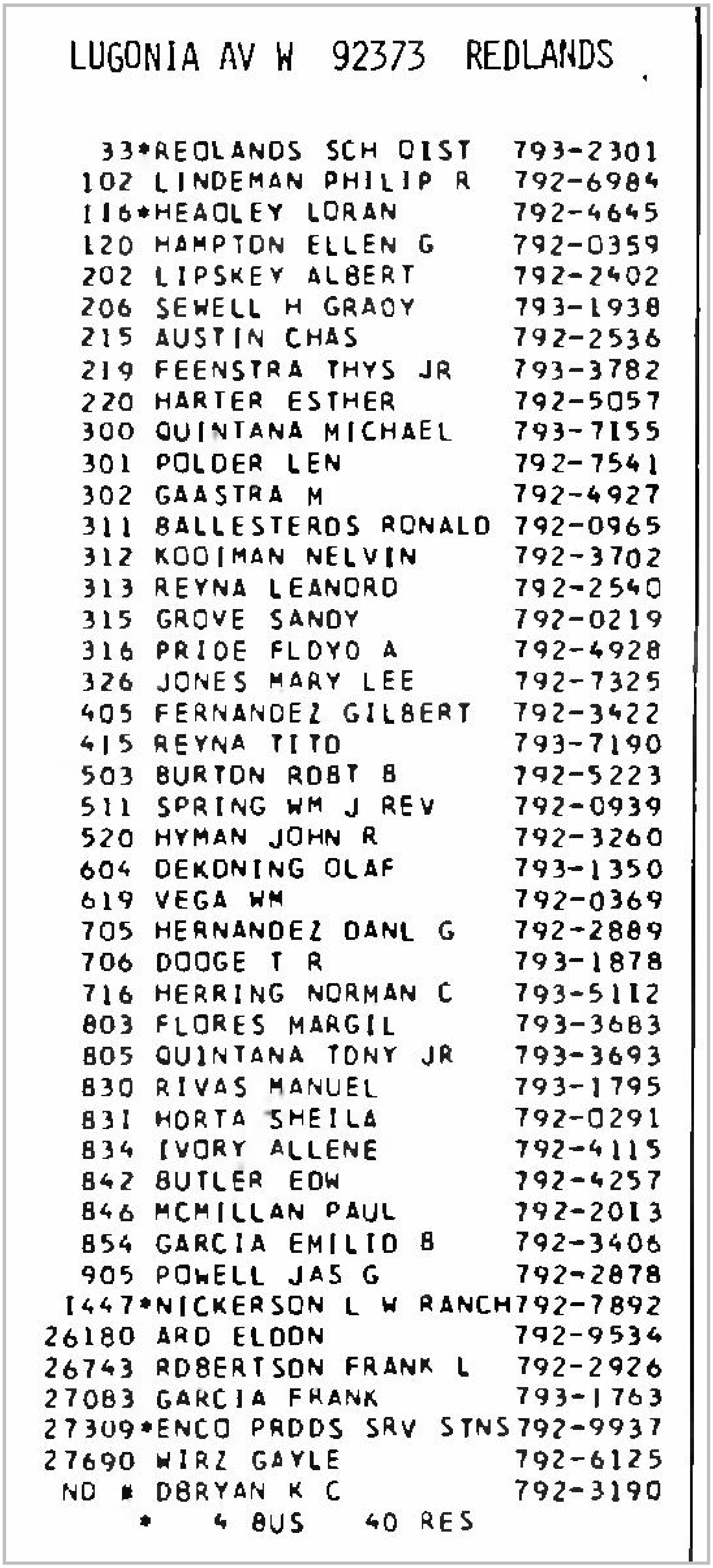
TENESSEE ST 1971

TENNESSEE

```
  251*PIONEER TESTING LAB793-2691
     *PIONEER TESTING LABRB9-8506
  300 RAY WESLEY         792-2208
  301*LA Z BOY WEST      793-3204
  312*ALLMAN KENNELS     792-1163
  314*REDLANDS ATD DSMNTLR84-3914
     *REDLANDS ATD DSMNTL793-2776
  346*HELENE LORAINE INC 792-9178
     *LORAINE H INTR DSGN792-9178
  354*DIGMOR EQUIP&ENGNRG793-3168
  401*REDLND CTY YRD ELEC792-2611
     *REDLND CTY YARD GAR792-1634
     *REDLND CTY YRD METR793-3633
     *REDLANDS CITY YARDS793-3719
  404 WASSENAAR ART P    792-1145
  416 RODRIQUEZ ROY      792-2233
  420 ARAGONNE ARLENE    793-1608
  610*UNIQUE SUPPLY      792-1212
  611*MELS MOONLIGHTING  792-4710
  615 RICE RONALD L      792-0575
  619 ROZEMA RALPH       793-4922
  620*BURGESONS HEATING  792-8027
     *BURGESONS HEATING  793-3685
11162*BROOKSIDE NRSRY SCH792-2010
     *FREE METHODIST CH  793-5440
11240 POLLARD JOE        793-3956
 NO #*REYNOLDS JACK      793-4197
     *  25 BUS   68 RES
```

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

W LUGONIA AVE 1971



LUGONIA AV W 92373 REDLANDS

33	*REDLANDS SCH DIST	793-2301
102	LINDEMAN PHILIP R	792-6984
116	*HEADLEY LORAN	792-4645
120	HAMPTON ELLEN G	792-0359
202	LIPSKEY ALBERT	792-2402
206	SEWELL H GRADY	793-1938
215	AUSTIN CHAS	792-2536
219	FEENSTRA THYS JR	793-3782
220	HARTER ESTHER	792-5057
300	QUINTANA MICHAEL	793-7155
301	POLDER LEN	792-7541
302	GAASTRA M	792-4927
311	BALLESTEROS RONALD	792-0965
312	KOOIMAN NELVIN	792-3702
313	REYNA LEANDRO	792-2540
315	GROVE SANDY	792-0219
316	PRIDE FLOYD A	792-4928
326	JONES MARY LEE	792-7325
405	FERNANDEZ GILBERT	792-3422
415	REYNA TITO	793-7190
503	BURTON ROBT B	792-5223
511	SPRING WM J REV	792-0939
520	HYMAN JOHN R	792-3260
604	DEKONING OLAF	793-1350
619	VEGA WM	792-0369
705	HERNANDEZ DANL G	792-2889
706	DODGE T R	793-1878
716	HERRING NORMAN C	793-5112
803	FLORES MARGIL	793-3683
805	QUINTANA TONY JR	793-3693
830	RIVAS MANUEL	793-1795
831	HORTA SHEILA	792-0291
834	IVORY ALLENE	792-4115
842	BUTLER EDW	792-4257
846	MCMILLAN PAUL	792-2013
854	GARCIA EMILIO B	792-3406
905	POWELL JAS G	792-2878
1447	*NICKERSON L W RANCH	792-7892
26180	ARD ELDON	792-9534
26743	ROBERTSON FRANK L	792-2926
27083	GARCIA FRANK	793-1763
27309	*ENCO PRODS SRV STNS	792-9937
27690	WIRZ GAYLE	792-6125
ND	* DBRYAN K C	792-3190

* 4 BUS 40 RES

Target Street	Cross Street	Source
✓	-	Luskey Brothers & Co.

TENESSEE ST 1965

TENNESSEE ST (ROLS) – FROM 1201 BROOKSIDE AV. NORTH (92373)

2 Apartments
A Hedleston Wm 793–3721
B Vacant
D Vacant
6 Vacant
8 Apartments
A Fernandez FL 1 792–6676
B Heintz VB 2............... 792–5429
12 Apartments
A Vacant
B Redar GE 1................ 793–4155
C *Pew DB
C Pew DB Jr................ 792–6142
D Gould RL.................. 792–2567
14 Farrar SM.................. 792–8958

N San Mateo St Ints

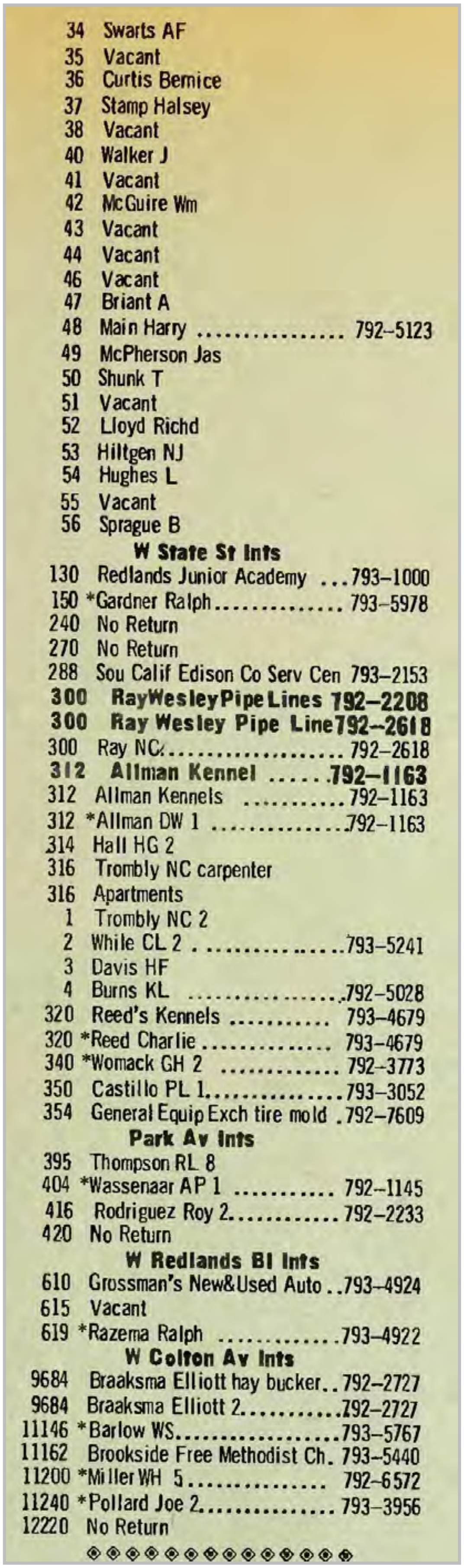
16 No Return

Pine Av Ints

100 Dornfeld PW 793–4733
100 Lido Palms Apartments 792–7016
1 VanManen Albt.............792–7016
2 Beaver DG 792–3979
3 Hatchell MP................ 793–4589
4 Igo Helen
5 Ferrin Bonnie 792–2166
6 Brumn J
7 Fossum OM 793–5086
8 Vacant
9 DeGraf Cornelius Jr 792–5434
10 Whitmer E
11 Smith Carl
12 Vacant
13 Van Kalbeek G
14 Crosby C
15 Council Dave
16 Segglink W
17 Wells E
18 Peeden E
19 Kaehae Ron
20 Rearick RB................ 792–4591
21 Robinson Donaleta...........792–6308
22 Larson H
23 Thompson Margaret
24 Bender H
25 Good Raymon
26 Gole Jack
27 Stumpf N
28 Katz LE.................... 793–1369
29 Provencher R
30 Cagle Roberta 792–6196
31 Mastra LF
32 Phillips KW 792–8511
33 Darnfeld PW

Target Street	Cross Street	Source
✓	-	Luskey Brothers & Co.

TENESSEE ST 1965



34 Swarts AF
35 Vacant
36 Curtis Bernice
37 Stamp Halsey
38 Vacant
40 Walker J
41 Vacant
42 McGuire Wm
43 Vacant
44 Vacant
46 Vacant
47 Briant A
48 Main Harry 792-5123
49 McPherson Jas
50 Shunk T
51 Vacant
52 Lloyd Richd
53 Hiltgen NJ
54 Hughes L
55 Vacant
56 Sprague B

W State St Ints

130 Redlands Junior Academy ...793-1000
150 *Gardner Ralph............... 793-5978
240 No Return
270 No Return
288 Sou Calif Edison Co Serv Cen 793-2153
300 RayWesleyPipeLines 792-2208
300 Ray Wesley Pipe Line792-2618
300 Ray NC.................... 792-2618
312 Allman Kennel 792-1163
312 Allman Kennels 792-1163
312 *Allman DW 1 792-1163
314 Hall HG 2
316 Trombly NC carpenter
316 Apartments
1 Trombly NC 2
2 While CL 2 793-5241
3 Davis HF
4 Burns KL 792-5028
320 Reed's Kennels 793-4679
320 *Reed Charlie 793-4679
340 *Womack GH 2 792-3773
350 Castillo PL 1...............793-3052
354 General Equip Exch tire mold . 792-7609

Park Av Ints

395 Thompson RL 8
404 *Wassenaar AP 1 792-1145
416 Rodriguez Roy 2............ 792-2233
420 No Return

W Redlands Bl Ints

610 Grossman's New&Used Auto ..793-4924
615 Vacant
619 *Razema Ralph 793-4922

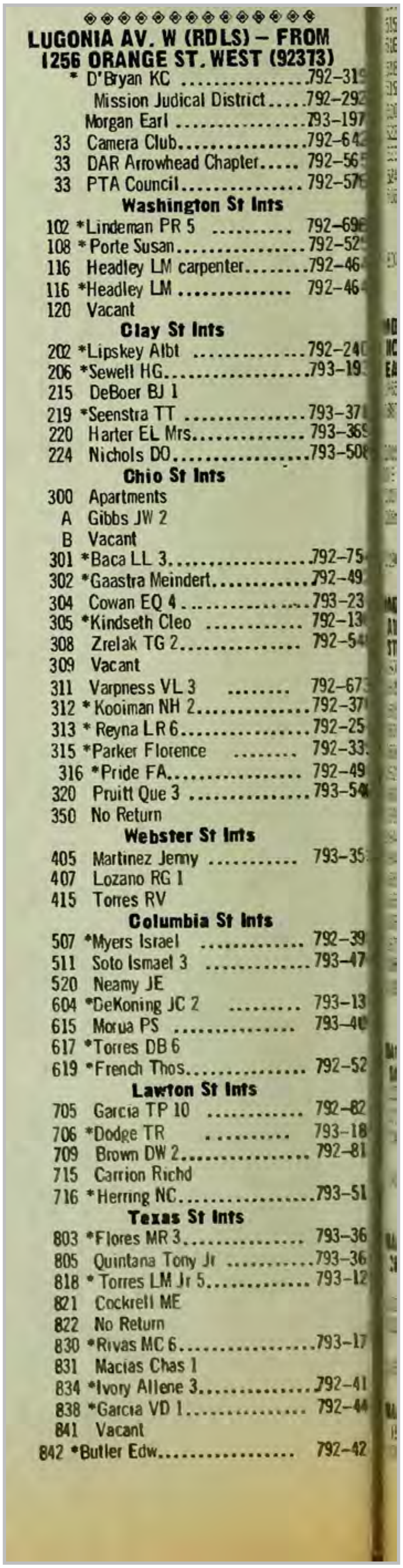
W Colton Av Ints

9684 Braaksma Elliott hay bucker.. 792-2727
9684 Braaksma Elliott 2...........792-2727
11146 *Barlow WS..................793-5767
11162 Brookside Free Methodist Ch. 793-5440
11200 *Miller WH 5............... 792-6572
11240 *Pollard Joe 2............... 793-3956
12220 No Return

◆ ◆ ◆

Target Street	Cross Street	Source
-	✓	Luskey Brothers & Co.

W LUGONIA AVE 1965



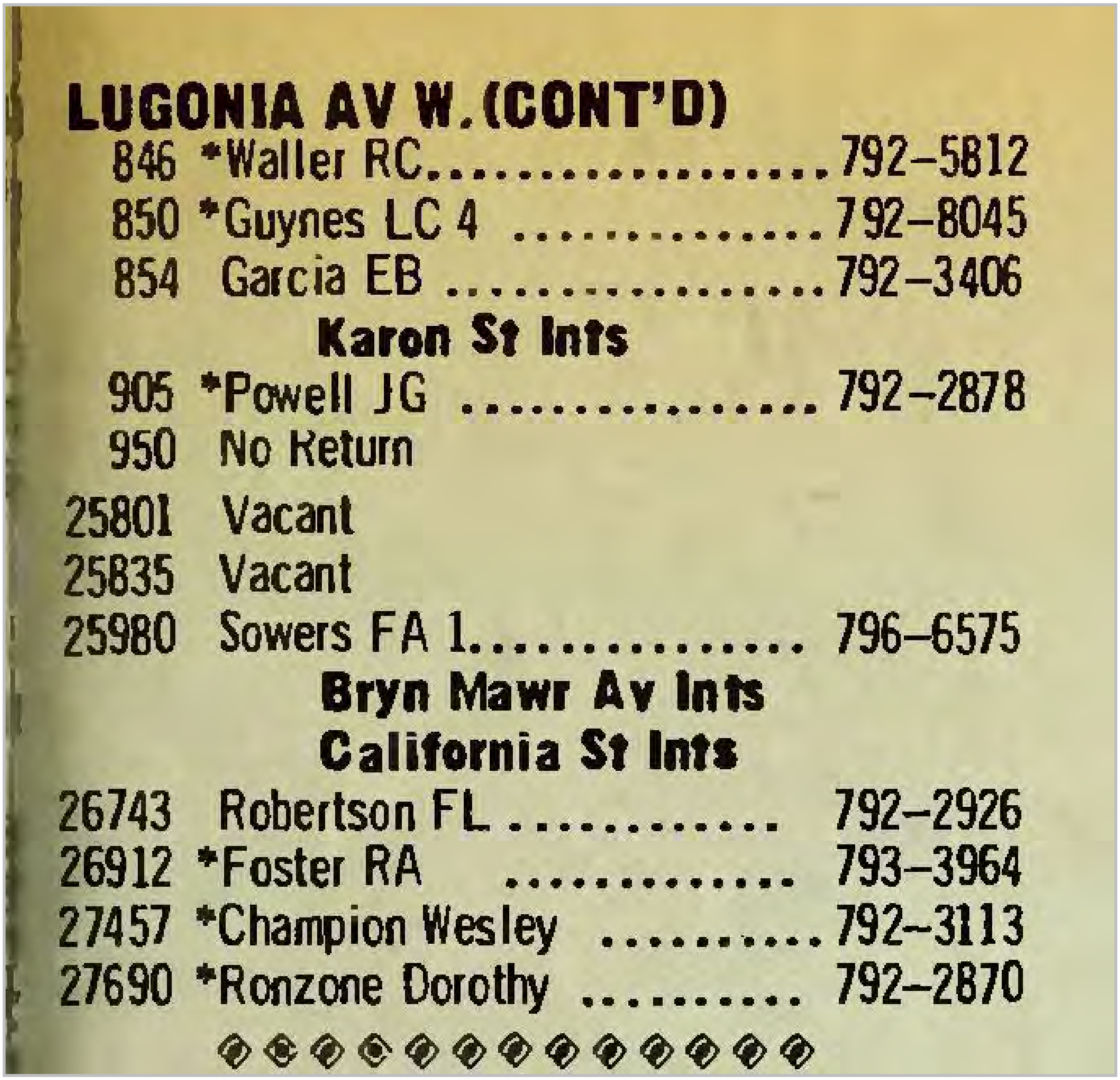
◆◆◆◆◆◆◆◆◆◆◆◆◆◆

LUGONIA AV. W (RDLS) – FROM 1256 ORANGE ST. WEST (92373)

	* D'Bryan KC	792-31
	Mission Judical District	792-29
	Morgan Earl	793-197
33	Camera Club	792-64
33	DAR Arrowhead Chapter	792-56
33	PTA Council	792-57
	Washington St Ints	
102	*Lindeman PR 5	792-69
108	*Porte Susan	792-52
116	Headley LM carpenter	792-46
116	*Headley LM	792-46
120	Vacant	
	Clay St Ints	
202	*Lipskey Albt	792-24
206	*Sewell HG	793-19
215	DeBoer BJ 1	
219	*Seenstra TT	793-37
220	Harter EL Mrs	793-36
224	Nichols DO	793-50
	Chio St Ints	
300	Apartments	
A	Gibbs JW 2	
B	Vacant	
301	*Baca LL 3	792-75
302	*Gaastra Meindert	792-49
304	Cowan EQ 4	793-23
305	*Kindseth Cleo	792-13
308	Zrelak TG 2	792-54
309	Vacant	
311	Varpness VL 3	792-67
312	*Kooiman NH 2	792-37
313	*Reyna LR 6	792-25
315	*Parker Florence	792-33
316	*Pride FA	792-49
320	Pruitt Que 3	793-54
350	No Return	
	Webster St Ints	
405	Martinez Jenny	793-35
407	Lozano RG 1	
415	Torres RV	
	Columbia St Ints	
507	*Myers Israel	792-39
511	Soto Ismael 3	793-47
520	Neamy JE	
604	*DeKoning JC 2	793-13
615	Morua PS	793-40
617	*Torres DB 6	
619	*French Thos	792-52
	Lawton St Ints	
705	Garcia TP 10	792-82
706	*Dodge TR	793-18
709	Brown DW 2	792-81
715	Carrion Richd	
716	*Herring NC	793-51
	Texas St Ints	
803	*Flores MR 3	793-36
805	Quintana Tony Jr	793-36
818	*Torres LM Jr 5	793-12
821	Cockrell ME	
822	No Return	
830	*Rivas MC 6	793-17
831	Macias Chas 1	
834	*Ivory Allene 3	792-41
838	*Garcia VD 1	792-44
841	Vacant	
842	*Butler Edw	792-42

Target Street	Cross Street	Source
-	✓	Luskey Brothers & Co.

W LUGONIA AVE 1965



LUGONIA AV W.(CONT'D)

846	*Waller RC	792-5812
850	*Guynes LC 4	792-8045
854	Garcia EB	792-3406
	Karon St Ints	
905	*Powell JG	792-2878
950	No Return	
25801	Vacant	
25835	Vacant	
25980	Sowers FA 1	796-6575
	Bryn Mawr Av Ints	
	California St Ints	
26743	Robertson FL	792-2926
26912	*Foster RA	793-3964
27457	*Champion Wesley	792-3113
27690	*Ronzone Dorothy	792-2870

◆ ◆ ◆

LPA Redlands Project
NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 6794904.6
December 21, 2021

The EDR Property Tax Map Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

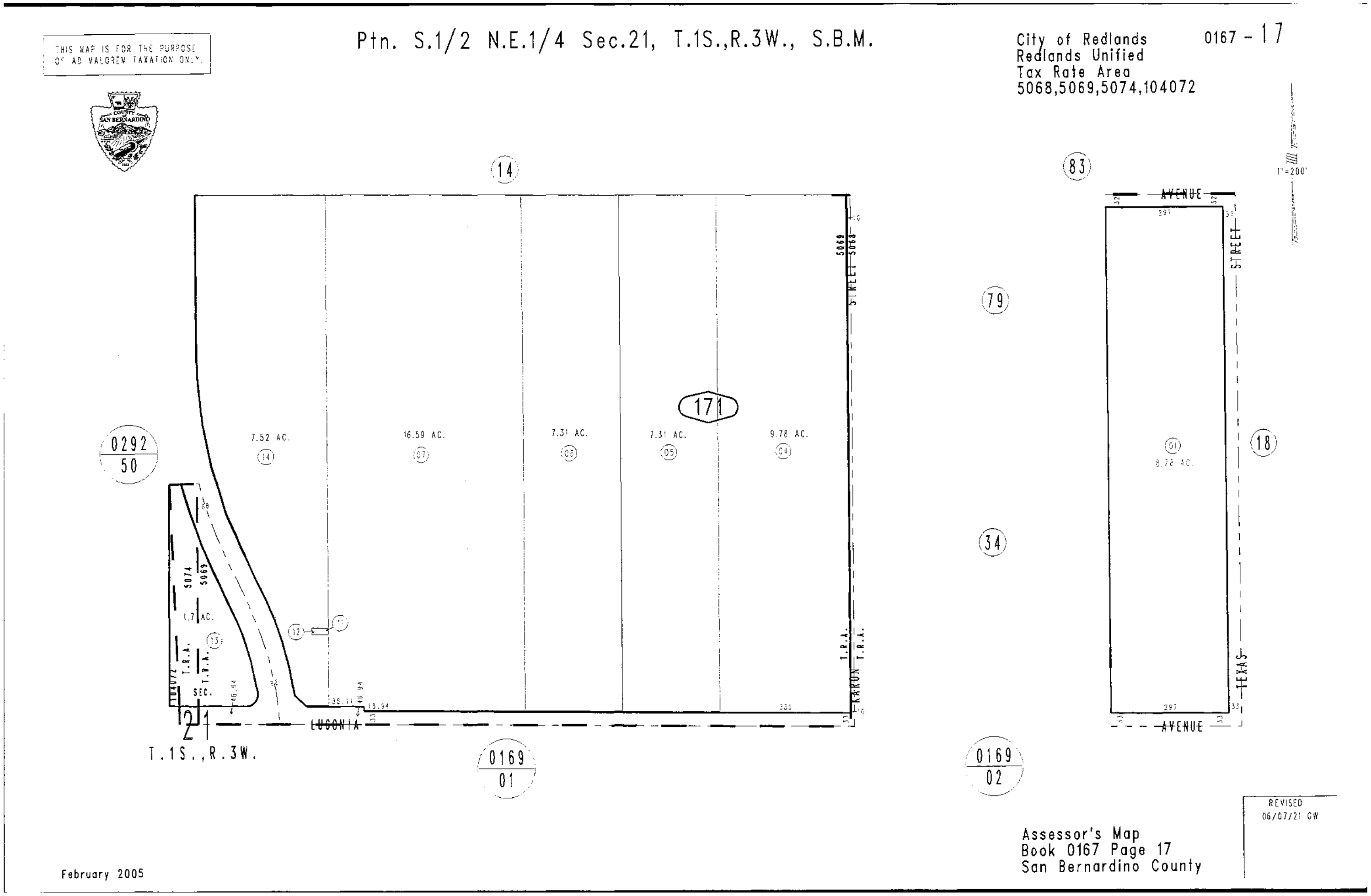
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.


THIS MAP IS FOR THE PURPOSE OF AD VALOREM TAXATION ONLY.
Ptn. S.1/2 N.E.1/4 Sec.21, T.1S.,R.3W., S.B.M.
City of Redlands
Redlands Unified
Tax Rate Area
5068,5069,5074,104072
0167 - 17
1"=200'
14
83
79
171
0292
50
7.52 AC.
14
16.59 AC.
07
7.31 AC.
06
7.31 AC.
05
9.78 AC.
04
01
8.78 AC.
18
34
1.7 AC.
13
12
5074
5069
5068
T.R.A.
SEC.
21
T.1S.,R.3W.
LUGONIA
AVENUE
STREET
TEXAS
KARON
297
335
0169
01
0169
02
REVISED
06/07/21 GN
Assessor's Map
Book 0167 Page 17
San Bernardino County
February 2005

LPA Redlands Project
NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 6794904.8
December 20, 2021

EDR Building Permit Report

Target Property and Adjoining Properties

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.

EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-13 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records - The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquires (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.

EDR® Environmental Data Resources Inc

BUILD FAX®
PROPERTY HISTORY

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Petra Geotechnical Inc on Dec 20, 2021.

TARGET PROPERTY

NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **YES**

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Redlands

Year	*Source*	*TP*	*Adjoining*
2021	City of Redlands, Building & Safety Department		
2020	City of Redlands, Building & Safety Department		
2019	City of Redlands, Building & Safety Department		
2018	City of Redlands, Building & Safety Department		
2017	City of Redlands, Building & Safety Department		
2016	City of Redlands, Building & Safety Department		
2015	City of Redlands, Building & Safety Department		X
2014	City of Redlands, Building & Safety Department		
2013	City of Redlands, Building & Safety Department		
2012	City of Redlands, Building & Safety Department		
2011	City of Redlands, Building & Safety Department		
2010	City of Redlands, Building & Safety Department		
2009	City of Redlands, Building & Safety Department		
2008	City of Redlands, Building & Safety Department		
2007	City of Redlands, Building & Safety Department		
2006	City of Redlands, Building & Safety Department		X

Name: JurisdictionName
Years: Years
Source: Source
Phone: Phone

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Redlands
Years: 2006-2021
Source: City of Redlands, Building & Safety Department, REDLANDS, CA
Phone: (909) 798-7551

Name: Burbank
Years: 1970-2021
Source: City of Burbank, Building Division, Burbank, CA
Phone: (818) 238-5220

Name: Hanford
Years: 1995-2021
Source: City of Hanford, Building Division, HANFORD, CA
Phone: (559) 585-2581

Name: San Bernardino County
Years: 1970-2021
Source: San Bernardino County, Land Use, Building & Safety, FONTANA, CA
Phone: (909) 387-8311

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

No Permits Found

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

TENNESSEE ST

1180 TENNESSEE ST

Date: **7/6/2015**
Permit Type:
Description: **UNDERGROUND FIRE SYSTEM**

Permit Description: **B-Fire Alarm/Sprinkler**
Work Class:
Proposed Use:
Permit Number: B15-13682
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name:

Date: **7/2/2015**
Permit Type:
Description: **FIRE MONITOR ALARM**

Permit Description: **B-Fire Alarm/Sprinkler**
Work Class:
Proposed Use:
Permit Number: B15-13868
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

Date: **3/31/2015**
Permit Type:
Description: **4924 SF CAR WASH CRA 883**

Permit Description: **B-Commercial**
Work Class:
Proposed Use:
Permit Number: B14-12259
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name:

Date:
Permit Type:
Description: **FIRE SPRINKLERS 67 HEADS**

Permit Description: **B-Fire Alarm/Sprinkler**
Work Class:
Proposed Use:
Permit Number: B15-12760
Status: APPROVED
Valuation: $0.00
Contractor Company:
Contractor Name:

1311 TENNESSEE ST

Date: **9/20/2006**
Permit Type: **BRP**
Description: **5500 SQ TILE ON TILE**

Permit Description: **B-Roofing**
Work Class:
Proposed Use:
Permit Number: B06-01495
Status: EXPIRED
Valuation: $16,225.00
Contractor Company:
Contractor Name:

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP’s to find clues to the prior use (s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000
Permit Type: Bldg -
New Permit Number: 101000000405
Status: Valuation: $1,000,000.00
Contractor Company: OWNER-BUILDER
Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

LPA Redlands Project

NEC Tennessee St. and W. Lugonia Ave
Redlands, CA 92374

Inquiry Number: 6794904.11
December 20, 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

12/20/21

Site Name:

LPA Redlands Project
NEC Tennessee St. and W. Lu
Redlands, CA 92374
EDR Inquiry # 6794904.11

Client Name:

Petra Geotechnical Inc
40880 County Center Drive, Suite M
Temecula, CA 92591
Contact: Edward Lump

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

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1994	1"=500'	Acquisition Date: January 01, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: August 15, 1989	USDA
1985	1"=500'	Flight Date: July 28, 1985	USDA
1975	1"=500'	Flight Date: December 01, 1975	USGS
1968	1"=500'	Flight Date: August 22, 1968	USDA
1966	1"=500'	Flight Date: April 16, 1966	USGS
1959	1"=500'	Flight Date: June 22, 1959	USDA
1953	1"=500'	Flight Date: January 15, 1953	USDA
1949	1"=500'	Flight Date: May 08, 1949	USDA
1938	1"=500'	Flight Date: July 04, 1938	USDA
1930	1"=500'	Flight Date: March 25, 1930	FAIR

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 #: 6794904.11

YEAR: 2016

= 500'

INQUIRY #: 6794904.11

YEAR: 2012

= 500'

N

INQUIRY #: 6794904.11

YEAR: 2009

= 500'

INQUIRY #: 6794904.11

YEAR: 2006

= 500'

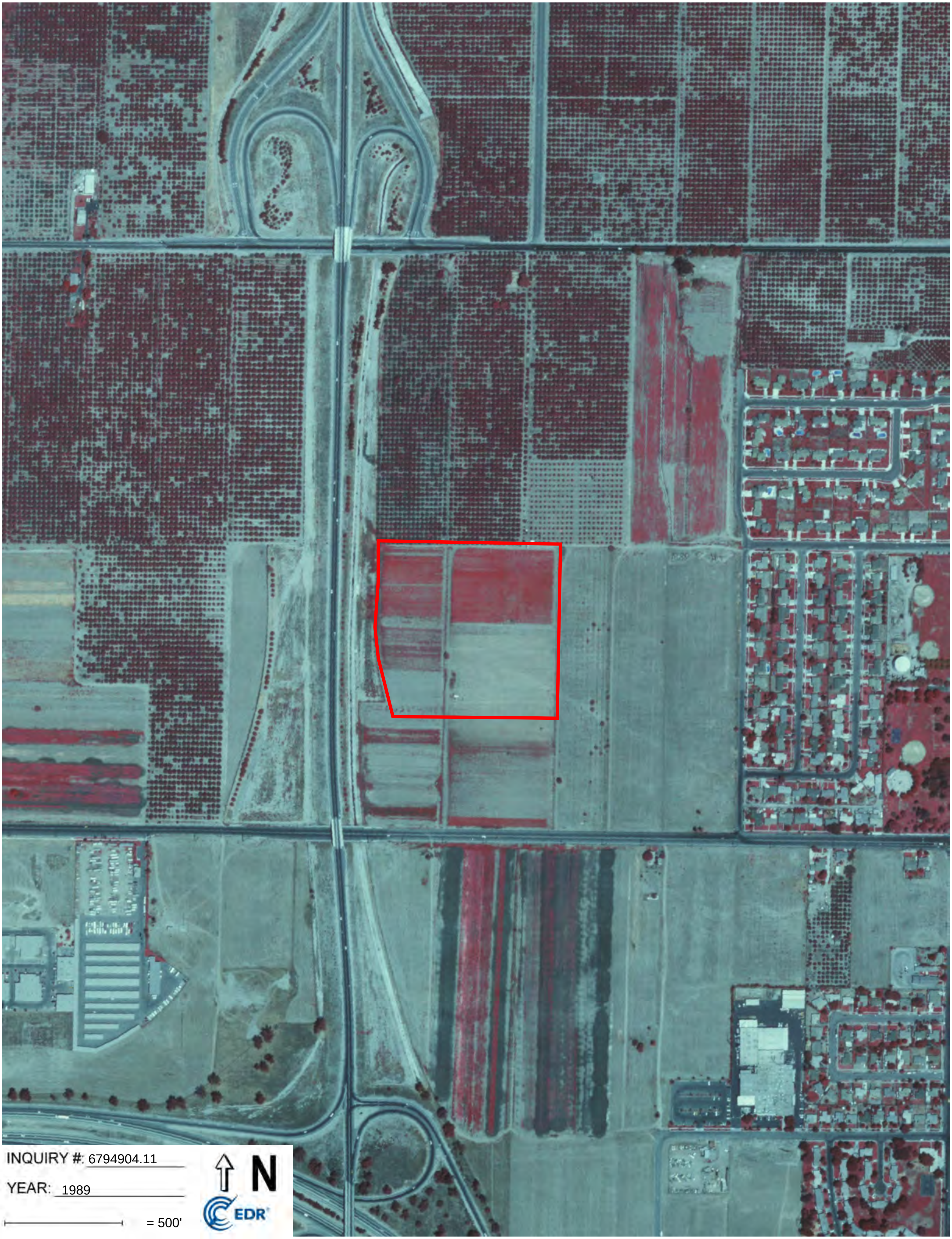
INQUIRY #: 6794904.11

YEAR: 2002

= 500'

EDR


INQUIRY #: 6794904.11
YEAR: 1994
= 500'
N
EDR



INQUIRY #: 6794904.11

YEAR: 1989

= 500'

INQUIRY #: 6794904.11

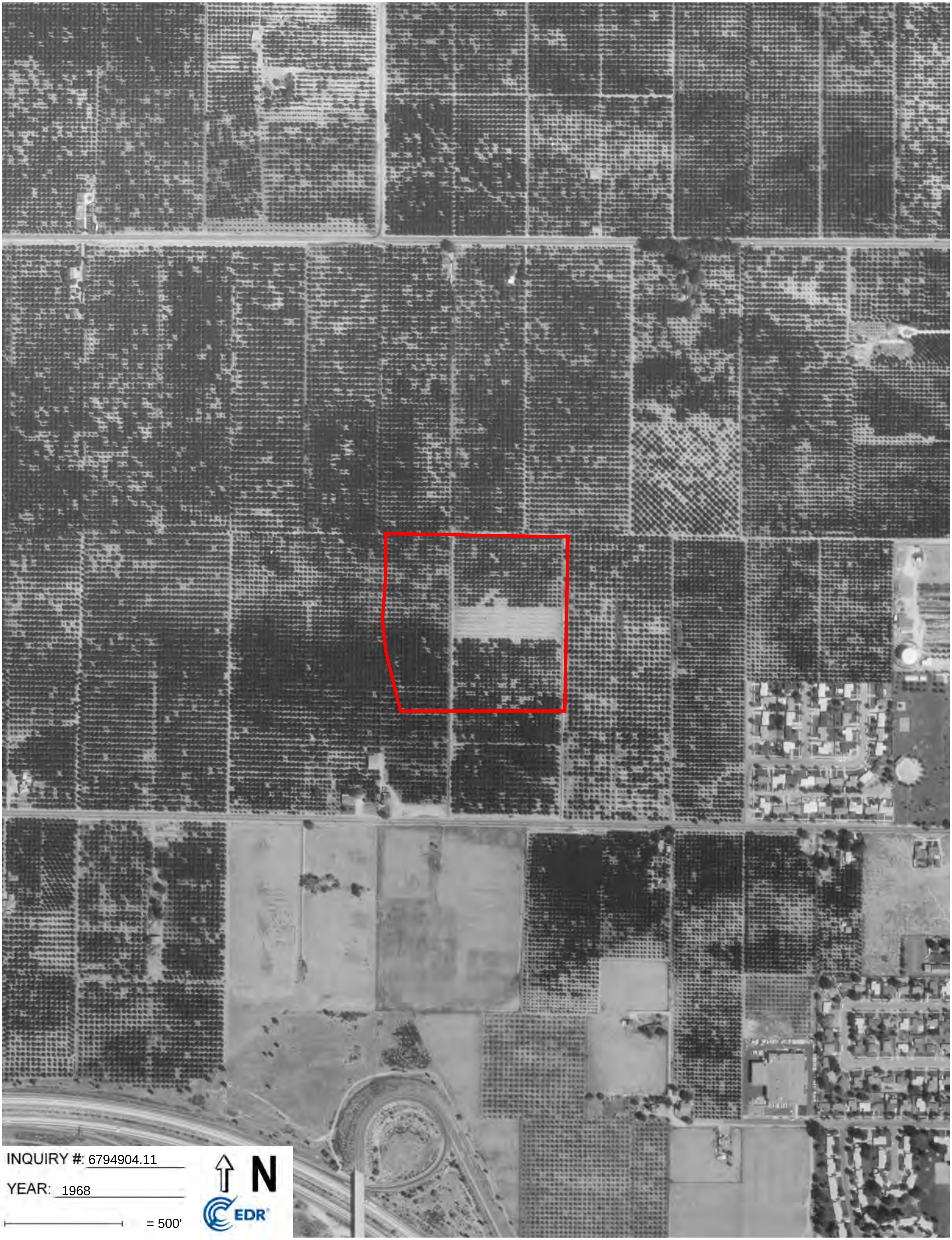
YEAR: 1985

= 500'

INQUIRY #: 6794904.11

YEAR: 1975

= 500'



INQUIRY #: 6794904.11

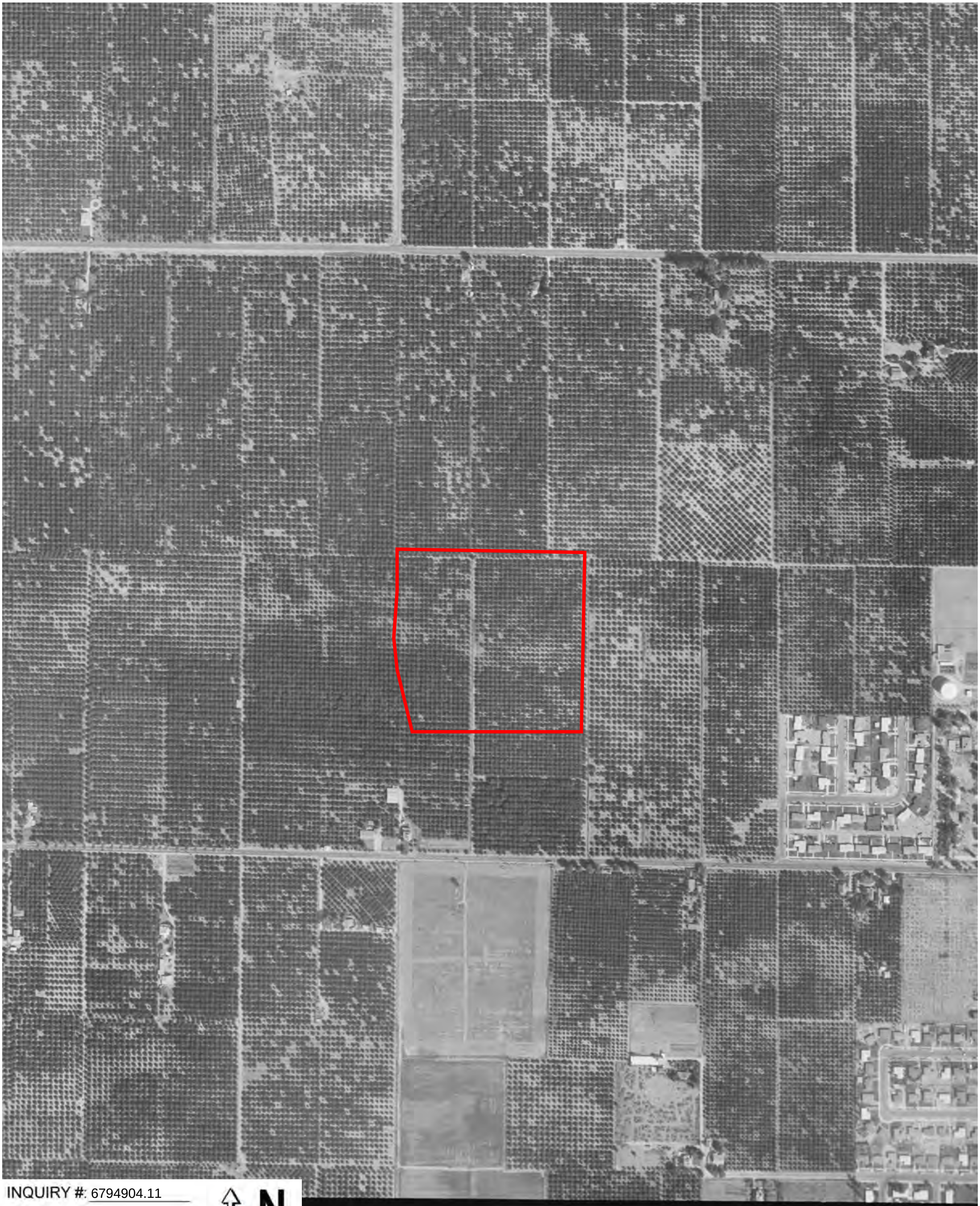
YEAR: 1968

= 500'

INQUIRY #: 6794904.11

YEAR: 1966

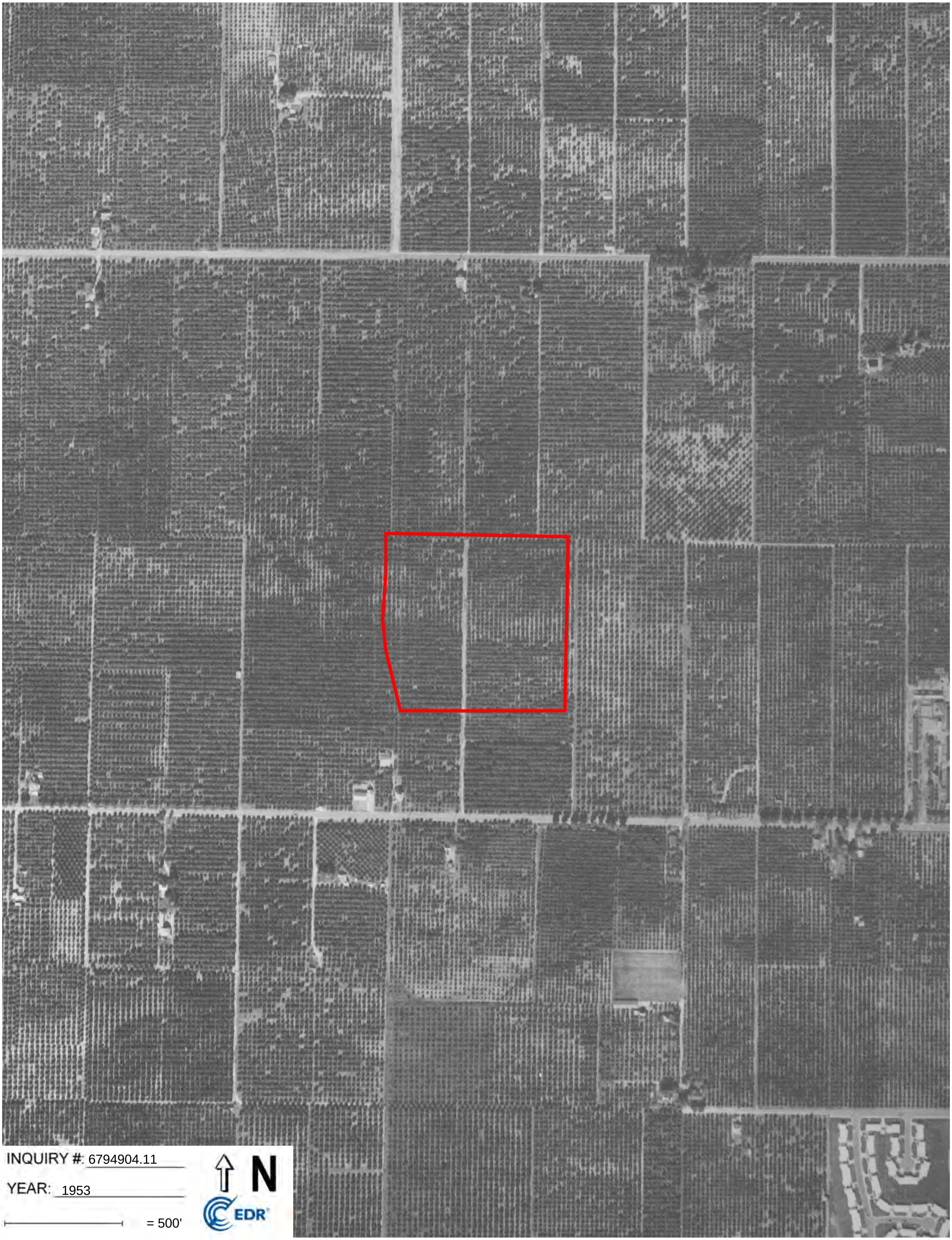
= 500'



INQUIRY #: 6794904.11

YEAR: 1959

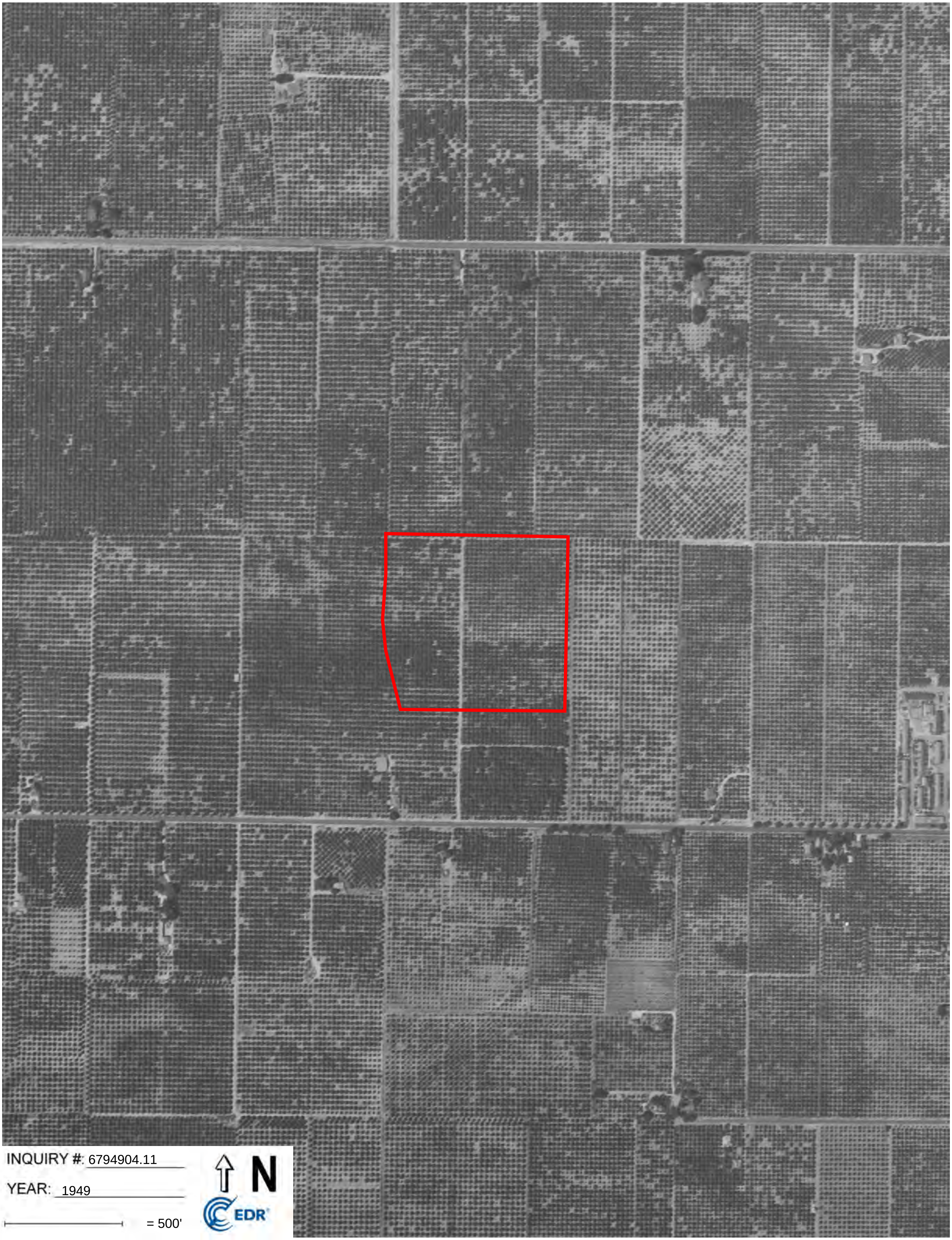
= 500'



INQUIRY #: 6794904.11

YEAR: 1953

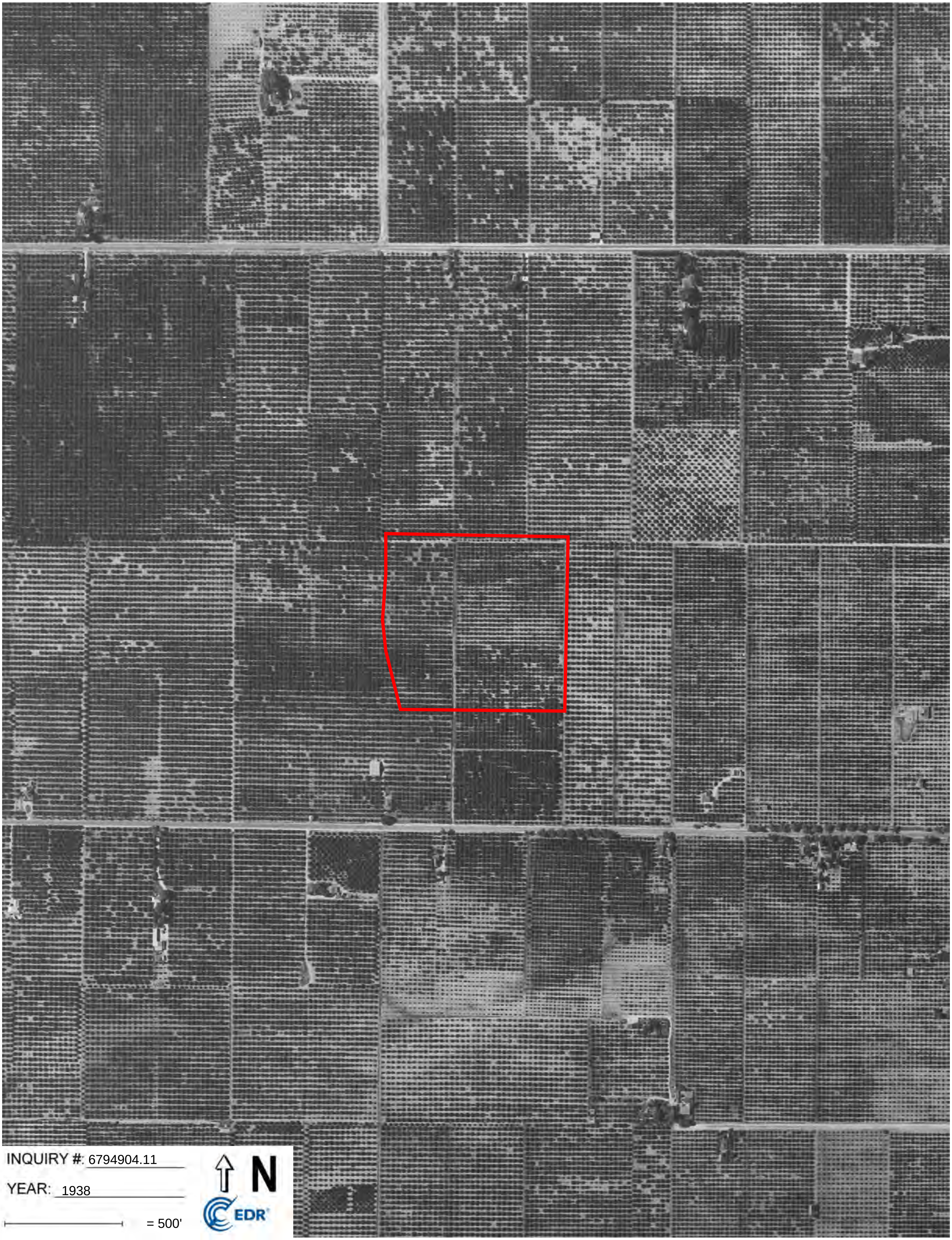
= 500'



INQUIRY #: 6794904.11

YEAR: 1949

= 500'

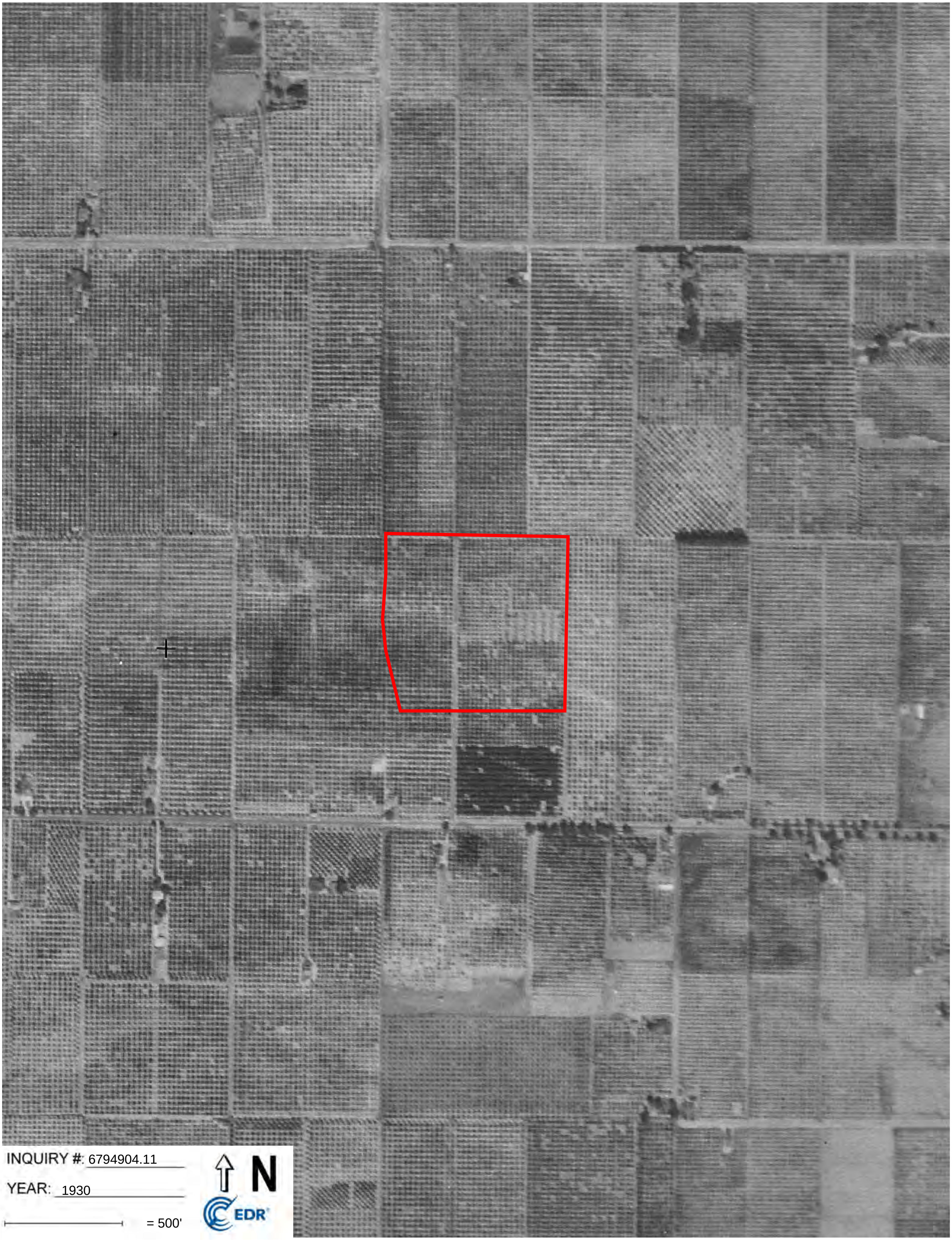


INQUIRY #: 6794904.11

YEAR: 1938

= 500'

N



INQUIRY #: 6794904.11

YEAR: 1930

= 500'

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

Inquiry Number: 06794904.13R
DECEMBER 28, 2021

EDR Environmental Lien and AUL Search 1980

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

EDR Environmental Lien and AUL Search 1980

The EDR Environmental Lien and AUL Search 1980 Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description
- search for ownership information filed between 1980 and the date of this report
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.
- access a copy of the deed
- search for environmental encumbering instrument(s) filed between 1980 and the date of this report
- provide a copy of any environmental encumbrance(s)
- provide a copy of the current deed

NOTICE:

DUE TO COVID-19 CONTAINMENT PROTOCOL, THE COUNTY RECORDER OFFICE IS CLOSED FOR THE FORESEEABLE FUTURE. OWNERSHIP HISTORY, TO THE EXTENT DATA AND DOCUMENTS WERE AVAILABLE ONLINE, WAS REVIEWED AND DOCUMENTED IN THE REPORT BACK TO 1980. RESEARCH OF HARDCOPY, ORIGINAL DEEDS, AND RECORDED ENVIRONMENTAL ENCUMBRANCES BACK TO CURRENT OWNER TRANSFER ARE NOT AVAILABLE NOR REASONABLY ASCERTAINABLE AT THIS TIME.

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

Disclaimer - Copyright and Trademark Notice

This report was prepared for the use of Environmental Data Resources, Inc., and AFX Research, LLC. (AFX) exclusively. This report is neither a guarantee of title, a commitment to insure, or a policy of title insurance. **NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WTH THIS REPORT**. Environmental Data Resources, Inc. (EDR) and AFX exclusively specifically disclaim the making of any such warranties, including without limitation, merchantability or fitness for a particular use or purpose. The information contained in this report is retrieved as it is recorded from the various agencies that make it available. The total liability is limited to the fee paid for this report.

EDR Environmental Lien and AUL Search 1980

TARGET PROPERTY INFORMATION

ADDRESS

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

PROPERTY DESCRIPTION

Current Owner:	LUGONIA HOLDINGS, LLC, AN UNDIVIDED 25% INTEREST; CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST AND LUGONIA PARK ASSOCIATES, AN UNDIVIDED 65% INTEREST
Legal Description:	E 15 AC W 25 AC SW 1/4 NE 1/4 SEC 21 TP 1S R 3W EX ST AND EX ST PER 6-24-88 #88-203974
Property Identifier(s):	0167-171-07-0000
General Comments:	NA

FINDINGS SUMMARY

ADDITIONAL DETIALS MAY BE FOUND IN THE 'FINDINGS DETAIL' SECTION.

Parcel: 0167-171-07-0000

Environmental Lien:	☐ Found	☒ Not Found
Other Activity and Use Limitations (AUL):	☐ Found	☒ Not Found

HISTORICAL CHAIN OF TITLE FROM 1980

RECORDED	INSTRUMENT	GRANTEE	GRANTOR
12/26/2019	2019-0477142	LUGONIA HOLDINGS, LLC	JAMES SEINO AND KENT SEINO
12/26/2019	2019-0477139	LUGONIA HOLDINGS, LLC	NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE...
12/26/2019	2019-0477137	LUGONIA HOLDINGS, LLC	ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY...
12/26/2019	2019-0477135	LUGONIA HOLDINGS, LLC	DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE...
12/26/2019	2019-0477133	LUGONIA HOLDINGS, LLC	YUMA TSUCHIYA, AN 1.25% UNDIVIDED...
12/26/2019	2019-0474413 TO 0474422	LUGONIA HOLDINGS, LLC	YUMA TSUCHIYA, A WIDOWER; JAMES A. SADOYAMA, A...
05/31/1990	90-212185	CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST	LUGONIA PARK ASSOCIATES
09/30/1988	88-330177	VICTOR K. SEINO, A WIDOWER, AS TO AN UNDIVIDED...	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25%...
09/30/1988	88-330176	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25%...	LUGONIA PARK ASSOCIATES
04/11/1984	84-083175	LUGONIA PARK ASSOCIATES	J.J RAMIREZ, A MARRIED MAN
01/03/1984	84-000521	J.J RAMIREZ, A MARRIED MAN	AMELIA RAMIREZ, WIFE OF GRANTEE
01/03/1984	84-000520	J.J RAMIREZ, A MARRIED MAN	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...
01/03/1984	84-000519	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...	UNIVERSITY RANCHES-HAGHIGHI-EMERALD PARTNERSHIP
11/29/1983	83-280321	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...	EMERALD REALTY, INC
06/23/1981	81-136896	UNIVERSITY RANCHES-HAGHIGHI-EMERALD PARTNERSHIP	EMERALD REALTY, INC, UNIVERSITY RANCHES...
05/06/1980	80-107706	EMERALD REALTY, INC., AS TO AN UNDIVIDED 10%...	INTER-CAL MANAGEMENT, LTD

EDR Environmental Lien and AUL Search 1980

RESEARCH SOURCES

JUDICIAL RECORDS ***NOT*** SEARCHED. BASED ON AVAILABLE INFORMATION EVALUATED BY THE TITLE SEARCH PROFESSIONAL, THE JURISDICTION ***DOES NOT*** REQUIRE A SEARCH OF JUDICIAL RECORDS IN ORDER TO IDENTIFY ENVIRONMENTAL LIENS.

Source 1:	SAN BERNARDINO COUNTY RECORDER'S OFFICE
Source 2:	SAN BERNARDINO COUNTY ASSESSOR'S OFFICE
Source 3:	CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
Source 4:	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Examiner's Note:	PUBLIC RECORDS OF SAN BERNARDINO COUNTY, CA WERE SEARCHED FROM JANUARY 1, 1980 TO DECEMBER 16, 2021, AND NO OTHER DEEDS VESTING TITLE IN THE SUBJECT PROPERTY WERE FOUND OF RECORD DURING THE PERIOD SEARCHED. **NOTICE:** DUE TO COVID-19 CONTAINMENT PROTOCOL, THE RECORDER OFFICE IS CLOSED FOR THE FORESEEABLE FUTURE. PROPERTY AND/OR ENCUMBRANCE HISTORY, TO THE EXTENT DATA AND DOCUMENTS WERE AVAILABLE ONLINE, WAS REVIEWED AND DOCUMENTED IN THE REPORT BACK TO 1980. RESEARCH OF HARDCOPY, ORIGINAL DEEDS, AND RECORDED DOCUMENTS PRIOR TO THIS DATE ARE NOT AVAILABLE NOR REASONABLY ASCERTAINABLE AT THIS TIME.

EDR Environmental Lien and AUL Search 1980

FINDINGS DETAIL

Parcel: 0167-171-07-0000

ENVIRONMENTAL LIEN

Environmental Lien: ☐ Found ☒ Not Found

Comments: LIMITED COUNTY ACCESS. NONE IDENTIFIED 1980 - PRESENT.

OTHER ACTIVITY AND USE LIMITATIONS (AULS)

Other AULs: ☐ Found ☒ Not Found

Comments: LIMITED COUNTY ACCESS. NONE IDENTIFIED 1980 - PRESENT.

EDR Environmental Lien and AUL Search 1980

HISTORICAL CHAIN OF TITLE FROM 1980

CHAIN 1

Type of Deed: QUIT CLAIM DEED
Title is vested in: LUGONIA HOLDINGS, LLC
Title received from: JAMES SEINO AND KENT SEINO
Date Executed: NA
Date Recorded: 12/26/2019
Book: NA
Page: NA
Volume: NA
Instrument#: 2019-0477142
Docket: NA
Land Record Comments: AFFIDAVIT; R. 4-21-20; 2020-0137026; MATTER OF VICTOR SEINO, DECEASED 05/13/1992; VESTS TO JAMES SEINO & KENT SEINO, BOTH AN 0.8333% UND T/C INTEREST, & ROBERT SEINO, 0.8334% UND. T/C INTEREST; AFFIDAVIT; R. 12-26-19; MATTER OF ROBERT MASAO SEINO, DECEASED 08/04/2018, VESTS TO KENT AND JAMES SEINO

CHAIN 2

Type of Deed: QUIT CLAIM DEED
Title is vested in: LUGONIA HOLDINGS, LLC
Title received from: NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE LIVING TRUST OF JAMES ANKI SADOYMA AND THAIS VERDELLE THRASHER SADOYAMA, AN 1.5% UNDIVIDED TENANCY IN COMMON INTEREST
Date Executed: NA
Date Recorded: 12/26/2019
Book: NA
Page: NA
Volume: NA
Instrument#: 2019-0477139
Docket: NA
Land Record Comments: ORDER DETERMINING SUCCESSION TO REAL PROPERTY, R. 12-26-19, 2019-0477138; MATTER OF THAIS VERDELLE THRASHER SADOYAMA VESTS TO NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE LIVING TRUST OF JAMES ANKI SADOYMA AND THAIS VERDELLE THRASHER SADOYAMA, AN 1.5% UNDIVIDED TENANCY IN COMMON INTEREST

CHAIN 3

Type of Deed: QUIT CLAIM DEED
Title is vested in: LUGONIA HOLDINGS, LLC
Title received from: ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed: NA
Date Recorded: 12/26/2019
Book: NA
Page: NA
Volume: NA
Instrument#: 2019-0477137
Docket: NA
Land Record Comments: AFFIDAVIT - REAL PROPERTY OF SMALL VALUE, R. 12/26/2019; 2019-0477136: MATTER OF HARUE MORIKONE, DECEASED 02/13/2010 VESTS IN ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST

EDR Environmental Lien and AUL Search 1980

CHAIN 4

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477135
Docket:	NA
Land Record Comments:	AFFIDAVIT - REAL PROPERTY OF SMALL VALUE, R. 12/26/2019; 2019-0477134; MATTER OF GARY G. MORIKONE, DECEASED 08/04/2003 VESTED IN DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST

CHAIN 5

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	YUMA TSUCHIYA, AN 1.25% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477133
Docket:	NA
Land Record Comments:	AFFIDAVIT - DEATH OF SPOUSE, R. 12/26/2019; 2019-0477132; HISAKO TSUCHIYA, DECEASED

CHAIN 6

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	YUMA TSUCHIYA, A WIDOWER; JAMES A. SADOYAMA, A WIDOWER; HIROMU MORIKONE, A WIDOWER; DOROTHY T. MORIKONE, A WIDOW, SHIROU KUNIHIRA AND SATSUKI MAY KUNIHIRA; PETER T. YOSHIDA, WHO TOOK TITLE AS PETER I. YOSHIDA, AND JUNE YOSHIDA; GEORGE M. TAKENO AND SETSUKO G. TAKENO, FRANK I YOSHIDA AND CHIEKO YOSHIDA; AND DAVID IL. ASATANI, A SINGLE MAN
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0474413 TO 0474422
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 7

Type of Deed: GRANT DEED

Title is vested in: CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST

Title received from: LUGONIA PARK ASSOCIATES

Date Executed: 05/04/1990

Date Recorded: 05/31/1990

Book: NA

Page: NA

Volume: NA

Instrument#: 90-212185

Docket: NA

Land Record Comments:

CHAIN 8

Type of Deed: GRANT DEED

Title is vested in: VICTOR K. SEINO, A WIDOWER, AS TO AN UNDIVIDED 1/10TH INTEREST; YUMA TSUCHIYA AND HISAKO TSUCHIYA, H & W, AS TO AN UNDIVIDED1/10TH INTEREST, PETER I. YOSHIDA AND JUNE YOSHIDA, AN UNDIVIDED 1/10TH INTEREST; GARY C. MORIKONE AND DOROTHY T. MORIKONE, H & W, AS TO AN UNDIVIDED 1/20TH INTEREST, RICHARD K. HAMAMURA & RUTH Y. HAMAMURA, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; SHIROU KUNIHIRA AND SATSUKI MAY KUNIHIRA, AS TO AN UNDIVIDED 1/10TH INTEREST, JAMES A. SADOYAMA & THAIS V. SADOYAMA, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; DAVID I. ASATANI, A SINGLE MAN, AS TO AN UNDIVIDED 1/10TH INTEREST, GEORGE M. TAKENO AND SETSUKO G. TAKENO, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; AND HIROMU MORIKONE AND HARUE MORIKONE, AS TO AN UNDIVIDED 1/20TH INTEREST

Title received from: WORLD INVESTMENT NETWORK, AN UNDIVIDED 25% INTEREST

Date Executed: 09/28/1988

Date Recorded: 09/30/1988

Book: NA

Page: NA

Volume: NA

Instrument#: 88-330177

Docket: NA

Land Record Comments: AFFIDAVIT - DEATH OF SPOUSE, R. 12-26-19, 2019-0477132, HISAKO TSUCHIYA, DECEASED

CHAIN 9

Type of Deed: GRANT DEED

Title is vested in: WORLD INVESTMENT NETWORK, AN UNDIVIDED 25% INTEREST

Title received from: LUGONIA PARK ASSOCIATES

Date Executed: 07/01/1988

Date Recorded: 09/30/1988

Book: NA

Page: NA

Volume: NA

Instrument#: 88-330176

Docket: NA

Land Record Comments:

EDR Environmental Lien and AUL Search 1980

CHAIN 10

Type of Deed:	GRANT DEED
Title is vested in:	LUGONIA PARK ASSOCIATES
Title received from:	J.J RAMIREZ, A MARRIED MAN
Date Executed:	03/28/1984
Date Recorded:	04/11/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-083175
Docket:	NA
Land Record Comments:	

CHAIN 11

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	J.J RAMIREZ, A MARRIED MAN
Title received from:	AMELIA RAMIREZ, WIFE OF GRANTEE
Date Executed:	NA
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000521
Docket:	NA
Land Record Comments:	

CHAIN 12

Type of Deed:	GRANT DEED
Title is vested in:	J.J RAMIREZ, A MARRIED MAN
Title received from:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED1/2 INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED1/2 INTEREST
Date Executed:	12/21/1983
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000520
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 13

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED1/2 INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED1/2 INTEREST
Title received from:	UNIVERSITY RANCHES-HAGHIGHI-EMERALD PARTNERSHIP
Date Executed:	NA
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000519
Docket:	NA
Land Record Comments:	

CHAIN 14

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED 5% INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED 5% INTEREST
Title received from:	EMERALD REALTY, INC
Date Executed:	NA
Date Recorded:	11/29/1983
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	83-280321
Docket:	NA
Land Record Comments:	

CHAIN 15

Type of Deed:	GRANT DEED
Title is vested in:	UNIVERSITY RANCHES-HAGHIGHI-EMERALD PARTNERSHIP
Title received from:	EMERALD REALTY, INC, UNIVERSITY RANCHES INTERNATIONAL, INC., MANOUTCHEHR HAGHIGHI AND SOUSSAN HAGHIGHI DOWLATSHAHI
Date Executed:	04/06/1981
Date Recorded:	06/23/1981
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	81-136896
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 16

Type of Deed:	GRANT DEED
Title is vested in:	EMERALD REALTY, INC., AS TO AN UNDIVIDED 10% INTEREST, UNIVERSITY RANCHES INTERNATIONAL, INC., AS TO AN UNDIVIDED 45% INTEREST, AND MANOUTCHEHR HAGHIGHI AND SOUSSAN HAGHIGHI, AS TO AN UNDIVIDED 45% INTEREST
Title received from:	INTER-CAL MANAGEMENT, LTD
Date Executed:	04/17/1980
Date Recorded:	05/06/1980
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	80-107706
Docket:	NA
Land Record Comments:	NO ADDITIONAL DEEDS FOUND LIMITED COUNTY ACCESS. RESEARCH CONDUCTED BACK TO 1980. THIS IS THE OLDEST RECORDED DEED ACCESSIBLE AT THIS TIME.

EDR Environmental Lien and AUL Search 1980

MISCELLANEOUS INSTRUMENTS

Comments:	LIMITED COUNTY ACCESS. NONE IDENTIFIED 1980 - PRESENT.

EDR Environmental Lien & AUL Search 1980

DEED EXHIBIT

RECORDING REQUESTED BY
CHICAGO TITLE COMPANY
COMMERCIAL DIVISION
AND WHEN RECORDED MAIL DOCUMENT TO:

NAME Mirau Edwards Cannon Lewin & Tooke
STREET ADDRESS PO Box 9058
CITY, STATE & ZIP CODE Redlands, CA 92375

102218-001-LZ7

Electronically
Recorded in Official Records
County of San Bernardino
Bob Dutton
Assessor-Recorder-County Clerk

DOC# 2019-0477142

12/26/2019
03:28 PM
SAN

B9246

Titles: 1 Pages: 5

Fees	$36.00
Taxes	$0.00
CA SB2 Fee	0.00
Total	$36.00

SPACE ABOVE FOR RECORDER'S USE ONLY

Exempt from fee per GC 27388.1 (a) (1);
fee cap of $225 reached

QUITCLAIM DEED

Title of Document

THIS AREA FOR RECORDER'S USE ONLY

1853

THIS COVER SHEET ADDED TO PROVIDE ADEQUATE SPACE FOR RECORDING INFORMATION
($3.00 Additional Recording Fee Applies)

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL
TO:
Mirau, Edwards, Cannon,
Lewin & Tooke (JKM)
P. O. Box 9058
Redlands, CA 92375

MAIL TAX STATEMENTS TO:
Lugonia Holdings, LLC
Daniel Kunihira
P. O. Box 542
Loma Linda, CA 92354

APN: 0167-171-07; -12 & -14

Property situate in County of San Bernardino
Amount of Documentary Transfer Tax Due $0.00

This conveyance changes the manner in which title is held, grantor(s) and Grantee(s) remain the same and continue to hold the same proportionate interest, R&T 11911.

Signature

QUITCLAIM DEED

FOR VALUABLE CONSIDERATION, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, JAMES SEINO and KENT SEINO hereby remise, release and quitclaims all their interest in the property situated in the County of San Bernardino, State of California, described on Exhibit "A" attached hereto and incorporated herein by reference to LUGONIA HOLDINGS, LLC, a California limited liability company.

IN WITNESS WHEREOF, the undersigned has executed this Quitclaim Deed as of Oct. 2, 2019.

James Seino

Kent Seino

MAIL TAX STATEMENTS AS DIRECTED ABOVE

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
:ss.
COUNTY OF Ventura)

On 9/24/2019, before me, Paul Varblow, Notary Public, personally appeared JAMES SEINO, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/s~~he~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the person~~s~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

PAUL VARBLOW
Notary Public - California
Ventura County
Commission # 2166145
My Comm. Expires Sep 29, 2020

Signature ______________________
Notary Public in and for said
County and State

(Seal)

STATE OF CALIFORNIA)
:ss.
COUNTY OF Los Angeles)

On October 2nd 2019 before me, Krisztian Nagy, Notary Public, personally appeared KENT SEINO, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature
Notary Public in and for said
County and State

KRISZTIAN NAGY
Notary Public - California
Los Angeles County
Commission # 2267940
My Comm. Expires Nov 20, 2022

(Seal)

LEGAL DESCRIPTION

A 2.5% TENANCY IN COMMON INTEREST IN THE FOLLOWING PROPERTY:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

THAT PORTION OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

COMMENCING 20 RODS EAST OF THE SOUTHWEST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION; THENCE EAST 30 RODS; THENCE NORTH 80 RODS; THENCE WEST 30 RODS; THENCE 80 RODS TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE SOUTH 30 FEET CONVEYED TO THE COUNTY OF SAN BERNARDINO FOR ROAD PURPOSES.

APN: 0167-171-07

PARCEL 2:

THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THEREFROM THAT PORTION OF THE ABOVE DESCRIBED PROPERTY LYING SOUTHWESTERLY OF THE NORTHWESTERLY LINE OF THAT CERTAIN PARCEL CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 8, 1979 IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THE FOLLOWING:

EXCEPTION A: AN UNDIVIDED 5/30THS INTEREST IN AND TO A PARCEL OF LAND (CALLED WELLSITE) WITH WELL AND PUMPING PLANT THEREON (COMMONLY KNOWN AS THE "LUGONIA AVENUE WELL"), SITUATED ON THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 21, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF SAID WEST 10 ACRES, 221 FEET NORTH FROM THE SOUTHEAST CORNER OF SAID WEST 10 ACRES (WHICH SOUTHEAST CORNER OF SAID TEN ACRES IS IN THE CENTER LINE OF LUGONIA AVENUE); THENCE WEST 42 FEET; THENCE NORTH 16 FEET; THENCE EAST 42 FEET; THENCE SOUTH 16 FEET TO POINT OF BEGINNING.

EXCEPTION B: THE RIGHTS AND INTERESTS AS CONVEYED TO SOUTHERN CITRUS ASSOCIATION, A CORPORATION, BY DEED DATED MAY 6, 1946, RECORDED MAY 15, 1946 IN BOOK 1891, PAGE 275 OF OFFICIAL RECORDS OF SAID COUNTY, INCLUDING AMONG SUCH RIGHTS AND INTEREST, AN UNDIVIDED 2/30THS INTEREST IN SAID WELL SITE, WELL AND PUMPING PLANT ABOVE REFERRED TO, SUCH EXCEPTED 2/30THS INTEREST BEING IN ADDITION TO THE 5/30THS INTEREST EXCEPTED IN EXCEPTION A.

EXCEPTION C: ANY PORTION OF THE ABOVE DESCRIBED PARCELS OF LAND LYING WITHIN LUGONIA AVENUE.

ALSO EXCEPTING THEREFROM DEED TO THE STATE OF CALIFORNIA, RECORDED AUGUST 8, 1979 IN BOOK 9745, PAGE 492 OF OFFICIAL RECORDS AND IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 17/30THS INTEREST IN AND TO A PARCEL OF LAND (CALLED "WELLSITE") AS CONVEYED TO D. W. WILCOTT, TRUSTEE AS RECORDED APRIL 10, 1972 IN BOOK 7904, PAGE 787 OF OFFICIAL RECORDS.

APN: 0167-171-12 AND 14

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

Inquiry Number: 06794904.13R
DECEMBER 28, 2021

EDR Environmental Lien and AUL Search 1980

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

EDR Environmental Lien and AUL Search 1980

The EDR Environmental Lien and AUL Search 1980 Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description
- search for ownership information filed between 1980 and the date of this report
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.
- access a copy of the deed
- search for environmental encumbering instrument(s) filed between 1980 and the date of this report
- provide a copy of any environmental encumbrance(s)
- provide a copy of the current deed

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

Disclaimer - Copyright and Trademark Notice

This report was prepared for the use of Environmental Data Resources, Inc., and AFX Research, LLC. (AFX) exclusively. This report is neither a guarantee of title, a commitment to insure, or a policy of title insurance. **NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WTH THIS REPORT**. Environmental Data Resources, Inc. (EDR) and AFX exclusively specifically disclaim the making of any such warranties, including without limitation, merchantability or fitness for a particular use or purpose. The information contained in this report is retrieved as it is recorded from the various agencies that make it available. The total liability is limited to the fee paid for this report.

EDR Environmental Lien and AUL Search 1980

TARGET PROPERTY INFORMATION

ADDRESS

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

PROPERTY DESCRIPTION

Current Owner:	LUGONIA HOLDINGS, LLC, AN UNDIVIDED 25% INTEREST; CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST AND LUGONIA PARK ASSOCIATES, AN UNDIVIDED 65% INTEREST
Legal Description:	W 10 AC SW 1/4 NE 1/4 SEC 21 TP 1S R 3W EX N 16 FT S 237 FT E 42 FT W 10 AC AND EX ST LYING E AND NELY OF HGWY PER DEED 8-8-79#347(9745/595)
Property Identifier(s):	0167-171-14-0000
General Comments:	NA

FINDINGS SUMMARY

ADDITIONAL DETIALS MAY BE FOUND IN THE 'FINDINGS DETAIL' SECTION.

Parcel: 0167-171-14-0000

Environmental Lien: ☐ Found ☒ Not Found

Other Activity and Use Limitations (AUL): ☐ Found ☒ Not Found

HISTORICAL CHAIN OF TITLE FROM 1980

RECORDED	INSTRUMENT	GRANTEE	GRANTOR
12/26/2019	2019-0477142	LUGONIA HOLDINGS, LLC	JAMES SEINO AND KENT SEINO
12/26/2019	2019-0477139	LUGONIA HOLDINGS, LLC	NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE...
12/26/2019	2019-0477137	LUGONIA HOLDINGS, LLC	ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY...
12/26/2019	2019-0477135	LUGONIA HOLDINGS, LLC	DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE...
12/26/2019	2019-0477133	LUGONIA HOLDINGS, LLC	YUMA TSUCHIYA, AN 1.25% UNDIVIDED...
12/26/2019	2019-0474413 TO 0474422	LUGONIA HOLDINGS, LLC	YUMA TSUCHIYA, A WIDOWER; JAMES A. SADOYAMA, A...
05/31/1990	90-212185	CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST	LUGONIA PARK ASSOCIATES
09/30/1988	88-330177	VICTOR K. SEINO, A WIDOWER, AS TO AN UNDIVIDED...	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25%...
09/30/1988	88-330176	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25%...	LUGONIA PARK ASSOCIATES
04/11/1984	84-083175	LUGONIA PARK ASSOCIATES	J.J RAMIREZ, A MARRIED MAN
01/03/1984	84-000521	J.J RAMIREZ, A MARRIED MAN	AMELIA RAMIREZ, WIFE OF GRANTEE
01/03/1984	84-000520	J.J RAMIREZ, A MARRIED MAN	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...
11/29/1983	83-280319	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...	EMERALD REALTY, INC
05/07/1980	80-108772	EMERALD REALTY, INC., AS TO AN UNDIVIDED 10%...	INTER-CAL MANAGEMENT, LTD

EDR Environmental Lien and AUL Search 1980

RESEARCH SOURCES

JUDICIAL RECORDS ***NOT*** SEARCHED. BASED ON AVAILABLE INFORMATION EVALUATED BY THE TITLE SEARCH PROFESSIONAL, THE JURISDICTION ***DOES NOT*** REQUIRE A SEARCH OF JUDICIAL RECORDS IN ORDER TO IDENTIFY ENVIRONMENTAL LIENS.

Source 1:	SAN BERNARDINO COUNTY RECORDER'S OFFICE
Source 2:	SAN BERNARDINO COUNTY ASSESSOR'S OFFICE
Source 3:	CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
Source 4:	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Examiner's Note:	PUBLIC RECORDS OF SAN BERNARDINO COUNTY, CA WERE SEARCHED FROM JANUARY 1, 1980 TO DECEMBER 16, 2021, AND NO OTHER DEEDS VESTING TITLE IN THE SUBJECT PROPERTY WERE FOUND OF RECORD DURING THE PERIOD SEARCHED.

EDR Environmental Lien and AUL Search 1980

FINDINGS DETAIL

Parcel: 0167-171-14-0000

ENVIRONMENTAL LIEN

Environmental Lien: ☐ Found ☒ Not Found

Comments: NONE IDENTIFIED.

OTHER ACTIVITY AND USE LIMITATIONS (AULS)

Other AULs: ☐ Found ☒ Not Found

Comments: NONE IDENTIFIED.

EDR Environmental Lien and AUL Search 1980

HISTORICAL CHAIN OF TITLE FROM 1980

CHAIN 1

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	JAMES SEINO AND KENT SEINO
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477142
Docket:	NA
Land Record Comments:	AFFIDAVIT; R. 4-21-20; 2020-0137026; MATTER OF VICTOR SEINO, DECEASED 05/13/1992; VESTS TO JAMES SEINO & KENT SEINO, BOTH AN 0.8333% UND T/C INTEREST, & ROBERT SEINO, 0.8334% UND. T/C INTEREST; AFFIDAVIT; R. 12-26-19; MATTER OF ROBERT MASAO SEINO, DECEASED 08/04/2018, VESTS TO KENT AND JAMES SEINO

CHAIN 2

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE LIVING TRUST OF JAMES ANKI SADOYMA AND THAIS VERDELLE THRASHER SADOYAMA, AN 1.5% UNDIVIDED TENANCY IN COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477139
Docket:	NA
Land Record Comments:	ORDER DETERMINING SUCCESSION TO REAL PROPERTY, R. 12-26-19, 2019-0477138; MATTER OF THAIS VERDELLE THRASHER SADOYAMA VESTS TO NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE LIVING TRUST OF JAMES ANKI SADOYMA AND THAIS VERDELLE THRASHER SADOYAMA, AN 1.5% UNDIVIDED TENANCY IN COMMON INTEREST

CHAIN 3

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477137
Docket:	NA
Land Record Comments:	AFFIDAVIT - REAL PROPERTY OF SMALL VALUE, R. 12/26/2019; 2019-0477136: MATTER OF HARUE MORIKONE, DECEASED 02/13/2010 VESTS IN ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST

EDR Environmental Lien and AUL Search 1980

CHAIN 4

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477135
Docket:	NA
Land Record Comments:	AFFIDAVIT - REAL PROPERTY OF SMALL VALUE, R. 12/26/2019; 2019-0477134; MATTER OF GARY G. MORIKONE, DECEASED 08/04/2003 VESTED IN DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST

CHAIN 5

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	YUMA TSUCHIYA, AN 1.25% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477133
Docket:	NA
Land Record Comments:	AFFIDAVIT - DEATH OF SPOUSE, R. 12/26/2019; 2019-0477132; HISAKO TSUCHIYA, DECEASED

CHAIN 6

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	YUMA TSUCHIYA, A WIDOWER; JAMES A. SADOYAMA, A WIDOWER; HIROMU MORIKONE, A WIDOWER; DOROTHY T. MORIKONE, A WIDOW, SHIROU KUNIHIRA AND SATSUKI MAY KUNIHIRA; PETER T. YOSHIDA, WHO TOOK TITLE AS PETER I. YOSHIDA, AND JUNE YOSHIDA; GEORGE M. TAKENO AND SETSUKO G. TAKENO, FRANK I YOSHIDA AND CHIEKO YOSHIDA; AND DAVID IL. ASATANI, A SINGLE MAN
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0474413 TO 0474422
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 7

Type of Deed:	GRANT DEED
Title is vested in:	CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST
Title received from:	LUGONIA PARK ASSOCIATES
Date Executed:	05/04/1990
Date Recorded:	05/31/1990
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	90-212185
Docket:	NA
Land Record Comments:	

CHAIN 8

Type of Deed:	GRANT DEED
Title is vested in:	VICTOR K. SEINO, A WIDOWER, AS TO AN UNDIVIDED 1/10TH INTEREST; YUMA TSUCHIYA AND HISAKO TSUCHIYA, H & W, AS TO AN UNDIVIDED1/10TH INTEREST, PETER I. YOSHIDA AND JUNE YOSHIDA, AN UNDIVIDED 1/10TH INTEREST; GARY C. MORIKONE AND DOROTHY T. MORIKONE, H & W, AS TO AN UNDIVIDED 1/20TH INTEREST, RICHARD K. HAMAMURA & RUTH Y. HAMAMURA, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; SHIROU KUNIHIRA AND SATSUKI MAY KUNIHIRA, AS TO AN UNDIVIDED 1/10TH INTEREST, JAMES A. SADOYAMA & THAIS V. SADOYAMA, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; DAVID I. ASATANI, A SINGLE MAN, AS TO AN UNDIVIDED 1/10TH INTEREST, GEORGE M. TAKENO AND SETSUKO G. TAKENO, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; AND HIROMU MORIKONE AND HARUE MORIKONE, AS TO AN UNDIVIDED 1/20TH INTEREST
Title received from:	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25% INTEREST
Date Executed:	09/28/1988
Date Recorded:	09/30/1988
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	88-330177
Docket:	NA
Land Record Comments:	AFFIDAVIT - DEATH OF SPOUSE, R. 12-26-19, 2019-0477132, HISAKO TSUCHIYA, DECEASED

CHAIN 9

Type of Deed:	GRANT DEED
Title is vested in:	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25% INTEREST
Title received from:	LUGONIA PARK ASSOCIATES
Date Executed:	07/01/1988
Date Recorded:	09/30/1988
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	88-330176
Docket:	NA
Land Record Comments:	

CHAIN 10

Type of Deed:	GRANT DEED
Title is vested in:	LUGONIA PARK ASSOCIATES
Title received from:	J.J RAMIREZ, A MARRIED MAN
Date Executed:	03/28/1984
Date Recorded:	04/11/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-083175
Docket:	NA
Land Record Comments:	

CHAIN 11

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	J.J RAMIREZ, A MARRIED MAN
Title received from:	AMELIA RAMIREZ, WIFE OF GRANTEE
Date Executed:	NA
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000521
Docket:	NA
Land Record Comments:	

CHAIN 12

Type of Deed:	GRANT DEED
Title is vested in:	J.J RAMIREZ, A MARRIED MAN
Title received from:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED1/2 INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED1/2 INTEREST
Date Executed:	12/21/1983
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000520
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 13

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED 5% INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED 5% INTEREST
Title received from:	EMERALD REALTY, INC
Date Executed:	NA
Date Recorded:	11/29/1983
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	83-280319
Docket:	NA
Land Record Comments:	

CHAIN 14

Type of Deed:	GRANT DEED
Title is vested in:	EMERALD REALTY, INC., AS TO AN UNDIVIDED 10% INTEREST, UNIVERSITY RANCHES INTERNATIONAL, INC., AS TO AN UNDIVIDED 45% INTEREST, AND MANOUTCHEHR HAGHIGHI AND SOUSSAN HAGHIGHI, AS TO AN UNDIVIDED 45% INTEREST
Title received from:	INTER-CAL MANAGEMENT, LTD
Date Executed:	04/17/1980
Date Recorded:	05/07/1980
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	80-108772
Docket:	NA
Land Record Comments:	NO ADDITIONAL DEEDS FOUND RESEARCH CONDUCTED BACK TO 1980. THIS IS THE OLDEST DEED OF RECORD FOUND POST DECEMBER 31, 1979 (BETWEEN 01/01/1980 AND 05/07/1980).

EDR Environmental Lien and AUL Search 1980

MISCELLANEOUS INSTRUMENTS

Comments: NONE IDENTIFIED.

DEED EXHIBIT

RECORDING REQUESTED BY
CHICAGO TITLE COMPANY
COMMERCIAL DIVISION
AND WHEN RECORDED MAIL DOCUMENT TO:

NAME Mirau Edwards Cannon Lewin & Tooke
STREET ADDRESS PO Box 9058
CITY, STATE & ZIP CODE Redlands, CA 92375

102218·001·LZ7

Electronically
Recorded in Official Records
County of San Bernardino
Bob Dutton
Assessor-Recorder-County Clerk

DOC# 2019-0477142

12/26/2019 Titles: 1 Pages: 5
03:28 PM
SAN

	Fees	$36.00
	Taxes	$0.00
B9246	CA SB2 Fee	0.00
	Total	$36.00

SPACE ABOVE FOR RECORDER'S USE ONLY

Exempt from fee per GC 27388.1 (a) (1);
fee cap of $225 reached

QUITCLAIM DEED

Title of Document

THIS AREA FOR RECORDER'S USE ONLY

1853

THIS COVER SHEET ADDED TO PROVIDE ADEQUATE SPACE FOR RECORDING INFORMATION
($3.00 Additional Recording Fee Applies)

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL
TO:
Mirau, Edwards, Cannon,
Lewin & Tooke (JKM)
P. O. Box 9058
Redlands, CA 92375

MAIL TAX STATEMENTS TO:
Lugonia Holdings, LLC
Daniel Kunihira
P. O. Box 542
Loma Linda, CA 92354

APN: 0167-171-07; -12 & -14

Property situate in County of San Bernardino
Amount of Documentary Transfer Tax Due $0.00

This conveyance changes the manner in which title is held, grantor(s) and Grantee(s) remain the same and continue to hold the same proportionate interest, R&T 11911.

James Sein
Signature

QUITCLAIM DEED

FOR VALUABLE CONSIDERATION, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, JAMES SEINO and KENT SEINO hereby remise, release and quitclaims all their interest in the property situated in the County of San Bernardino, State of California, described on Exhibit "A" attached hereto and incorporated herein by reference to LUGONIA HOLDINGS, LLC, a California limited liability company.

IN WITNESS WHEREOF, the undersigned has executed this Quitclaim Deed as of Oct. 2, 2019.

James Sein
James Seino

Kent Seino

MAIL TAX STATEMENTS AS DIRECTED ABOVE

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
:ss.
COUNTY OF Ventura)

On 9/24/2019, before me, Paul Varblow, Notary Public, personally appeared JAMES SEINO, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

PAUL VARBLOW
Notary Public - California
Ventura County
Commission # 2166145
My Comm. Expires Sep 29, 2020

Signature Paul Varblow
Notary Public in and for said
County and State

(Seal)

STATE OF CALIFORNIA)
:ss.
COUNTY OF Los Angeles)

On October 2nd 2019 before me, Krisztian Nagy, Notary Public, personally appeared KENT SEINO, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

KRISZTIAN NAGY
Notary Public - California
Los Angeles County
Commission # 2267940
My Comm. Expires Nov 20, 2022

(Seal)

Signature
Notary Public in and for said
County and State

LEGAL DESCRIPTION

A 2.5% TENANCY IN COMMON INTEREST IN THE FOLLOWING PROPERTY:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

THAT PORTION OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

COMMENCING 20 RODS EAST OF THE SOUTHWEST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION; THENCE EAST 30 RODS; THENCE NORTH 80 RODS; THENCE WEST 30 RODS; THENCE 80 RODS TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE SOUTH 30 FEET CONVEYED TO THE COUNTY OF SAN BERNARDINO FOR ROAD PURPOSES.

APN: 0167-171-07

PARCEL 2:

THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THEREFROM THAT PORTION OF THE ABOVE DESCRIBED PROPERTY LYING SOUTHWESTERLY OF THE NORTHWESTERLY LINE OF THAT CERTAIN PARCEL CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 8, 1979 IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THE FOLLOWING:

EXCEPTION A: AN UNDIVIDED 5/30THS INTEREST IN AND TO A PARCEL OF LAND (CALLED WELLSITE) WITH WELL AND PUMPING PLANT THEREON (COMMONLY KNOWN AS THE "LUGONIA AVENUE WELL"), SITUATED ON THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 21, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF SAID WEST 10 ACRES, 221 FEET NORTH FROM THE SOUTHEAST CORNER OF SAID WEST 10 ACRES (WHICH SOUTHEAST CORNER OF SAID TEN ACRES IS IN THE CENTER LINE OF LUGONIA AVENUE); THENCE WEST 42 FEET; THENCE NORTH 16 FEET; THENCE EAST 42 FEET; THENCE SOUTH 16 FEET TO POINT OF BEGINNING.

EXCEPTION B: THE RIGHTS AND INTERESTS AS CONVEYED TO SOUTHERN CITRUS ASSOCIATION, A CORPORATION, BY DEED DATED MAY 6, 1946, RECORDED MAY 15, 1946 IN BOOK 1891, PAGE 275 OF OFFICIAL RECORDS OF SAID COUNTY, INCLUDING AMONG SUCH RIGHTS AND INTEREST, AN UNDIVIDED 2/30THS INTEREST IN SAID WELL SITE, WELL AND PUMPING PLANT ABOVE REFERRED TO, SUCH EXCEPTED 2/30THS INTEREST BEING IN ADDITION TO THE 5/30THS INTEREST EXCEPTED IN EXCEPTION A.

EXCEPTION C: ANY PORTION OF THE ABOVE DESCRIBED PARCELS OF LAND LYING WITHIN LUGONIA AVENUE.

ALSO EXCEPTING THEREFROM DEED TO THE STATE OF CALIFORNIA, RECORDED AUGUST 8, 1979 IN BOOK 9745, PAGE 492 OF OFFICIAL RECORDS AND IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 17/30THS INTEREST IN AND TO A PARCEL OF LAND (CALLED "WELLSITE") AS CONVEYED TO D. W. WILCOTT, TRUSTEE AS RECORDED APRIL 10, 1972 IN BOOK 7904, PAGE 787 OF OFFICIAL RECORDS.

APN: 0167-171-12 AND 14

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

Inquiry Number: 06794904.13R
DECEMBER 29, 2021

EDR Environmental Lien and AUL Search 1980

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

EDR Environmental Lien and AUL Search 1980

The EDR Environmental Lien and AUL Search 1980 Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description
- search for ownership information filed between 1980 and the date of this report
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.
- access a copy of the deed
- search for environmental encumbering instrument(s) filed between 1980 and the date of this report
- provide a copy of any environmental encumbrance(s)
- provide a copy of the current deed

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

EDR Environmental Lien and AUL Search 1980

TARGET PROPERTY INFORMATION

ADDRESS

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

PROPERTY DESCRIPTION

Current Owner:	LAURA ANN RAMIREZ, AN UNMARRIED WOMAN
Legal Description:	N 16 FT S 237 FT E 42 FT W 10 AC SW 1/4 NE 1/4 SEC 21 TP 1S R 3W 1/6 INT ONLY WELLSITE
Property Identifier(s):	0167-171-11-0000
General Comments:	NA

FINDINGS SUMMARY

ADDITIONAL DETIALS MAY BE FOUND IN THE 'FINDINGS DETAIL' SECTION.

Parcel: 0167-171-11-0000

Environmental Lien: ☐ Found ☒ Not Found

Other Activity and Use Limitations (AUL): ☐ Found ☒ Not Found

HISTORICAL CHAIN OF TITLE FROM 1980

RECORDED	INSTRUMENT	GRANTEE	GRANTOR
06/21/2012	2012-0250324	LAURA ANN RAMIREZ, AN UNMARRIED WOMAN	LAURA ANN RAMIREZ, TRUSTEE OF J. J. RAMIREZ,...
11/26/2002	2002-0643680	J. J. RAMIREZ, AMELIA RAMIREZ AND LAURA ANN...	J. J. RAMIREZ AND AMELIA RAMIREZ, H & W
01/03/1984	84-000521	J.J RAMIREZ, A MARRIED MAN	AMELIA RAMIREZ, WIFE OF GRANTEE
01/03/1984	84-000520	J.J RAMIREZ, A MARRIED MAN	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...
11/29/1983	83-280319	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...	EMERALD REALTY, INC
05/07/1980	80-108772	EMERALD REALTY, INC.,, AS TO AN UNDIVIDED 10%...	INTER-CAL MANAGEMENT, LTD

RESEARCH SOURCES

JUDICIAL RECORDS ***NOT*** SEARCHED. BASED ON AVAILABLE INFORMATION EVALUATED BY THE TITLE SEARCH PROFESSIONAL, THE JURISDICTION ***DOES NOT*** REQUIRE A SEARCH OF JUDICIAL RECORDS IN ORDER TO IDENTIFY ENVIRONMENTAL LIENS.

Source 1:	SAN BERNARDINO COUNTY RECORDER'S OFFICE
Source 2:	SAN BERNARDINO COUNTY ASSESSOR'S OFFICE
Source 3:	CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
Source 4:	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Examiner's Note:	PUBLIC RECORDS OF SAN BERNARDINO COUNTY, CA WERE SEARCHED FROM JANUARY 1, 1980 TO DECEMBER 16, 2021, AND NO OTHER DEEDS VESTING TITLE IN THE SUBJECT PROPERTY WERE FOUND OF RECORD DURING THE PERIOD SEARCHED.

EDR Environmental Lien and AUL Search 1980

FINDINGS DETAIL

Parcel: 0167-171-11-0000

ENVIRONMENTAL LIEN

Environmental Lien: ☐ Found ☒ Not Found

Comments: NONE IDENTIFIED.

OTHER ACTIVITY AND USE LIMITATIONS (AULS)

Other AULs: ☐ Found ☒ Not Found

Comments: NONE IDENTIFIED.

EDR Environmental Lien and AUL Search 1980

HISTORICAL CHAIN OF TITLE FROM 1980

CHAIN 1

Type of Deed:	GRANT DEED
Title is vested in:	LAURA ANN RAMIREZ, AN UNMARRIED WOMAN
Title received from:	LAURA ANN RAMIREZ, TRUSTEE OF J. J. RAMIREZ, AMELIA RAMIREZ AND LAURA ANNE RAMIREZ TRUST
Date Executed:	06/12/2012
Date Recorded:	06/21/2012
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2012-0250324
Docket:	NA
Land Record Comments:	EXHIBIT K, PAGE 13

CHAIN 2

Type of Deed:	GRANT DEED
Title is vested in:	J. J. RAMIREZ, AMELIA RAMIREZ AND LAURA ANN RAMIREZ, AS TRUSTEES OF J. J. RAMIREZ, AMELIA RAMIREZ AND LAURA ANNE RAMIREZ TRUST
Title received from:	J. J. RAMIREZ AND AMELIA RAMIREZ, H & W
Date Executed:	10/13/2002
Date Recorded:	11/26/2002
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2002-0643680
Docket:	NA
Land Record Comments:	

CHAIN 3

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	J.J RAMIREZ, A MARRIED MAN
Title received from:	AMELIA RAMIREZ, WIFE OF GRANTEE
Date Executed:	NA
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000521
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 4

Type of Deed:	GRANT DEED
Title is vested in:	J.J RAMIREZ, A MARRIED MAN
Title received from:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED1/2 INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED1/2 INTEREST
Date Executed:	12/21/1983
Date Recorded:	01/03/1984
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	84-000520
Docket:	NA
Land Record Comments:	

CHAIN 5

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED 5% INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED 5% INTEREST
Title received from:	EMERALD REALTY, INC
Date Executed:	NA
Date Recorded:	11/29/1983
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	83-280319
Docket:	NA
Land Record Comments:	

CHAIN 6

Type of Deed:	GRANT DEED
Title is vested in:	EMERALD REALTY, INC.,, AS TO AN UNDIVIDED 10% INTEREST, UNIVERSITY RANCHES INTERNATIONAL, INC., AS TO AN UNDIVIDED 45% INTEREST, AND MANOUTCHEHR HAGHIGHI AND SOUSSAN HAGHIGHI, AS TO AN UNDIVIDED 45% INTEREST
Title received from:	INTER-CAL MANAGEMENT, LTD
Date Executed:	04/17/1980
Date Recorded:	05/07/1980
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	80-108772
Docket:	NA
Land Record Comments:	RESEARCH CONDUCTED BACK TO 1980. THIS IS THE OLDEST DEED OF RECORD FOUND POST DECEMBER 31, 1979 (BETWEEN 01/01/1980 AND 05/07/1980).

EDR Environmental Lien and AUL Search 1980

MISCELLANEOUS INSTRUMENTS

Comments:	NONE IDENTIFIED.

EDR Environmental Lien & AUL Search 1980

DEED EXHIBIT

Recorded in Official Records, County of San Bernardino
DENNIS DRAEGER
ASSESSOR – RECORDER – CLERK

6/21/2012
3:38 PM
BGJ

P Counter

Doc#: 2012-0250324

Titles: 1	Pages: 20
Fees	72.00
Taxes	0.00
Other	0.00
PAID	$72.00

Recorded at Request of:
Guay P. Wilson
Attorney at Law

When recorded mail to:

GUAY P. WILSON
P.O. Box 166
Redlands, CA 92373

GRANT DEED

The undersigned Grantor(s) declares(s) under penalty of perjury that the following is true and correct:
Documentary Transfer tax is $ 0
( ) computed on full value of property conveyed, or
( ) computed on full value less value of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: (X) City of Redlands.

Signature of declarant or agent

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

LAURA ANNE RAMIREZ, TRUSTEE OF J.J. RAMIREZ, AMELIA RAMIREZ and LAURA ANNE RAMIREZ Trust Dated October 31, 2002

hereby GRANT(S) to LAURA ANNE RAMIREZ, an unmarried woman

see Attachments
EXHIBITS "A" - "R"

Dated JUNE 12, 2012

LAURA ANNE RAMIREZ, Trustee of the J.J. RAMIREZ, AMELIA RAMIREZ and LAURA ANNE RAMIREZ Trust dated October 31, 2002

MAIL TAX STATEMENTS TO:
Laura Anne Ramirez
P.O. Box 1525
Loma Linda, CA 92354

STATE OF CALIFORNIA,

COUNTY OF SAN BERNARDINO

On JUNE 12, 2012, before me, GUAY P. WILSON a Notary Public in and for the State of California, personally appeared LAURA ANNE RAMIREZ, who proved to me on the basis of satisfactory evidence to be the person whose name IS subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

GUAY P. WILSON
COMM. # 1847449
NOTARY PUBLIC - CALIFORNIA
SAN BERNARDINO COUNTY
My Comm. Expires May 3, 2013

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

GUAY P. WILSON

LAURA RAMIREZ
EXHIBIT "A"

the following described real property in the County of SAN BERNARDINO, State of California:

That portion of the Northeast Quarter of the Northeast Quarter of Section 21, Township 1 South, Range 3 West, SAN BERNARDINO MERIDIAN, according to the official plat of said land filed in the District Land Office February 24, 1860, described as follows:

BEGINNING at the Northeast corner of the Northeast Quarter of said Section, thence West along the North line 555 feet; thence South parallel with the East line of said Section 528 feet, more or less, to the South line of the North 12 acres of the East 3/8 of the North half of the Northeast Quarter of said Section, thence East along South line of North 12 acres of the East 3/8 of the North half of the Northeast Quarter of said Section, 555 feet to the East line of said Section 21; thence North along the East line of said Section 528 feet, more or less, to the place of beginning.

Assessor's Parcel Number: 0167 141 06 0000

LAURA RAMIREZ
EXHIBIT "B"

the following described real property in the County of SAN BERNARDINO, State of California:

All that portion of Section 16, Township 1 south, Range 3 West, San Bernardino Meridian in the State of California, according to the official plat thereof, described as follows:

Commencing at a point 1419 feet East of the Southwest corner of said Section 16; thence North 1° 20' East, 720.55 feet for true point of beginning; thence North 1° 20' East, 747.32 feet; thence East 458.3 feet; thence South 0° 1' West, 746.63 feet to a point 720.34 feet North of the South line of Section 16; thence West 475.38 feet to the point of beginning.

EXCEPT THE COUNTY ROAD.

Assessor's Parcel Number: 0292 072 04 0000

LAURA RAMIREZ
EXHIBIT "C"

the following described real property in the County of <u>SAN BERNARDINO</u>, State of California:

> That Portion of Parcel No 1 RANCHO SAN BERNARDINO, as per plat recorded in Book 7 of Maps, Page 2 of Official records of Said County.

Assessor's Parcel Number: 0292-111-49-0000

LAURA RAMIREZ
EXHIBIT "D"

the following described real property in the County of SAN BERNARDINO, State of California:

> The North 1/2 of the West 1/2 of the West 1/2 of the Northwest 1/4 of the Northwest 1/4 of Section 22, Township 1 South, Range 3 West, SAN BERNARDINO MERIDIAN, in the City of Redlands, County of San Bernardino, State of California, according to the official plat thereof.

SAVINGS AND EXCEPTING THEREFROM ALL STREETS AND HIGHWAYS

Assessor's Parcel Number: 0167-805-01 0000 (formerly 167 151 01)

LAURA RAMIREZ
EXHIBIT "E"

the following described real property in the County of SAN BERNARDINO, State of California:

> LOT 2 of that portion of BROCK & BENNINGSDORF of ROSS AND RAUSCH ADDITION as per plat recorded in Book 15, of Maps, Page 5, Official records of said County.

Assessor's Parcel Number: 0167-301-02-0000

LAURA RAMIREZ
EXHIBIT "F"

the following described real property in the County of <u>SAN BERNARDINO</u>, State of California:

> West 508.50 feet East 988.20 Feet Northwest 1/4 of Southeast 1/4 Section 13, Township 1 South Range 3 West Excepting North 350 feet and excepting the street, San Bernardino Meridian, as per plat recorded in Book 0168 of Maps, page 04 of Official records of said County.

Assessor's Parcel Number: 0168-041-20-0000

LAURA RAMIREZ
EXHIBIT "G"

the following described real property in the County of SAN BERNARDINO, State of California:

AN UNDIVIDED 40% INTEREST IN:

The Northwest 1/4 and the North 1/2 of the Southwest 1/4 of Lot 17 of the Barton Ranch, in the County of San Bernardino, STate of California, as per plat recorded in Book 6 of Maps, page 19, records of said County.

EXCEPTING THEREFROM that portion thereof embraced within the following description.

BEGINNING at the Southeast corner of the North 1/2 of the Southwest 1/4 of said Lot 17; thence running West to a point in the middle line of Alabama Street; thence North along the middle line of Alabama Street, 241-1/2 feet; thence in a Southeasterly direction to a point distant 140 feet North of the point of beginning; thence South 140 feet to the point of beginning.

ALSO EXCEPTING THEREFROM and undivided 7/8 interest in the land described as:

COMMENCING at a point in the South line of Citrus Avenue where the East line of the Northwest 1/4 of said Lot 17 intersects with South line of Citrus Avenue; thence South along said line 88 feet; thence at right angles West 43 feet for the point of beginning, from said point of beginning running West 16 feet; thence South 26 feet; thence East 16 feet; thence North 26 feet to the point of beginning.

TOGETHER with an undivided 1/8th interest in and to a well and pumping plant on the following described real property:
COMMENCING at a point in the South line of Citrus Avenue where the East line of the Northwest 1/4 of said Lot 17 intersects the South line of Citrus Avenue; thence South along said line 88 feet; thence at right angles West 43 feet for a point of beginning, from said point of beginning running West 16 feet; thence South 26 feet; thence East 16 feet; thence North 26 feet to the point of beginning.

Commonly known as the Hoover well.

Assessor's Parcel Number: 0292-201-20 0000

LAURA RAMIREZ
EXHIBIT "H"

the following described real property in the County of <u>SAN BERNARDINO</u>, State of California:

> BEGINNING 1800 feet West of a point 152 feet North of Southeast corner, North 1/2 of Southwest 1/4 Section 16, Township 1 South, Range 3 West; thence North 1214.5 feet, thence West 214 feet , thence South 1214.5 feet, thence East 215 feet to THE POINT OF BEGINNING 5.87 ac, San Bernardino Base Meridian, as recorded in Book 0292 of Maps, Page 07, of Official records of said County.

Assessor's Parcel Number: 0292-071-30-0000

LAURA RAMIREZ
EXHIBIT "I"

the following described real property in the County of SAN BERNARDINO, State of California:

> BEGINNING at a point 2015 feet West of point 152 feet North of Southeast corner, North 1/2 Southwest 1/4 Section 16 Township 1 South Range 3 West, thence North 1214.5 feet West 215 feet South 1214.5 feet East 215 feet 5.87 ac as recorded in Book 0292 of Maps, Page 07 in Official records of said County.

Assessor's Parcel Number: 0292-071-21-0000

LAURA RAMIREZ
EXHIBIT "J"

the following described real property in the County of SAN BERNARDINO, State of California:

North 1214.5 feet South 20680.5 feet, West 463.8 feet of Section 16, Township 1 South Range 3 west, Except the Street as recorded in Book 0292 of Maps, Page 07 in Official records of said County.

Assessor's Parcel Number; 0292-071-22-0000

LAURA RAMIREZ
EXHIBIT "K"

the following described real property in the County of SAN BERNARDINO, State of California:

North 16 feet South 237 feet East 42 feet W 10 AC Southwest 1/4 Northeast 1/4 Section 21 Township 15, Range 3 West 1/6 int only Wellsite as recorded in Book 0167 of Maps, Page 17 in Official records of said County.

Assessor's Parcel Number: 0167-171-11-0000

LAURA RAMIREZ
EXHIBIT "L"

the following described real property in the County of SAN BERNARDINO, State of California:

> Portion of Southeast 1/4 of Northwest 1/4 of Section 16 Township 1 South Range 3 West COMMENCING on East Line of Southwest 1/4 of said Section, 152 feet North of Southeast corner of North 1/2 Southwest 1/4 of said Section, thence North along East line of Southwest 1/4 of said section 16 and East line Northwest 1/4 of said section 1974.82 Feet, thence at right angle West 65 feet to true point of beginning, thence at Right angel North 40 feet, thence at right angle West 25 feet, thence at right angle South 40 feet, thence at right angle 25 feet to true point of beginning. Wellsite und 1/3 interest, as recorded in Book 0292 of Maps Page 07 of Official records of said County.

Assessor's Parcel Number: 0292-071-41; 42

LAURA RAMIREZ
EXHIBIT "M"

the following described real property in the County of SAN BERNARDINO, State of California:

> Portion of Southeast 1/4 of Northwest 1/4 Section 16 Township 1 South Range 3 West COMMENCING on East line os Southwest 1/4 of said Section 152 feet North of Southeast Corner North 1/2 Southwest 1/4 of said section; thence North along East line of Southwest 1/4 of said Section 16 and East line Northwest 1/3 of Said Section 1974.82 feet; thence at right angle West 65 feet to True point of Beginning;thence at right Angel North 40 feet, thence at right angle West 25 feet; thence at right Angle South 40 feet, thence at Right angle East 25 feet to True Point of Beginning. Wellsite UN 2/3 interest as recorded in Book 0292 of Maps, page 07 in Official records of said County.

Assessor's Parcel Number: 0167-831-54-0000

LAURA RAMIREZ
EXHIBIT "N"

the following described real property in the County of SAN BERNARDINO, State of California:

> BARON RANCHO South 26 feet North 154 feet West 16 feet East 59 feet Northwest 1/4 of Lot 17 UN 14 interest as recorded in Book 6 of Maps Page 19 as recorded in Official records of said County.

Assessor's Parcel Number: 0292-201-14; 15
15=40% 14=100%

LAURA RAMIREZ
EXHIBIT "O"

the following described real property in the County of SAN BERNARDINO, State of California:

TWENTY PERCENT (20%) INTEREST IN

COMMENCING 1360 feet West of point 1562 feet North of Southeast corner of North 1/2 of Southwest 1/4 Section 16 Township 1 South Range 3 West, thence North 40 feet to North line of Pioneer Ave and true point of beginning, thence North 50 feet, thence East 50 feet, thence South 50 feet, thence West 50 feet to the true point of beginning, as recorded in Book 0292 of Maps page 07 of Official records of said County.

Assessor's Parcel Number: 0292-071-39-0000

LAURA RAMIREZ
EXHIBIT "P"

the following described real property in the County of <u>SAN BERNARDINO</u>, State of California:

LOT 44 of TRACT 6953 as per Book 9 of Maps, Page 22 as recorded in official records of said County.

(Being a residence at 1430 W. Fern Avenue, Redlands, CA 92373

Assessor's Parcel Number: 0172-172-05-0000

LAURA RAMIREZ
EXHIBIT "Q"

the following described real property in the County of SAN BERNARDINO, State of California:

AN UNDIVIDED 2/7ths INTEREST IN

the following described real property in the City of FONTANA, County of SAN BERNARDINO, State of California:

THE NORTH 74 FEET OF THE FOLLOWING DESCRIBED REAL PROPERTY:

That Portion of Lot 440, According to map showing subdivision of land belonging to the Semi-Tropic Land and Water Company, in the County of San Bernardino, State of California, as per plat recorded in Book 11 of Maps, Page 12, records of said County, Described as follows:

BEGINNING at the Northwest corner of said Lot 440, which point is in the East line of Laurel Avenue, 629.2 feet North of the North line of Perris Avenue; Thence South along the East line of Laurel Avenue, 272.4 feet for the true point of beginning; Thence East 629.2 feet to the East line of the West half of the said Lot 440; thence South 148 feet; Thence West 629.2 feet to the East line of Laurel Avenue; Thence North along said East line, 148 feet to the point of beginning.

(Being real property at 8445 Laurel, Fontana, CA)

Assessor's Parcel Number: 0246-041-06-0000

LAURA RAMIREZ
EXHIBIT "R"

the following described real property in the County of SAN BERNARDINO, State of California:

> East 1/2 of Northeast 1/4 of Southwest 1/4 of Section 16, Township 2 North Range 2 West 5 acres as per Book 0328 of Maps, Page 41 as recorded in official records of said County.

Assessor's Parcel Number: 0328-411-34-0000

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

Inquiry Number: 06794904.13R
DECEMBER 28, 2021

EDR Environmental Lien and AUL Search 1980

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

EDR Environmental Lien and AUL Search 1980

The EDR Environmental Lien and AUL Search 1980 Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description
- search for ownership information filed between 1980 and the date of this report
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.
- access a copy of the deed
- search for environmental encumbering instrument(s) filed between 1980 and the date of this report
- provide a copy of any environmental encumbrance(s)
- provide a copy of the current deed

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

EDR Environmental Lien and AUL Search 1980

TARGET PROPERTY INFORMATION

ADDRESS

LPA REDLANDS PROJECT
NEC TENNESSEE ST. AND W. LUGONIA AVE
REDLANDS, CA 92374

PROPERTY DESCRIPTION

Current Owner:	LUGONIA HOLDINGS, LLC, AN UNDIVIDED 25% INTEREST; CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST AND LUGONIA PARK ASSOCIATES, AN UNDIVIDED 65% INTEREST
Legal Description:	N 16 FT S 237 FT E 42 FT W 10 AC SW 1/4 NE 1/4 SEC 21 TP 1S R 3W 5/6 INT ONLY WELLSITE
Property Identifier(s):	0167-171-12-0000
General Comments:	NA

FINDINGS SUMMARY

ADDITIONAL DETIALS MAY BE FOUND IN THE 'FINDINGS DETAIL' SECTION.

Parcel: 0167-171-12-0000

Environmental Lien: ☐ Found ☒ Not Found

Other Activity and Use Limitations (AUL): ☐ Found ☒ Not Found

HISTORICAL CHAIN OF TITLE FROM 1980

RECORDED	INSTRUMENT	GRANTEE	GRANTOR
12/26/2019	2019-0477142	LUGONIA HOLDINGS, LLC	JAMES SEINO AND KENT SEINO
12/26/2019	2019-0477139	LUGONIA HOLDINGS, LLC	NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE...
12/26/2019	2019-0477137	LUGONIA HOLDINGS, LLC	ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY...
12/26/2019	2019-0477135	LUGONIA HOLDINGS, LLC	DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE...
12/26/2019	2019-0477133	LUGONIA HOLDINGS, LLC	YUMA TSUCHIYA, AN 1.25% UNDIVIDED...
12/26/2019	2019-0474413 TO 0474422	LUGONIA HOLDINGS, LLC	YUMA TSUCHIYA, A WIDOWER; JAMES A. SADOYAMA, A...
05/31/1990	90-212185	CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST	LUGONIA PARK ASSOCIATES
09/30/1988	88-330177	VICTOR K. SEINO, A WIDOWER, AS TO AN UNDIVIDED...	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25%...
09/30/1988	88-330176	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25%...	LUGONIA PARK ASSOCIATES
04/11/1984	84-083175	LUGONIA PARK ASSOCIATES	J.J RAMIREZ, A MARRIED MAN
01/03/1984	84-000521	J.J RAMIREZ, A MARRIED MAN	AMELIA RAMIREZ, WIFE OF GRANTEE
01/03/1984	84-000520	J.J RAMIREZ, A MARRIED MAN	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...
11/29/1983	83-280319	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN...	EMERALD REALTY, INC
05/07/1980	80-108772	EMERALD REALTY, INC., AS TO AN UNDIVIDED 10%...	INTER-CAL MANAGEMENT, LTD

EDR Environmental Lien and AUL Search 1980

RESEARCH SOURCES

JUDICIAL RECORDS ***NOT*** SEARCHED. BASED ON AVAILABLE INFORMATION EVALUATED BY THE TITLE SEARCH PROFESSIONAL, THE JURISDICTION ***DOES NOT*** REQUIRE A SEARCH OF JUDICIAL RECORDS IN ORDER TO IDENTIFY ENVIRONMENTAL LIENS.

Source 1:	SAN BERNARDINO COUNTY RECORDER'S OFFICE
Source 2:	SAN BERNARDINO COUNTY ASSESSOR'S OFFICE
Source 3:	CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
Source 4:	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Examiner's Note:	PUBLIC RECORDS OF SAN BERNARDINO COUNTY, CA WERE SEARCHED FROM JANUARY 1, 1980 TO DECEMBER 16, 2021, AND NO OTHER DEEDS VESTING TITLE IN THE SUBJECT PROPERTY WERE FOUND OF RECORD DURING THE PERIOD SEARCHED.

EDR Environmental Lien and AUL Search 1980

FINDINGS DETAIL

Parcel: 0167-171-12-0000

ENVIRONMENTAL LIEN

Environmental Lien: ☐ Found ☒ Not Found

Comments: NONE IDENTIFIED.

OTHER ACTIVITY AND USE LIMITATIONS (AULS)

Other AULs: ☐ Found ☒ Not Found

Comments: NONE IDENTIFIED.

EDR Environmental Lien and AUL Search 1980

HISTORICAL CHAIN OF TITLE FROM 1980

CHAIN 1

Type of Deed: QUIT CLAIM DEED
Title is vested in: LUGONIA HOLDINGS, LLC
Title received from: JAMES SEINO AND KENT SEINO
Date Executed: NA
Date Recorded: 12/26/2019
Book: NA
Page: NA
Volume: NA
Instrument#: 2019-0477142
Docket: NA
Land Record Comments: AFFIDAVIT; R. 4-21-20; 2020-0137026; MATTER OF VICTOR SEINO, DECEASED 05/13/1992; VESTS TO JAMES SEINO & KENT SEINO, BOTH AN 0.8333% UND T/C INTEREST, & ROBERT SEINO, 0.8334% UND. T/C INTEREST; AFFIDAVIT; R. 12-26-19; MATTER OF ROBERT MASAO SEINO, DECEASED 08/04/2018, VESTS TO KENT AND JAMES SEINO

CHAIN 2

Type of Deed: QUIT CLAIM DEED
Title is vested in: LUGONIA HOLDINGS, LLC
Title received from: NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE LIVING TRUST OF JAMES ANKI SADOYMA AND THAIS VERDELLE THRASHER SADOYAMA, AN 1.5% UNDIVIDED TENANCY IN COMMON INTEREST
Date Executed: NA
Date Recorded: 12/26/2019
Book: NA
Page: NA
Volume: NA
Instrument#: 2019-0477139
Docket: NA
Land Record Comments: ORDER DETERMINING SUCCESSION TO REAL PROPERTY, R. 12-26-19, 2019-0477138; MATTER OF THAIS VERDELLE THRASHER SADOYAMA VESTS TO NONI S. PATCHETT, TRUSTEE OF THE REVOCABLE LIVING TRUST OF JAMES ANKI SADOYMA AND THAIS VERDELLE THRASHER SADOYAMA, AN 1.5% UNDIVIDED TENANCY IN COMMON INTEREST

CHAIN 3

Type of Deed: QUIT CLAIM DEED
Title is vested in: LUGONIA HOLDINGS, LLC
Title received from: ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed: NA
Date Recorded: 12/26/2019
Book: NA
Page: NA
Volume: NA
Instrument#: 2019-0477137
Docket: NA
Land Record Comments: AFFIDAVIT - REAL PROPERTY OF SMALL VALUE, R. 12/26/2019; 2019-0477136: MATTER OF HARUE MORIKONE, DECEASED 02/13/2010 VESTS IN ROSEMARIE EMORI, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST

CHAIN 4

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477135
Docket:	NA
Land Record Comments:	AFFIDAVIT - REAL PROPERTY OF SMALL VALUE, R. 12/26/2019; 2019-0477134; MATTER OF GARY G. MORIKONE, DECEASED 08/04/2003 VESTED IN DOROTHY MORIKONE, TRUSTEE OF THE MORIKONE FAMILY TRUST, AN 0.625% UNDIVIDED TENANCY-IN-COMMON INTEREST

CHAIN 5

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	YUMA TSUCHIYA, AN 1.25% UNDIVIDED TENANCY-IN-COMMON INTEREST
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0477133
Docket:	NA
Land Record Comments:	AFFIDAVIT - DEATH OF SPOUSE, R. 12/26/2019; 2019-0477132; HISAKO TSUCHIYA, DECEASED

CHAIN 6

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	LUGONIA HOLDINGS, LLC
Title received from:	YUMA TSUCHIYA, A WIDOWER; JAMES A. SADOYAMA, A WIDOWER; HIROMU MORIKONE, A WIDOWER; DOROTHY T. MORIKONE, A WIDOW, SHIROU KUNIHIRA AND SATSUKI MAY KUNIHIRA; PETER T. YOSHIDA, WHO TOOK TITLE AS PETER I. YOSHIDA, AND JUNE YOSHIDA; GEORGE M. TAKENO AND SETSUKO G. TAKENO, FRANK I YOSHIDA AND CHIEKO YOSHIDA; AND DAVID IL. ASATANI, A SINGLE MAN
Date Executed:	NA
Date Recorded:	12/26/2019
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	2019-0474413 TO 0474422
Docket:	NA
Land Record Comments:	

CHAIN 7

Type of Deed:	GRANT DEED
Title is vested in:	CANYON RANCH ASSOCIATES, AN UNDIVIDED 10% INTEREST
Title received from:	LUGONIA PARK ASSOCIATES
Date Executed:	05/04/1990
Date Recorded:	05/31/1990
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	90-212185
Docket:	NA
Land Record Comments:	

CHAIN 8

Type of Deed:	GRANT DEED
Title is vested in:	VICTOR K. SEINO, A WIDOWER, AS TO AN UNDIVIDED 1/10TH INTEREST; YUMA TSUCHIYA AND HISAKO TSUCHIYA, H & W, AS TO AN UNDIVIDED1/10TH INTEREST, PETER I. YOSHIDA AND JUNE YOSHIDA, AN UNDIVIDED 1/10TH INTEREST; GARY C. MORIKONE AND DOROTHY T. MORIKONE, H & W, AS TO AN UNDIVIDED 1/20TH INTEREST, RICHARD K. HAMAMURA & RUTH Y. HAMAMURA, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; SHIROU KUNIHIRA AND SATSUKI MAY KUNIHIRA, AS TO AN UNDIVIDED 1/10TH INTEREST, JAMES A. SADOYAMA & THAIS V. SADOYAMA, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; DAVID I. ASATANI, A SINGLE MAN, AS TO AN UNDIVIDED 1/10TH INTEREST, GEORGE M. TAKENO AND SETSUKO G. TAKENO, H & W, AS TO AN UNDIVIDED 1/10TH INTEREST; AND HIROMU MORIKONE AND HARUE MORIKONE, AS TO AN UNDIVIDED 1/20TH INTEREST
Title received from:	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25% INTEREST
Date Executed:	09/28/1988
Date Recorded:	09/30/1988
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	88-330177
Docket:	NA
Land Record Comments:	AFFIDAVIT - DEATH OF SPOUSE, R. 12-26-19, 2019-0477132, HISAKO TSUCHIYA, DECEASED

CHAIN 9

Type of Deed:	GRANT DEED
Title is vested in:	WORLD INVESTMENT NETWORK, AN UNDIVIDED 25% INTEREST
Title received from:	LUGONIA PARK ASSOCIATES
Date Executed:	07/01/1988
Date Recorded:	09/30/1988
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	88-330176
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search 1980

CHAIN 10

Type of Deed: GRANT DEED
Title is vested in: LUGONIA PARK ASSOCIATES
Title received from: J.J RAMIREZ, A MARRIED MAN
Date Executed: 03/28/1984
Date Recorded: 04/11/1984
Book: NA
Page: NA
Volume: NA
Instrument#: 84-083175
Docket: NA
Land Record Comments:

CHAIN 11

Type of Deed: QUIT CLAIM DEED
Title is vested in: J.J RAMIREZ, A MARRIED MAN
Title received from: AMELIA RAMIREZ, WIFE OF GRANTEE
Date Executed: NA
Date Recorded: 01/03/1984
Book: NA
Page: NA
Volume: NA
Instrument#: 84-000521
Docket: NA
Land Record Comments:

CHAIN 12

Type of Deed: GRANT DEED
Title is vested in: J.J RAMIREZ, A MARRIED MAN
Title received from: UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED1/2 INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED1/2 INTEREST
Date Executed: 12/21/1983
Date Recorded: 01/03/1984
Book: NA
Page: NA
Volume: NA
Instrument#: 84-000520
Docket: NA
Land Record Comments:

EDR Environmental Lien and AUL Search 1980

CHAIN 13

Type of Deed:	QUIT CLAIM DEED
Title is vested in:	UNIVERSITY RANCHES INTERNATIONAL, INC. AS TO AN UNDIVIDED 5% INTEREST AND MANOUTCHEHR HAGIGHI AND SOUSSAN HAGHIGHI, H & W, AS TO AN UNDIVIDED 5% INTEREST
Title received from:	EMERALD REALTY, INC
Date Executed:	NA
Date Recorded:	11/29/1983
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	83-280319
Docket:	NA
Land Record Comments:	

CHAIN 14

Type of Deed:	GRANT DEED
Title is vested in:	EMERALD REALTY, INC., AS TO AN UNDIVIDED 10% INTEREST, UNIVERSITY RANCHES INTERNATIONAL, INC., AS TO AN UNDIVIDED 45% INTEREST, AND MANOUTCHEHR HAGHIGHI AND SOUSSAN HAGHIGHI, AS TO AN UNDIVIDED 45% INTEREST
Title received from:	INTER-CAL MANAGEMENT, LTD
Date Executed:	04/17/1980
Date Recorded:	05/07/1980
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	80-108772
Docket:	NA
Land Record Comments:	NO ADDITIONAL DEEDS FOUND RESEARCH CONDUCTED BACK TO 1980. THIS IS THE OLDEST DEED OF RECORD FOUND POST DECEMBER 31, 1979 (BETWEEN 01/01/1980 AND 05/07/1980).

EDR Environmental Lien and AUL Search 1980

MISCELLANEOUS INSTRUMENTS

Comments:	NONE IDENTIFIED.

EDR Environmental Lien & AUL Search 1980

DEED EXHIBIT

RECORDING REQUESTED BY
CHICAGO TITLE COMPANY
COMMERCIAL DIVISION
AND WHEN RECORDED MAIL DOCUMENT TO:

NAME Mirau Edwards Cannon Lewin & Tooke

STREET ADDRESS PO Box 9058

CITY, STATE & ZIP CODE Redlands, CA 92375

102218·001·227

Electronically
Recorded in Official Records
County of San Bernardino
Bob Dutton
Assessor-Recorder-County Clerk

DOC# 2019-0477142

12/26/2019
03:28 PM
SAN

B9246

Titles: 1 Pages: 5

Fees	$36.00
Taxes	$0.00
CA SB2 Fee	0.00
Total	$36.00

SPACE ABOVE FOR RECORDER'S USE ONLY

Exempt from fee per GC 27388.1 (a) (1);
fee cap of $225 reached

QUITCLAIM DEED

Title of Document

THIS AREA FOR RECORDER'S USE ONLY

THIS COVER SHEET ADDED TO PROVIDE ADEQUATE SPACE FOR RECORDING INFORMATION
($3.00 Additional Recording Fee Applies)

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL
TO:
Mirau, Edwards, Cannon,
Lewin & Tooke (JKM)
P. O. Box 9058
Redlands, CA 92375

MAIL TAX STATEMENTS TO:
Lugonia Holdings, LLC
Daniel Kunihira
P. O. Box 542
Loma Linda, CA 92354

APN: 0167-171-07; -12 & -14

Property situate in County of San Bernardino
Amount of Documentary Transfer Tax Due $0.00

This conveyance changes the manner in which title is held, grantor(s) and Grantee(s) remain the same and continue to hold the same proportionate interest, R&T 11911.

James Seino
Signature

QUITCLAIM DEED

FOR VALUABLE CONSIDERATION, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, JAMES SEINO and KENT SEINO hereby remise, release and quitclaims all their interest in the property situated in the County of San Bernardino, State of California, described on Exhibit "A" attached hereto and incorporated herein by reference to LUGONIA HOLDINGS, LLC, a California limited liability company.

IN WITNESS WHEREOF, the undersigned has executed this Quitclaim Deed as of Oct. 2, 2019.

James Seino
James Seino

Kent Seino

MAIL TAX STATEMENTS AS DIRECTED ABOVE

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
:ss.
COUNTY OF Ventura)

On 9/24/2019, before me, Paul Varblow, Notary Public, personally appeared JAMES SEINO, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the person~~s~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

PAUL VARBLOW
Notary Public - California
Ventura County
Commission # 2166145
My Comm. Expires Sep 29, 2020

Signature ______________________
Notary Public in and for said
County and State

(Seal)

STATE OF CALIFORNIA)
:ss.
COUNTY OF Los Angeles)

On October 2nd 2019 before me, Krisztian Nagy, Notary Public, personally appeared KENT SEINO, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

KRISZTIAN NAGY
Notary Public - California
Los Angeles County
Commission # 2267940
My Comm. Expires Nov 20, 2022

(Seal)

Signature
Notary Public in and for said
County and State

LEGAL DESCRIPTION

A 2.5% TENANCY IN COMMON INTEREST IN THE FOLLOWING PROPERTY:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

THAT PORTION OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

COMMENCING 20 RODS EAST OF THE SOUTHWEST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION; THENCE EAST 30 RODS; THENCE NORTH 80 RODS; THENCE WEST 30 RODS; THENCE 80 RODS TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE SOUTH 30 FEET CONVEYED TO THE COUNTY OF SAN BERNARDINO FOR ROAD PURPOSES.

APN: 0167-171-07

PARCEL 2:

THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THEREFROM THAT PORTION OF THE ABOVE DESCRIBED PROPERTY LYING SOUTHWESTERLY OF THE NORTHWESTERLY LINE OF THAT CERTAIN PARCEL CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 8, 1979 IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THE FOLLOWING:

EXCEPTION A: AN UNDIVIDED 5/30THS INTEREST IN AND TO A PARCEL OF LAND (CALLED WELLSITE) WITH WELL AND PUMPING PLANT THEREON (COMMONLY KNOWN AS THE "LUGONIA AVENUE WELL"), SITUATED ON THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 21, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF SAID WEST 10 ACRES, 221 FEET NORTH FROM THE SOUTHEAST CORNER OF SAID WEST 10 ACRES (WHICH SOUTHEAST CORNER OF SAID TEN ACRES IS IN THE CENTER LINE OF LUGONIA AVENUE); THENCE WEST 42 FEET; THENCE NORTH 16 FEET; THENCE EAST 42 FEET; THENCE SOUTH 16 FEET TO POINT OF BEGINNING.

EXCEPTION B: THE RIGHTS AND INTERESTS AS CONVEYED TO SOUTHERN CITRUS ASSOCIATION, A CORPORATION, BY DEED DATED MAY 6, 1946, RECORDED MAY 15, 1946 IN BOOK 1891, PAGE 275 OF OFFICIAL RECORDS OF SAID COUNTY, INCLUDING AMONG SUCH RIGHTS AND INTEREST, AN UNDIVIDED 2/30THS INTEREST IN SAID WELL SITE, WELL AND PUMPING PLANT ABOVE REFERRED TO, SUCH EXCEPTED 2/30THS INTEREST BEING IN ADDITION TO THE 5/30THS INTEREST EXCEPTED IN EXCEPTION A.

EXCEPTION C: ANY PORTION OF THE ABOVE DESCRIBED PARCELS OF LAND LYING WITHIN LUGONIA AVENUE.

ALSO EXCEPTING THEREFROM DEED TO THE STATE OF CALIFORNIA, RECORDED AUGUST 8, 1979 IN BOOK 9745, PAGE 492 OF OFFICIAL RECORDS AND IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 17/30THS INTEREST IN AND TO A PARCEL OF LAND (CALLED "WELLSITE") AS CONVEYED TO D. W. WILCOTT, TRUSTEE AS RECORDED APRIL 10, 1972 IN BOOK 7904, PAGE 787 OF OFFICIAL RECORDS.

APN: 0167-171-12 AND 14

APPENDIX D

INTERVIEWS

Chicago Title Company

4911 Birch Street, , Newport Beach, CA 92660
Phone: (949) 724-3117 ● Fax: (949) 258-5237

Issuing Policies of Chicago Title Insurance Company

ORDER NO.: **62218A-987-OC1-K27**

Ticor Title Company
4120 Concours Street Suite 400
Ontario, CA 91764
ATTN: Loretta Hovey
Email: LHovey@ticortitle.com
REF:

Escrow/Customer Phone: **(949) 724-3117**

Title Officer: John Balassi/Jason Silva (OC/Comm)
Title Officer Phone: (949) 724-3117
Title Officer Fax: (949) 258-5237
Title Officer Email: CTCommercialTitleNewport@ctt.com

PROPERTY: **VACANT LAND LUGONIA STREET, REDLANDS, CA**

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein, ***Chicago Title Company*** *hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of title insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.*

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a Florida corporation.

Please read the exceptions shown or referred to herein and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

Chicago Title Company

By: ______________________
Authorized Signature

By:
Randy Quirk
President

ATTEST
Marjorie Nemzura
Corporate Secretary

Chicago Title Company

4911 Birch Street, , Newport Beach, CA 92660
Phone: (949) 724-3117 ● Fax: (949) 258-5237

PRELIMINARY REPORT

EFFECTIVE DATE: **October 1, 2021 at 7:30 a.m.**

ORDER NO.: 62218A-987-OC1-K27

The form of policy or policies of title insurance contemplated by this report is:

CLTA Standard Coverage Owners Policy (04-08-14)

1. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A FEE

2. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   LUGONIA HOLDINGS, LLC, a California limited liability company, as to an undivided 25% interest; LUGONIA PARK ASSOCIATES, a California limited partnership, as to an undivided 65% interest nd CANYON RANCH DEVELOPMENT, LLC, a California limited liability company formerly known as CANYON RANCH ASSOCIATES, LTD., a California limited partnership, as to an undivided 10% interest, as tenants in common as to Parcels 1 and 2 and an undivided 6/30th interest in and to Parcel 3;

   LAURA ANNE RAMIREZ, an unmarried woman, as to an undivided 5/30th interest in and to Parcel 3

   JOHN CURCI, Trustee, as to an undivided 2/30th interest in and to Parcel 3

   ORANGE TREE WEST, a limited partnership, as to an undivided 17/30th interest in and to Parcel 3

3. THE LAND REFERRED TO IN THIS REPORT IS DESCRIBED AS FOLLOWS:

   See Exhibit A attached hereto and made a part hereof.

EXHIBIT "A"

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF REDLANDS, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

THAT PORTION OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

COMMENCING 20 RODS EAST OF THE SOUTHWEST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION; THENCE EAST 30 RODS; THENCE NORTH 80 RODS; THENCE WEST 30 RODS; THENCE 80 RODS TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED JUNE 24, 1988 AS INSTRUMENT NO. 88-203974 OF OFFICIAL RECORDS.

EXCEPTING THEREFROM THE SOUTH 30 FEET CONVEYED TO THE COUNTY OF SAN BERNARDINO FOR ROAD PURPOSES.

APN: 0167-171-07-0-000

PARCEL 2:

THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THEREFROM THAT PORTION OF THE ABOVE DESCRIBED PROPERTY LYING SOUTHWESTERLY OF THE NORTHEASTERLY LINE OF THAT CERTAIN PARCEL CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 08, 1979 AS INSTRUMENT NO. 347, IN BOOK 9745, PAGE 595 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THE FOLLOWING:

EXCEPTION A: A PARCEL OF LAND (CALLED "WELLSITE" WITH WELL AND PUMPING PLANT THEREON) (COMMONLY KNOWN AS THE "LUGONIA AVENUE WELL"), SITUATED ON THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 21, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF SAID WEST 10 ACRES, 221 FEET NORTH FROM THE SOUTHEAST CORNER OF SAID WEST 10 ACRES (WHICH SOUTHEAST CORNER OF SAID 10 ACRES IS IN THE CENTER LINE OF LUGONIA AVENUE); THENCE WEST 42 FEET; THENCE NORTH 16 FEET; THENCE EAST 42 FEET; THENCE SOUTH 16 FEET TO THE POINT OF BEGINNING.

EXCEPTION B: THE RIGHTS AND INTERESTS AS CONVEYED TO SOUTHERN CITRUS ASSOCIATION, A CORPORATION, BY DEED DATED MAY 06, 1946, RECORDED MAY 15, 1946 IN BOOK 1891, PAGE 275 OF OFFICIAL RECORDS OF SAID COUNTY.

EXCEPTION C: ANY PORTION OF THE ABOVE DESCRIBED PARCELS OF LAND LYING WITHIN LUGONIA AVENUE.

EXHIBIT A
(Continued)

EXCEPTION D: THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA, BY DEEDS RECORDED AUGUST 08, 1979 AS INSTRUMENT NO. 346, IN BOOK 9745, PAGE 592, AND AUGUST 08, 1979 AS INSTRUMENT NO. 347, IN BOOK 9745, PAGE 595, BOTH OF OFFICIAL RECORDS.

APN: 0167-171-14-0-000

PARCEL 3:

THAT PORTION OF THE WEST 10 ACRES OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN (CALLED “WELLSITE” WITH WELL AND PUMPING PLANT THEREON), IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF SAID WEST 10 ACRES, 221 FEET NORTH FROM THE SOUTHEAST CORNER OF SAID WEST 10 ACRES (WHICH SOUTHEAST CORNER OF SAID 10 ACRES IS IN THE CENTER LINE OF LUGONIA AVENUE); THENCE WEST 42 FEET; THENCE NORTH 16 FEET; THENCE EAST 42 FEET; THENCE SOUTH 16 FEET TO THE POINT OF BEGINNING.

APN: 0167-171-11-0-000; 0167-171-12-0-000

EXCEPTIONS

AT THE DATE HEREOF, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN SAID POLICY FORM WOULD BE AS FOLLOWS:

A. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 0167-171-07-00
Fiscal Year: 2021-2022
1st Installment: $5,583.88, open (Delinquent after December 10)
Penalty: $558.39
2nd Installment: $5,583.88, open (Delinquent after April 10)
Penalty and Cost: $568.39
Homeowners Exemption: $
Code Area: 005-069

Affects: Parcel 1

B. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 0167-171-11-0-000
Fiscal Year: 2021-2022
1st Installment: $10.15, open (Delinquent after December 10)
Penalty: $1.01
2nd Installment: $10.14, open (Delinquent after April 10)
Penalty and Cost: $11.01
Homeowners Exemption: $
Code Area: 005-069

Affects: A portion of Parcel 3

C. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 0167-171-12-0-000
Fiscal Year: 2021-2022
1st Installment: $84.15, open (Delinquent after December 10)
Penalty: $8.40
2nd Installment: $84.13, open (Delinquent after April 10)
Penalty and Cost: $18.40
Homeowners Exemption: $
Code Area: 005-069

Affects: A portion of Parcel 3

EXCEPTIONS
(Continued)

D. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.:	0167-171-14-0-000
Fiscal Year:	2021-2022
1st Installment:	$2,526.52, open (Delinquent after December 10)
Penalty:	$252.66
2nd Installment:	$2,526.50, open (Delinquent after April 10)
Penalty and Cost:	$262.65
Homeowners Exemption:	$
Code Area:	005-069

Affects: Parcel 2

E. The lien of supplemental or escaped assessments of property taxes, if any, made pursuant to the provisions of Chapter 3.5 (commencing with Section 75) or Part 2, Chapter 3, Articles 3 and 4, respectively, of the Revenue and Taxation Code of the State of California as a result of the transfer of title to the vestee named in Schedule A or as a result of changes in ownership or new construction occurring prior to Date of Policy.

1. Water rights, claims or title to water, whether or not disclosed by the public records.

2. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	A pipe line to carry and flow the water obtained from said well-site
Recording Date:	May 15, 1945
Recording No:	in Book 1891, Page 275 of Official Records
Affects:	Parcel 2

3. The ownership of said Land does not include rights of access to or from the street, highway, or freeway abutting said Land, such rights having been relinquished by the document,

Recording Date:	August 08, 1979
Recording No:	as Instrument No. 1979-346, in Book 9745, Page 592 of Official Records
Affects:	Said land abutting State Highway 30
and Recording Date:	August 08, 1979
and Recording No:	as Instrument No. 1979-347, in Book 9745, Page 595 of Official Records

4. The Land described herein is included within a project area of the Redevelopment Agency shown below, and that proceedings for the redevelopment of said project have been instituted under the Redevelopment Law (such redevelopment to proceed only after the adoption of the Redevelopment Plan) as disclosed by a document.

Redevelopment Agency:	Redevelopment Agency of the City of Redlands
Recording Date:	July 17, 2008
Recording No:	as Instrument No. 2008-0325710 of Official Records
and Recording Date:	July 17, 2008
and Recording No:	as Instrument No. 2008-0325711 of Official Records

EXCEPTIONS
(Continued)

5. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

6. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other matters which a correct survey would disclose and which are not shown by the public records.

7. Any easements not disclosed by the public records as to matters affecting title to real property, whether or not said easements are visible and apparent.

8. Matters which may be disclosed by an inspection and/or by a correct ALTA/NSPS Land Title Survey of said Land that is satisfactory to the Company, and/or by inquiry of the parties in possession thereof.

9. Any rights of the parties in possession of a portion of, or all of, said Land, which rights are not disclosed by the public records.

   The Company will require, for review, a full and complete copy of any unrecorded agreement, contract, license and/or lease, together with all supplements, assignments and amendments thereto, before issuing any policy of title insurance without excepting this item from coverage.

   The Company reserves the right to except additional items and/or make additional requirements after reviewing said documents.

PLEASE REFER TO THE “INFORMATIONAL NOTES” AND “REQUIREMENTS” SECTIONS WHICH FOLLOW FOR INFORMATION NECESSARY TO COMPLETE THIS TRANSACTION.

END OF EXCEPTIONS

REQUIREMENTS SECTION

1. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below:

   Limited Liability Company: Lugonia Holdings, LLC, a California limited liability company

   a) A copy of its operating agreement, if any, and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

   b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

   c) If the Limited Liability Company is member-managed, a full and complete current list of members certified by the appropriate manager or member.

   d) A current dated certificate of good standing from the proper governmental authority of the state in which the entity is currently domiciled.

   e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

   f) If Limited Liability Company is a Single Member Entity, a Statement of Information for the Single Member will be required.

   g) Each member and manager of the LLC without an Operating Agreement must execute in the presence of a notary public the Certificate of California LLC (Without an Operating Agreement) Status and Authority form.

2. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the limited partnership named below:

   Name: Lugonia Park Associates, a California limited partnership

   a) A complete copy of the limited partnership agreement and all amendments thereto.

   b) Satisfactory evidence that the partnership was validly formed and is in good standing.

   The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

REQUIREMENTS
(Continued)

3. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below:

   Limited Liability Company: Canyon Ranch Development, LLC, a California limited liability company

   a) A copy of its operating agreement, if any, and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

   b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

   c) If the Limited Liability Company is member-managed, a full and complete current list of members certified by the appropriate manager or member.

   d) A current dated certificate of good standing from the proper governmental authority of the state in which the entity is currently domiciled.

   e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

   f) If Limited Liability Company is a Single Member Entity, a Statement of Information for the Single Member will be required.

   g) Each member and manager of the LLC without an Operating Agreement must execute in the presence of a notary public the Certificate of California LLC (Without an Operating Agreement) Status and Authority form.

4. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the limited partnership named below:

   Name: Canyon Ranch Associates, Ltd., a California limited partnership

   a) A complete copy of the limited partnership agreement and all amendments thereto.

   b) Satisfactory evidence that the partnership was validly formed and is in good standing.

   The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

5. The Company will require either (a) a complete copy of the trust agreement and any amendments thereto certified by the trustee(s) to be a true and complete copy with respect to the hereinafter named trust, or (b) a Certification, pursuant to California Probate Code Section 18100.5, executed by all of the current trustee(s) of the hereinafter named trust, a form of which is attached.

   Name of Trust: John Curci, Trustee

REQUIREMENTS
(Continued)

6. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the limited partnership named below:

Name: Orange Tree West, a limited partnership

a) A complete copy of the limited partnership agreement and all amendments thereto.

b) Satisfactory evidence that the partnership was validly formed and is in good standing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

7. We find various Liens and Judgments that are of record against persons with similar or the same name as that of the vestee(s) shown herein. In order to complete this report, the Company requires a Statement of Information to be provided for the following vestee(s), which may allow and assist in the elimination of some or all of the said liens and judgments. After review of the requested Statement of Information, the Company reserves the right to add additional items or make further requirements prior to the issuance of any Policy of Title Insurance.

Vestee(s): Laura Anne Ramirez

NOTE: The Statement of Information is necessary to complete the search and examination of title under this order. Any title search includes matters that are indexed by name only, and having a completed Statement of Information assists the Company in the elimination of certain matters which appear to involve the parties but in fact affect another party with the same or similar name. Be assured that the Statement of Information is essential and will be kept strictly confidential to this file.

8. Prior to the close of escrow, the Company requires a Statement of Information to be completed by the following party(s),

Party(s): All Parties

The Company reserves the right to add additional items or make further requirements after review of the requested Statement of Information.

9. Furnish for review a full and complete copy of any unrecorded agreement, contract, license and/or lease together with all supplements, assignments and amendments thereto, prior to the close of this transaction.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

10. Unrecorded matters which may be disclosed by an Owner’s Affidavit or Declaration. A form of the Owner’s Affidavit/Declaration is attached to this Preliminary Report/Commitment. This Affidavit/Declaration is to be completed by the record owner of the land and submitted for review prior to the closing of this transaction. Your prompt attention to this requirement will help avoid delays in the closing of this transaction. Thank you.

The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit/Declaration.

REQUIREMENTS
(Continued)

END OF REQUIREMENTS

INFORMATIONAL NOTES SECTION

1. Supplemental taxes, including any personal property taxes and any assessments collected with taxes, assessed pursuant to the provisions of Chapter 3.5 (commencing with Section 75) of the Revenue and Taxation Code of the State of California, are as follows:

   Tax Identification No.: 0167-171-07-0-000
   Fiscal Year: 2018-2019
   1st Installment: $135.27, paid
   2nd Installment: $135.25, paid
   Code Area: 005-069
   Supplemental Bill No.: 200913508

2. Supplemental taxes, including any personal property taxes and any assessments collected with taxes, assessed pursuant to the provisions of Chapter 3.5 (commencing with Section 75) of the Revenue and Taxation Code of the State of California, are as follows:

   Tax Identification No.: 0167-171-14-0-000
   Fiscal Year: 2018-2019
   1st Installment: $61.16, paid
   2nd Installment: $61.13, paid
   Code Area: 005-069
   Supplemental Bill No.: 200913509

3. None of the items shown in this report will cause the Company to decline to attach ALTA Endorsement Form 9 to an Extended Coverage Loan Policy, when issued.

4. Note: The policy of title insurance will include an arbitration provision. The Company or the insured may demand arbitration. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. Please ask your escrow or title officer for a sample copy of the policy to be issued if you wish to review the arbitration provisions and any other provisions pertaining to your Title Insurance coverage.

5. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

6. Pursuant to Government Code Section 27388.1, as amended and effective as of 1-1-2018, a Documentary Transfer Tax (DTT) Affidavit may be required to be completed and submitted with each document when DTT is being paid or when an exemption is being claimed from paying the tax. If a governmental agency is a party to the document, the form will not be required. DTT Affidavits may be available at a Tax Assessor-County Clerk-Recorder.

7. Note: The only conveyance(s) affecting said Land, which recorded within 24 months of the date of this report, are as follows:

   Grantor: David I. Asatani, a single man
   Grantee: Lugonia Holdings, LLC, a California limited liability company
   Recording Date: December 23, 2019
   Recording No: as Instrument No. 2019-0474413 of Official Records

   Grantor: Frank I. Yoshida and Chieko Yoshida
   Grantee: Lugonia Holdings, LLC, a California limited liability company
   Recording Date: December 23, 2019
   Recording No: as Instrument No. 2019-0474414 of Official Records

INFORMATIONAL NOTES
(Continued)

Grantor: George M. Takeno and Setsuko G. Takeno
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474415 of Official Records

Grantor: Peter T. Yoshida who took title as Peter I. Yoshida, and Jude Yoshida
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474416 of Official Records

Grantor: Richard K. Hamamura and Ruth Y. Hamamura
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474417 of Official Records

Grantor: Shirou Kunihira and Satsuki May Kunihira
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474418 of Official Records

Grantor: Dorothy T. Morikone, a widow
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474419 of Official Records

Grantor: Hiromu Morikone, a widower
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474420 of Official Records

Grantor: James A. Sadoyama, a widower
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474421 of Official Records

Grantor: Yuma Tsuchiya, a widower
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 23, 2019
Recording No: as Instrument No. 2019-0474422 of Official Records

Grantor: Yuma Tsuchiya
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 26, 2019
Recording No: as Instrument No. 2019-0477133 of Official Records

Grantor: Dorothy Morikone Trustee, Morikone Family Trust
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 26, 2019
Recording No: as Instrument No. 2019-0477135 of Official Records

Grantor: Rosemarie Emori, Trustee, Morikone Family Trust
Grantee: Lugonia Holdings, LLC, a California limited liability company
Recording Date: December 26, 2019
Recording No: as Instrument No. 2019-0477137 of Official Records

INFORMATIONAL NOTES
(Continued)

Grantor:	Noni S. Patchett, Trustee, Revocable Living Trust of James Anki Sadoyama and Thais Verdelle Thrasher Sadoyama
Grantee:	Lugonia Holdings, LLC, a California limited liability company
Recording Date:	December 26, 2019
Recording No:	as Instrument No. 2019-0477139 of Official Records

Grantor:	James Seino and Kent Seino
Grantee:	Lugonia Holdings, LLC, a California limited liability company
Recording Date:	December 26, 2019
Recording No:	as Instrument No. 2019-0477142 of Official Records

END OF INFORMATIONAL NOTES

John Balassi/Jason Silva (OC/Comm)/ry5

WIRE SAFE™ | Inquire before you wire!

Wire Fraud Alert

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the phone number of relevant parties to the transaction as soon as an escrow account is opened**. DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation: **http://www.fbi.gov**	***Internet Crime Complaint Center:*** **http://www.ic3.gov**

Chicago Title Company

4911 Birch Street, , Newport Beach, CA 92660
Phone: (949) 724-3117 ● Fax: (949) 258-5237

Notice of Available Discounts

Pursuant to Section 2355.3 in Title 10 of the California Code of Regulations Fidelity National Financial, Inc. and its subsidiaries ("FNF") must deliver a notice of each discount available under our current rate filing along with the delivery of escrow instructions, a preliminary report or commitment. Please be aware that the provision of this notice does not constitute a waiver of the consumer's right to be charged the filed rate. As such, your transaction may not qualify for the below discounts.

You are encouraged to discuss the applicability of one or more of the below discounts with a Company representative. These discounts are generally described below; consult the rate manual for a full description of the terms, conditions and requirements for such discount. These discounts only apply to transactions involving services rendered by the FNF Family of Companies. This notice only applies to transactions involving property improved with a one-to-four family residential dwelling.

Not all discounts are offered by every FNF Company. The discount will only be applicable to the FNF Company as indicated by the named discount.

FNF Underwritten Title Company	**Underwritten by FNF Underwriters**
CTC – Chicago Title company	CTIC – Chicago Title Insurance Company
CLTC – Commonwealth Land Title Company	CLTIC - Commonwealth Land Title Insurance Company
FNTC – Fidelity National Title Company of California	FNTIC – Fidelity National Title Insurance Company
FNTCCA - Fidelity National Title Company of California	FNTIC - Fidelity National Title Insurance Company
TICOR – Ticor Title Company of California	CTIC – Chicago Title Insurance Company
LTC – Lawyer's Title Company	CLTIC – Commonwealth Land Title Insurance Company
SLTC – ServiceLink Title Company	CTIC – Chicago Title Insurance Company

Available Discounts

DISASTER LOANS (CTIC, CLTIC, FNTIC)

The charge for a Lender's Policy (Standard or Extended coverage) covering the financing or refinancing by an owner of record, within twenty-four (24) months of the date of a declaration of a disaster area by the government of the United States or the State of California on any land located in said area, which was partially or totally destroyed in the disaster, will be fifty percent (50%) of the appropriate title insurance rate.

CHURCHES OR CHARITABLE NON-PROFIT ORGANIZATIONS (CTIC, FNTIC)

On properties used as a church or for charitable purposes within the scope of the normal activities of such entities, provided said charge is normally the church's obligation the charge for an owner's policy shall be fifty percent (50%) to seventy percent (70%) of the appropriate title insurance rate, depending on the type of coverage selected. The charge for a lender's policy shall be forty (40%) to fifty percent (50%) of the appropriate title insurance rate, depending on the type of coverage selected.

FIDELITY NATIONAL FINANCIAL, INC.
PRIVACY NOTICE

Effective August 1, 2021

Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, “FNF,” “our,” or “we”) respect and are committed to protecting your privacy. This Privacy Notice explains how we collect, use, and protect personal information, when and to whom we disclose such information, and the choices you have about the use and disclosure of that information.

A limited number of FNF subsidiaries have their own privacy notices. If a subsidiary has its own privacy notice, the privacy notice will be available on the subsidiary’s website and this Privacy Notice does not apply.

Collection of Personal Information

FNF may collect the following categories of Personal Information:
- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- identity information (*e.g.* Social Security Number, driver’s license, passport, or other government ID number);
- financial account information (*e.g.* loan or bank account information); and
- other personal information necessary to provide products or services to you.

We may collect Personal Information about you from:
- information we receive from you or your agent;
- information about your transactions with FNF, our affiliates, or others; and
- information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others.

Collection of Browsing Information

FNF automatically collects the following types of Browsing Information when you access an FNF website, online service, or application (each an “FNF Website”) from your Internet browser, computer, and/or device:
- Internet Protocol (IP) address and operating system;
- browser version, language, and type;
- domain name system requests; and
- browsing history on the FNF Website, such as date and time of your visit to the FNF Website and visits to the pages within the FNF Website.

Like most websites, our servers automatically log each visitor to the FNF Website and may collect the Browsing Information described above. We use Browsing Information for system administration, troubleshooting, fraud investigation, and to improve our websites. Browsing Information generally does not reveal anything personal about you, though if you have created a user account for an FNF Website and are logged into that account, the FNF Website may be able to link certain browsing activity to your user account.

Other Online Specifics

Cookies. When you visit an FNF Website, a “cookie” may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer’s hard drive. Information gathered using cookies helps us improve your user experience. For example, a cookie can help the website load properly or can customize the display page based on your browser type and user preferences. You can choose whether or not to accept cookies by changing your Internet browser settings. Be aware that doing so may impair or limit some functionality of the FNF Website.

Web Beacons. We use web beacons to determine when and how many times a page has been viewed. This information is used to improve our websites.

Do Not Track. Currently our FNF Websites do not respond to “Do Not Track” features enabled through your browser.

Links to Other Sites. FNF Websites may contain links to unaffiliated third-party websites. FNF is not responsible for the privacy practices or content of those websites. We recommend that you read the privacy policy of every website you visit.

Use of Personal Information

FNF uses Personal Information for three main purposes:
- To provide products and services to you or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you about our, our affiliates’, and others’ products and services, jointly or independently.

When Information Is Disclosed

We may disclose your Personal Information and Browsing Information in the following circumstances:
- to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to nonaffiliated service providers who provide or perform services or functions on our behalf and who agree to use the information only to provide such services or functions;

- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to jointly market financial products or services to you;
- to law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order; or
- in the good-faith belief that such disclosure is necessary to comply with legal process or applicable laws, or to protect the rights, property, or safety of FNF, its customers, or the public.

The law does not require your prior authorization and does not allow you to restrict the disclosures described above. Additionally, we may disclose your information to third parties for whom you have given us authorization or consent to make such disclosure. We do not otherwise share your Personal Information or Browsing Information with nonaffiliated third parties, except as required or permitted by law. We may share your Personal Information with affiliates (other companies owned by FNF) to directly market to you. Please see "Choices with Your Information" to learn how to restrict that sharing.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of bankruptcy, reorganization, insolvency, receivership, or an assignment for the benefit of creditors. By submitting Personal Information and/or Browsing Information to FNF, you expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings.

Security of Your Information

We maintain physical, electronic, and procedural safeguards to protect your Personal Information.

Choices With Your Information

If you do not want FNF to share your information among our affiliates to directly market to you, you may send an "opt out" request as directed at the end of this Privacy Notice. We do not share your Personal Information with nonaffiliates for their use to direct market to you without your consent.

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you.

For California Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties, except as permitted by California law. For additional information about your California privacy rights, please visit the "California Privacy" link on our website (https://fnf.com/pages/californiaprivacy.aspx) or call (888) 413-1748.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 714-2710 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.
For Oregon Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not disclose information about your creditworthiness to our affiliates and will not disclose your personal information, financial information, credit report, or health information to nonaffiliated third parties to market to you, other than as permitted by Vermont law, unless you authorize us to make those disclosures.

Information From Children

The FNF Websites are not intended or designed to attract persons under the age of eighteen (18).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States and choose to provide Personal Information or Browsing Information to us, please note that we may transfer that information outside of your country of residence. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection, transfer, and use of such information in accordance with this Privacy Notice.

FNF Website Services for Mortgage Loans

Certain FNF companies provide services to mortgage loan servicers, including hosting websites that collect customer information on behalf of mortgage loan servicers (the "Service Websites"). The Service Websites may contain links to both this Privacy Notice and the mortgage loan servicer or lender's privacy notice. The sections of this Privacy Notice titled When Information is Disclosed, Choices with Your Information, and Accessing and Correcting Information do not apply to the Service Websites. The mortgage loan servicer or lender's privacy notice governs use, disclosure, and access to your Personal Information. FNF does not share Personal Information collected through the Service Websites, except as required or authorized by contract with the mortgage loan servicer or lender, or as required by law or in the good-faith belief that such disclosure is necessary: to comply with a legal process or applicable law, to enforce this Privacy Notice, or to protect the rights, property, or safety of FNF or the public.

Your Consent To This Privacy Notice; Notice Changes

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information in accordance with this Privacy Notice. We may change this Privacy Notice at any time. The Privacy Notice's effective date will show the last date changes were made. If you provide information to us following any change of the Privacy Notice, that signifies your assent to and acceptance of the changes to the Privacy Notice.

Accessing and Correcting Information; Contact Us

If you have questions, would like to correct your Personal Information, or want to opt-out of information sharing for affiliate marketing, visit FNF's Opt Out Page or contact us by phone at (888) 714-2710 or by mail to:

Fidelity National Financial, Inc.
601 Riverside Avenue,
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

ATTACHMENT ONE (Revised 05-06-16)

CALIFORNIA LAND TITLE ASSOCIATION
STANDARD COVERAGE POLICY – 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;
   d. improvements on the Land;
   e. land division; and
   f. environmental protection.
   This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;

   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.

   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	**Our Maximum Dollar Limit of Liability**
Covered Risk 16:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 10,000.00
Covered Risk 18:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 19:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 21:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 5,000.00

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
      (i) the occupancy, use, or enjoyment of the Land;
      (ii) the character, dimensions, or location of any improvement erected on the Land;
      (iii) the subdivision of land; or
      (iv) environmental protection;

      or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13 or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

{Except as provided in Schedule B - Part II,{ t{or T}his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

{PART I

{The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.}

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:}

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
      (i) the occupancy, use, or enjoyment of the Land;
      (ii) the character, dimensions, or location of any improvement erected on the Land;
      (iii) the subdivision of land; or
      (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

{The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and that are not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records. }
7. {Variable exceptions such as taxes, easements, CC&R's, etc. shown here.}

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY – ASSESSMENTS PRIORITY (04-02-15)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

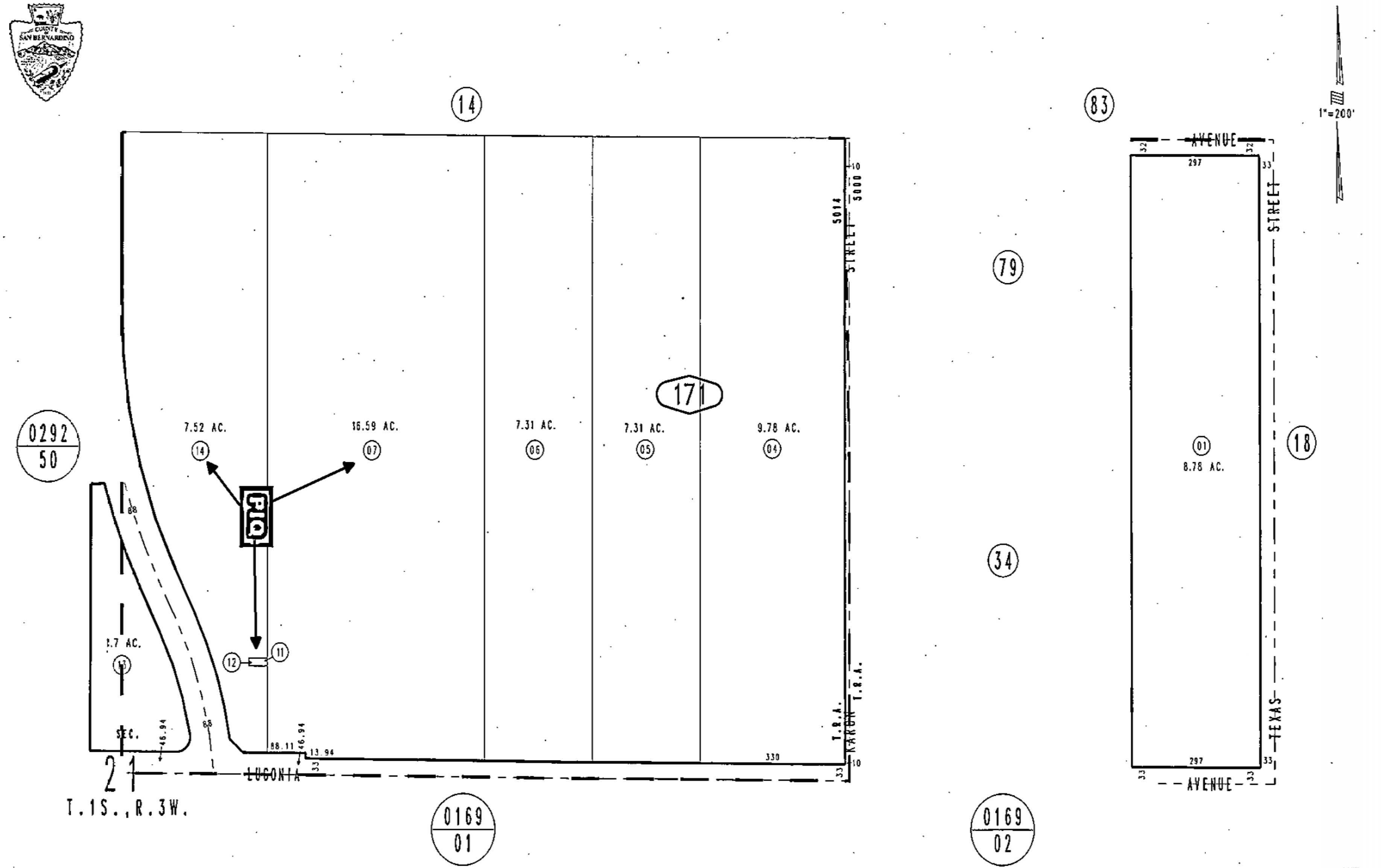
1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
      (i) the occupancy, use, or enjoyment of the Land;
      (ii) the character, dimensions, or location of any improvement erected on the Land;
      (iii) the subdivision of land; or
      (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

S MAP IS FOR THE PURPOSE
AD VALOREM TAXATION ONLY.

Ptn. S.1/2 N.E.1/4 Sec.21, T.1S.,R.3W., S.B.M.

City of Redlands
Tax Rate Area
5068,5069

0167 - 17



bruary 2005

Ptn. N.E.1/4, Sec. 21
T.1S., R.3W.

Assessor's Map
Book 0167 Page 17
San Bernardino County

REVISED
01/15/08 RM
03/03/09 GW

OWNER'S DECLARATION

Escrow No.: 62218A-987-OC1-K27
Property Address: Vacant Land Lugonia Street
Redlands, CA

The undersigned hereby declares as follows:

1. (Fill in the applicable paragraph and strike the other)
    a. Declarant ("Owner") is the owner or lessee, as the case may be, of certain premises located at Vacant Land Lugonia Street, Redlands, CA, further described as follows: See Preliminary Report/Commitment No. for full legal description (the "Land").
    b. Declarant is the ______________________________ of ____________________________________ ("Owner"), which is the owner or lessee, as the case may be, of certain premises located at Vacant Land Lugonia Street, Redlands, CA, further described as follows: See Preliminary Report/Commitment No. for full legal description (the "Land").
2. (Fill in the applicable paragraph and strike the other)
    a. During the period of six months immediately preceding the date of this declaration no work has been done, no surveys or architectural or engineering plans have been prepared, and no materials have been furnished in connection with the erection, equipment, repair, protection or removal of any building or other structure on the Land or in connection with the improvement of the Land in any manner whatsoever.
    b. During the period of six months immediately preceding the date of this declaration certain work has been done and materials furnished in connection with _________________________ upon the Land in the approximate total sum of $__________, but no work whatever remains to be done and no materials remain to be furnished to complete the construction in full compliance with the plans and specifications, nor are there any unpaid bills incurred for labor and materials used in making such improvements or repairs upon the Land, or for the services of architects, surveyors or engineers, except as follows: ____. Owner, by the undersigned Declarant, agrees to and does hereby indemnify and hold harmless Chicago Title Company against any and all claims arising therefrom.
3. Owner has not previously conveyed the Land; is not a debtor in bankruptcy (and if a partnership, the general partner thereof is not a debtor in bankruptcy); and has not received notice of any pending court action affecting the title to the Land.
4. Except as shown in the above-referenced Preliminary Report/Commitment, there are no unpaid or unsatisfied mortgages, deeds of trust, Uniform Commercial Code financing statements, regular assessments, special assessments, periodic assessments or any assessment from any source, claims of lien, special assessments, or taxes that constitute a lien against the Land or that affect the Land but have not been recorded in the public records. There are no violations of the covenants, conditions and restrictions as shown in the above-referenced Preliminary Report/Commitment.
5. The Land is currently in use as _____________________; _______________________ occupy/occupies the Land; and the following are all of the leases or other occupancy rights affecting the Land:

    ____

6. There are no other persons or entities that assert an ownership interest in the Land, nor are there unrecorded easements, claims of easement, or boundary disputes that affect the Land.
7. There are no outstanding options to purchase or rights of first refusal affecting the Land.
8. Between the most recent Effective Date of the above-referenced Preliminary Report/Commitment and the date of recording of the Insured Instrument(s), Owner has not taken or allowed, and will not take or allow, any action or inaction to encumber or otherwise affect title to the Land.

This declaration is made with the intention that Chicago Title Company (the "Company") and its policy issuing agents will rely upon it in issuing their title insurance policies and endorsements. Owner, by the undersigned Declarant, agrees to indemnify the Company against loss or damage (including attorneys fees, expenses, and costs) incurred by the Company as a result of any untrue statement made herein.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on ______ at ___________________________________.

Signature: _________________________________

RECORDING REQUESTED BY
Chicago Title Company
WHEN RECORDED MAIL TO:
=addressee=

ORDER NO.: **62218A-987-OC1-K27**

SPACE ABOVE THIS LINE FOR RECORDER'S USE

CERTIFICATION OF TRUST
California Probate Code Section 18100.5

The undersigned declare(s) under penalty of perjury under the laws of the State of California that the following is true and correct:

1. The Trust known as ______________________________, executed on ______________________, is a valid and existing trust.

2. The name(s) of the settlor(s) of the Trust is (are): ______________________________
____

3. The name(s) of the currently acting trustee(s) is (are): ______________________________
____

4. The trustee(s) of the Trust have the following powers (initial applicable line(s)):
   ______Power to acquire additional property.
   ______Power to sell and execute deeds.
   ______Power to encumber, and execute deeds of trust.
   ______Other: ______________________________

5. The Trust is (check one): _______ Revocable _______ Irrevocable

   The name of the person who may revoke the Trust is: ______________________________

6. The number of trustees who must sign documents in order to exercise the powers of the Trust is (are): ________, whose name(s) is (are): ______________________________

7. Title to Trust assets is to be taken as follows: ______________________________

8. The Trust has not been revoked, modified or amended in any manner which would cause the representations contained herein to be incorrect.

9. I (we) am (are) all of the currently acting trustees.

10. I (we) understand that I (we) may be required to provide copies of excerpts from the original Trust documents which designate the trustees and confer the power to act in the pending transaction.

Dated: ______________________________ ______________________________

(Acknowledgement must be attached)

CERTIFICATE OF ACKNOWLEDGEMENT OF NOTARY PUBLIC

> A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF } ss:

On ____ before me,
____,
Notary Public, personally appeared ______________________________________
who proved to me on the basis of satisfactory evidence to be the person(s)whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s)on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature ______________________________

CERTIFICATE OF ACKNOWLEDGEMENT OF NOTARY PUBLIC

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF } ss:

On ____ before me,
____,
Notary Public, personally appeared ______________________________________
who proved to me on the basis of satisfactory evidence to be the person(s)whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s)on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature ______________________________

OWNER'S DECLARATION

Escrow No.: 62218A-987-OC1-K27
Property Address: Vacant Land Lugonia Street
Redlands, CA

The undersigned hereby declares as follows:

1. (Fill in the applicable paragraph and strike the other)
    a. Declarant ("Owner") is the owner or lessee, as the case may be, of certain premises located at Vacant Land Lugonia Street, Redlands, CA, further described as follows: See Preliminary Report/Commitment No. for full legal description (the "Land").
    b. Declarant is the ______________________________ of ____________________________________ ("Owner"), which is the owner or lessee, as the case may be, of certain premises located at Vacant Land Lugonia Street, Redlands, CA, further described as follows: See Preliminary Report/Commitment No. for full legal description (the "Land").
2. (Fill in the applicable paragraph and strike the other)
    a. During the period of six months immediately preceding the date of this declaration no work has been done, no surveys or architectural or engineering plans have been prepared, and no materials have been furnished in connection with the erection, equipment, repair, protection or removal of any building or other structure on the Land or in connection with the improvement of the Land in any manner whatsoever.
    b. During the period of six months immediately preceding the date of this declaration certain work has been done and materials furnished in connection with _________________________ upon the Land in the approximate total sum of $__________, but no work whatever remains to be done and no materials remain to be furnished to complete the construction in full compliance with the plans and specifications, nor are there any unpaid bills incurred for labor and materials used in making such improvements or repairs upon the Land, or for the services of architects, surveyors or engineers, except as follows: ____. Owner, by the undersigned Declarant, agrees to and does hereby indemnify and hold harmless Chicago Title Company against any and all claims arising therefrom.
3. Owner has not previously conveyed the Land; is not a debtor in bankruptcy (and if a partnership, the general partner thereof is not a debtor in bankruptcy); and has not received notice of any pending court action affecting the title to the Land.
4. Except as shown in the above-referenced Preliminary Report/Commitment, there are no unpaid or unsatisfied mortgages, deeds of trust, Uniform Commercial Code financing statements, regular assessments, special assessments, periodic assessments or any assessment from any source, claims of lien, special assessments, or taxes that constitute a lien against the Land or that affect the Land but have not been recorded in the public records. There are no violations of the covenants, conditions and restrictions as shown in the above-referenced Preliminary Report/Commitment.
5. The Land is currently in use as _____________________; _______________________ occupy/occupies the Land; and the following are all of the leases or other occupancy rights affecting the Land:

    ____
6. There are no other persons or entities that assert an ownership interest in the Land, nor are there unrecorded easements, claims of easement, or boundary disputes that affect the Land.
7. There are no outstanding options to purchase or rights of first refusal affecting the Land.
8. Between the most recent Effective Date of the above-referenced Preliminary Report/Commitment and the date of recording of the Insured Instrument(s), Owner has not taken or allowed, and will not take or allow, any action or inaction to encumber or otherwise affect title to the Land.

This declaration is made with the intention that Chicago Title Company (the "Company") and its policy issuing agents will rely upon it in issuing their title insurance policies and endorsements. Owner, by the undersigned Declarant, agrees to indemnify the Company against loss or damage (including attorneys fees, expenses, and costs) incurred by the Company as a result of any untrue statement made herein.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on ______ at ___________________________________.

Signature: ________________________________

PHASE I USER/CLIENT QUESTIONNAIRE

The purpose of this questionnaire is to obtain information from the client regarding the Property.

Date Sent to Client December 21, 2021 Date Received from Client ________

A. SITE INFORMATION

1. Property Name/APN: LPA Redlands Project, a portion of APN's 0167-171-07, -11, -12, and -14, Redlands, CA
2. Location (If a map is available, please include it): Northeast corner of S. Tennessee St. & W. Lugonia Ave.
3. Why is the Phase I required? (Development as a residential parcel, protection from CERCLA liability, etc?): Development as a residential parcel
4. Is there an Interview Contact for this job? (A current owner, operator, or someone with knowledge of the history and/or processes occurring at the site). ☒ Yes ☐ No

   If yes, please provide the following information:
   Person to be interviewed: Dan Kunihira
   Title/Company: Managing Partner
   Phone number and/or email address: daniel.kunihira@gmail.com

5. Do you have any reports for this job (such as previous Phase I's, biology reports, cultural resource reports, geotechnical reports, etc.) ☐ Yes ☒ No

   If yes, please provide them for Petra to review. *Date Received from Client* ________

6. As part of our assessment, Petra contacts local agencies to obtain miscellaneous information about the project site such as previous investigations, zoning, and flood zone. Do you have any current restrictions regarding Petra contacting these agencies?

   ☐ Yes ☒ No

   If yes, please contact us to discuss further.

B. SITE ACESS

1. Does Petra have access to the property at this time? ☒ Yes ☐ No
2. Are there any access restrictions such as a locked gate or required insurance forms? No
3. Is there a site manager that Petra needs to contact prior to visiting the site? No, just give Diversified (Nolan Leggio) 48 hour notice before being onsite.

C. LANDOWNER LIABILITY PROTECTIONS

In order to qualify for one of the Landowner Liability Protections offered by the Small Business liability Relief and Brownfields Revitalization of 2001 (the "Brownfields Amendments"), the client must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

1. Are you aware of any environmental clean-up liens against the property that are filed or recorded under federal, tribal, state, or local law? (40 CFR 312.25) ☐ Yes ☒ No

   If no, have you or will you conduct a search for any environmental cleanup liens against the property that are filed or recorded in a registry? ☒ Yes ☐ No

   If yes, please provide Petra with this information. A title report has been provided.

   If no, do you require Petra to complete this task? ☒ Yes ☐ No

2. Are you aware of any activity and land use limitations (AULs), such as engineering controls, land use restrictions, or institutional controls that are in place on or for the site and/or have been filed or that environmental cleanup liens against the property that are filed or recorded under federal, tribal, state, or local law? (40 CFR 312.25) ☐ Yes ☒ No

   If no, have you or will you conduct a search for any AULs against the property that are filed or recorded in a registry? ☐ Yes ☒ No

   If yes, please provide Petra with this information.

   If no, do you require Petra to complete this task? ☒ Yes ☐ No

3. As the user of this Environmental Site Assessment, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in 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 potential chemicals and processes used by this type of business?
   ☐ Yes ☒ No

   If yes, please provide Petra with this information.

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? ☒ Yes ☐ No

   If you conclude that there is a difference, have you considered whether the lower purchase price is because of any environmental concerns are known or believed to be present at the property? ☐ Yes ☐ No

   If yes, please provide Petra with that information.

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 hazardous materials/chemical releases or threatened releases? For example,

   A. Do you know the past uses of the property? ☒ Yes ☐ No

   If yes, please provide Petra with the information. The property was last used for agriculture in the early 80s.

   B. Do you know of specific chemicals that are present or once were present at the property? ☐ Yes ☒ No

   If yes, please provide Petra with the information.

   C. Do you know of spills or other chemical releases that have taken place at the property? ☐ Yes ☒ No

   If yes, please provide Petra with the information.

   D. Do you know of any environmental cleanups that have taken place at the property or adjacent properties? ☐ Yes ☒ No

   If yes, please provide Petra with the information.

6. As the user of this ESA, based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property? ☐ Yes ☒ No

   If yes, please provide Petra with the information.

User/Client Representative: Nolan Leggio Nolan Leggio Date: 1/31/22
(Please sign and print name)

PETRA GEOSCIENCES, INC.
40880 County Center Dr., Suite M, Temecula, CA * (951) 600-9271 * (951) 719-1499

PHASE I PROPERTY OWNER INTERVIEW QUESTIONNAIRE

The purpose of this questionnaire is to obtain information from knowledgeable individuals regarding the Subject Site. This questionnaire will become part of the assessment report.

A. SITE INFORMATION

Project Number: 21-458

Property Location: Vacant land at the northwest corner of S. Tennessee St. and W. Lugonia Avenue, Redlands, CA

B. INTERVIEW INFORMATION

Date/Time: ______
Interviewer: ______
Person Interviewed: Daniel Kunihira
Title/Company: manager

☐ In Person
☐ By Telephone, Number: ______
☐ By Facsimile, Number: ______
☐ Email: ______

1. What is your relationship to the property? General Partner / manager

2. Do you have good knowledge regarding the uses and physical characteristics of the property?
☒Yes
☐No If not, who does? ______ Phone Number: ______

3. Do you have good knowledge regarding the activities/processes conducted at the property?
☒Yes
☐No If not, who does? ______ Phone Number: ______

C. PROPERTY INFORMATION

1. To the best of your knowledge, what are the current and past uses of the property? Please describe with approximate dates.

current usage - bare land / no agriculture
past - up to early 1980's - citrus grove

2. To your knowledge, are there:

Hazardous substances present on the site? ☐Yes ☒No
Petroleum products present on the site? ☐Yes ☒No

If the preceding items are present, are there indications of any of the following:

An existing release? ☐Yes ☐No
A past release? ☐Yes ☐No
A threat of their release? ☐Yes ☐No

If yes to any of the above, please describe:

3. Are you aware of the presence of any of the following either currently or previously on the property or any nearby properties: To the best of our Knowledge.

Potential Recognized Environmental Conditions	Site		Adjacent	
Hazardous substances?	☐ Yes	☒ No	☐ Yes	☒ No
Petroleum products?	☐ Yes	☒ No	☐ Yes	☒ No
Chemicals? probable spraying of citrus prior to purchase	☐ Yes	☒ No	☐ Yes	☒ No
Asbestos or asbestos-containing materials?	☐ Yes	☒ No	☐ Yes	☒ No
Lead-based paints?	☐ Yes	☒ No	☐ Yes	☒ No
Underground storage tanks?	☐ Yes	☒ No	☐ Yes	☒ No
Above-ground storage tanks?	☐ Yes	☒ No	☐ Yes	☒ No
Oil Wells?	☐ Yes	☒ No	☐ Yes	☒ No
Sumps?	☐ Yes	☒ No	☐ Yes	☒ No

If yes to any of the above, please describe: There was probable spraying of citrus trees as part of grove care prior to our purchasing the property

4. Are you aware of any current or previous uses of the property or nearby properties that would suggest the presence of the foregoing items, substances, or materials? ☐Yes ☒No

If yes to any of the above, please describe:

5. To your knowledge, are there any utility corridors on the property? ☐ Yes ☒ No

If yes to any of the above, please describe:

6. To your knowledge, are you aware of any of the following on the property:

- inactive

Water Wells? ☒ Yes ☐ No
Clarifiers? ☐ Yes ☒ No
Disposal Wells? ☐ Yes ☒ No
Underground Irrigation Systems? ☐ Yes ☒ No

If yes to any of the above, please describe:

Inactive water well on PDG side of property

7. Are there any occupants on the property? ☐ Yes ☒ No

If yes to any of the above, please describe:

8. Do you have good knowledge regarding the identity of any existing documents relating to the property?

☒ Yes
☐ No If not, who does? Phone Number:

9. To your knowledge, do any of the following documents exist with respect to the subject property? If yes, please name the document and comment upon whether it is available for review.

Document	Yes	No	Name/Availability
Environmental site assessment reports?		X	
Environmental audit reports?		X	
Environmental permits?		X	
Storage tank registration?		X	
Material safety data sheets (MSDS)?		X	
Community right-to-know plans?		X	
Safety plans?		X	
Spill Prevention, Countermeasure, & Control Plans?		X	
Illness and Injury Prevention Plans?		X	
Reports regarding hydrogeologic conditions on the property or surrounding area?		X	
Hazardous waste generator notices or reports?		X	
Geotechnical studies?		X	

10. To your knowledge, do any of the following exist with respect to the subject property?

a. Notices or other correspondence from any government agency relating to past or current violations of environmental laws? ☐Yes ☒No

If yes to any of the above, please describe: ______

b. Notices or other correspondence from any government agency relating to environmental liens encumbering the property? ☐Yes ☒No

If yes to any of the above, please describe: ______

c. Pending, threatened, or past litigation or administrative proceedings relevant to hazardous substances, or petroleum products in, on, or from the property? ☐Yes ☒No

If yes to any of the above, please describe: ______

d. Notices from any government al entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products? ☐Yes ☒No

If yes to any of the above, please describe: ______

11. Please provide any additional information relative to this project.

______

Owner/Representative: Daniel Kunihira Date: 1/30/22
(sign and print name) Daniel Kunihira

APPENDIX E

LABORATORY TEST RESULTS
AND CHAIN OF CUSTODY

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: January 14, 2022

Mr. Ed Lump
Petra Geotechnical, Inc.
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271   E-Mail: ELump@Petra-Inc.com

Project: **21-458 DP, Redlands**
Lab I.D.: **220107-21 through -43**

Dear Mr. Lump:

The **analytical results** for the soil samples, received by our laboratory on January 7, 2022, are attached. The samples were received intact, and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President

Pearl Wong
Quality Manager

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or Manager's Designee, as verified by the above signature which applies to this PDS File as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of ELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**
MATRIX: SOIL
SAMPLING DATE: 01/06/22
REPORT TO: MR. ED LUMP
DATE RECEIVED: 01/07/22
DATE ANALYZED: 01/10/22
DATE REPORTED: 01/14/22

EPA 6010B FOR TTLC-ARSENIC/LEAD
UNITS: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	ARSENIC RESULT	DF	LEAD RESULT	DF
P-1 @ 0-1'	220107-21	ND	1	2.77	1
P-2 @ 0-1'	220107-24	1.07	1	7.78	1
P-3 @ 0-1'	220107-27	0.503	1	6.17	1
P-3 @ 0-1' Duplicate	220107-28	0.539	1	6.09	1
B-1 @ 0-1'	220107-31	1.05	1	21.0	1
B-2 @ 0-1'	220107-34	ND	1	2.72	1
B-3 @ 0-1'	220107-38	ND	1	2.39	1
B-4 @ 0-1'	220107-41	0.662	1	8.15	1
Method Blank	---	ND	1	ND	1
	PQL	**0.30**		**0.50**	

COMMENTS:
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = DF X PQL
ND = Non-Detected or below the Actual Detection Limit
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
TTLC Limit for Arsenic = 500 PPM / STLC Limit for Arsenic = 5 PPM
TTLC Limit for lead = 1000 PPM / STLC Limit for lead = 5 PPM
* = STLC analysis is recommended (if marked)
*** = The concentration exceeds the TTLC Limit, therefore the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

Data Reviewed and Approved by:____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLC--SOLID/SOIL *MATRIX*

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 1/10/2022

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	*Sample Result*	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	220107-21	50.0	97	*PASS*	0	50.0	37.6	75%	38.9	78%	3%
Chromium(Cr)	220107-21	50.0	97	*PASS*	30.9	50.0	64.9	68%	65.3	69%	1%
Lead(Pb)	220107-21	50.0	108	*PASS*	2.77	50.0	55.8	106%	56.6	108%	1%

ANALYSIS DATE. : 1/7/2022

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	*Sample Result*	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	211214-44	0.125	97	*PASS*	*0*	0.125	0.105	84%	0.108	86%	2%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	*PASS*	*PASS*	*PASS*	*PASS*
Chromium(Cr)	*FAIL**	*FAIL**	*PASS*	*PASS*
Lead(Pb)	*PASS*	*PASS*	*PASS*	*PASS*
Mercury (Hg)	*PASS*	*PASS*	*PASS*	*PASS*
Accepted Range	**75 ~ 125**	**75 ~ 125**	**85 ~ 115**	**0 ~ 20**

ANALYST: ______________________

FINAL REVIEWER: ______________________

*=Fail due to matrix interference

Note:LCS is in control therefore results are in control

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/10/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

TOTAL PETROLEUM HYDROCARBONS(TPH) - CARBON CHAIN ANALYSIS
METHOD: EPA 8015B
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C10-C28	C28-C35	DF
P-2 @ 0-1'	220107-24	ND	ND	ND	1
B-2 @ 0-1'	220107-34	ND	ND	ND	1
B-3 @ 0-1'	220107-38	ND	ND	ND	1
B-4 @ 0-1'	220107-41	ND	ND	ND	1
METHOD BLANK		ND	ND	ND	1
	PQL	10	10	50	

COMMENTS:
C4-C10 = GASOLINE RANGE
C10-C28 = DIESEL RANGE
C28-C35 = MOTOR OIL RANGE
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = DF X PQL
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro Chem, Inc

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

8015B QA/QC Report

Date Analyzed: 1/10/2022 **Units:** mg/Kg (ppm)

Matrix: **Soil/Solid/Sludge/Liquid**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 220107-34 MS/MSD

Analyte	SR	spk conc	MS	%MS	MSD	%MSD	%RPD	ACP %MS	ACP RPD
C10~C28 Range	0.00	200	206	**103%**	192	**96%**	**7%**	**75-125**	**0-20%**

LCS STD RECOVERY:

Analyte	spk conc	LCS	% REC	ACP
C10~C28 Range	200	181	**91%**	**75-125**

Analyzed and Reviewed By: Amy

Final Reviewer:

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/10/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

SAMPLE I.D.: **P-1 @ 0-1'** LAB I.D.: 220107-21

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
Aldrin	ND	0.001	1
alpha-BHC	ND	0.001	1
beta-BHC	ND	0.001	1
gamma-BHC (Lindane)	ND	0.001	1
delta-BHC	ND	0.001	1
alpha-Chlordane	ND	0.001	1
gamma-Chlordane	ND	0.001	1
Total Chlordane (Technical)	ND	0.005	1
4,4'-DDD	ND	0.001	1
4,4'-DDE	0.004	0.001	1
4,4'-DDT	ND	0.001	1
Dieldrin	ND	0.001	1
Endosulfan I	ND	0.001	1
Endosulfan II	ND	0.001	1
Endosulfan Sulfate	ND	0.001	1
Endrin	ND	0.001	1
Endrin Aldehyde	ND	0.001	1
Endrin Ketone	ND	0.001	1
Heptachlor Epoxide	ND	0.001	1
Heptachlor	ND	0.001	1
Methoxyclor	ND	0.001	1
Toxaphene	ND	0.020	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:__________________
CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED: 01/07/22
MATRIX: SOIL
DATE EXTRACTED: 01/10/22
SAMPLING DATE: 01/06/22
DATE ANALYZED: 01/10/22
REPORT TO: MR. ED LUMP
DATE REPORTED: 01/14/22

SAMPLE I.D.: **P-2 @ 0-1'**
LAB I.D.: 220107-24

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
Aldrin	ND	0.001	10
alpha-BHC	ND	0.001	10
beta-BHC	ND	0.001	10
gamma-BHC (Lindane)	ND	0.001	10
delta-BHC	ND	0.001	10
alpha-Chlordane	ND	0.001	10
gamma-Chlordane	ND	0.001	10
Total Chlordane (Technical)	ND	0.005	10
4,4'-DDD	ND	0.001	10
4,4'-DDE	0.040	0.001	10
4,4'-DDT	ND	0.001	10
Dieldrin	ND	0.001	10
Endosulfan I	ND	0.001	10
Endosulfan II	ND	0.001	10
Endosulfan Sulfate	ND	0.001	10
Endrin	ND	0.001	10
Endrin Aldehyde	ND	0.001	10
Endrin Ketone	ND	0.001	10
Heptachlor Epoxide	ND	0.001	10
Heptachlor	ND	0.001	10
Methoxyclor	ND	0.001	10
Toxaphene	ND	0.020	10

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY: ____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED: 01/07/22
MATRIX: SOIL
DATE EXTRACTED: 01/10/22
SAMPLING DATE: 01/06/22
DATE ANALYZED: 01/10/22
REPORT TO: MR. ED LUMP
DATE REPORTED: 01/14/22

SAMPLE I.D.: **P-3 @ 0-1'** LAB I.D.: 220107-27

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	10
alpha-BHC	ND	0.001	10
beta-BHC	ND	0.001	10
gamma-BHC (Lindane)	ND	0.001	10
delta-BHC	ND	0.001	10
alpha-Chlordane	ND	0.001	10
gamma-Chlordane	ND	0.001	10
Total Chlordane (Technical)	ND	0.005	10
4,4'-DDD	ND	0.001	10
4,4'-DDE	0.059	0.001	10
4,4'-DDT	ND	0.001	10
Dieldrin	ND	0.001	10
Endosulfan I	ND	0.001	10
Endosulfan II	ND	0.001	10
Endosulfan Sulfate	ND	0.001	10
Endrin	ND	0.001	10
Endrin Aldehyde	ND	0.001	10
Endrin Ketone	ND	0.001	10
Heptachlor Epoxide	ND	0.001	10
Heptachlor	ND	0.001	10
Methoxyclor	ND	0.001	10
Toxaphene	ND	0.020	10

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED: 01/07/22
MATRIX: SOIL
DATE EXTRACTED: 01/10/22
SAMPLING DATE: 01/06/22
DATE ANALYZED: 01/10/22
REPORT TO: MR. ED LUMP
DATE REPORTED: 01/14/22

SAMPLE I.D.: **P-3 @ 0-1' Duplicate** LAB I.D.: 220107-28

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	20
alpha-BHC	ND	0.001	20
beta-BHC	ND	0.001	20
gamma-BHC (Lindane)	ND	0.001	20
delta-BHC	ND	0.001	20
alpha-Chlordane	ND	0.001	20
gamma-Chlordane	ND	0.001	20
Total Chlordane (Technical)	ND	0.005	20
4,4'-DDD	ND	0.001	20
4,4'-DDE	0.118	0.001	20
4,4'-DDT	ND	0.001	20
Dieldrin	ND	0.001	20
Endosulfan I	ND	0.001	20
Endosulfan II	ND	0.001	20
Endosulfan Sulfate	ND	0.001	20
Endrin	ND	0.001	20
Endrin Aldehyde	ND	0.001	20
Endrin Ketone	ND	0.001	20
Heptachlor Epoxide	ND	0.001	20
Heptachlor	ND	0.001	20
Methoxyclor	ND	0.001	20
Toxaphene	ND	0.020	20

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

MATRIX:SOIL
SAMPLING DATE:01/06/22
REPORT TO:MR. ED LUMP

DATE RECEIVED:01/07/22
DATE EXTRACTED:01/10/22
DATE ANALYZED:01/10/22
DATE REPORTED:01/14/22

SAMPLE I.D.: **B-1 @ 0-1'** LAB I.D.: 220107-31

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
Aldrin	ND	0.001	50
alpha-BHC	ND	0.001	50
beta-BHC	ND	0.001	50
gamma-BHC (Lindane)	ND	0.001	50
delta-BHC	ND	0.001	50
alpha-Chlordane	ND	0.001	50
gamma-Chlordane	ND	0.001	50
Total Chlordane (Technical)	ND	0.005	50
4,4'-DDD	ND	0.001	50
4,4'-DDE	0.135	0.001	50
4,4'-DDT	ND	0.001	50
Dieldrin	ND	0.001	50
Endosulfan I	ND	0.001	50
Endosulfan II	ND	0.001	50
Endosulfan Sulfate	ND	0.001	50
Endrin	ND	0.001	50
Endrin Aldehyde	ND	0.001	50
Endrin Ketone	ND	0.001	50
Heptachlor Epoxide	ND	0.001	50
Heptachlor	ND	0.001	50
Methoxyclor	ND	0.001	50
Toxaphene	ND	0.020	50

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED: 01/07/22
MATRIX: SOIL
DATE EXTRACTED: 01/10/22
SAMPLING DATE: 01/06/22
DATE ANALYZED: 01/10/22
REPORT TO: MR. ED LUMP
DATE REPORTED: 01/14/22

SAMPLE I.D.: **B-2 @ 0-1'**
LAB I.D.: 220107-34

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
Aldrin	ND	0.001	1
alpha-BHC	ND	0.001	1
beta-BHC	ND	0.001	1
gamma-BHC (Lindane)	ND	0.001	1
delta-BHC	ND	0.001	1
alpha-Chlordane	ND	0.001	1
gamma-Chlordane	ND	0.001	1
Total Chlordane (Technical)	ND	0.005	1
4,4'-DDD	ND	0.001	1
4,4'-DDE	ND	0.001	1
4,4'-DDT	ND	0.001	1
Dieldrin	ND	0.001	1
Endosulfan I	ND	0.001	1
Endosulfan II	ND	0.001	1
Endosulfan Sulfate	ND	0.001	1
Endrin	ND	0.001	1
Endrin Aldehyde	ND	0.001	1
Endrin Ketone	ND	0.001	1
Heptachlor Epoxide	ND	0.001	1
Heptachlor	ND	0.001	1
Methoxyclor	ND	0.001	1
Toxaphene	ND	0.020	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:___________________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/10/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

SAMPLE I.D.: **B-3 @ 0-1'** LAB I.D.: 220107-38

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
Aldrin	ND	0.001	1
alpha-BHC	ND	0.001	1
beta-BHC	ND	0.001	1
gamma-BHC (Lindane)	ND	0.001	1
delta-BHC	ND	0.001	1
alpha-Chlordane	ND	0.001	1
gamma-Chlordane	ND	0.001	1
Total Chlordane (Technical)	ND	0.005	1
4,4'-DDD	ND	0.001	1
4,4'-DDE	ND	0.001	1
4,4'-DDT	ND	0.001	1
Dieldrin	ND	0.001	1
Endosulfan I	ND	0.001	1
Endosulfan II	ND	0.001	1
Endosulfan Sulfate	ND	0.001	1
Endrin	ND	0.001	1
Endrin Aldehyde	ND	0.001	1
Endrin Ketone	ND	0.001	1
Heptachlor Epoxide	ND	0.001	1
Heptachlor	ND	0.001	1
Methoxyclor	ND	0.001	1
Toxaphene	ND	0.020	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/11/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

SAMPLE I.D.: **B-4 @ 0-1'**
LAB I.D.: 220107-41

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
Aldrin	ND	0.001	10
alpha-BHC	ND	0.001	10
beta-BHC	ND	0.001	10
gamma-BHC (Lindane)	ND	0.001	10
delta-BHC	ND	0.001	10
alpha-Chlordane	ND	0.001	10
gamma-Chlordane	ND	0.001	10
Total Chlordane (Technical)	ND	0.005	10
4,4'-DDD	ND	0.001	10
4,4'-DDE	0.057	0.001	10
4,4'-DDT	ND	0.001	10
Dieldrin	ND	0.001	10
Endosulfan I	ND	0.001	10
Endosulfan II	ND	0.001	10
Endosulfan Sulfate	ND	0.001	10
Endrin	ND	0.001	10
Endrin Aldehyde	ND	0.001	10
Endrin Ketone	ND	0.001	10
Heptachlor Epoxide	ND	0.001	10
Heptachlor	ND	0.001	10
Methoxyclor	ND	0.001	10
Toxaphene	ND	0.020	10

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:
CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/10/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

METHOD BLANK REPORT FOR LAB I.D.:
220107-21, -24, -27, -28, -31, -34, -38, -41

Organochlorine Pesticides Analysis
Method: EPA 8081A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	SAMPLE RESULT	PQL	DF
Aldrin	ND	0.001	1
alpha-BHC	ND	0.001	1
beta-BHC	ND	0.001	1
gamma-BHC (Lindane)	ND	0.001	1
delta-BHC	ND	0.001	1
alpha-Chlordane	ND	0.001	1
gamma-Chlordane	ND	0.001	1
Total Chlordane (Technical)	ND	0.005	1
4,4'-DDD	ND	0.001	1
4,4'-DDE	ND	0.001	1
4,4'-DDT	ND	0.001	1
Dieldrin	ND	0.001	1
Endosulfan I	ND	0.001	1
Endosulfan II	ND	0.001	1
Endosulfan Sulfate	ND	0.001	1
Endrin	ND	0.001	1
Endrin Aldehyde	ND	0.001	1
Endrin Ketone	ND	0.001	1
Heptachlor Epoxide	ND	0.001	1
Heptachlor	ND	0.001	1
Methoxyclor	ND	0.001	1
Toxaphene	ND	0.020	1

COMMENTS:
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = PQL X DF
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

DATA REVIEWED AND APPROVED BY:____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

EPA 8081A QA/QC Report

Matrix: **Soil/Solid/Liquid(Oil)** Date Analyzed: **1/10~11/2022**

Unit: **mg/Kg (ppm)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 220110-LCS 1/2

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
Gamma-BHC	0.000	0.00500	0.00545	**109%**	0.00583	**117%**	**7%**	**0-20%**	**70-130**
Aldrin	0.000	0.00500	0.00545	**109%**	0.00580	**116%**	**6%**	**0-20%**	**70-130**
4,4-DDE	0.000	0.00500	0.00552	**110%**	0.00587	**117%**	**6%**	**0-20%**	**70-130**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
Gamma-BHC	0.00500	0.00549	**110%**	**75-125**
Aldrin	0.00500	0.00550	**110%**	**75-125**
4,4-DDE	0.00500	0.00556	**111%**	**75-125**
Dieldrin	0.00500	0.00562	**112%**	**75-125**

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	220107-21	220107-24	220107-27	220107-28	220107-31	220107-34
Tetra-chloro-meta-xylene	50-150	106%	103%	114%	102%	103%	103%	117%
Decachlorobiphenyl	50-150	94%	90%	107%	95%	96%	96%	102%

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		220107-38	220107-41	220107-63	220107-65	220107-69	220107-71	220107-75
Tetra-chloro-meta-xylene	50-150	117%	110%	110%	116%	109%	112%	111%
Decachlorobiphenyl	50-150	102%	106%	106%	98%	106%	101%	101%

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		220107-80	220107-85	220107-90	220107-95	220107-100	220107-105	220107-110
Tetra-chloro-meta-xylene	50-150	108%	113%	110%	106%	120%	110%	109%
Decachlorobiphenyl	50-150	101%	105%	99%	106%	109%	104%	104%

S.R. = Sample Result

spk conc = Spike Concentration

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference (If Marked)*

Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: Amy

Final Reviewer: ____________

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/09-10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/10/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

SAMPLE I.D.: **B-1 @ 0-1'**
LAB I.D.: 220107-31

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Non detected or below the Actual Detection Limit

DATA REVIEWED AND APPROVED BY:
CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**

DATE RECEIVED:01/07/22
MATRIX:SOIL
DATE EXTRACTED:01/09-10/22
SAMPLING DATE:01/06/22
DATE ANALYZED:01/10/22
REPORT TO:MR. ED LUMP
DATE REPORTED:01/14/22

METHOD BLANK REPORT FOR LAB I.D.: 220107-31

Chlorinated Herbicides Analysis
Method: EPA 8151A
Unit: mg/Kg = Milligram Per Kilogram = PPM

PARAMETER	**SAMPLE RESULT**	**PQL**	**DF**
2,4,5-T	ND	0.020	1
2,4,5-TP (Silvex)	ND	0.020	1
2,4-D	ND	0.200	1
2,4-DB	ND	0.200	1
Dalapon (Dichloroacetic Acid)	ND	0.500	1
Dicamba	ND	0.020	1
Dichloroprop	ND	0.200	1
Dinoseb (DNBP)	ND	0.100	1
MCPA	ND	20.0	1
MCPP	ND	20.0	1

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Non detected or below the Actual Detection Limit

DATA REVIEWED AND APPROVED BY: ____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

QA/QC Report
Analysis: EPA 8151A

Matrix: **Soil/Solid/Liquid** Date Analyzed: **1/10/2022**
Unit: **mg/Kg (PPM)**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
Spiked Sample Lab I.D.: 220106-11 MS/MSD

Analyte	S.R.	spk conc	MS	% REC	MSD	% REC	%RPD	ACP %RPD	ACP %REC
2,4,5-T	0	0.050	0.058	**116%**	0.059	**118%**	**2%**	**0-20%**	**50-150**

Lab Control Spike (LCS) Recovery:

Analyte	spk conc	LCS	% REC	ACP %REC
2,4,5-T	0.050	0.059	**118%**	70-130
2,4,5-TP	0.050	0.060	**120%**	70-130
Dinoseb	0.250	0.288	**115%**	70-130

Surrogate Recovery:

Analyte	ACP %	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:		M-BLK	220106-10	220106-11	220107-10	220107-31		
DCAA	50-150	137%	97%	82%	75%	105%		

Analyte	ACP %	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:								
DCAA	50-150							

Analyte	ACP %	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample ID:								
DCAA	50-150							

S.R. = Sample Result
spk conc = Spike Concentration
%REC = Percent Recovery
ACP %RPD = Acceptable Percent RPD Range
ACP %REC = Acceptable Percent Recovery Range

** = Surrogate fail due to matrix interference (If Marked)*

Note: ***LCS, MS, MSD are in control therefore results are in control.***

Analyzed and Reviewed By: ____________

Final Reviewer: ____________

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE #1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
[✓ 1 Week (Standard)]
Other:

Misc./PO# 21-1184

SAMPLE ID	LAB ID	SAMPLING Time ~~DATE~~	SAMPLING Date ~~TIME~~	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	OCPs	Lead & arsenic	Chlorinated Herbicides	TPH						COMMENTS
P-1 @ 0-1'	220107-21	7:15	1/6/22	Soil	1		ICE	✓	✓								
P-1 @ 1-2'	-22	7:16			4oz Jar												
P-1 @ 2-3'	-23	7:17															
P-2 @ 0-1'	-24	7:30						✓	✓		✓						
P-2 @ 1-2'	-25	7:35															
P-2 @ 2-3'	-26	7:40															
P-3 @ 0-1'	-27	8:00						✓	✓								
P-3 @ 0-1' Duplicate	-28	8:00						✓	✓								
P-3 @ 1-2'	-29	8:02															
P-3 @ 2-3'	-30	8:06															
B-1 @ 0-1'	-31	9:45						✓	✓	✓							
B-1 @ 1-2'	-32	9:47															
B-1 @ 2-3'	-33	9:55															
B-2 @ 0-1'	-34	12:00						✓	✓		✓						
B-2 @ 1-2'	-35	12:03															

Analysis Required

Company Name: Petra Geosciences, Inc.
Address: 3186 Airway Ave, Suite K
City/State/Zip: Costa Mesa, CA 92626
Project Contact: ED Lump
Tel: 951-253-4452
Fax/Email: elump@petra-inc.com
Sampler's Signature:
Project Name/ID: 21-458 DP, Redlands

Relinquished by: Received by: Jessica R Date & Time: 1/7/22 1155
Relinquished by: Received by: Date & Time:
Relinquished by: Received by: Date & Time:

Instructions for Sample Storage After Analysis:
○ Dispose of ○ Return to Client ○ Store (30 Days)
○ Other:

CHAIN OF CUSTODY RECORD

WHITE WITH SAMPLE • YELLOW TO CLIENT

Date: 1/7/2022

Page 1 **of** 2

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE #1555

Turnaround Time
○ Same Day
○ 24 Hours
○ 48 Hours
○ 72 Hours
○ 1 Week (Standard)
Other:

Misc./PO# 21-1184

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	OCP's	Lead	Organic Chlorinated Herbicides	TPH	COMMENTS
D-2 @ 1-2' Dup	220101-36	1/6/22	12:03	soil	1		ICE					
B-2@ 2-3'	↓ -37	↓	12:05	↓	↓		↓					
B-3@ 0-1'	↓ -38	↓	12:50	↓	↓		↓	✓	✓		✓	
B-3 @ 1-2'	↓ -39	↓	12:55	↓	↓		↓					
B-3@ 2-3'	↓ -40	↓	1:00	↓	↓		↓					
D-4@ 0-1'	↓ -41	↓	1:50	↓	↓		↓	✓	✓		✓	
B-4@ 1-2'	↓ -42	↓	1:55	↓	↓		↓					
B-4@ 2-3'	↓ -43	↓	2:00	↓	↓		↓					

Analysis Required

Company Name: Petra Geosciences
Address: 3186 Airway Ave., Suite K
City/State/Zip: Costa Mesa, CA 92626

Project Contact: Ed Lump
Tel: 951-253-4452
Fax/Email: elump@petra-inc.com

Sampler's Signature:
Project Name/ID: 21-458, DA, Redlands

Relinquished by: | Received by: | Date & Time: 1/7/22 1155
Relinquished by: | Received by: | Date & Time:
Relinquished by: | Received by: | Date & Time:

Instructions for Sample Storage After Analysis:
○ Dispose of ○ Return to Client ○ Store (30 Days)
○ Other:

CHAIN OF CUSTODY RECORD

WHITE WITH SAMPLE • YELLOW TO CLIENT

Date: 1/7/2022

Page 2 of 2

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: January 19, 2022

Mr. Ed Lump
Petra Geotechnical, Inc.
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

Project: **21-458 DP, Redlands**
Lab I.D.: **220107-21 through -43**

Dear Mr. Lump:

The **additional CAM 17 TTLC Metals results** for the soil samples, received by our laboratory on January 7, 2022, are attached. The samples were received intact, accompanying chain of custody and also stored per the EPA protocols.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President

Pearl Wong
Quality Manager

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or Manager's Designee, as verified by the above signature which applies to this PDS File as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of ELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**
MATRIX:SOIL
SAMPLING DATE:01/06/22
REPORT TO:MR. ED LUMP
DATE RECEIVED:01/07/22
DATE ANALYZED:01/18/22
DATE REPORTED:01/19/22

SAMPLE I.D.: **P-1 @ 0-1'** LAB I.D.: 220107-21

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.5	1	500	5.0	6010B
Barium(Ba)	62.5	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	31.5	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.2	-	500	5.0	7196A
Cobalt(Co)	8.88	1.0	1	8,000	80	6010B
Copper(Cu)	11.5	1.0	1	2,500	25	6010B
Lead(Pb)	2.66	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	6.34	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	36.8	5.0	1	2,400	24	6010B
Zinc(Zn)	42.5	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal *is* recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

DATA REVIEWED AND APPROVED BY:
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**
MATRIX: SOIL
SAMPLING DATE: 01/06/22
REPORT TO: MR. ED LUMP
DATE RECEIVED: 01/07/22
DATE ANALYZED: 01/18/22
DATE REPORTED: 01/19/22

SAMPLE I.D.: **B-2 @ 0-1'**
LAB I.D.: 220107-34

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	0.519	0.5	1	500	5.0	6010B
Barium(Ba)	57.8	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	28.4	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.2	-	500	5.0	7196A
Cobalt(Co)	8.08	1.0	1	8,000	80	6010B
Copper(Cu)	9.91	1.0	1	2,500	25	6010B
Lead(Pb)	2.42	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	4.87	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	34.5	5.0	1	2,400	24	6010B
Zinc(Zn)	38.5	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

DATA REVIEWED AND APPROVED BY: ____________________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**
MATRIX: SOIL
SAMPLING DATE: 01/06/22
REPORT TO: MR. ED LUMP
DATE RECEIVED: 01/07/22
DATE ANALYZED: 01/18/22
DATE REPORTED: 01/19/22

SAMPLE I.D.: **B-4 @ 0-1'**
LAB I.D.: 220107-41

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	**SAMPLE RESULT**	**PQL**	**DF**	**TTLC LIMIT**	**STLC LIMIT**	**EPA METHOD**
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	0.659	0.5	1	500	5.0	6010B
Barium(Ba)	46.2	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	27.3	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.2	-	500	5.0	7196A
Cobalt(Co)	7.40	1.0	1	8,000	80	6010B
Copper(Cu)	8.85	1.0	1	2,500	25	6010B
Lead(Pb)	2.70	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	4.27	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	38.9	5.0	1	2,400	24	6010B
Zinc(Zn)	34.8	0.5	1	5,000	250	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

DATA REVIEWED AND APPROVED BY: ______________
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: **Petra Geotechnical**
40880 County Center Drive, Suite M
Temecula, CA 92591
Tel:(951)600-9271 E-Mail: ELump@Petra-Inc.com

PROJECT: **21-458 DP, Redlands**
MATRIX: SOIL
SAMPLING DATE: 01/06/22
REPORT TO: MR. ED LUMP
DATE RECEIVED: 01/07/22
DATE ANALYZED: 01/18/22
DATE REPORTED: 01/19/22

METHOD BLANK REPORT FOR LAB I.D.: 220107-21, -34, -41

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony(Sb)	ND	1.0	1	500	15	6010B
Arsenic(As)	ND	0.5	1	500	5.0	6010B
Barium(Ba)	ND	5.0	1	10,000	100	6010B
Beryllium(Be)	ND	0.5	1	75	0.75	6010B
Cadmium(Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total(Cr)	ND	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.2	-	500	5.0	7196A
Cobalt(Co)	ND	1.0	1	8,000	80	6010B
Copper(Cu)	ND	1.0	1	2,500	25	6010B
Lead(Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury(Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum(Mo)	ND	5.0	1	3,500	350	6010B
Nickel(Ni)	ND	2.5	1	2,000	20	6010B
Selenium(Se)	ND	1.0	1	100	1.0	6010B
Silver(Ag)	ND	1.0	1	500	5.0	6010B
Thallium(Tl)	ND	1.0	1	700	7.0	6010B
Vanadium(V)	ND	5.0	1	2,400	24	6010B
Zinc(Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal *is* recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

DATA REVIEWED AND APPROVED BY: ____________
CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLC--SOLID/SOIL *MATRIX*

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 1/14/2022

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	*Sample Result*	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	220107-21	50.0	100	*PASS*	0.454	50.0	37.5	74%	39.4	78%	5%
Chromium(Cr)	220107-21	50.0	98	*PASS*	31.5	50.0	66.4	70%	67.8	73%	4%
Lead(Pb)	220107-21	50.0	104	*PASS*	2.66	50.0	59.9	114%	61.2	117%	2%

ANALYSIS DATE. : 1/18/2022

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	*Sample Result*	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	220107-21	0.125	94	*PASS*	*0*	0.125	0.103	82%	0.109	87%	5%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	*FAIL**	*PASS*	*PASS*	*PASS*
Chromium(Cr)	*FAIL**	*FAIL**	*PASS*	*PASS*
Lead(Pb)	*PASS*	*PASS*	*PASS*	*PASS*
Mercury (Hg)	*PASS*	*PASS*	*PASS*	*PASS*
Accepted Range	**75 ~ 125**	**75 ~ 125**	**85 ~ 115**	**0 ~ 20**

ANALYST: ____________________

FINAL REVIEWER: ____________________

*=Fail due to matrix interference

Note:LCS is in control therefore results are in control

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue.
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE #1555

Turnaround Time
○ Same Day
○ 24 Hours
○ 48 Hours
○ 72 Hours
☒ 1 Week (Standard)
Other

Misc./PO#: 21-1184

SAMPLE ID	LAB ID	SAMPLING Time ~~DATE~~	SAMPLING Date ~~TIME~~	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Analysis Required: OCPs	Lead & arsenic	Chlorinated herbicides	TPH	Metals Title 22					COMMENTS
P-1 @ 0-1'	220107-21	7:15	1/6/22	soil	1		ICE	✓	✓			✓					
P-1 @ 1-2'	-22	7:16				4.6°/KY											
P-1 @ 2-3'	-23	7:17															
P-2 @ 0-1'	-24	7:30						✓	✓		✓						
P-2 @ 1-2'	-25	7:35															
P-2 @ 2-3'	-26	7:40															
P-3 @ 0-1'	-27	8:00						✓	✓								
P-3 @ 0-1' Duplicate	-28	8:00						✓	✓								
P-3 @ 1-2'	-29	8:02															
P-3 @ 2-3'	-30	8:06															
B-1 @ 0-1'	-31	9:45						✓	✓	✓							
B-1 @ 1-2'	-32	9:47															
B-1 @ 2-3'	-33	9:55															
B-2 @ 0-1'	-34	12:00						✓	✓		✓	✓					
B-2 @ 1-2'	-35	12:03															

Company Name: Petra Geosciences, Inc.
Address: 3186 Airway Ave, Suite K
City/State/Zip: Costa Mesa, CA 92626

Project Contact: ED Lump
Tel: 951-253-4452
Fax/Email: elump@petra-inc.com

Sampler's Signature:
Project Name/ID: 21-458 DP, Redlands

Relinquished by:	Received by:	Date & Time
Relinquished by:	Received by: Nessa	Date & Time 1/7/22 1155
Relinquished by:	Received by:	Date & Time
Relinquished by:	Received by:	Date & Time

Instructions for Sample Storage After Analysis:
○ Dispose of ○ Return to Client ○ Store (30 Days)
○ Other:

Date: 1/7/2022

CHAIN OF CUSTODY RECORD

WHITE WITH SAMPLE • YELLOW TO CLIENT

Page 1 of 2

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE #1555

Turnaround Time
0 Same Day
0 24 Hours
0 48 Hours
0 72 Hours
0 1 Week (Standard)
Other:

Misc./PO#
21-1184

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Analysis Required: OCP's	Lead	Corrosion, Chloride, sulfate, [illegible]	TPH		Metals Title 22				COMMENTS
D-2 @ 1-2' Dup	22010|1-36	1/6/22	12:03	soil			ICE										
B-2 @ 2-3'	-37		12:05														
B-3 @ 0-1'	-38		12:50					✓	✓		✓						
B-3 @ 1-2'	-39		12:55														
B-3 @ 2-3'	-40		1:00														
D-4 @ 0-1'	-41		1:50					✓	✓		✓		✓				
B-4 @ 1-2'	-42		1:55														
B-4 @ 2-3'	-43		2:00														

Company Name: Petra Geosciences

Address: 3186 Airway Ave., Suite K

City/State/Zip: Costa Mesa, CA 92626

Project Contact: Ed Lung

Tel: 951-253-4452

Fax/Email: elung@petra-inc.com

Sampler's Signature:

Project Name/ID: 21-458, DP, Redlands

Relinquished by:	Received by:	Date & Time 1/7/22 1153
Relinquished by:	Received by:	Date & Time
Relinquished by:	Received by:	Date & Time

Instructions for Sample Storage After Analysis:
○ Dispose of ○ Return to Client ○ Store (30 Days)
○ Other:

CHAIN OF CUSTODY RECORD

WHITE WITH SAMPLE • YELLOW TO CLIENT

Date: 1/7/2022

Page 2 of 2

APPENDIX F

RESUMES

ED LUMP

MR. ED LUMP
Associate Geologist

EDUCATION

B.Sc Geology, San Diego State University, San Diego, California

PROFESSIONAL SUMMARY

Mr. Lump has been in the field of Engineering Geology since 1984 and in the field of Environmental Assessment since 1990. Serving as a field technician, soils laboratory technician, and geologist he has gained field experience on numerous hillside and flatland residential and commercial developments throughout southern California. As an engineering geologist he supervised field personnel and conducted numerous geologic and geotechnical evaluations on residential, commercial and industrial developments in California, Arizona and Nevada. His projects have included landslide and fault evaluations, single and multi-tract residential properties, shopping centers/national chain retail developments, and forensic evaluations, as well as grading and construction oversight. Mr. Lump has also conducted and managed numerous Phase I Environmental Site Assessments and Phase II soil, groundwater and soil vapor assessments for vacant, agricultural, residential, commercial and industrial properties in California, Arizona and Nevada.

SELECTED PROJECT EXPERIENCE

Environmental Site Assessments

- Limited Phase II and Soil Vapor Survey, 2013, County of Riverside, future Eastvale fire station, Riverside County, CA
- Phase I ESA, 2013, Wakeland Housing Development, 10 apartment complex portfolio, San Diego County, CA
- Phase I ESA and Limited Phase II, 2013, William Lyon Homes, Upland Residential Development, San Bernardino County, CA
- Limited Phase II Assessment, 2013, KB Homes, Spring Mountain Ranch, Riverside County, CA
- Environmental demolition and grading oversight, 2011/2012, Standard Pacific Homes, Harmony Grove residential development, San Diego County, CA
- Groundwater Mounding Evaluation, 2008, Lowe's HIW, Lowe's of Pacoima, Los Angeles County, CA
- Phase I ESA, Pesticide Residue Survey, Remedial Earthwork Guidelines, and Final As-Built Assessment, 2003/2004, Lennar Homes, Bressi Ranch, San Diego County, CA

Geologic and Geotechnical Evaluations

- Lake Elsinore Marketplace, Diamond Development, Riverside County, CA
- Salton Sea Solar Plant, Chevron Solar, Inc., Imperial County, CA
- Lowe's of Sparks, Nevada, Lowe's HIW, Washoe County, NV
- Walmart Murrieta, Walmart, Inc., Riverside County, CA
- Santa Fe Hills/Paloma Residential Development, KB Homes, San Diego County, CA
- Carmel Mountain Ranch Residential Development, Presley of San Diego, San Diego County, CA
- Lowe's of Bullhead City, Arizona, Lowe's HIW, Mohave County, AZ

ED LUMP

Grading and Construction

- Discovery Hills Residential Development, Presley of San Diego, San Diego County, CA
- Lowe’s of Prescott, Arizona, Lowe’s HIW, Yavapai County, AZ
- Salt Creek Residential Development, KB Homes, San Diego County, CA
- Lowe’s of Pacoima, Lowe’s HIW, Los Angeles County, CA
- Lake Elsinore Marketplace, Diamond Development, Riverside County, CA
- Carmel Mountain Ranch Residential Development, Presley of San Diego, San Diego County, CA
- Santa Fe Hills/Paloma Residential Development, KB Homes, San Diego County, CA
- Cobra Golf Facility-Carlsbad, Cobra Golf, San Diego County, CA

SIAMAK JAFROUDI

DR. SIAMAK JAFROUDI
President
Principal-in-Charge

EDUCATION
PhD, Geotechnical Engineering, 1983, UC Davis

MS, Civil Engineering, 1978, UC Davis

REGISTRATIONS
Civil Engineering, California, PE 36641

Geotechnical Engineer, California, GE 2024

Environmental Assessor, REA 01655

PROFESSIONAL SUMMARY
Dr. Jafroudi has over 34 years of professional experience in geotechnical engineering. His area of specialization is “material characterization” in relation to slope stability evaluation, liquefaction analysis, pavement design, collapse potential, earth retaining structures and earthquake engineering. Dr. Jafroudi’s experience encompasses the design and supervision of a multitude of soil mechanics laboratory tests and drilling programs. With a broad range of project experience, he has served as a Principal Engineer on several key projects for such clients as school, university and college districts, public agencies; transportation agencies; residential and commercial developers, as well as private sector clients.

Acquiring a doctorate degree in Geotechnical Engineering as well as a Master of Science degree in Civil Engineering, Dr. Jafroudi maintains extensive working knowledge and experience with respect to these challenging fields. Dr. Jafroudi is a Registered Geotechnical Engineer (GE), a Registered Environmental Assessor (REA), and is registered in Civil Engineering (PE), all in the state of California. Additionally, he is an active member of the American Society of Civil Engineers, the Earthquake Engineering Research Institute and California Geotechnical Engineering Association.

SELECTED PROJECT EXPERIENCE

Environmental Site Assessments
- KB Homes, Hollywood Beverly Christian Church, Hollywood
- Castle & Cooke, Lake Elsinore Outlet Mall, Lake Elsinore
- Covina Transit Plaza, Foothill Transit, Covina
- First Street Bridge Widening, Los Angeles County
- Overland Street Bridge Improvements, Los Angeles County
- 801 Office Tower, Mani Brothers, Los Angeles
- Harmony Grove Site Acquisition, New Urban West, San Diego County
- Site Acquisitions, County of Los Angeles Office of Education, Los Angeles
- Eleven Projects, City of Mission Viejo, Mission Viejo
- Site Acquisitions, Paramount USD, Paramount
- Site Acquisitions, Santa Ana USD, Santa Ana
- Site Acquisition, Nevis Construction, Chino Hills
- Site Acquisitions, Moreno Valley USD, Moreno Valley
- Corona Farms, Confidential Client, Corona
- Amusement Park, Confidential Client, Orange County
- Nursery Site, Confidential Client, Sylmar

This Page Intentionally Left Blank.

Preliminary Water Quality Management Plan

For:

DPC Redlands

CRA 956

APN: 0167-171-15

Prepared for:

Diversified Pacific Communities

10621 Civic Center Drive

Rancho Cucamonga, CA 91730

(909) 481-1150

Prepared by:

Kimley Horn & Associates, Inc.

3880 Lemon Street, Suite 420

Riverside, CA 92501

951-543-9868

Submittal Date: 02/07/2024

Approval Date:_____________________

Project Owner's Certification

This Water Quality Management Plan (WQMP) has been prepared for Diversified Pacific Communities by Kimley Horn & Associates, Inc.. The WQMP is intended to comply with the requirements of the City of Redlands and the NPDES Areawide Stormwater Program requiring the preparation of a WQMP. The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with San Bernardino County's Municipal Storm Water Management Program and the intent of the NPDES Permit for San Bernardino County and the incorporated cities of San Bernardino County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors in interest and the city/county shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and funding) of the WQMP have been accepted and that the plan will be transferred to future successors."

.

Project Data

Permit/Application Number(s):		Grading Permit Number(s):	
Tract/Parcel Map Number(s):		Building Permit Number(s):	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):			0167-171-15

Owner's Signature

Owner Name: Nolan Leggio

Title	Director of Forward Planning		
Company	Diversified Pacific Communities		
Address	10621 Civic Center Drive, Rancho Cucamonga, CA 91730		
Email	NLeggio@diversifiedpacific.com		
Telephone #	909-373-2628		
Signature		Date	

Preparer's Certification

Project Data			
Permit/Application Number(s):		Grading Permit Number(s):	
Tract/Parcel Map Number(s):		Building Permit Number(s):	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):			0167-171-15

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of Regional Water Quality Control Board Order No. R8-2010-0036."

Engineer: Robert Otte, P.E.		PE Stamp Below
Title	Project Engineer	
Company	Kimley-Horn Inc.	
Address	3801 University Avenue, Suite 300, Riverside, CA 92501	
Email	rob.otte@Kimley-Horn.com	
Telephone #	909-953-6070	
Signature		
Date		

Table of Contents

Forms

Section 1 Discretionary Permit(s)

Form 1-1 Project Information

Project Name	DPC Redlands				
Project Owner Contact Name:	Nolan Leggio, Diversified Pacific Communities				
Mailing Address:	10621 Civic Center Drive Rancho Cucamonga, CA 91730	E-mail Address:	NLeggio@diversifiedpacific.com	Telephone:	909-373-2628
Permit/Application Number(s):		Tract/Parcel Map Number(s):			
Additional Information/ Comments:					
Description of Project:	The proposed development includes the construction of 10 high-density residential buildings. The site also includes surface parking, a subsurface parking garage below one building, multiple courtyards, and an outdoor community pool. Improvements within the site will provide parking facilities, driveway entrances connecting to existing roads, site utilities, storm drain systems, and underground detention. The primary structural BMPs include two underground detention systems to address the hydrologic conditions and water quality.				
Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy.	The project is approximately 12.8 acres of undeveloped land. The parcel is bound by Tennessee Street to the west, Pennsylvania to the north, and proposed developments to the east and south. The total project square footage is 557,550 splitting into 46,567 square feet (pervious) and 510,983 square feet (impervious). This is 91.6% impervious on the project site. The proposed drainage matches existing drainage patterns. In the existing condition, stormwater drains generally from the eastern face of the site to the west, ultimately out-falling to Tennessee Street. The stormwater then surface flows across Tennessee St. and flows via a curb cut to the existing stormwater culvert between I-210 and Tennessee St. In the project condition, stormwater is conveyed by a combination of sheet flow, curb and gutter, and valley gutter to various onsite inlets. Stormwater is collected and conveyed to one of two proposed underground infiltration systems sized for the water quality event. The water quality volume is designed to drain within 48 hours. In the case of stormwater events larger than the water quality event, stormwater will fill the underground retention system then outlet via an orifice, sized so that the stormwater leaving the site does not exceed existing conditions. Flow will be conveyed to the north of the site, connecting to a proposed storm drain In Pennsylvania Avenue, as required by the City of Redlands.				

Section 2 Project Description

2.1 Project Information

This section of the WQMP should provide the information listed below. The information provided for Conceptual/ Preliminary WQMP should give sufficient detail to identify the major proposed site design and LID BMPs and other anticipated water quality features that impact site planning. Final Project WQMP must specifically identify all BMP incorporated into the final site design and provide other detailed information as described herein.

The purpose of this information is to help determine the applicable development category, pollutants of concern, watershed description, and long term maintenance responsibilities for the project, and any applicable water quality credits. This information will be used in conjunction with the information in Section 3, Site Description, to establish the performance criteria and to select the LID BMP or other BMP for the project or other alternative programs that the project will participate in, which are described in Section 4.

Form 2.1-1 Description of Proposed Project

[1] Development Category (Select all that apply):

☐ Significant re-development involving the addition or replacement of 5,000 ft² or more of impervious surface on an already developed site	☒ New development involving the creation of 10,000 ft² or more of impervious surface collectively over entire site	☐ Automotive repair shops with standard industrial classification (SIC) codes 5013, 5014, 5541, 7532- 7534, 7536-7539	☐ Restaurants (with SIC code 5812) where the land area of development is 5,000 ft² or more
☐ Hillside developments of 5,000 ft² or more which are located on areas with known erosive soil conditions or where the natural slope is 25 percent or more	☐ Developments of 2,500 ft² of impervious surface or more adjacent to (within 200 ft) or discharging directly into environmentally sensitive areas or waterbodies listed on the CWA Section 303(d) list of impaired waters.	☐ Parking lots of 5,000 ft² or more exposed to storm water	☐ Retail gasoline outlets that are either 5,000 ft² or more, or have a projected average daily traffic of 100 or more vehicles per day

☐ Non-Priority / Non-Category Project *May require source control LID BMPs and other LIP requirements. Please consult with local jurisdiction on specific requirements.*

[2] Project Area (ft2):	557,550	[3] Number of Dwelling Units:	460	[4] SIC Code:	1522

[5] Is Project going to be phased? Yes ☐ No ☒ *If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.*

[6] Does Project include roads? Yes ☐ No ☒ *If yes, ensure that applicable requirements for transportation projects are addressed (see Appendix A of TGD for WQMP)*

2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

Form 2.2-1 Property Ownership/Management

Describe property ownership/management responsible for long-term maintenance of WQMP stormwater facilities:

The proposed project will be maintained by the ultimate owner, Diversified Pacific Community (DPC). DPC will be responsible for maintaining and providing regular inspections on all the post-construction BMPs as well as all private utility infrastructure. All public off-site utility infrastructure maintenance will be deferred to the City of Redlands where applicable.

Diversified Pacific Community
Attention: Nolan Leggio
10621 Civic Center Drive
Rancho Cucamonga, CA 91730

The maintenance of the proposed development is the responsibility of the owner until the property is sold to a new owner and then they assume responsibility of the BMP maintenance and management. There is no homeowner's or property owner's association set up for this proposed development. All of the BMP's are the responsibility of the owner to maintain. BMPs include, but are not limited to, BMP maintenance, e.g. inspection, storm drain stenciling, efficient irrigation and landscape maintenance, BMP maintenance of sub-surface infiltration system and basins.

Infrastructure will not transfer to City of Redlands, or San Bernardino County

2.3 Potential Stormwater Pollutants

Determine and describe expected stormwater pollutants of concern based on land uses and site activities (refer to Table 3-3 in the TGD for WQMP).

Form 2.3-1 Pollutants of Concern

Pollutant	Please check: E=Expected, N=Not Expected		Additional Information and Comments
Pathogens (Bacterial / Virus)	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Nutrients - Phosphorous	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Nutrients - Nitrogen	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Noxious Aquatic Plants	E ☐	N ☒	Expected in residential development per WQMP TBD Table 3-3
Sediment	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Metals	E ☐	N ☒	Not expected in residential development per WQMP TBD Table 3-3
Oil and Grease	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Trash/Debris	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Pesticides / Herbicides	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3
Organic Compounds	E ☒	N ☐	Expected in residential development per WQMP TBD Table 3-3

2.4 Water Quality Credits

A water quality credit program is applicable for certain types of development projects if it is not feasible to meet the requirements for on-site LID. Proponents for eligible projects, as described below, can apply for water quality credits that would reduce project obligations for selecting and sizing other treatment BMP or participating in other alternative compliance programs. Refer to Section 6.2 in the TGD for WQMP to determine if water quality credits are applicable for the project.

Form 2.4-1 Water Quality Credits

[1] Project Types that Qualify for Water Quality Credits: *Select all that apply*			
☐ Redevelopment projects that reduce the overall impervious footprint of the project site. [Credit = % impervious reduced]	Higher density development projects ☐Vertical density [20%] ☒7 units/ acre [5%]	☐ Mixed use development, (combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that demonstrate environmental benefits not realized through single use projects) [20%]	☐Brownfield redevelopment (redevelop real property complicated by presence or potential of hazardous contaminants) [25%]
☐ Redevelopment projects in established historic district, historic preservation area, or similar significant core city center areas [10%]	☐ Transit-oriented developments (mixed use residential or commercial area designed to maximize access to public transportation) [20%]	☐ In-fill projects (conversion of empty lots & other underused spaces < 5 acres, substantially surrounded by urban land uses, into more beneficially used spaces, such as residential or commercial areas) [10%]	☐ Live-Work developments (variety of developments designed to support residential and vocational needs) [20%]
[2] Total Credit %: 5% *(Total all credit percentages up to a maximum allowable credit of 50 percent)*			
Description of Water Quality Credit Eligibility (if applicable)	The DPC Redlands development includes more than seven units per acre of development. With 12.8 acres of development, 90 units are required.		

Section 3 Site and Watershed Description

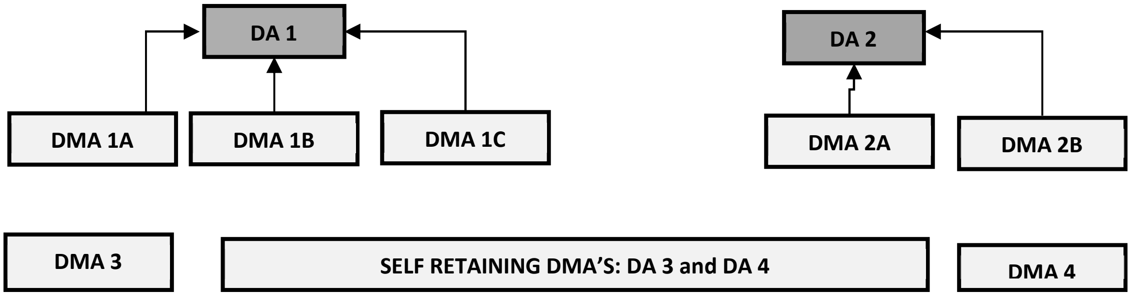
Describe the project site conditions that will facilitate the selection of BMP through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed DMAs) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. The form below is provided as an example. Then complete Forms 3.2 and 3.3 for each DA on the project site. ***If the project has more than one drainage area for stormwater management, then complete additional versions of these forms for each DA / outlet.***

Form 3-1 Site Location and Hydrologic Features

Site coordinates *take GPS measurement at approximate center of site*	Latitude 34° 4'23.09"N	Longitude 17°11'56.91"W	Thomas Bros Map page 608 c5

[1] San Bernardino County climatic region: ☒ Valley ☐ Mountain

[2] Does the site have more than one drainage area (DA): Yes☒ No☐ *If no, proceed to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached*



Conveyance	Briefly describe on-site drainage features to convey runoff that is not retained within a DMA
DMA 1A to Outlet 1	The north easterly portion of the site, DMA 1A has roof drains discharge to pavement, landscape and sheets across the pavement towards onsite catch basins that will filter through CDS units and discharge and infiltrate through an underground retention vault, RV-1. Flows in the retention vault will rise enough to store the DCV for sub-area 1A, sub-area 1B, and sub-area 1C. The water quality event stormwater volume will draw down within 48 hours. Stormwater will fill the vault and is conveyed to an orifice to mitigate post construction flow rate to the pre-construction flow rate. Stormwater will be conveyed to west of the site to 1 (one) onsite proprietary pump system and flow to Tennessee Street, as it does in the existing condition.
DMA 1B to Outlet 1	The small northern portion of the site, DMA 1B stormwater discharge to pavement, landscape and sheets across the pavement towards an onsite catch basin that will filter through CDS units and discharge and infiltrate through an underground retention vault, RV-1. Flows in the retention vault will rise enough to store the DCV for sub-area 1A, sub-area 1B, and sub-area 1C. The water quality event stormwater volume will draw down within 48 hours. Stormwater will fill the vault and is conveyed to an

	orifice to mitigate post construction flow rate to the pre-construction flow rate. Stormwater will be conveyed to west of the site to 1 (one) onsite proprietary pump system and flow to Tennessee Street, as it does in the existing condition.
DMA 1C to Outlet 1	The north westerly portion of the site, DMA 1C has roof drains discharge to pavement, landscape and sheets across the pavement towards trench drains and onsite catch basins that will filter through CDS units and discharge and infiltrate through an underground retention vault, RV-1. Flows in the retention vault will rise enough to store the DCV for sub-area 1A, sub-area 1B, and sub-area 1C. The water quality event stormwater volume will draw down within 48 hours. Stormwater will fill the vault and is conveyed to an orifice to mitigate post construction flow rate to the pre-construction flow rate. Stormwater will be conveyed to west of the site to 1 (one) onsite proprietary pump system and flow to Tennessee Street, as it does in the existing condition.
DMA 2A to Outlet 2	The south easterly portion of the site, DMA 2A has roof drains discharge to pavement, landscape and sheets across the pavement towards onsite catch basins that will filter through CDS units and discharge and infiltrate through an underground retention vault, RV-2. Flows in the retention vault will rise enough to store the DCV for sub-area 2A and sub-area 2B. The water quality event stormwater volume will draw down within 48 hours. Stormwater will fill the vault and is conveyed to an orifice to mitigate post construction flow rate to the pre-construction flow rate. Stormwater will be conveyed to west of the site to 1 (one) onsite proprietary pump system and flow to Tennessee Street, as it does in the existing condition.
DMA 2B to Outlet 2	The south westerly portion of the site, DMA 2B has roof drains discharge to pavement, landscape and sheets across the pavement towards onsite catch basins that will filter through CDS units and discharge and infiltrate through an underground retention vault, RV-2. Flows in the retention vault will rise enough to store the DCV for sub-area 2A and sub-area 2B. The water quality event stormwater volume will draw down within 48 hours. Stormwater will fill the vault and is conveyed to an orifice to mitigate post construction flow rate to the pre-construction flow rate. Stormwater will be conveyed to west of the site to 1 (one) onsite proprietary pump system and flow to Tennessee Street, as it does in the existing condition.
DMA 3	DMA 3 is located along the north and west edge of the site and consists of landscape setback, driveways, and sidewalks. This DMA is self-retaining.
DMA 4	DMA 4 is located along the south and west edge of the site and consists of landscape setback, driveways, and sidewalks.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1

For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA A	DMA B	DMA C	DMA D
1 DMA drainage area (ft^2)	557,550	N/A	N/A	N/A
2 Existing site impervious area (ft^2)	0	N/A	N/A	N/A
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	II	N/A	N/A	N/A
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A	N/A	N/A	N/A
5 Longest flowpath length (ft)	1055	N/A	N/A	N/A
6 Longest flowpath slope (ft/ft)	0.016	N/A	N/A	N/A
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Chaparral	N/A	N/A	N/A
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating*	Good	N/A	N/A	N/A

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 2

For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA A	DMA B	DMA C	DMA D
1 DMA drainage area (ft²)	232,610	N/A	N/A	N/A
2 Existing site impervious area (ft²)	0	N/A	N/A	N/A
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	II	N/A	N/A	N/A
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A	N/A	N/A	N/A
5 Longest flowpath length (ft)	805	N/A	N/A	N/A
6 Longest flowpath slope (ft/ft)	0.018	N/A	N/A	N/A
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Chaparral	N/A	N/A	N/A
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating*	Good	N/A	N/A	N/A

Please refer to the photos taken below as a demonstration of site conditions:

The photos were taken along Tennessee Street and provide an accurate description of the existing conditions.

Zone 1:

Zone 2:

Zone 3:

Form 3-3 Watershed Description for Drainage Area

Receiving waters *Refer to Watershed Mapping Tool - http://permitrack.sbcounty.gov/wap/* *See 'Drainage Facilities" link at this website*	Tennessee St, San Bernardino County storm Drain, Santa Ana River Reach 5-1, Prado Dam
Applicable TMDLs *Refer to Local Implementation Plan*	Santa Ana River: Indicator Bacteria, Nitrate
303(d) listed impairments *Refer to Local Implementation Plan and Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/ and State Water Resources Control Board website – http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/index.shtml*	Santa Ana River, Reach 3: Copper, Lead Santa Ana River, Reach 2: Indicator Bacteria
Environmentally Sensitive Areas (ESA) *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	None
Unlined Downstream Water Bodies *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	None
Hydrologic Conditions of Concern	☐ Yes *Complete Hydrologic Conditions of Concern (HCOC) Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-10 in submittal* ☒ No
Watershed–based BMP included in a RWQCB approved WAP	☐ Yes *Attach verification of regional BMP evaluation criteria in WAP* • *More Effective than On-site LID* • *Remaining Capacity for Project DCV* • *Upstream of any Water of the US* • *Operational at Project Completion* • *Long-Term Maintenance Plan* ☒ No

Section 4 Best Management Practices (BMP)

4.1 Source Control BMP

4.1.1 Pollution Prevention

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N1	Education of Property Owners, Tenants and Occupants on Stormwater BMPs	☒	☐	Owner shall familiarize him/herself with the contents of this WQMP and furnish copies of BMP factsheets to all future tenants.
N2	Activity Restrictions	☐	☒	Any activities that are in violation of the City of Redlands ordinances and Codes shall also be restricted, specifically those that would violate the ordinanaces in Chapter 13.54 of the City of Redlands Municipal Codes. Additionally, activities for which adequate BMPs have not been provided are restricted.
N3	Landscape Management BMPs	☒	☐	Landscape crews contracted shall inspect irrigation system and health of landscaping and shall report all repairs or problems to owner. Routine landscaping maintenance shall be done according to CASQA SC-73 fact sheet.
N4	BMP Maintenance	☒	☐	The building site owners or contracted license crews shall inspect the infiltration basins after each landscape procedure and shall report all drainage problems to owner. The owner shall also check the basins for erosion and sediment buildup and standing water 48 hours after storm events. Building site owner or contracted maintenance crew shall inspect underground infiltration system annually prior to the rainy season. Sediment buildup shall be removed as necessary. The filter in the inlet shall be inspected annually and replaced as necessary. Building site owner or contracted maintenance crew shall inspect the underground infiltration system annually prior to the rainy season. BMP maintenance shall be performed per the schedule in Form 5-1 of this WQMP.
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	No hazardous waste is defined for site.

Form 4.1-1 Non-Structural Source Control BMPs

N6	Local Water Quality Ordinances	☒	☐	Owner shall ensure business activities at the site comply with the City's Stormwater Ordinance through the implementation of BMP's included in this report. Owner must comply with ordinance Chapter 13.54 of the City of Redlands Ordinances and can be found on the City's web site, www.cityofredlands.org.
N7	Spill Contingency Plan	☒	☒	A spill contingency plan shall be performed according to CASQA BMP SC-11.
N8	Underground Storage Tank Compliance	☒	☐	Building site owner or contracted maintenance crew shall inspect the underground infiltration system annually prior to the rainy season.
N9	Hazardous Materials Disclosure Compliance	☐	☒	N/A - No hazardous materials affiliated with proposed development

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N10	Uniform Fire Code Implementation	☐	☒	N/A - No hazardous materials affiliated with proposed development UFC article 80 is not applicable.
N11	Litter/Debris Control Program	☒	☐	A program shall be implemented to pick up litter and sweep and clean the existing trash enclosures on a daily basis. Trash enclosures are designed to divert all flows around the enclosure. All dumpsters will have lids installed and will be inspected to ensure that the dumpsters remain covered and leak-proof. The owner shall ensure tenants contract with a refuse company to have the dumpsters emptied on a weekly basis, at a minimum.
N12	Employee Training	☒	☐	Property owner shall establish an educational program for site employees and contractors to inform and train personnel engaged in maintenance activities regarding the impact of dumping oil, paint, solvents, or other potentially harmful chemicals into the storm drain system; the use of fertilizers and pesticides in landscaping maintenance practices; and the impacts of litter and improper waste disposal.
N13	Housekeeping of Loading Docks	☐	☒	N/A - No proposed loading docks onsite.
N14	Catch Basin Inspection Program	☒	☐	The on-site catch basins shall be inspected monthly during the rainy season (October-May) and before and after each storm to ensure proper operation. The owner shall contract with a qualified landscape contractor to inspect and clean out accumulation of trash, litter, and sediment and check for evidence of illegal dumping of waste materials into on-site drains.
N15	Vacuum Sweeping of Private Streets and Parking Lots	☒	☐	Parking lots shall be swept weekly to prevent sediment, garden waste, and trash, or other pollutants from entering on-site drains and public storm channels. Sweeping will be done by a landscape contractor or other contractor provided by the owner.
N16	Other Non-structural Measures for Public Agency Projects	☐	☒	N/A – Proposed project is not a Public Agency Project.

N17	Comply with all other applicable NPDES permits	☒	☐	The developer of this site shall comply with the state's General Construction Stormwater Permit by filling an NOI to obtain a permit WDID number prior to start of grading/construction. All future occupants requiring coverage under the NPDES General Industrial Activities Permit shall comply with the permit requirements by filing an NOI to obtain a permit WDID number or No Exposure Certification (NEC) with the state prior to commencement of industrial activities covered under the permit.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S1	Provide storm drain system stencilling and signage (CASQA New Development BMP Handbook SD-13)	☒	☐	A painted message shall be blue on a white background with lettering 2-1/2" in heigh and reading "No Dumping-Drains to River" shall be placed on each catch basin. The message shall be inspected annually & repainted as necessary. A fish or similar water dependent creature silhouette may be included subject to City approval. In lieu of a stencil, a catch basin curb marker circular or rectangular, at least 4" in height or diameter, may be used. The message will be the same and is subject to City approval. A painted circular stencil shall not be bigger than 8" in diameter. Legibility will be checked and repainted annually.
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)	☐	☒	N/A – No outdoor storage areas are proposed within this project.
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	☒	☐	Stormwater flows are not allowed to flow through existing waste areas under existing conditions. All dumpsters shall have working lids which shall be kept closed, at all times. Trash enclosure shall comply with CASQA SD-32 and shall have doors and a roof.
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)	☒	☐	The irrigation system will include devices to prevent low head drainage, overspray and run off through the use of pressure regulating devices, check valves, rain shutoff valves, flow sensors, pressure drop sensors, proper spacing, low precipitation emissions devises and ET or weather based controllers. Landscape and irrigation shall be consistent with the State Model Water Efficient landscape Ordinance. Plants installed will be arranged according to similar hydrozones and meet the required water budget for the site. Landscape areas used for water quality swales or infiltration areas shall have proper plants for saturated soils, drought tolerance and erosion control qualities. Shade trees shall be used to intercept rainwater and reduce gain on paving.
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	☒	☐	Landscape complies with depressed area requirements.

S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)	☐	☒	No slopes or channels are proposed on the project site.
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)	☐	☒	N/A – no dock areas proposed onsite.
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)	☐	☒	N/A – No maintenance bays are proposed within this project.
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	N/A – Vehicle washing is not an intended use for the proposed project.
S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)	☐	☒	N/A – No outdoor processing areas are proposed within this project.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	N/A No equipment wash areas are being proposed.
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)	☐	☒	N/A – No fueling areas are being proposed.
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)	☐	☒	N/A – No hillside landscaping is being proposed.
S14	Wash water control for food preparation areas	☐	☒	N/A – No food preparation area is being proposed.
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)	☐	☒	N/A – No carwash activities are expected for the proposed project.

4.1.2 Preventative LID Site Design Practices

Site design practices associated with new LID requirements in the MS4 Permit should be considered in the earliest phases of a project. Preventative site design practices can result in smaller DCV for LID BMP and hydromodification control BMP by reducing runoff generation. Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

Form 4.1-3 Preventative LID Site Design Practices Checklist

Site Design Practices
If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets

Minimize impervious areas: Yes ☒ No ☐
Explanation: Landscaping will be installed and implemented wherever possible onsite.

Maximize natural infiltration capacity: Yes ☒ No ☐
Explanation: Landscaping will be installed and implemented wherever possible onsite.

Preserve existing drainage patterns and time of concentration: Yes ☒ No ☐
Explanation: Existing drainage patterns are to be maintained and onsite stormwater features are to improve the time of concentration.

Disconnect impervious areas: Yes ☒ No ☐
Explanation: Vegetated swales, filter strips, roof drains to landscaping. Disconnection of impervious areas so that stormwater runoff is directed to on-site pervious surfaces than off-site streets and storm drains.

Protect existing vegetation and sensitive areas: Yes ☐ No ☒
Explanation:

Re-vegetate disturbed areas: Yes ☒ No ☐
Explanation: All disturbed areas are to be re-vegetated.

Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Yes ☒ No ☐
Explanation: Unnecessary compaction surrounding stormwater retention/infiltration basin/trench areas to be minimized in order to maximize infiltration.

Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: Yes ☒ No ☐
Explanation: Vegetated swales to be installed and implemented whenever possible onsite.

Stake off areas that will be used for landscaping to minimize compaction during construction : Yes ☐ No ☒
Explanation: N/A

4.2 Project Performance Criteria

The purpose of this section of the Project WQMP is to establish targets for post-development hydrology based on performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), and runoff volume, time of concentration, and peak runoff for protection of any downstream waterbody segments with a HCOC. ***If the project has more than one outlet for stormwater runoff, then complete additional versions of these forms for each DA / outlet.***

Methods applied in the following forms include:

- For LID BMP Design Capture Volume (DCV), the San Bernardino County Stormwater Program requires use of the P_6 method (MS4 Permit Section XI.D.6a.ii) – Form 4.2-1
- For HCOC pre- and post-development hydrologic calculation, the San Bernardino County Stormwater Program requires the use of the Rational Method (San Bernardino County Hydrology Manual Section D). Forms 4.2-2 through Form 4.2-5 calculate hydrologic variables including runoff volume, time of concentration, and peak runoff from the project site pre- and post-development using the Hydrology Manual Rational Method approach. For projects greater than 640 acres (1.0 mi^2), the Rational Method and these forms should not be used. For such projects, the Unit Hydrograph Method (San Bernardino County Hydrology Manual Section E) shall be applied for hydrologic calculations for HCOC performance criteria.

Refer to Section 4 in the TGD for WQMP for detailed guidance and instructions.

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 1)

1 Project area DMA 1 (ft^2): 281,441	2 Imperviousness after applying preventative site design practices (Imp%): 93.1%	3 Runoff Coefficient (Rc): 0.78 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*

4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.472 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

5 Compute P_6, Mean 6-hr Precipitation (inches): 0.698

*P_6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*

6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*	24-hrs ☐ 48-hrs ☒

7 Compute design capture volume, DCV (ft^3): 25,065

*DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*

Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 2)

1 Project area DMA 2 (ft^2): 232,493	2 Imperviousness after applying preventative site design practices (Imp%): 93.3%	3 Runoff Coefficient (Rc): 0.78 *R_c = 0.858(Imp%)^3-0.78(Imp%)^2+0.774(Imp%)+0.04*

4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr-1hr}$ (in): 0.472 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

5 Compute P_6, Mean 6-hr Precipitation (inches): 0.698

*P_6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*

6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*	24-hrs ☐ 48-hrs ☒

7 Compute design capture volume, DCV (ft^3): 20,555

*DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*
Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 3)

1 Project area DMA 2 (ft^2): 39974	2 Imperviousness after applying preventative site design practices (Imp%): 20%	3 Runoff Coefficient (Rc): 0.21 *R_c = 0.858(Imp%)^3-0.78(Imp%)^2+0.774(Imp%)+0.04*

4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr-1hr}$ (in): 0.472 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

5 Compute P_6, Mean 6-hr Precipitation (inches): 0.698

*P_6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*

6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*	24-hrs ☐ 48-hrs ☒

7 Compute design capture volume, DCV (ft^3): 963

*DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*
Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 4)

1 Project area DMA 2 (ft^2): 3532	2 Imperviousness after applying preventative site design practices (Imp%): 20%	3 Runoff Coefficient (Rc): 0.21 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*

4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.472 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

5 Compute P_6, Mean 6-hr Precipitation (inches): 0.698

*P_6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*

6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*	24-hrs ☐ 48-hrs ☒

7 Compute design capture volume, DCV (ft^3): 84.7

*DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*

Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2

Form 4.2-2 Summary of HCOC Assessment (DA 1 and DA 2)

Does project have the potential to cause or contribute to an HCOC in a downstream channel: Yes ☐ No ☒

Go to: http://permitrack.sbcounty.gov/wap/

If "Yes", then complete HCOC assessment of site hydrology for 2yr storm event using Forms 4.2-3 through 4.2-5 and insert results below

(Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual)

If "No," then proceed to Section 4.3 Project Conformance Analysis

Condition	Runoff Volume (ft^3)	Time of Concentration (min)	Peak Runoff (cfs)
Pre-developed	1 *Form 4.2-3 Item 12*	2 *Form 4.2-4 Item 13*	3 *Form 4.2-5 Item 10*
Post-developed	4 *Form 4.2-3 Item 13*	5 *Form 4.2-4 Item 14*	6 *Form 4.2-5 Item 14*
Difference	7 *Item 4 – Item 1*	8 *Item 2 – Item 5*	9 *Item 6 – Item 3*
Difference (as % of pre-developed)	10 % *Item 7 / Item 1*	11 % *Item 8 / Item 2*	12 % *Item 9 / Item 3*

Form 4.2-3 HCOC Assessment for Runoff Volume (DA 1 and DA 2)

Weighted Curve Number Determination for: Pre-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1a Land Cover type								
2a Hydrologic Soil Group (HSG)								
3a DMA Area, ft^2 *sum of areas of DMA should equal area of DA*								
4a Curve Number (CN) *use Items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*								
Weighted Curve Number Determination for: Post-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1b Land Cover type								
2b Hydrologic Soil Group (HSG)								
3b DMA Area, ft^2 *sum of areas of DMA should equal area of DA*								
4b Curve Number (CN) *use Items 5 and 6 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*								

5 Pre-Developed area-weighted CN:	**7** Pre-developed soil storage capacity, S (in): *S = (1000 / Item 5) - 10*	**9** Initial abstraction, I_a (in): I_a *= 0.2 * Item 7*
6 Post-Developed area-weighted CN:	**8** Post-developed soil storage capacity, S (in): *S = (1000 / Item 6) - 10*	**10** Initial abstraction, I_a (in): I_a *= 0.2 * Item 8*

11 Precipitation for 2 yr, 24 hr storm (in):
Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

12 Pre-developed Volume (ft^3):
V_{pre} *=(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)*

13 Post-developed Volume (ft^3):
V_{pre} *=(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)*

14 Volume Reduction needed to meet HCOC Requirement, (ft^3):
V_{HCOC} *= (Item 13 * 0.95) – Item 12*

Form 4.2-4 HCOC Assessment for Time of Concentration (DMA 1 and DMA 2)

Compute time of concentration for pre and post developed conditions for each DA *(For projects using the Hydrology Manual complete the form below)*

Variables	Pre-developed DA1 *Use additional forms if there are more than 4 DMA*				Post-developed DA1 *Use additional forms if there are more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
1 Length of flowpath (ft) *Use Form 3-2 Item 5 for pre-developed condition*								
2 Change in elevation (ft)								
3 Slope (ft/ft), S_o *= Item 2 / Item 1*								
4 Land cover								
5 Initial DMA Time of Concentration (min) *Appendix C-1 of the TGD for WQMP*								
6 Length of conveyance from DMA outlet to project site outlet (ft) *May be zero if DMA outlet is at project site outlet*								
7 Cross-sectional area of channel (ft^2)								
8 Wetted perimeter of channel (ft)								
9 Manning's roughness of channel (n)								
10 Channel flow velocity (ft/sec) $V_{fps} = (1.49 / \text{Item } 9) * (\text{Item } 7/\text{Item } 8)^{\wedge 0.67} * (\text{Item } 3)^{\wedge 0.5}$								
11 Travel time to outlet (min) $T_t = \text{Item } 6 / (\text{Item } 10 * 60)$								
12 Total time of concentration (min) $T_c = \text{Item } 5 + \text{Item } 11$								

13 Pre-developed time of concentration (min): *Minimum of Item 12 pre-developed DMA*

14 Post-developed time of concentration (min): *Minimum of Item 12 post-developed DMA*

15 Additional time of concentration needed to meet HCOC requirement (min): $T_{C\text{-}HCOC} = (\text{Item } 13 * 0.95) - \text{Item } 14$

Form 4.2-5 HCOC Assessment for Peak Runoff (DMA 1 and DMA 2)

Compute peak runoff for pre- and post-developed conditions							
Variables		Pre-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)*			Post-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)*		
		DMA A	DMA B	DMA C	DMA A	DMA B	DMA C
1 Rainfall Intensity for storm duration equal to time of concentration *I_{peak} = 10^(LOG Form 4.2-1 Item 4 - 0.6 LOG Form 4.2-4 Item 5 /60)*							
2 Drainage Area of each DMA (Acres) *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
3 Ratio of pervious area to total area *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
4 Pervious area infiltration rate (in/hr) *Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP*							
5 Maximum loss rate (in/hr) *F_m = Item 3 * Item 4* *Use area-weighted F_m from DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
6 Peak Flow from DMA (cfs) *Q_p =Item 2 * 0.9 * (Item 1 - Item 5)*							
7 Time of concentration adjustment factor for other DMA to site discharge point *Form 4.2-4 Item 12 DMA / Other DMA upstream of site discharge point (If ratio is greater than 1.0, then use maximum value of 1.0)*	DMA A	*n/a*			*n/a*		
	DMA B		*n/a*			*n/a*	
	DMA C			*n/a*			*n/a*
8 Pre-developed Q_p at T_c for DMA A: *Q_p = Item 6_{DMAA} + [Item 6_{DMAB} * (Item 1_{DMAA} - Item 5_{DMAB})/(Item 1_{DMAB} - Item 5_{DMAB})* Item $7_{DMAA/2}$] + [Item 6_{DMAC} * (Item 1_{DMAA} - Item 5_{DMAC})/(Item 1_{DMAC} - Item 5_{DMAC})* Item $7_{DMAA/3}$]*		9 Pre-developed Q_p at T_c for DMA B: *Q_p = Item 6_{DMAB} + [Item 6_{DMAA} * (Item 1_{DMAB} - Item 5_{DMAA})/(Item 1_{DMAA} - Item 5_{DMAA})* Item $7_{DMAB/1}$] + [Item 6_{DMAC} * (Item 1_{DMAB} - Item 5_{DMAC})/(Item 1_{DMAC} - Item 5_{DMAC})* Item $7_{DMAB/3}$]*			10 Pre-developed Q_p at T_c for DMA C: *Q_p = Item 6_{DMAC} + [Item 6_{DMAA} * (Item 1_{DMAC} - Item 5_{DMAA})/(Item 1_{DMAA} - Item 5_{DMAA})* Item $7_{DMAC/1}$] + [Item 6_{DMAB} * (Item 1_{DMAC} - Item 5_{DMAB})/(Item 1_{DMAB} - Item 5_{DMAB})* Item $7_{DMAC/2}$]*		
10 Peak runoff from pre-developed condition confluence analysis (cfs): *Maximum of Item 8, 9, and 10 (including additional forms as needed)*							
11 Post-developed Q_p at T_c for DMA A: *Same as Item 8 for post-developed values*		12 Post-developed Q_p at T_c for DMA B: *Same as Item 9 for post-developed values*			13 Post-developed Q_p at T_c for DMA C: *Same as Item 10 for post-developed values*		
14 Peak runoff from post-developed condition confluence analysis (cfs): *Maximum of Item 11, 12, and 13 (including additional forms as needed)*							
15 Peak runoff reduction needed to meet HCOC Requirement (cfs): *Q_{p-HCOC} = (Item 14 * 0.95) – Item 10*							

4.3 Project Conformance Analysis

Complete the following forms for each project site DA to document that the proposed LID BMPs conform to the project DCV developed to meet performance criteria specified in the MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the MS4 Permit (see Section 5.3.1 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

- Site Design and Hydrologic Source Controls (Form 4.3-2)
- Retention and Infiltration (Form 4.3-3)
- Harvested and Use (Form 4.3-4) or
- Biotreatment (Form 4.3-5).

At the end of each form, additional fields facilitate the determination of the extent of mitigation provided by the specific BMP category, allowing for use of the next category of BMP in the hierarchy, if necessary.

The first step in the analysis, using Section 5.3.2.1 of the TGD for WQMP, is to complete Forms 4.3-1 and 4.3-3) to determine if retention and infiltration BMPs are infeasible for the project. For each feasibility criterion in Form 4.3-1, if the answer is “Yes,” provide all study findings that includes relevant calculations, maps, data sources, etc. used to make the determination of infeasibility.

Next, complete Forms 4.3-2 and 4.3-4 to determine the feasibility of applicable HSC and harvest and use BMPs, and, if their implementation is feasible, the extent of mitigation of the DCV.

If no site constraints exist that would limit the type of BMP to be implemented in a DA, evaluate the use of combinations of LID BMPs, including all applicable HSC BMPs to maximize on-site retention of the DCV. If no combination of BMP can mitigate the entire DCV, implement the single BMP type, or combination of BMP types, that maximizes on-site retention of the DCV within the minimum effective area.

If the combination of LID HSC, retention and infiltration, and harvest and use BMPs are unable to mitigate the entire DCV, then biotreatment BMPs may be implemented by the project proponent. If biotreatment BMPs are used, then they must be sized to provide sufficient capacity for effective treatment of the remainder of the volume-based performance criteria that cannot be achieved with LID BMPs (TGD for WQMP Section 5.4.4.2). **Under no circumstances shall any portion of the DCV be released from the site without effective mitigation and/or treatment**.

Form 4.3-1 Infiltration BMP Feasibility (DMA 1 and DMA 2)

Feasibility Criterion – Complete evaluation for each DA on the Project Site

[1] Would infiltration BMP pose significant risk for groundwater related concerns? Yes ☐ No ☒
Refer to Section 5.3.2.1 of the TGD for WQMP

If Yes, Provide basis: (attach)

[2] Would installation of infiltration BMP significantly increase the risk of geotechnical hazards? Yes ☐ No ☒
(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):

- The location is less than 50 feet away from slopes steeper than 15 percent
- The location is less than eight feet from building foundations or an alternative setback.
- A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.

If Yes, Provide basis: (attach)

[3] Would infiltration of runoff on a Project site violate downstream water rights? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[4] Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[5] Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[6] Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses? Yes ☐ No ☒
See Section 3.5 of the TGD for WQMP and WAP

If Yes, Provide basis: (attach)

[7] Any answer from Item 1 through Item 3 is "Yes": Yes ☐ No ☒
If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Harvest and Use BMP. If no, then proceed to Item 8 below.

[8] Any answer from Item 4 through Item 6 is "Yes": Yes ☐ No ☒
If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Hydrologic Source Control BMP.
If no, then proceed to Item 9, below.

[9] All answers to Item 1 through Item 6 are "No": Yes ☒ No ☐
Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.
Proceed to Form 4.3-2, Hydrologic Source Control BMP.

4.3.1 Site Design Hydrologic Source Control BMP

Section XI.E. of the Permit emphasizes the use of LID preventative measures; and the use of LID HSC BMPs reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable HSC shall be provided except where they are mutually exclusive with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of HSC, if a project cannot feasibly meet BMP sizing requirements or cannot fully address HCOCs, feasibility of all applicable HSC must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design HSC BMP. Refer to Section 5.4.1 in the TGD for more detailed guidance.

Form 4.3-2 Site Design Hydrologic Source Control BMPs
(DMA 1 and DMA 2)

1 Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP: Yes ☐ No ☒ *If yes, complete Items 2-5; If no, proceed to Item 6*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Total impervious area draining to pervious area (ft^2)			
3 Ratio of pervious area receiving runoff to impervious area			
4 Retention volume achieved from impervious area dispersion (ft^3) *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff*			
5 Sum of retention volume achieved from impervious area dispersion (ft^3): $V_{retention}$ *=Sum of Item 4 for all BMPs*			
6 Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens): Yes ☐ No ☒ *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
7 Ponding surface area (ft^2)			
8 Ponding depth (ft)			
9 Surface area of amended soil/gravel (ft^2)			
10 Average depth of amended soil/gravel (ft)			
11 Average porosity of amended soil/gravel			
12 Retention volume achieved from on-lot infiltration (ft^3) $V_{retention}$ *= (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)*			
13 Runoff volume retention from on-lot infiltration (ft^3): 0 $V_{retention}$ *=Sum of Item 12 for all BMPs*			

Form 4.3-2 Site Design Hydrologic Source Control BMPs (DMA 1 and DMA 2)

Form 4.3-2 cont. Site Design Hydrologic Source Control BMPs (DMA 1 and DMA 2)

14 Implementation of evapotranspiration BMP (green, brown, or blue roofs): Yes ☐ No ☒ *If yes, complete Items 15-20. If no, proceed to Item 21*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
15 Rooftop area planned for ET BMP (ft^2)			
16 Average wet season ET demand (in/day) *Use local values, typical ~ 0.1*			
17 Daily ET demand (ft^3/day) *Item 15 * (Item 16 / 12)*			
18 Drawdown time (hrs) *Copy Item 6 in Form 4.2-1*			
19 Retention Volume (ft^3) $V_{retention}$ *= Item 17 * (Item 18 / 24)*			
20 Runoff volume retention from evapotranspiration BMPs (ft^3): $V_{retention}$ *=Sum of Item 19 for all BMPs*			
21 Implementation of Street Trees: Yes ☒ No ☐ *If yes, complete Items 22-25. If no, proceed to Item 26*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
22 Number of Street Trees	702		
23 Average canopy cover over impervious area (ft^2)	12		
24 Runoff volume retention from street trees (ft^3) $V_{retention}$ *= Item 22 * Item 23 * (0.05/12) assume runoff retention of 0.05 inches*	35.1		
25 Runoff volume retention from street tree BMPs (ft^3): 35 $V_{retention}$ *= Sum of Item 24 for all BMPs*			
26 Implementation of residential rain barrel/cisterns: Yes ☐ No ☒ *If yes, complete Items 27-29; If no, proceed to Item 30*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
27 Number of rain barrels/cisterns			
28 Runoff volume retention from rain barrels/cisterns (ft^3) $V_{retention}$ *= Item 27 * 3*			
29 Runoff volume retention from residential rain barrels/Cisterns (ft3): $V_{retention}$ *=Sum of Item 28 for all BMPs*			

Form 4.3-2 Site Design Hydrologic Source Control BMPs (DMA 1 and DMA 2)

30 Total Retention Volume from Site Design Hydrologic Source Control BMPs: 35 *Sum of Items 5, 13, 20, 25 and 29*

4.3.2 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix D of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5.1 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

.

Form 4.3-3 Infiltration LID BMP - including underground BMPs (DA 1)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 25,049 *V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item 30 (38/2 = 17 CF)*

BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs*	DA DMA BMP Type HSC BMP	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix D of the TGD for WQMP for minimum requirements for assessment methods*	13.9		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.0		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	6.95		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48 hours		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	10		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	10		
8 Infiltrating surface area, SA_{BMP} (ft^2) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP*	0		
9 Amended soil depth, d_{media} (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*	0		
10 Amended soil porosity	0		
11 Gravel depth, d_{media} (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
14 Above Ground Retention Volume (ft^3) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*	0		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	25,049		

16 Total Retention Volume from LID Infiltration BMPs: 25,049 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *Retention% = Item 16 / Form 4.2-1 Item 7*

18 Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☒ No ☐

If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.

Form 4.3-3 Infiltration LID BMP - including underground BMPs (DMA 2)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 20,556 *V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item 30 (38/2 = 17 CF)*			
BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs*	DA DMA BMP Type HSC BMP	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix D of the TGD for WQMP for minimum requirements for assessment methods*	13.9		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.0		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	6.95		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48 hours		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	10		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	10		
8 Infiltrating surface area, *SA_{BMP}* (ft^2) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP*	0		
9 Amended soil depth, *d_{media}* (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*	0		
10 Amended soil porosity	0		
11 Gravel depth, *d_{media}* (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
14 Above Ground Retention Volume (ft^3) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*	0		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	20,556		
16 Total Retention Volume from LID Infiltration BMPs: 20,556 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*			
17 Fraction of DCV achieved with infiltration BMP: 100% *Retention% = Item 16 / Form 4.2-1 Item 7*			
18 Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☒ No ☐			

If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.

4.3.3 Harvest and Use BMP

Harvest and use BMP may be considered if the full LID DCV cannot be met by maximizing infiltration BMPs. Use Form 4.3-4 to compute on-site retention of runoff from proposed harvest and use BMPs.

Form 4.3-4 Harvest and Use BMPs (DMA 1 AND DMA 2)

1 Remaining LID DCV not met by site design HSC or infiltration BMP (ft³): 0
V_{unmet} *= Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16*

BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP) - Use additional forms for more BMPs*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Describe cistern or runoff detention facility			
3 Storage volume for proposed detention type (ft³) *Volume of cistern*			
4 Landscaped area planned for use of harvested stormwater (ft²)			
5 Average wet season daily irrigation demand (in/day) Use local values, typical ~ 0.1 in/day			
6 Daily water demand (ft³/day) *Item 4 * (Item 5 / 12)*			
7 Drawdown time (hrs) *Copy Item 6 from Form 4.2-1*			
8 Retention Volume (ft³) $V_{retention}$ *= Minimum of (Item 3) or (Item 6 * (Item 7 / 24))*			

9 Total Retention Volume (ft³) from Harvest and Use BMP *Sum of Item 8 for all harvest and use BMP included in plan*

10 Is the full DCV retained with a combination of LID HSC, retention and infiltration, and harvest & use BMPs? Yes ☐ No ☐
If yes, demonstrate conformance using Form 4.3-10. If no, then re-evaluate combinations of all LID BMP and optimize their implementation such that the maximum portion of the DCV is retained on-site (using a single BMP type or combination of BMP types). If the full DCV cannot be mitigated after this optimization process, proceed to Section 4.3.4.

4.3.4 Biotreatment BMP

Biotreatment BMPs may be considered if the full LID DCV cannot be met by maximizing retention and infiltration, and harvest and use BMPs. A key consideration when using biotreatment BMP is the effectiveness of the proposed BMP in addressing the pollutants of concern for the project (see Table 5-5 of the TGD for WQMP).

Use Form 4.3-5 to summarize the potential for volume based and/or flow based biotreatment options to biotreat the remaining unmet LID DCV w. Biotreatment computations are included as follows:

- Use Form 4.3-6 to compute biotreatment in small volume based biotreatment BMP (e.g. bioretention w/underdrains);
- Use Form 4.3-7 to compute biotreatment in large volume based biotreatment BMP (e.g. constructed wetlands);
- Use Form 4.3-8 to compute sizing criteria for flow-based biotreatment BMP (e.g. bioswales)

Form 4.3-5 Selection and Evaluation of Biotreatment BMP (DMA 1 AND DMA 2)

1 Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment (ft³): 0 *Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16- Form 4.3-4 Item 9*	List pollutants of concern *Copy from Form 2.3-1.*	
2 Biotreatment BMP Selected *(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)*	Volume-based biotreatment *Use Forms 4.3-6 and 4.3-7 to compute treated volume* ☐ Bioretention with underdrain ☐ Planter box with underdrain ☐ Constructed wetlands ☐ Wet extended detention ☐ Dry extended detention	Flow-based biotreatment *Use Form 4.3-8 to compute treated volume* ☐ Vegetated swale ☐ Vegetated filter strip ☐ Proprietary biotreatment
3 Volume biotreated in volume based biotreatment BMP (ft³): *Form 4.3-6 Item 15 + Form 4.3-7 Item 13*	4 Compute remaining LID DCV with implementation of volume based biotreatment BMP (ft³): *Item 1 – Item 3*	5 Remaining fraction of LID DCV for sizing flow based biotreatment BMP: % *Item 4 / Item 1*
6 Flow-based biotreatment BMP capacity provided (cfs): *Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)*		
7 Metrics for MEP determination: • Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development: ☐ *If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.*		

Form 4.3-6 Volume Based Biotreatment (DMA 1 AND DMA 2) – Bioretention and Planter Boxes with Underdrains

Biotreatment BMP Type *(Bioretention w/underdrain, planter box w/underdrain, other comparable BMP)*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
1 Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*			
2 Amended soil infiltration rate *Typical ~ 5.0*			
3 Amended soil infiltration safety factor *Typical ~ 2.0*			
4 Amended soil design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*			
5 Ponded water drawdown time (hr) *Copy Item 6 from Form 4.2-1*			
6 Maximum ponding depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12 * Item 4 * Item 5) or Item 6*			
8 Amended soil surface area (ft^2)			
9 Amended soil depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Amended soil porosity, *n*			
11 Gravel depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
12 Gravel porosity, *n*			
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*			
14 Biotreated Volume (ft^3) *$V_{biotreated}$ = Item 8 * [(Item 7/2) + (Item 9 * Item 10) +(Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*			
15 Total biotreated volume from bioretention and/or planter box with underdrains BMP: *Sum of Item 14 for all volume-based BMPs included in this form*			

Form 4.3-7 Volume Based Biotreatment (DMA 1 AND DMA 2) – Constructed Wetlands and Extended Detention

Biotreatment BMP Type *Constructed wetlands, extended wet detention, extended dry detention, or other comparable proprietary BMP. If BMP includes multiple modules (e.g. forebay and main basin), provide separate estimates for storage and pollutants treated in each module.*	DA DMA BMP Type		DA DMA BMP Type *(Use additional forms for more BMPs)*	
	Forebay	Basin	Forebay	Basin
1 Pollutants addressed with BMP forebay and basin *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*				
2 Bottom width (ft)				
3 Bottom length (ft)				
4 Bottom area (ft^2) $A_{bottom} = \text{Item 2} * \text{Item 3}$				
5 Side slope (ft/ft)				
6 Depth of storage (ft)				
7 Water surface area (ft^2) $A_{surface} = (\text{Item 2} + (2 * \text{Item 5} * \text{Item 6})) * (\text{Item 3} + (2 * \text{Item 5} * \text{Item 6}))$				
8 Storage volume (ft^3) *For BMP with a forebay, ensure fraction of total storage is within ranges specified in BMP specific fact sheets, see Table 5-6 of the TGD for WQMP for reference to BMP design details* $V = \text{Item 6} / 3 * [\text{Item 4} + \text{Item 7} + (\text{Item 4} * \text{Item 7})\text{^}0.5]$				
9 Drawdown Time (hrs) *Copy Item 6 from Form 2.1*				
10 Outflow rate (cfs) $Q_{BMP} = (\text{Item } 8_{forebay} + \text{Item } 8_{basin}) / (\text{Item 9} * 3600)$				
11 Duration of design storm event (hrs)				
12 Biotreated Volume (ft^3) $V_{biotreated} = (\text{Item } 8_{forebay} + \text{Item } 8_{basin}) + (\text{Item 10} * \text{Item 11} * 3600)$				
13 Total biotreated volume from constructed wetlands, extended dry detention, or extended wet detention : *(Sum of Item 12 for all BMP included in plan)*				

Form 4.3-8 Flow Based Biotreatment (DMA 1 AND DMA 2)

Biotreatment BMP Type *Vegetated swale, vegetated filter strip, or other comparable proprietary BMP*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
1 Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in TGD Table 5-5*			
2 Flow depth for water quality treatment (ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
3 Bed slope (ft/ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
4 Manning's roughness coefficient			
5 Bottom width (ft) b_w = (Form 4.3-5 Item 6 * Item 4) / (1.49 * Item $2^{\wedge 1.67}$ * Item $3^{\wedge 0.5}$)			
6 Side Slope (ft/ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Cross sectional area (ft^2) *A = (Item 5 * Item 2) + (Item 6 * Item* $2^{\wedge 2}$)			
8 Water quality flow velocity (ft/sec) *V = Form 4.3-5 Item 6 / Item 7*			
9 Hydraulic residence time (min) *Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Length of flow based BMP (ft) *L = Item 8 * Item 9 * 60*			
11 Water surface area at water quality flow depth (ft^2) SA_{top} = (Item 5 + (2 * Item 2 * Item 6)) * Item 10			

4.3.5 Conformance Summary

Complete Form 4.3-9 to demonstrate how on-site LID DCV is met with proposed site design hydrologic source control, infiltration, harvest and use, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate (DMA 1 AND DMA 2)

1 Total LID DCV for the Project DA-1 (ft³): 45,621 *Copy Item 7 in Form 4.2-1*

2 On-site retention with site design hydrologic source control LID BMP (ft³): 35 CF *Copy Item 30 in Form 4.3-2*

3 On-site retention with LID infiltration BMP (ft³): 45,586 *Copy Item 16 in Form 4.3-3*

4 On-site retention with LID harvest and use BMP (ft³): 0 *Copy Item 9 in Form 4.3-4*

5 On-site biotreatment with volume based biotreatment BMP (ft³): 0 *Copy Item 3 in Form 4.3-5*

6 Flow capacity provided by flow based biotreatment BMP (cfs): 0 *Copy Item 6 in Form 4.3-5*

7 LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP: Yes ☒ No ☐
  If yes, sum of Items 2, 3, and 4 is greater than Item 1
- Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☐ No ☒
  If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized
- On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☒
  If yes, Form 4.3-1 Items 7 and 8 were both checked yes

8 If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

- Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture: ☐
  Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, V_{alt} *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*
- An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility: ☐
  Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed

4.3.6 Hydromodification Control BMP

Use Form 4.3-10 to compute the remaining runoff volume retention, after LID BMP are implemented, needed to address HCOC, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential HCOC. Describe hydromodification control BMP that address HCOC, which may include off-site BMP and/or in-stream controls. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

Form 4.3-10 Hydromodification Control BMPs (DMA 1 AND DMA 2)

1 Volume reduction needed for HCOC performance criteria (ft^3): 0 *(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*	**2** On-site retention with site design hydrologic source control, infiltration, and harvest and use LID BMP (ft^3): 0 *Sum of Form 4.3-9 Items 2, 3, and 4 Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving HCOC volume reduction*
3 Remaining volume for HCOC volume capture (ft^3): *Item 1 – Item 2*	**4** Volume capture provided by incorporating additional on-site or off-site retention BMPs (ft^3): *Existing downstream BMP may be used to demonstrate additional volume capture (if so, attach to this WQMP a hydrologic analysis showing how the additional volume would be retained during a 2-yr storm event for the regional watershed)*

5 If Item 4 is less than Item 3, incorporate in-stream controls on downstream waterbody segment to prevent impacts due to hydromodification ☐ *Attach in-stream control BMP selection and evaluation to this WQMP*

6 Is Form 4.2-2 Item 11 less than or equal to 5%: Yes ☐ No ☐

If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site or off-site retention BMP ☐
  BMP upstream of a waterbody segment with a potential HCOC may be used to demonstrate increased time of concentration through hydrograph attenuation (if so, show that the hydraulic residence time provided in BMP for a 2-year storm event is equal or greater than the addition time of concentration requirement in Form 4.2-4 Item 15)
- Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities ☐
- Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California ☐

7 Form 4.2-2 Item 12 less than or equal to 5%: Yes ☐ No ☐

If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site or off-site retention BMPs ☐

  BMPs upstream of a waterbody segment with a potential HCOC may be used to demonstrate additional peak runoff reduction through hydrograph attenuation (if so, attach to this WQMP, a hydrograph analysis showing how the peak runoff would be reduced during a 2-yr storm event)
- Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California ☐

4.4 Alternative Compliance Plan (Not applicable)

Since the project was fully able to retain and infiltrate the DCV through on site BMP's, an alternative compliance plan to address the remainder of the LID DCV is not necessary.

Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMP included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and may require a Maintenance Agreement (consult the jurisdiction's LIP). If a Maintenance Agreement is required, it must also be attached to the WQMP.

Form 5-1 BMP Inspection and Maintenance (use additional forms as necessary)

BMP	Reponsible Party(s)	Inspection/ Maintenance Activities Required	Minimum Frequency of Activities
Subsurface System	Diversified Pacific Communities	Check for ponding water longer than 72 hours, inspect outlet structure and fix if necessary, remove litter and debris, remove sediment volume and additional tasks specified by manufacturer.	After storm event to bi-annually
Inlet Stencils	Diversified Pacific Communities	Check that signage is visible; remove/replace sign if illegible.	Minimum of twice annually, repair as needed.
Trash Receptacles	Diversified Pacific Communities	Trash shall be closed or covered at all times. Ensure regular waste pick-up	As needed, with minimum weekly inspections.
Litter/Debris Control Program	Diversified Pacific Communities	Litter shall be picked up, trash enclosure areas shall be swept and cleaned, dumpsters shall be emptied.	Weekly
Parking Lot Sweeping	Diversified Pacific Communities	Parking lots must be swept	Quarterly (minimum), Weekly during rainy season (Oct-May)
Landscape Management	Diversified Pacific Communities	Gardening and lawn care practices to prevent landscape waster to exit project site per SC-73	Weekly

Section 6 WQMP Attachments

6.1. Site Plan and Drainage Plan

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (as described in their local Local Implementation Plan), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

6.3 Post Construction

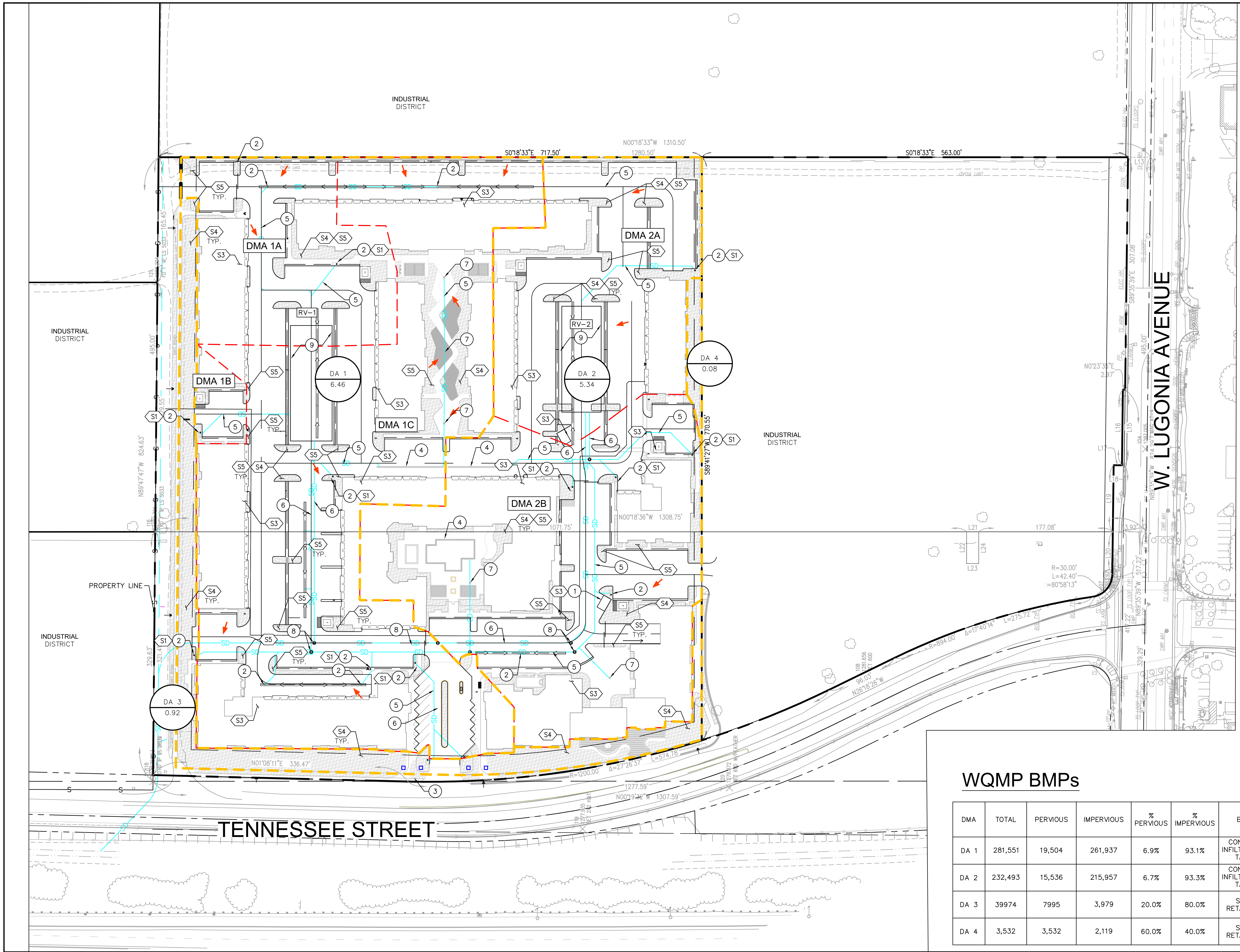
Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP.

6.4 Other Supporting Documentation

- BMP Educational Materials
- Activity Restriction – C, C&R's & Lease Agreements

Section 6.1

Site Plan and Drainage Plan



LEGEND

——— – ———	CENTER LINE
▬ ▬ ▬ ▬	PROPERTY LINE
— — — — —	EASEMENT LINE
🟨 🟨 🟨 🟨	LIMITS OF DRAINAGE AREA AND APPROXIMATE LIMITS OF DISTURBANCE
🟥 🟥 🟥 🟥	DRAINAGE SUB AREA DELINEATION
———SD———	PROPOSED STORM DRAIN PIPE
■ ☐	PROPOSED STORM DRAIN INLET
▨	PROPOSED LANDSCAPING / PERVIOUS SURFACE
☐	IMPERVIOUS SURFACE
DA ID ACRES	DRAINAGE AREA LABEL

FLOOD ZONE

FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD

CONCEPTUAL WQMP NOTES

① TRASH ENCLOSURE AREA PER ARCHITECTURAL PLAN.

② INSTALL 24" X 24" JENSEN PRECAST DROP INLET. ALL DROP INLETS SHALL HAVE "OLDCASTLE FLOGARD CATCH BASIN FILTER INSERTS". ALL GRATES SHALL BE TRAFFIC RATED. PAINT "NO DUMPING–DRAINS TO RIVER" ON CURB ADJACENT TO CATCH BASIN.

③ PROPOSED PROPRIETARY PUMP.

④ PROPOSED TRENCH DRAIN

⑤ 6" SDR–35 PVC STORM DRAIN PIPE SLOPED AT 0.5% MIN.

⑥ 12" SDR–35 PVC STORM DRAIN PIPE SLOPED AT 0.5% MIN.

⑦ INSTALL 4" NDS ADA COMPLIANT AREA DRAIN.

⑧ PROPOSED STORM DRAIN MANHOLE

⑨ PROPOSED CONTECH UNDERGROUND INFILTRATION TANK FOR WATER QUALITY AND STORMWATER RETENTION.

STRUCTURAL SOURCE CONTROL BMP NOTES

S1 STORM DRAIN SYSTEM STENCILING AND SIGNAGE (CASQA HANDBOOK SD–13)

S3 TRASH AND WASTE STORAGE AREAS (CASQA HANDBOOK SD–32)

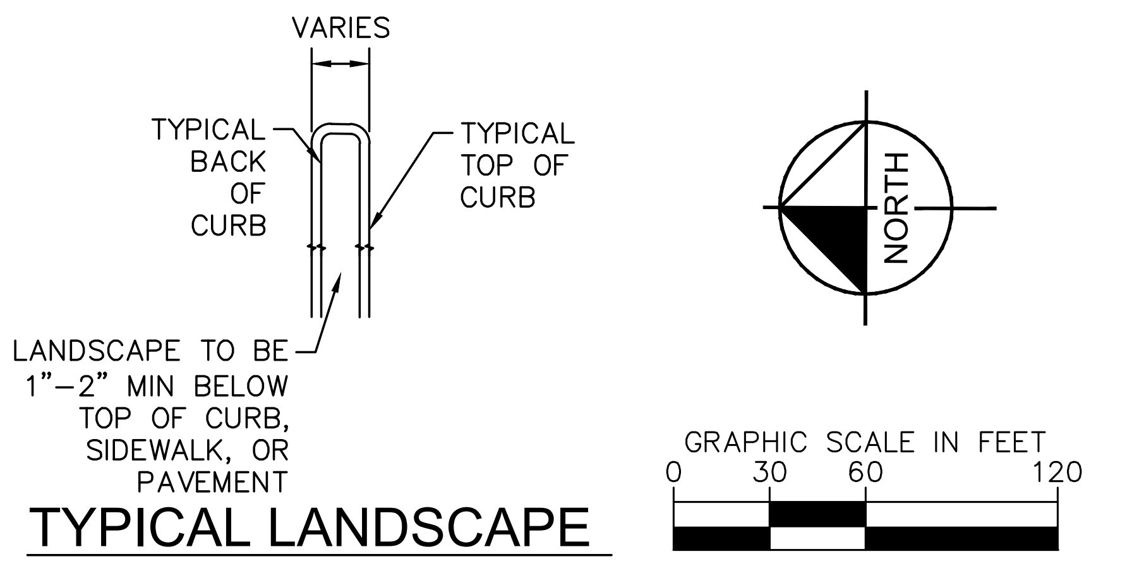
S4 IRRIGATION SYSTEMS AND LANDSCAPE DESIGN (CASQA HANDBOOK SD–12)

S5 COMPLIANT FINISHED GRADES OF LANDSCAPED AREAS

GENERAL NOTES

1. DRAWDOWN IS 48 HRS; A=1.9632.
2. 2–YEAR, 1–HR PRECIPITATION DEPTH = 0.472 INCHES
3. INFILTRATION RATE = 6.95 INCHES/HR PER GEOTECH REPORT PREPARED BY PETRA GEOSCIENCES DATED 02/15/2022 AND SAFETY FACTOR OF 2.

NOTE: CONTRACTOR TO CONFIRM/VERIFY INFILTRATION RATES WITH SOILS ENGINEER AFTER THE GRADING OPERATION AND PRIOR TO INSTALLATION OF THE UNDERGROUND CHAMBERS. THE CITY SHALL BE NOTIFIED IF THE INFILTRATION RATES DEVIATE FROM THE ORIGINAL INFILTRATION REPORT.



TYPICAL LANDSCAPE AREA DETAIL

WQMP BMPs

DMA	TOTAL	PERVIOUS	IMPERVIOUS	% PERVIOUS	% IMPERVIOUS	BMP	BMP ID	C_{BMP}	P_6	DESIGN CAPTURE VOLUME (CF)	DRAWDOWN	STORAGE VOLUME REQUIRED (CF)	STORAGE VOLUME PROVIDED (CF)
DA 1	281,551	19,504	261,937	6.9%	93.1%	CONTECH INFILTRATION TANK	RV–1	0.78	0.699	25,409	48 HR	25,409	25,446
DA 2	232,493	15,536	215,957	6.7%	93.3%	CONTECH INFILTRATION TANK	RV–2	0.78	0.699	20,556	48 HR	20,556	21,677
DA 3	39974	7995	3,979	20.0%	80.0%	SELF RETAINING	—	0.78	0.699	963	48 HR	963	3000
DA 4	3,532	3,532	2,119	60.0%	40.0%	SELF RETAINING	—	0.78	0.699	221	48 HR	221	325

No.	REVISIONS	DATE	BY

Kimley»Horn

3801 UNIVERSITY AVENUE, SUITE 300, RIVERSIDE, CA 92501
PHONE: 760-565-5103
WWW.KIMLEY-HORN.COM

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
DPC REDLANDS MARKETPLACE
REDLANDS, CALIFORNIA
APN 0167-171-015

DRAWING NAME:
WQMP EXHIBIT

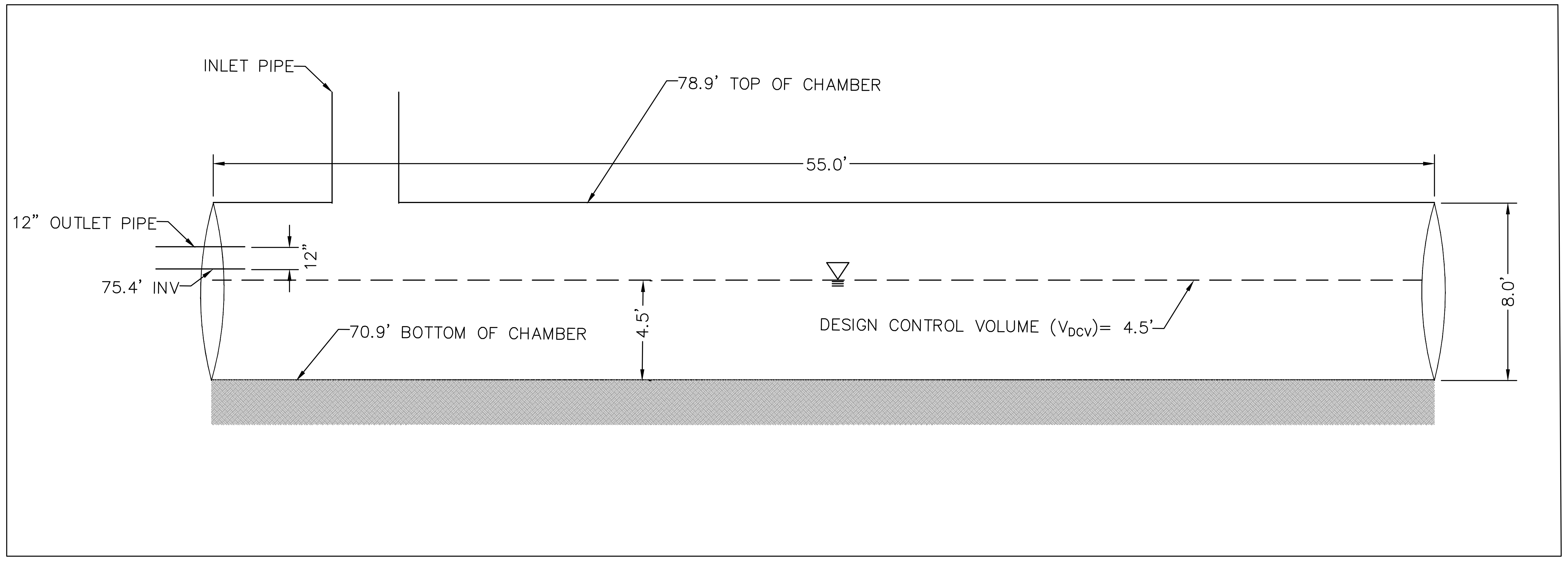
ISSUE: CONCEPTUAL
DATE: 2022–08–31
CHECKED: DRAWN:
DRAWING FILE:
PROJECT NO.:
SCALE: AS SHOWN

SHEET NUMBER
1.0

K:\RIV_LDEV\194423001 – DPC REDLANDS\CAD\EXHIBITS\REPORTS\DPC REDLANDS WQMP EXHIBIT.DWG 2/7/2024 10:07:58 AM

BMP CHAMBER CROSS SECTION

NOT TO SCALE (NTS).



STORM DRAIN STENCIL

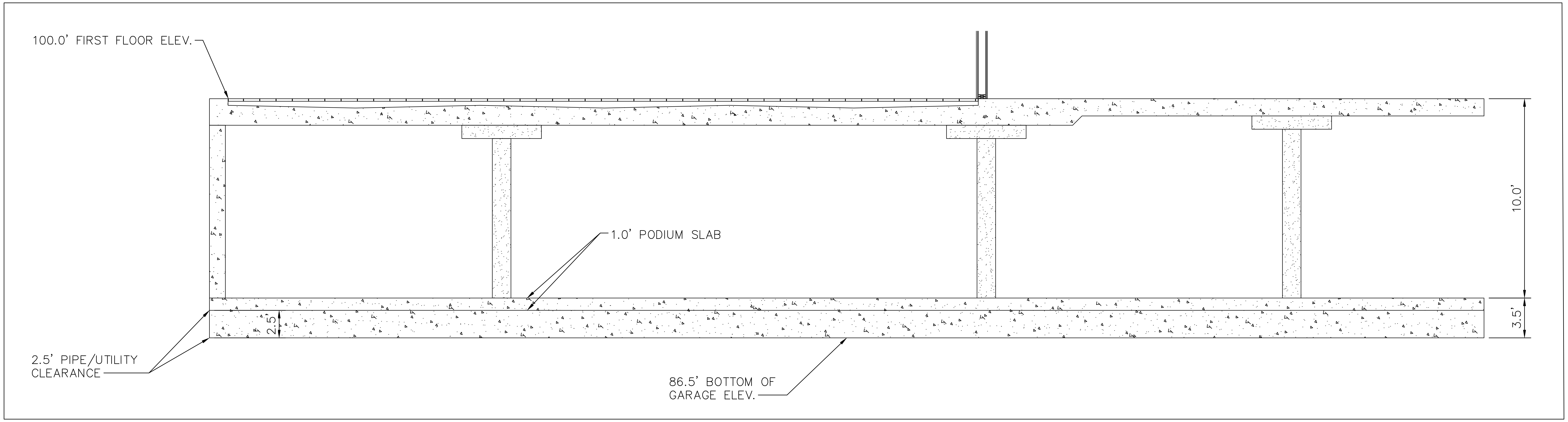
STENCIL MUST HAVE WHITE BACKGROUND

"NO DUMPING - DRAINS TO RIVER."

2-1/2" MINIMUM IN BLUE LETTERING

UNDERGROUND GARAGE CROSS SECTION

NOT TO SCALE (NTS).



No.	REVISIONS	DATE	BY

Kimley»Horn

3801 UNIVERSITY AVENUE, SUITE 300, RIVERSIDE, CA 92501
PHONE: 760-565-5103
WWW.KIMLEY-HORN.COM

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
DPC REDLANDS MARKETPLACE
REDLANDS, CALIFORNIA
APN 0167-171-015

DRAWING NAME: WQMP EXHIBIT: SECTIONS

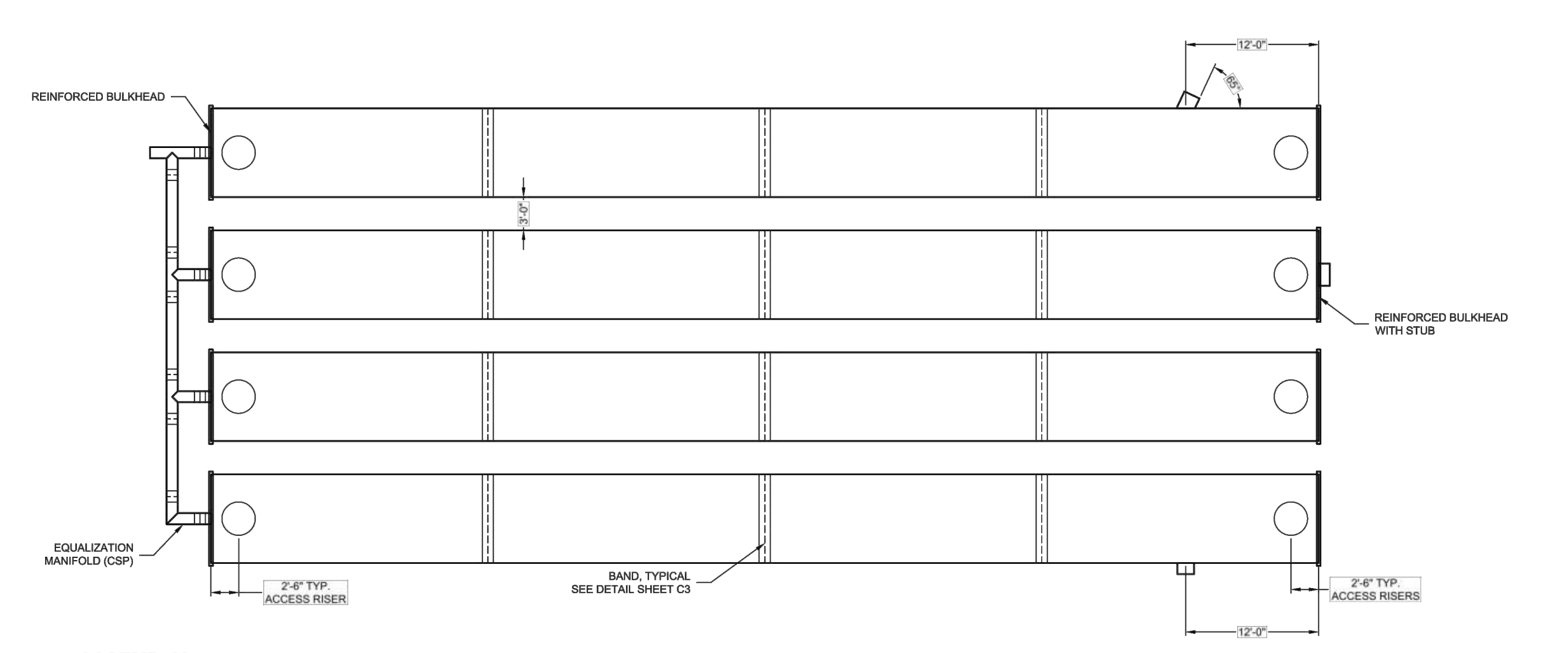
ISSUE: CONCEPTUAL
DATE: 2022-08-31
CHECKED: DRAWN:
DRAWING FILE:
PROJECT NO.:
SCALE: AS SHOWN

SHEET NUMBER
2.0

K:\RIV_LDEV\194423001 - DPC REDLANDS\CAD\EXHIBITS\REPORTS\DPC REDLANDS WQMP EXHIBIT.DWG 2/8/2024 11:01:56 AM

UNDERGROUND DETENTION SYSTEM DETAILS

SAMPLE UNDERGROUND DETENTION SPECIFICITION



ASSEMBLY
SCALE: 1" = 10'

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (6) PAGES INCLUDING THE FOLLOWING:

- **MAINLINE PIPE GAGE = 18, 16, 14, 12, 10, 8**
- **WALL TYPE = SOLID OR PERF**
- **DIAMETER = 12 - 144"**
- **FINISH = ALT2, POLY, GALV, ALUM**
- **CORRUGATION = 2 2/3x1/2, 3x1, 5x1**

CUSTOMER ____________ DATE ____________

NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD (EOR) PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.

MARK	DATE	REVISION DESCRIPTION	BY

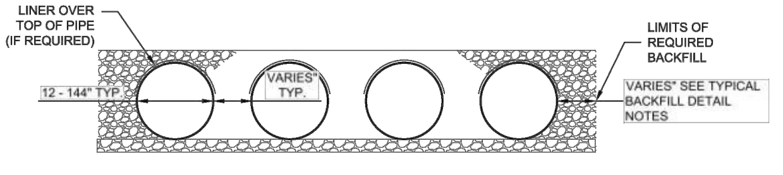
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH CONTRACT DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

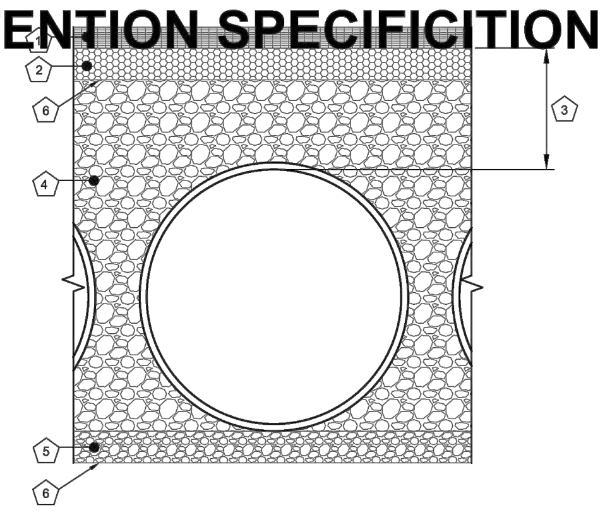
PROJECT No.: ---- SEQ. No.: ---- DATE: 1/10/2019
DESIGNED: xxx DRAWN: DAH
CHECKED: xxx APPROVED: xxx
SHEET NO.: C1 OF 6

SAMPLE UNDERGROUND DETENTION SPECIFICITION



TYPICAL SECTION VIEW
NOT TO SCALE

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



KEY

1.) RIGID OR FLEXIBLE PAVEMENT
2.) GRANULAR ROAD BASE
3.) 12" MIN. FOR DIAMETERS THROUGH 96" 18" MIN. FOR DIAMETERS FROM 102" AND LARGER MEASURED TO TOP OF RIGID OR BOTTOM OF FLEXIBLE PAVEMENT.
4.) FREE DRAINING ANGULAR WASHED STONE 3/4" - 2" MIN. PARTICLE SIZE.
5.) GRANULAR BEDDING, ROUGHLY SHAPED TO FIT THE BOTTOM OF PIPE, 4"- 6" IN DEPTH.
6.) CONTECH C-40 OR C-45 NON-WOVEN GEOTEXTILE REQUIRED, WRAPPING TRENCH ONLY.

FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

BACKFILL

THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR HIS REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAINING BALANCED LOADING ON ALL PIPES IN THE SYSTEM, DURING ALL SUCH OPERATIONS.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

1/C3 BACKFILL DETAIL
SCALE: N.T.S.

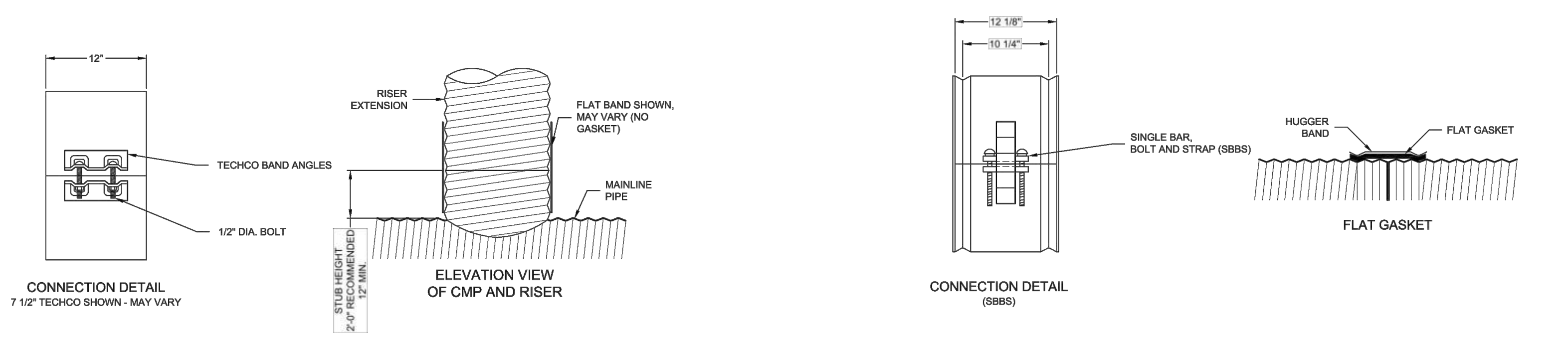
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH CONTRACT DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ---- SEQ. No.: ---- DATE: 1/10/2019
DESIGNED: xxx DRAWN: DAH
CHECKED: xxx APPROVED: xxx
SHEET NO.: C2 OF 6

SAMPLE UNDERGROUND DETENTION SPECIFICITION



PLAIN END CMP RISER PIPE

GENERAL NOTES:

1. **DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.**
2. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
3. BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
4. IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
5. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" 2-PIECES
6. ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
7. MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
8. DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

12" RISER BAND DETAIL
NOT TO SCALE

2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" THRU 96" 2-PIECES
   - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

H-12 HUGGER BAND DETAIL
NOT TO SCALE

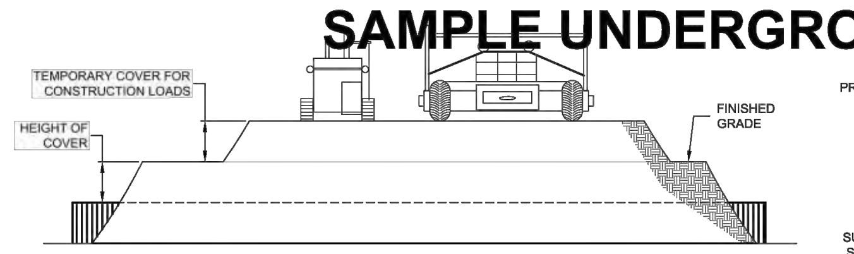
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH CONTRACT DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ---- SEQ. No.: ---- DATE: 1/10/2019
DESIGNED: xxx DRAWN: DAH
CHECKED: xxx APPROVED: xxx
SHEET NO.: C3 OF 6

SAMPLE UNDERGROUND DETENTION SPECIFICITION



CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

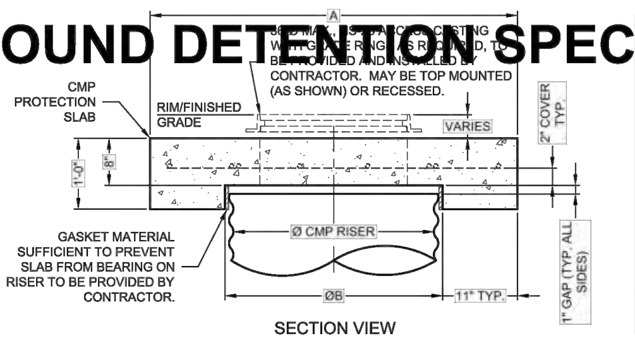
SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA)

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

MATERIAL SPECIFICATION
NOT TO SCALE

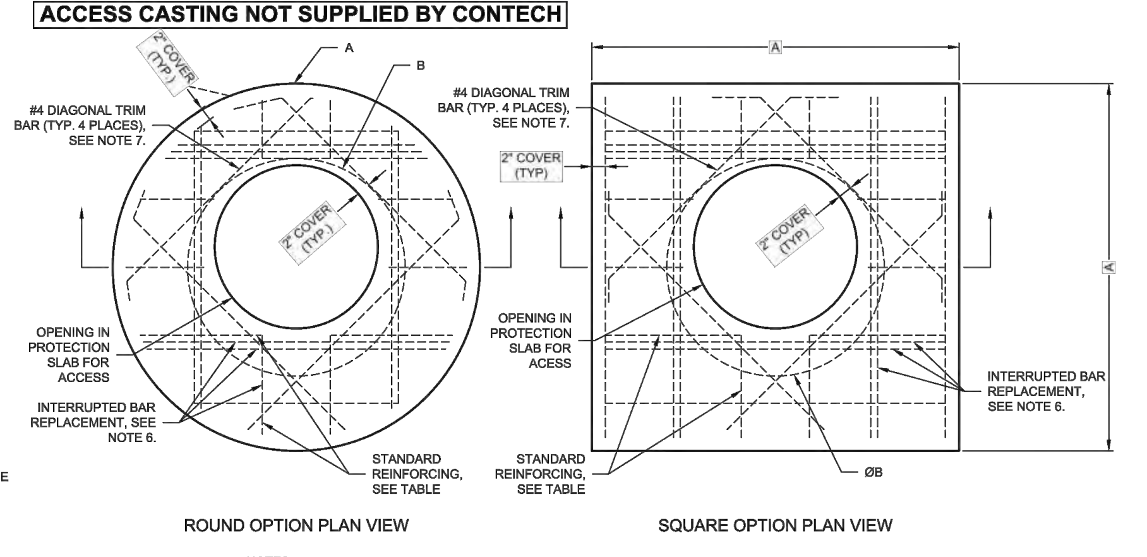


ACCESS CASTING NOT SUPPLIED BY CONTECH

REINFORCING TABLE

Ø CMP RISER	A	B Ø	REINFORCING	**BEARING PRESSURE (PSF)
24"	4'Ø 4'x4'	26"	#5 @ 10" OCEW #5 @ 10" OCEW	2,540 1,900
30"	4'-6"Ø 4'-6" x 4'-6"	32"	#5 @ 10" OCEW #5 @ 9" OCEW	2,260 1,670
36"	5'Ø 5' x 5'	38"	#5 @ 9" OCEW #5 @ 8" OCEW	2,060 1,500
42"	5'-6"Ø 5'-6" x 5'-6"	44"	#5 @ 8" OCEW #5 @ 8" OCEW	1,490 1,370
48"	6'Ø 6' x 6'	50"	#5 @ 7" OCEW #5 @ 7" OCEW	1,210 1,270

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW

SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 4,000 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, ENDWELL, NY.

MANHOLE CAP DETAIL
NOT TO SCALE

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH CONTRACT DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ---- SEQ. No.: ---- DATE: 1/10/2019
DESIGNED: xxx DRAWN: DAH
CHECKED: xxx APPROVED: xxx
SHEET NO.: C4 OF 6

No.	REVISIONS	DATE	BY

Kimley»Horn

3801 UNIVERSITY AVENUE, SUITE 300, RIVERSIDE, CA 92501
PHONE: 760-565-5103
WWW.KIMLEY-HORN.COM

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
DPC REDLANDS MARKETPLACE
REDLANDS, CALIFORNIA
APN 0167-171-015

DRAWING NAME: WQMP EXHIBIT: BMP DETAILS

ISSUE: CONCEPTUAL
DATE: 2022-08-31
CHECKED: DRAWN:
DRAWING FILE:
PROJECT NO.:
SCALE: AS SHOWN

SHEET NUMBER
3.0

K:\RIV_LDEV\194423001 - DPC REDLANDS\CAD\EXHIBITS\REPORTS\DPC REDLANDS WQMP EXHIBIT.DWG 2/8/2024 11:01:56 AM

Section 6.2

Electronic Data Submittal

Section 6.3

Post Construction (O&M and BMP Agreement)

Section 6.4

Other Supporting Materials

Section 6.4.1

Soil Report and Precipitation

NOAA Atlas 14, Volume 6, Version 2
Location name: Redlands, California, USA*
Latitude: 34.072°, Longitude: -117.1983°
Elevation: 1287.05 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.098 (0.081-0.118)	0.126 (0.105-0.153)	0.164 (0.136-0.200)	0.196 (0.161-0.241)	0.240 (0.190-0.305)	0.274 (0.213-0.356)	0.310 (0.235-0.413)	0.347 (0.256-0.476)	0.399 (0.282-0.571)	0.440 (0.300-0.652)
10-min	0.140 (0.116-0.170)	0.181 (0.150-0.220)	0.235 (0.195-0.287)	0.281 (0.231-0.345)	0.344 (0.273-0.437)	0.393 (0.305-0.511)	0.444 (0.337-0.592)	0.498 (0.366-0.682)	0.572 (0.404-0.818)	0.631 (0.430-0.935)
15-min	0.169 (0.141-0.205)	0.219 (0.182-0.266)	0.285 (0.236-0.347)	0.340 (0.279-0.417)	0.416 (0.330-0.528)	0.475 (0.369-0.617)	0.537 (0.407-0.715)	0.602 (0.443-0.825)	0.691 (0.488-0.989)	0.763 (0.520-1.13)
30-min	0.251 (0.209-0.305)	0.325 (0.270-0.395)	0.423 (0.351-0.516)	0.505 (0.415-0.620)	0.618 (0.490-0.785)	0.706 (0.549-0.918)	0.798 (0.605-1.06)	0.894 (0.659-1.23)	1.03 (0.725-1.47)	1.13 (0.772-1.68)
60-min	0.365 (0.304-0.444)	0.472 (0.393-0.574)	0.615 (0.510-0.750)	0.733 (0.603-0.901)	0.898 (0.713-1.14)	1.03 (0.798-1.33)	1.16 (0.879-1.55)	1.30 (0.957-1.78)	1.49 (1.05-2.14)	1.65 (1.12-2.44)
2-hr	0.520 (0.433-0.632)	0.668 (0.555-0.812)	0.863 (0.716-1.05)	1.02 (0.842-1.26)	1.25 (0.991-1.59)	1.42 (1.10-1.85)	1.60 (1.21-2.13)	1.78 (1.31-2.45)	2.04 (1.44-2.92)	2.24 (1.53-3.32)
3-hr	0.640 (0.533-0.777)	0.820 (0.681-0.996)	1.06 (0.876-1.29)	1.25 (1.03-1.54)	1.52 (1.21-1.93)	1.73 (1.34-2.25)	1.94 (1.47-2.59)	2.16 (1.59-2.97)	2.47 (1.74-3.53)	2.71 (1.84-4.01)
6-hr	0.899 (0.748-1.09)	1.15 (0.955-1.40)	1.48 (1.23-1.80)	1.75 (1.44-2.15)	2.12 (1.68-2.69)	2.40 (1.87-3.12)	2.69 (2.04-3.59)	2.99 (2.20-4.10)	3.40 (2.40-4.87)	3.72 (2.54-5.51)
12-hr	1.20 (0.998-1.46)	1.54 (1.28-1.87)	1.98 (1.64-2.42)	2.34 (1.93-2.88)	2.84 (2.25-3.61)	3.21 (2.50-4.17)	3.59 (2.72-4.79)	3.99 (2.94-5.47)	4.52 (3.19-6.47)	4.93 (3.36-7.31)
24-hr	1.61 (1.42-1.85)	2.08 (1.84-2.40)	2.69 (2.37-3.11)	3.19 (2.79-3.71)	3.86 (3.27-4.64)	4.37 (3.63-5.37)	4.89 (3.96-6.16)	5.42 (4.27-7.01)	6.14 (4.64-8.27)	6.69 (4.89-9.33)
2-day	1.99 (1.76-2.29)	2.60 (2.30-3.00)	3.41 (3.01-3.95)	4.08 (3.57-4.75)	4.98 (4.22-6.00)	5.67 (4.71-6.98)	6.38 (5.17-8.04)	7.11 (5.61-9.21)	8.10 (6.13-10.9)	8.88 (6.49-12.4)
3-day	2.15 (1.90-2.48)	2.86 (2.53-3.30)	3.80 (3.35-4.39)	4.57 (4.00-5.33)	5.65 (4.78-6.80)	6.48 (5.38-7.97)	7.35 (5.95-9.25)	8.25 (6.50-10.7)	9.49 (7.18-12.8)	10.5 (7.66-14.6)
4-day	2.32 (2.05-2.67)	3.11 (2.75-3.58)	4.16 (3.67-4.81)	5.04 (4.41-5.87)	6.26 (5.30-7.54)	7.22 (5.99-8.87)	8.21 (6.65-10.3)	9.25 (7.30-12.0)	10.7 (8.10-14.4)	11.9 (8.67-16.5)
7-day	2.68 (2.38-3.09)	3.62 (3.20-4.18)	4.88 (4.31-5.65)	5.94 (5.19-6.92)	7.40 (6.27-8.92)	8.56 (7.10-10.5)	9.76 (7.90-12.3)	11.0 (8.68-14.3)	12.8 (9.66-17.2)	14.2 (10.4-19.8)
10-day	2.91 (2.57-3.35)	3.94 (3.49-4.55)	5.34 (4.71-6.18)	6.51 (5.69-7.59)	8.13 (6.89-9.80)	9.42 (7.81-11.6)	10.7 (8.71-13.5)	12.2 (9.58-15.7)	14.1 (10.7-19.0)	15.7 (11.5-21.8)
20-day	3.59 (3.18-4.14)	4.91 (4.35-5.67)	6.70 (5.91-7.76)	8.20 (7.18-9.57)	10.3 (8.73-12.4)	12.0 (9.94-14.7)	13.7 (11.1-17.3)	15.6 (12.3-20.1)	18.1 (13.7-24.4)	20.2 (14.8-28.1)
30-day	4.22 (3.74-4.87)	5.79 (5.12-6.68)	7.92 (6.99-9.16)	9.71 (8.50-11.3)	12.2 (10.4-14.7)	14.2 (11.8-17.5)	16.3 (13.2-20.6)	18.6 (14.6-24.0)	21.7 (16.4-29.2)	24.2 (17.7-33.7)
45-day	5.05 (4.47-5.82)	6.91 (6.11-7.98)	9.45 (8.33-10.9)	11.6 (10.1-13.5)	14.6 (12.4-17.6)	17.0 (14.1-20.9)	19.5 (15.8-24.6)	22.2 (17.5-28.7)	26.0 (19.7-35.0)	29.0 (21.2-40.4)
60-day	5.91 (5.23-6.81)	8.05 (7.12-9.29)	11.0 (9.67-12.7)	13.4 (11.7-15.7)	16.9 (14.3-20.4)	19.7 (16.3-24.2)	22.6 (18.3-28.5)	25.7 (20.3-33.3)	30.0 (22.7-40.5)	33.6 (24.6-46.8)

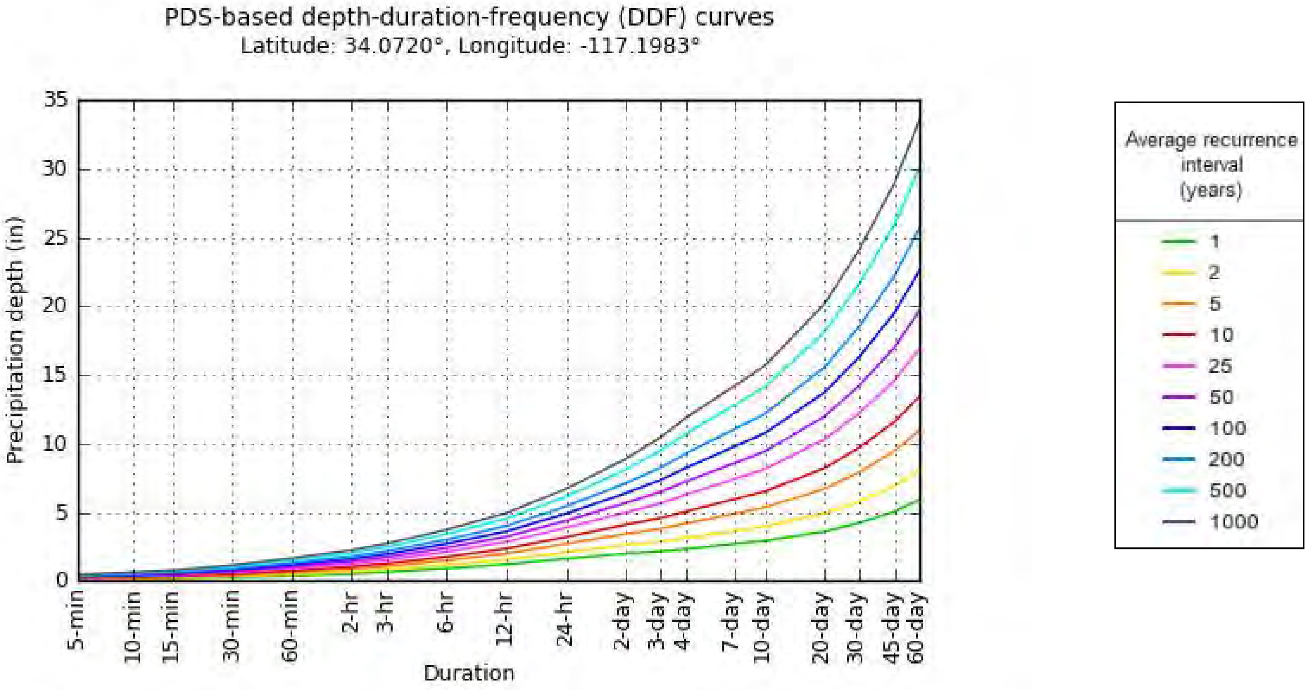
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

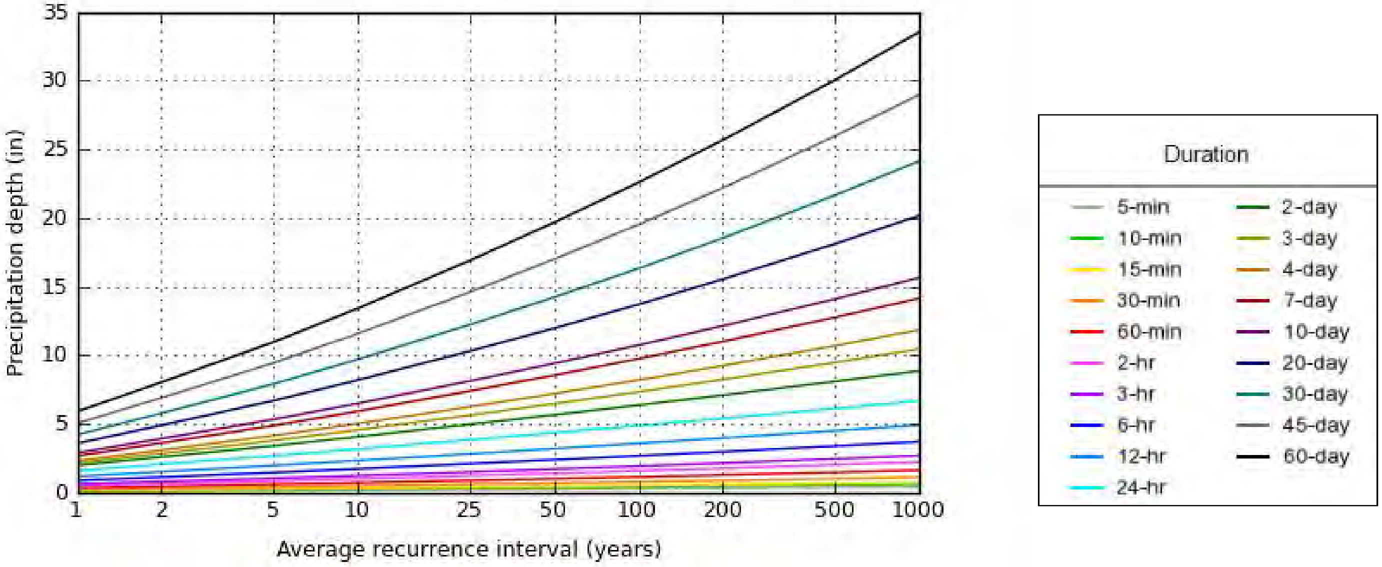
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical





NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Thu Aug 11 18:22:48 2022

Back to Top

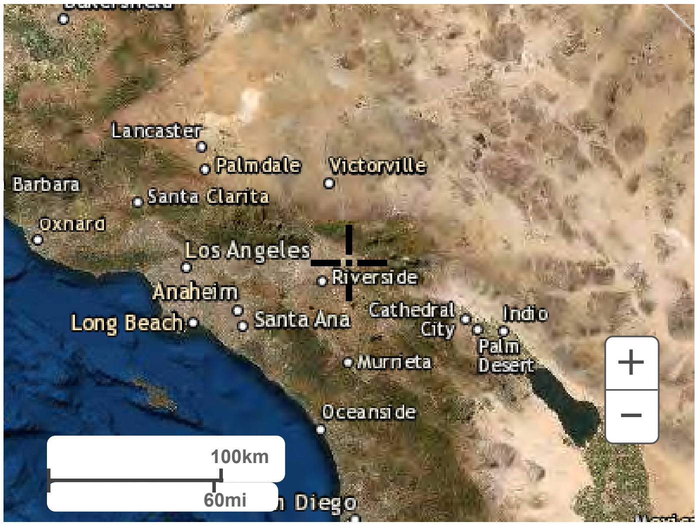
Maps & aerials

Small scale terrain

Large scale terrain

Large scale map

Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

San Bernardino County Southwestern Part, California

HbA—Hanford sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2y8tv
Elevation: 790 to 1,610 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 65 to 65 degrees F
Frost-free period: 345 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 12 inches: sandy loam
C - 12 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: No

Minor Components

Hanford, steeper slopes

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Greenfield, sandy loam

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 13, Sep 13, 2021

Soil Map—San Bernardino County Southwestern Part, California

Map Scale: 1:2,340 if printed on A portrait (8.5" x 11") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

☐ Soil Map Unit Polygons

〰 Soil Map Unit Lines

■ Soil Map Unit Points

Special Point Features

Blowout

☒ Borrow Pit

Clay Spot

◇ Closed Depression

Gravel Pit

∴ Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

◎ Miscellaneous Water

○ Perennial Water

∨ Rock Outcrop

+ Saline Spot

Sandy Spot

Severely Eroded Spot

◇ Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

△ Other

Special Line Features

Water Features

〰 Streams and Canals

Transportation

Rails

〰 Interstate Highways

〰 US Routes

〰 Major Roads

〰 Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 11, 2020—Nov 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

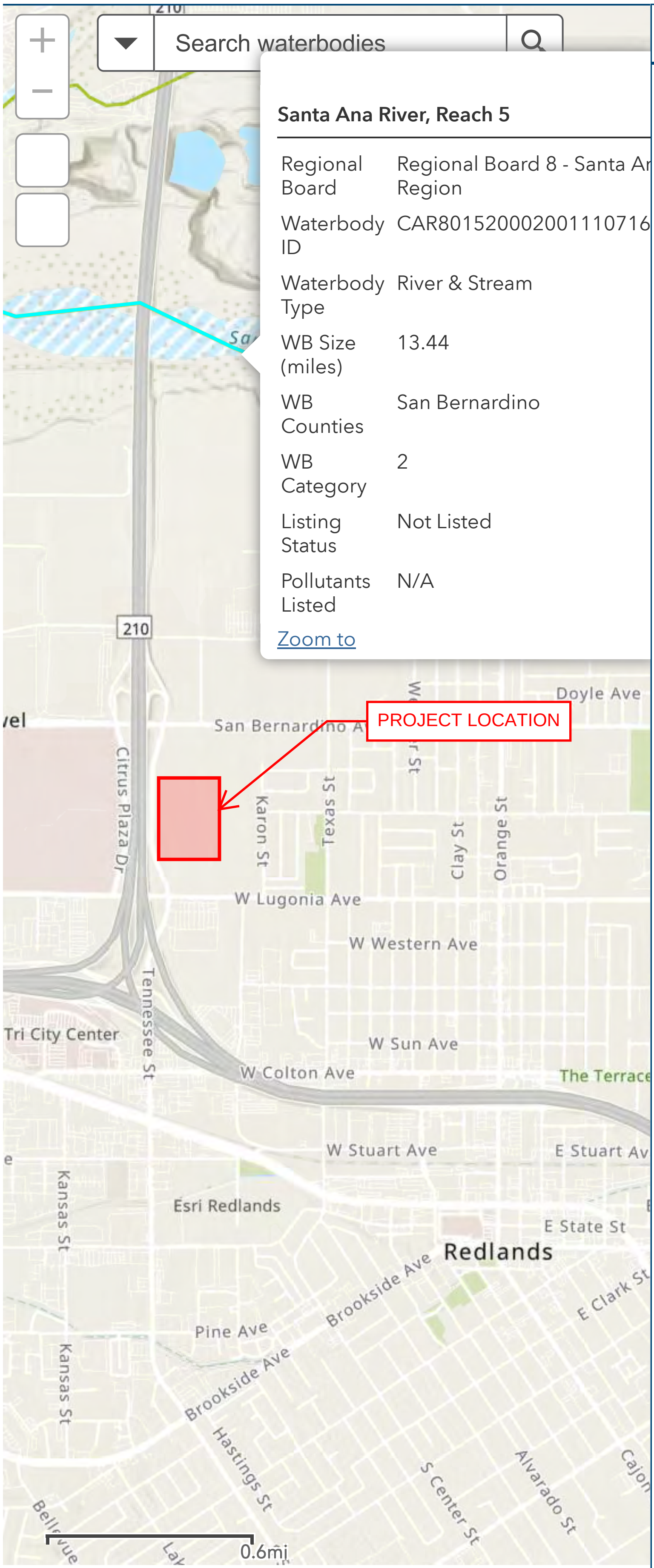
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HbA	Hanford sandy loam, 0 to 2 percent slopes	23.7	81.6%
TuB	Tujunga loamy sand, 0 to 5 percent slopes	5.3	18.4%
Totals for Area of Interest		**29.0**	**100.0%**

Section 6.4.2

HCOC and Pollutants of Concern

CALIFORNIA WATER BOARDS
State Water Resources Control Board



Search waterbodies

Santa Ana River, Reach 5

Regional Board	Regional Board 8 - Santa Ar Region
Waterbody ID	CAR801520002001110716
Waterbody Type	River & Stream
WB Size (miles)	13.44
WB Counties	San Bernardino
WB Category	2
Listing Status	Not Listed
Pollutants Listed	N/A

Zoom to

PROJECT LOCATION

Legend

2020-22 Integrated Report Lines

— Not Listed

— Listed

2020-22 Integrated Report Polygons

🟩 Listed

🟩 Not Listed

CATEGORY 5

Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report)
USEPA Final Approval: October 11, 2011

2010 SANTA ANA REGION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS*

Category 5 criteria: 1) A water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment.

* USGS HUC = US Geological Survey Hydrologic Unit Code. Calwater = State Water Resources Control Board hydrological subunit area or even smaller planning watershed.

** TMDL requirement status definitions for listed pollutants are: A= TMDL still required, B= being addressed by USEPA approved TMDL, C= being addressed by action other than a TMDL

*** Dates relate to the TMDL requirement status, so a date for A= TMDL scheduled completion date, B= Date USEPA approved TMDL, and C= Completion date for action other than a TMDL

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
8	Anaheim Bay	Bay & Harbor	80111000 / 18070201	• Dieldrin (tissue) Source Unknown *This listing was made by USEPA.*	402 Acres	2006	5A	2019
				• Nickel Source Unknown *This listing was made by USEPA.*	402 Acres	2002	5A	2019
				• PCBs (Polychlorinated biphenyls) (tissue) Source Unknown *This listing was made by USEPA.*	402 Acres	2002	5A	2019
				• Sediment Toxicity Source Unknown	402 Acres	2006	5A	2019
8	Balboa Beach	Coastal & Bay Shoreline	80114000 / 18070201	• DDT (Dichlorodiphenyltrichloroethane) Source Unknown	1.8 Miles	2006	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Dieldrin Source Unknown	1.8 Miles	2006	5A	2019
				• PCBs (Polychlorinated biphenyls) Source Unknown	1.8 Miles	2006	5A	2019
8	Big Bear Lake	Lake & Reservoir	80171000 / 18070203	• Mercury Resource Extraction	2865 Acres	1994	5A	2007
				• Noxious aquatic plants Construction/Land Development Unknown Nonpoint Source	2865 Acres	1994	5B	2007
				• Nutrients Construction/Land Development Snow skiing activities	2865 Acres	1994	5B	2007
				• PCBs (Polychlorinated biphenyls) Source Unknown	2865 Acres	2006	5A	2019
8	Bolsa Chica Channel	River & Stream	80111000 / 18070201	• Ammonia (Unionized) Other Urban Runoff Storm sewers Surface Runoff Unknown Nonpoint Source	5.1 Miles	2010	5A	2021
				• Indicator Bacteria Source Unknown	5.1 Miles	2010	5A	2021
				• pH Source Unknown	5.1 Miles	2010	5A	2021
8	Bolsa Chica State Beach	Coastal & Bay Shoreline	80111000 / 18070201	• Copper Source Unknown	2.6 Miles	2002	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	POLLUTANT POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				This listing was made by USEPA.				
				Nickel Source Unknown *This listing was made by USEPA.*	2.6 Miles	2002	5A	2019
8	Borrego Creek (from Irvine Blvd to San Diego Creek Reach 2)	River & Stream	80111000 / 18070203	Ammonia (Unionized) Other Urban Runoff Storm sewers Surface Runoff Unknown Nonpoint Source	3.2 Miles	2010	5A	2021
				Indicator Bacteria Source Unknown	3.2 Miles	2010	5A	2021
8	Buck Gully Creek	River & Stream	80111000 / 18070201	Fecal Coliform Source Unknown *Listing is downstream of Pacific Coast Highway.*	0.3 Miles	2002	5A	2019
				Total Coliform Source Unknown *Listing is downstream of Pacific Coast Highway.*	0.3 Miles	2002	5A	2019
8	Canyon Lake (Railroad Canyon Reservoir)	Lake & Reservoir	80211000 / 18070202	Nutrients Nonpoint Source	453 Acres	1998	5B	2005
				Pathogens Nonpoint Source	453 Acres	1998	5A	2006

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	POLLUTANT POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
8	Chino Creek Reach 1A (Santa Ana River R5 confl to just downstream of confl with Mill Creek)	River & Stream	80121000 / 18070203	Nutrients Agriculture Dairies	0.79 Miles	2010	5A	2019
				Pathogens Agriculture Dairies Urban Runoff/Storm Sewers	0.79 Miles	2010	5B	2007
8	Chino Creek Reach 1B (Mill Creek confl to start of concrete lined channel)	River & Stream	80121000 / 18070203	Chemical oxygen demand (COD) Source Unknown	7 Miles	2010	5A	2021
				Nutrients Agriculture	7 Miles	2010	5A	2019
				Pathogens Agriculture Dairies Urban Runoff/Storm Sewers	7 Miles	2010	5B	2007
8	Chino Creek Reach 2 (Beginning of concrete channel to confl w San Antonio Creek)	River & Stream	80121000 / 18070203	Coliform Bacteria Unknown Nonpoint Source	2.5 Miles	1998	5B	2007
				pH Source Unknown	2.5 Miles	2010	5A	2021
8	Cucamonga Creek Reach 1 (Valley Reach)	River & Stream	80121000 / 18070203	Cadmium Source Unknown	9.6 Miles	2010	5A	2021
				Coliform Bacteria Unknown Nonpoint Source	9.6 Miles	1998	5B	2007

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Copper Source Unknown	9.6 Miles	2010	5A	2021
				• Lead Source Unknown	9.6 Miles	2010	5A	2021
				• Zinc Source Unknown	9.6 Miles	2010	5A	2021
8	Cucamonga Creek Reach 2 (Mountain Reach)	River & Stream	80124020 / 18070203	• pH Source Unknown	13 Miles	2010	5A	2021
8	East Garden Grove Wintersburg Channel	River & Stream	80111000 / 18070201	• Ammonia (Unionized) Source Unknown	2.9 Miles	2010	5A	2021
8	Elsinore, Lake	Lake & Reservoir	80231000 / 18070202	• Nutrients Unknown Nonpoint Source	2431 Acres	1994	5B	2005
				• Organic Enrichment/Low Dissolved Oxygen Unknown Nonpoint Source	2431 Acres	1994	5B	2005
				• PCBs (Polychlorinated biphenyls) Source Unknown	2431 Acres	2006	5A	2019
				• Sediment Toxicity Source Unknown	2431 Acres	2010	5A	2021
				• Unknown Toxicity Source Unknown	2431 Acres	1994	5A	2007
8	Fulmor, Lake	Lake & Reservoir	80221000 / 18070202	• Pathogens Unknown Nonpoint Source	4.2 Acres	1998	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
8	Goldenstar Creek	River & Stream	80126000 / 18070203	• Indicator Bacteria Source Unknown	2.4 Miles	2010	5A	2021
8	Grout Creek	River & Stream	80171000 / 18070203	• Nutrients Unknown Nonpoint Source	3.5 Miles	1994	5A	2008
8	Huntington Beach State Park	Coastal & Bay Shoreline	80111000 / 18070201	• PCBs (Polychlorinated biphenyls) Source Unknown	5.8 Miles	2006	5A	2019
8	Huntington Harbour	Bay & Harbor	80111000 / 18070201	• Chlordane Source Unknown	221 Acres	2006	5A	2019
				• Copper Source Unknown *This listing was made by USEPA.*	221 Acres	2002	5A	2019
				• Lead Source Unknown	221 Acres	2006	5A	2019
				• Nickel Source Unknown *This listing was made by USEPA.*	221 Acres	2002	5A	2019
				• PCBs (Polychlorinated biphenyls) (tissue) Source Unknown *This listing was made by USEPA.*	221 Acres	2002	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Pathogens Urban Runoff/Storm Sewers	221 Acres	1992	5A	2019
				The data shows that the impairment is focused at the 11th Street, Anderson Street Marina, Clubhouse Marina and Sunset Aquatic Park locations. These locations exceed mainly the enterococcus standard.				
				• Sediment Toxicity Source Unknown	221 Acres	2006	5A	2019
8	Knickerbocker Creek	River & Stream	80171000 / 18070203	• Pathogens Unknown Nonpoint Source	2 Miles	2006	5A	2005
				For 2006, pathogens was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.				
8	Los Trancos Creek (Crystal Cove Creek)	River & Stream	80111000 / 18070201	• Fecal Coliform Source Unknown	0.19 Miles	2006	5A	2019
				Listing is downstream of Pacific Coast Highway.				
				• Total Coliform Source Unknown	0.19 Miles	2006	5A	2019
				Listing is downstream of Pacific Coast Highway.				
8	Lytle Creek	River & Stream	80141000 / 18070203	• Pathogens Unknown Nonpoint Source	41 Miles	2006	5A	2019
8	Mill Creek (Prado Area)	River & Stream	80121000 / 18070203	• Nutrients Agriculture Dairies	1.6 Miles	1996	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Pathogens Dairies	1.6 Miles	1996	5B	2007
				• Total Suspended Solids (TSS) Dairies	1.6 Miles	1996	5A	2019
8	Mill Creek Reach 1	River & Stream	80156000 / 18070203	• Pathogens Unknown Nonpoint Source	12 Miles	1998	5A	2019
8	Mill Creek Reach 2	River & Stream	80158000 / 18070203	• Pathogens Unknown Nonpoint Source	12 Miles	1998	5A	2019
8	Morning Canyon Creek	River & Stream	80111000 / 18070201	• Indicator Bacteria Source Unknown	1.1 Miles	2010	5A	2021
8	Mountain Home Creek	River & Stream	80158000 / 18070203	• Pathogens Unknown Nonpoint Source	3.7 Miles	1998	5A	2019
8	Mountain Home Creek, East Fork	River & Stream	80158000 / 18070203	• Pathogens Unknown Nonpoint Source	5.1 Miles	1998	5A	2019
8	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	Bay & Harbor	80114000 / 18070201	• Chlordane Source Unknown	767 Acres	2006	5A	2019
				• Copper Source Unknown	767 Acres	2006	5A	2007
				• DDT (Dichlorodiphenyltrichloroethane) Source Unknown	767 Acres	1990	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Indicator Bacteria Source Unknown	767 Acres		5B	2000
				• Nutrients Source Unknown	767 Acres	1992	5B	1999
				• PCBs (Polychlorinated biphenyls) Source Unknown	767 Acres	1990	5A	2019
				• Pesticides Agriculture Contaminated Sediments	767 Acres	1990	5B	2004
				• Sediment Toxicity Source Unknown	767 Acres	2006	5A	2019
8	Newport Bay, Upper (Ecological Reserve)	Estuary	80111000 / 18070201	• Chlordane Source Unknown	653 Acres	2006	5A	2019
				• Copper Source Unknown	653 Acres	2006	5A	2007
				• DDT (Dichlorodiphenyltrichloroethane) Source Unknown	653 Acres	2006	5A	2019
				• Indicator Bacteria Source Unknown	653 Acres		5B	2000
				• Metals Urban Runoff/Storm Sewers	653 Acres	1992	5A	2019
				• Nutrients Source Unknown	653 Acres	2006	5B	1999
				• PCBs (Polychlorinated biphenyls) Source Unknown	653 Acres	2006	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Pesticides Agriculture Unknown Nonpoint Source	653 Acres	1992	5B	2004
				• Sediment Toxicity Source Unknown	653 Acres	2006	5A	2019
				• Sedimentation/Siltation Agriculture Channel Erosion Construction/Land Development Erosion/Siltation	653 Acres	2006	5B	1999
8	Newport Slough	River & Stream	80111000 / 18070201	• Enterococcus Source Unknown	1.3 Miles	2010	5A	2021
				• Fecal Coliform Source Unknown	1.3 Miles	2010	5A	2021
				• Total Coliform Source Unknown	1.3 Miles	2010	5A	2021
8	Peters Canyon Channel	River & Stream	80111000 / 18070201	• DDT (Dichlorodiphenyltrichloroethane) Source Unknown	3 Miles	2006	5A	2019
				• Indicator Bacteria Source Unknown	3 Miles	2010	5A	2021
				• Toxaphene Source Unknown	3 Miles	2006	5A	2019
				• pH Unknown Nonpoint Source Urban Runoff/Storm Sewers	3 Miles	2010	5A	2021

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
8	Prado Park Lake	Lake & Reservoir	80121000 / 18070203	• Nutrients Nonpoint Source	90 Acres	1998	5A	2019
				• Pathogens Nonpoint Source	90 Acres	1998	5B	2007
8	Rathbone (Rathbun) Creek	River & Stream	80171000 / 18070203	• Cadmium Source Unknown	4.7 Miles	2010	5A	2021
				• Copper Source Unknown	4.7 Miles	2010	5A	2021
				• Nutrients Snow skiing activities Unknown Nonpoint Source	4.7 Miles	1994	5A	2008
				• Sedimentation/Siltation Snow skiing activities Unknown Nonpoint Source	4.7 Miles	1994	5A	2006
8	Rhine Channel	Bay & Harbor	80114000 / 18070201	• Copper Source Unknown	20 Acres	2006	5A	2019
				• Lead Source Unknown	20 Acres	2006	5A	2019
				• Mercury Source Unknown	20 Acres	2006	5A	2019
				• PCBs (Polychlorinated biphenyls) Source Unknown	20 Acres	2006	5A	2019
				• Sediment Toxicity Source Unknown	20 Acres	2006	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Zinc Source Unknown	20 Acres	2006	5A	2019
8	San Antonio Creek	River & Stream	80121000 / 18070203	• pH Source Unknown	23 Miles	2010	5A	2021
8	San Diego Creek Reach 1	River & Stream	80111000 / 18070201	• Fecal Coliform Other Urban Runoff Urban Runoff/Storm Sewers	7.8 Miles	2002	5A	2019
				• Nutrients Source Unknown	7.8 Miles	1996	5B	1999
				• Pesticides Unknown Nonpoint Source	7.8 Miles	1990	5B	2004
				• Sedimentation/Siltation Source Unknown	7.8 Miles	1996	5B	1999
				• Selenium Source Unknown	7.8 Miles	2006	5A	2007
				• Toxaphene Source Unknown	7.8 Miles	2006	5A	2019
8	San Diego Creek Reach 2	River & Stream	80111000 / 18070201	• Indicator Bacteria Source Unknown	6.3 Miles	2010	5A	2021
				• Nutrients Agriculture Groundwater Loadings Urban Runoff/Storm Sewers	6.3 Miles	1996	5B	1999

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Sedimentation/Siltation Agriculture Channel Erosion Construction/Land Development Erosion/Siltation	6.3 Miles	1996	5B	1999
				• Unknown Toxicity Unknown Nonpoint Source	6.3 Miles	1996	5B	2004
8	Santa Ana Delhi Channel	River & Stream	80111000 / 18070201	• Indicator Bacteria Source Unknown	6.8 Miles	2010	5A	2021
8	Santa Ana River Reach 6	River & Stream	80157000 / 18070203	• Cadmium Source Unknown	27 Miles	2010	5A	2021
				• Copper Source Unknown	27 Miles	2010	5A	2021
				• Lead Source Unknown	27 Miles	2010	5A	2021
8	Santa Ana River, Reach 2	River & Stream	80113000 / 18070201	• Indicator Bacteria Source Unknown	20 Miles	2010	5A	2021
8	Santa Ana River, Reach 3	River & Stream	80121000 / 18070203	• Copper Source Unknown *The impairment is during the wet season only.*	26 Miles	2010	5A	2021
				• Lead Source Unknown	26 Miles	2010	5A	2021

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
				• Pathogens Dairies	26 Miles	1994	5B	2007
8	Santa Ana River, Reach 4	River & Stream	80127000 / 18070203	• Pathogens Nonpoint Source	14 Miles	1994	5A	2019
8	Santiago Creek, Reach 4	River & Stream	80112000 / 18070203	• Salinity/TDS/Chlorides Source Unknown	9.8 Miles	1996	5A	2019
8	Seal Beach	Coastal & Bay Shoreline	80111000 / 18070201	• Enterococcus Urban Runoff/Storm Sewers *Impaired 50 yards around drain at 1st Street.*	0.53 Miles	2002	5A	2019
				• PCBs (Polychlorinated biphenyls) Source Unknown	0.53 Miles	2006	5A	2019
8	Serrano Creek	River & Stream	80111000 / 18070201	• Ammonia (Unionized) Source Unknown	7.2 Miles	2010	5A	2021
				• Indicator Bacteria Source Unknown	7.2 Miles	2010	5A	2021
				• pH Source Unknown	7.2 Miles	2010	5A	2021
8	Silverado Creek	River & Stream	80112000 / 18070203	• Pathogens Unknown Nonpoint Source	11 Miles	1998	5A	2019
				• Salinity/TDS/Chlorides Unknown Nonpoint Source	11 Miles	1996	5A	2019

REGION	WATER BODY NAME	WATER TYPE	WATERSHED CALWATER/ USGS HUC	• POLLUTANT • POTENTIAL SOURCES	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS	DATE
8	Summit Creek	River & Stream	80171000 / 18070203	• Nutrients Construction/Land Development	1.5 Miles	1998	5A	2008
8	Temescal Creek, Reach 1	River & Stream	80125000 / 18070203	• pH Source Unknown	2.3 Miles	2010	5A	2021
8	Temescal Creek, Reach 6 (Elsinore Groundwater sub basin boundary to Lake Elsinore Outlet)	River & Stream	80135000 / 18070202	• Indicator Bacteria Source Unknown	5.4 Miles	2010	5A	2021

Final California 2020 Integrated Report (303(d) List/305(b) Report)

Supporting Information

Regional Board 8 - Santa Ana Region

Water Body Name:	**Santa Ana River, Reach 5**
Water Body ID:	**CAR8015200020011107163238**
Water Body Type:	**River & Stream**

DECISION ID **73933** **Region 8**

Santa Ana River, Reach 5

Pollutant:	**Alachlor | Atrazine | Azinphos-methyl (Guthion) | Carbaryl | Carbofuran | Chlorpyrifos | DDE (Dichlorodiphenyldichloroethylene) | Diazinon | Dieldrin | Disulfoton | Malathion | Methyl Parathion | Molinate | Simazine | Thiobencarb/Bolero**
Final Listing Decision:	**Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	Do Not List on 303(d) list (TMDL required list)(2016)
Revision Status	Original
Impairment from Pollutant or Pollution:	Pollutant

Regional Board Conclusion:

There was no new data considered in the 2014 Listing Cycle, this previously made decision will carryover. The following description applies to an earlier Listing Cycle.

This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One (1) line of evidence is available in the administrative record to assess this pollutant. None of the samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. None of eight (8) samples exceeded the US EPA National Recommended Ambient Water Quality Criteria Aquatic Life Protection Instantaneous Maximum

and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Decision Recommendation: This is a decision previously approved by the State Water Resources Control Board and the USEPA. No new data were assessed by the Regional Board for the current. The decision has not changed.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 73933, Multiple Pollutants **Region 8**

Santa Ana River, Reach 5

LOE ID: 7837

Pollutant: Alachlor | Atrazine | Azinphos-methyl (Guthion) | Carbaryl | Carbofuran | Chlorpyrifos | DDE (Dichlorodiphenyldichloroethylene) | Diazinon | Dieldrin | Disulfoton | Malathion | Methyl Parathion | Molinate | Simazine | Thiobencarb/Bolero
LOE Subgroup: Pollutant-Water
Matrix: Water
Fraction: None

Beneficial Use: Warm Freshwater Habitat

Number of Samples: 8
Number of Exceedances: 0

Data and Information Type: PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality: Of the eight samples collected none exceeded the guidelines.
Data Reference: Concentrations of Pesticides in the waterbodies in the Santa Ana Region

SWAMP Data: Non-SWAMP

Water Quality Objective/Criterion: Santa Ana Region¿s Basin Plan Narrative Objective: The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses.
Objective/Criterion Reference: Water Quality Control Plan for the Santa Ana River Basin

Evaluation Guideline: USEPA National Recommended Ambient Water Quality Criteria Aquatic Life Protection Instantaneous Max - alachlor: 76 ppb, atrazine: 1 ppb, azinphos methyl: 0.01 ppb, carbaryl: 0.02 ppb, disulfoton: 0.05 ppb, simazine: 10 ppb, carbofuran: 0.5 ppb. California Department of Fish and Game: chlropyrifos: 0.014 ppb, parathion: 0.08 ppb, permethrin: 0.03 ppb, diazinon: 0.08 ppb. CTR Freshwater aquatic life protection Cont Conc 4 day ave - dieldrin: 0.056 ppb, DDE: 0.001 ppb, Guideline Reference: National recommended water quality criteria: 2002. EPA-822-R-02-047 Washington, D.C. USEPA

Guideline Reference: Compilation of Water Quality Goals

Guideline Reference: Water quality criteria for diazinon and chlorpyrifos. Administrative Report 00-3. Rancho Cordova, CA: Pesticide Investigations Unit, Office of Spills and Response. CA Department of Fish and Game

Guideline Reference: Water Quality Standards 2000. Establishment of numeric criteria for priority toxic pollutants for the State of California: Rules and regulations. Federal Register Vol. 65, No. 97. Washington, D.C.: Environmental Protection Agency

Spatial Representation: Santa Ana River Near Mentone California_USGS NAWQA site

Temporal Representation: 2/20/01, 3/22/01, 4/16/01, 5/17/01, 6/14/01, 7/10/01, 8/13/01, 9/13/01.

Environmental Conditions:

QAPP Information: The data's quality is deemed appropriate because it came from the Department of Pesticide Regulation.

QAPP Information Reference(s):

DECISION ID 94268 Region 8

Santa Ana River, Reach 5

Pollutant: **Chloride**

Final Listing Decision: **Do Not List on 303(d) list (TMDL required list)**

Last Listing Cycle's Final Listing Decision: Do Not List on 303(d) list (TMDL required list)(2016)

Revision Status Original

Impairment from Pollutant or Pollution: Pollutant

Regional Board Conclusion: This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1of the Listing Policy. Under section 3.1 a single line of evidence are necessary to assess listing status.

One (1) line of evidence is available in the administrative record to assess this pollutant. One (1) of the one sample exceed the OBJECTIVE.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. One (1) of one sample exceeded the OBJECTIVE and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples is needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to SECTION 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Decision After review of the available data and information, RWQCB staff concludes that the

Recommendation: water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 94268, Chloride **Region 8**

Santa Ana River, Reach 5

LOE ID: 82359

Pollutant: Chloride
LOE Subgroup: Pollutant-Water
Matrix: Water
Fraction: Total Dissolved

Beneficial Use: Warm Freshwater Habitat

Number of Samples: 1
Number of Exceedances: 1

Data and Information Type: PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality: Numeric data generated from 1 sample collected had 1 exceedence of the site-specific objective.
Data Reference: Data for Various Pollutants in the Streams of Region 8, 2009.

SWAMP Data: Non-SWAMP

Water Quality Objective/Criterion: The site-pecific objective for Chloride at Santa Ana River Reach 5 according to table 4-1 of the Santa Ana Basin plan is 20 mg/L.
Objective/Criterion Reference: Water Quality Control Plan, Santa Ana River Basin

Evaluation Guideline:
Guideline Reference:

Spatial Representation: Data was collected from the SMCR8_572 station.
Temporal Representation: Data was collected on the following dates: 6/30/2009
Environmental Conditions:
QAPP Information: The data was analyzed by CSULB and follows California's Surface Water Ambient Monitoring Program protocols. No QAPP provided.

QAPP Information Reference(s):

DECISION ID **95161** **Region 8**

Santa Ana River, Reach 5

Pollutant: **Sulfates**
Final Listing Decision: **Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision: Do Not List on 303(d) list (TMDL required list)(2016)
Revision Status Original
Impairment from Pollutant or Pollution: Pollutant

Regional Board Conclusion:

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One (1) lines of evidence is available in the administrative record to assess this pollutant. One (1) of the one (1) sample exceeds the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. One (1) of the one (1) sample exceeds the water quality objective and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples is needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Decision Recommendation:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 95161, Sulfates **Region 8**

Santa Ana River, Reach 5

LOE ID: 82360

Pollutant: Sulfates
LOE Subgroup: Pollutant-Water

Matrix: Water
Fraction: Total Dissolved

Beneficial Use: Warm Freshwater Habitat

Number of Samples: 1
Number of Exceedances: 1

Data and Information Type: PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality: Numeric data generated from 1 sample collected had 1 exceedence of the site-specific objective.
Data Reference: Data for Various Pollutants in the Streams of Region 8, 2009.

SWAMP Data: Non-SWAMP

Water Quality Objective/Criterion: The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors. The site-specific objective for Sulfates at Santa Ana River, Reach 5 according to table 4-1 of the Santa Ana Basin plan is 60 mg/L.
Objective/Criterion Reference: Water Quality Control Plan, Santa Ana River Basin

Evaluation Guideline:
Guideline Reference:

Spatial Representation: Data was collected from the SMCR8_572 station.
Temporal Representation: Data was collected on the following dates: 6/30/2009.
Environmental Conditions:
QAPP Information: The data was analyzed by CSULB and follows California's Surface Water Ambient Monitoring Program protocols. No QAPP provided.
QAPP Information Reference(s):

DECISION ID 96158 Region 8

Santa Ana River, Reach 5

Pollutant: **Toxicity**
Final Listing Decision: **Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision: Do Not List on 303(d) list (TMDL required list)(2016)
Revision Status Original
Impairment from Pollutant or Pollution: Pollutant

Regional Board Conclusion: This pollutant is being considered for placement on the CWA section 303(d) List under section 3.6 of the Listing Policy. Under section 3.6 at least one line of evidence is necessary to assess listing status for toxicity, and waters may be placed on the CWA section 303(d) List for toxicity alone.

One line of evidence is available in the administrative record to assess this pollutant. Zero of the 1 samples exhibit water toxicity.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

	This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. Zero of the 1 samples exhibit water toxicity and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples is needed to determine if a beneficial use is fully supported using table 3.1. 4. Pursuant to SECTION 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
Regional Board Decision Recommendation:	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
State Board Review of Regional Board Conclusion and Recommendation:	
State Board Decision Recommendation:	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

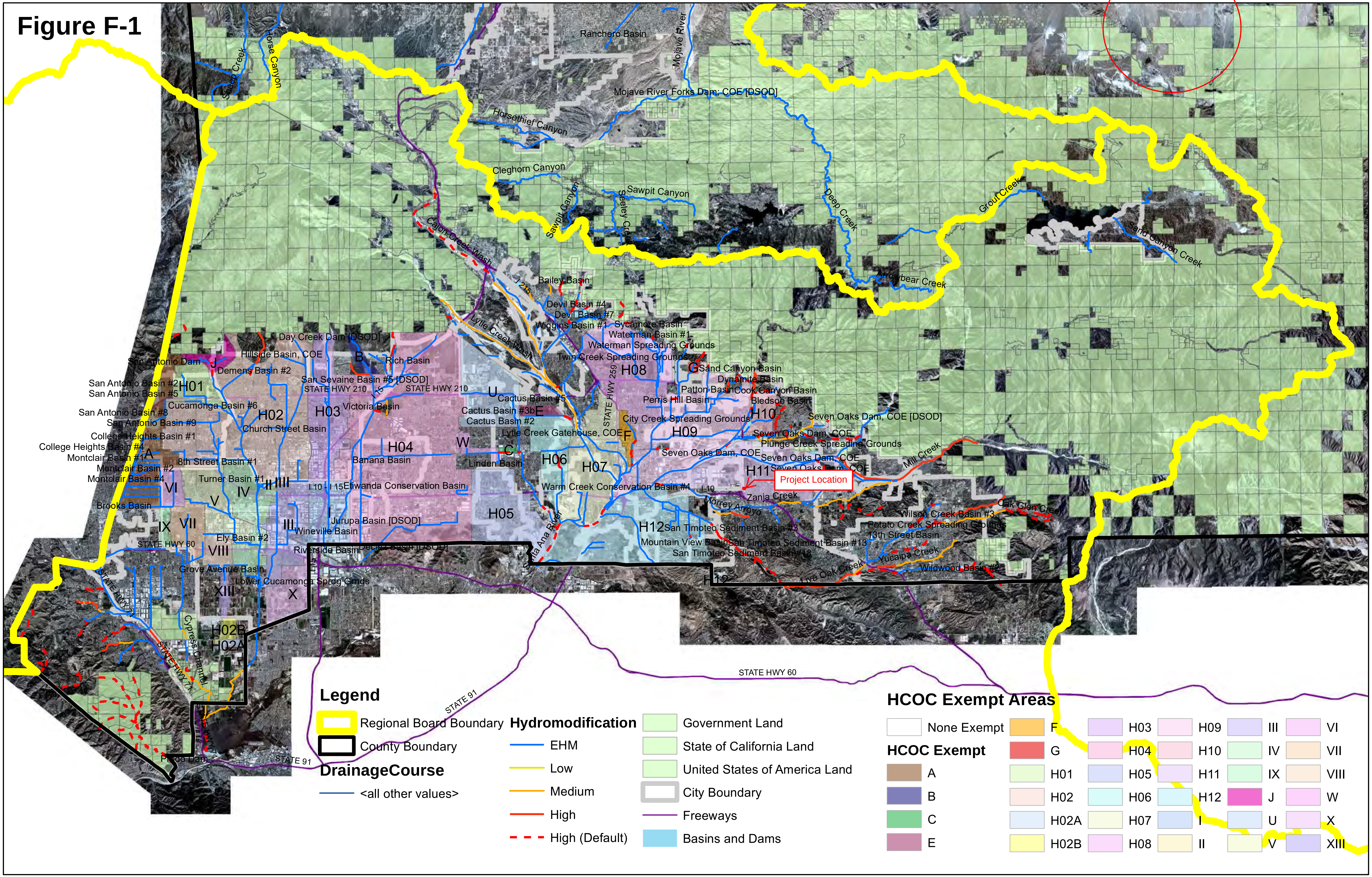
Line of Evidence (LOE) for Decision ID 96158, Toxicity **Region 8**

Santa Ana River, Reach 5

LOE ID:	82361
Pollutant:	Toxicity
LOE Subgroup:	Toxicity
Matrix:	Water
Fraction:	None
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	TOXICITY TESTING
Data Used to Assess Water Quality:	One sample was collected to evaluate water toxicity. The one sample did not exhibit significant toxicity. The toxicity tests included survival and reproduction of Ceriodaphnia dubia.
Data Reference:	Data for Various Pollutants in the Streams of Region 8, 2009.
SWAMP Data:	Non-SWAMP
Water Quality Objective/Criterion:	Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health. Region 8 Basin Plan.

Objective/Criterion Reference:	Water Quality Control Plan, Santa Ana River Basin
Evaluation Guideline:	Toxicity is defined as a statistically significant effect in the sample exposure compared to the control using EPA-recommended hypothesis testing. The t-test is used to determine if there is a statistically significant decrease in organism response in the sample as compared to the control.
Guideline Reference:	Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. Office of Water, U.S. Environmental Protection Agency. Washington, D.C. EPA-821-R-02-013
Spatial Representation:	The samples were collected in Santa Ana River, Reach 5 at this site SMCR8_572.
Temporal Representation:	The samples were collected in June 2009.
Environmental Conditions:	
QAPP Information:	The data was analyzed by CSULB and follows California's Surface Water Ambient Monitoring Program protocols. No QAPP provided.
QAPP Information Reference(s):	

Figure F-1


Ranchero Basin
Mojave River
Horse Canyon
Sheep Creek
Mojave River Forks Dam: COE [DSOD]
Horsethief Canyon
Cleghorn Canyon
Sawpit Canyon
Seeley Creek
Deep Creek
Grout Creek
Sand Canyon Creek
Holcomb Creek
Cajon Creek Wash
Bailey Basin
Devil Basin #4
Devil Basin #7
Wiggins Basin #1
Sycamore Basin
Waterman Basin #1
Waterman Spreading Grounds
Twin Creek Spreading Grounds
Lytle Creek Wash
Day Creek Dam [DSOD]
Hillside Basin, COE
Rich Basin
San Antonio Dam
Demens Basin #2
San Sevaine Basin #5 [DSOD]
STATE HWY 210
San Antonio Basin #2
San Antonio Basin #5
H01
Cucamonga Basin #6
H02
H03
Victoria Basin
Cactus Basin #5
Cactus Basin #3b
Cactus Basin #2
San Antonio Basin #8
San Antonio Basin #9
Church Street Basin
College Heights Basin #1
College Heights Basin #4
Montclair Basin #1
Montclair Basin #2
Montclair Basin #4
8th Street Basin #1
H04
Banana Basin
W
Linden Basin
Lytle Creek Gatehouse, COE
H06
H07
Turner Basin #1
II
IIII
I 10
I 15
Etiwanda Conservation Basin
Warm Creek Conservation Basin #4
VI
V
IV
Brooks Basin
IX
VII
III
Jurupa Basin [DSOD]
Wineville Basin
H05
Santa Ana River
STATE HWY 60
Ely Basin #2
VIII
Riverside Basin
Declez Basin [DSOD]
Grove Avenue Basin
Lower Cucamonga Sprdg Grnds
XIII
X
STATE HWY 71
Cypress Channel
H02B
H02A
Prado Dam
STATE 91
STATE HWY 60
H08
STATE HWY 259
G
Sand Canyon Basin
Dynamite Basin
Patton Basin
Cook Canyon Basin
Perris Hill Basin
Bledsoe Basin
City Creek Spreading Grounds
H10
H09
Seven Oaks Dam, COE [DSOD]
Seven Oaks Dam, COE
Plunge Creek Spreading Grounds
Mill Creek
H11
Project Location
Zanja Creek
Morrey Arroyo
Oak Glen Creek
Wilson Creek Basin #3
Potato Creek Spreading Grounds
13th Street Basin
H12
San Timoteo Sediment Basin #3
Mountain View Basin
San Timoteo Sediment Basin #13
San Timoteo Sediment Basin #18
Yucaipa Creek
Wildwood Basin #2
Live Oak Creek
A
B
C
E
F
J
U
Legend
Regional Board Boundary
County Boundary
DrainageCourse
<all other values>
Hydromodification
EHM
Low
Medium
High
High (Default)
Government Land
State of California Land
United States of America Land
City Boundary
Freeways
Basins and Dams
HCOC Exempt Areas
None Exempt
HCOC Exempt
A
B
C
E
F
G
H01
H02
H02A
H02B
H03
H04
H05
H06
H07
H08
H09
H10
H11
H12
I
II
III
IV
IX
U
V
VI
VII
VIII
J
W
X
XIII

Hydromodification

A.1 Hydrologic Conditions of Concern (HCOC) Analysis

HCOC Exemption:

1. **Sump Condition:** All downstream conveyance channel to an adequate sump (for example, Prado Dam, Santa Ana River, or other Lake, Reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

2. **Pre = Post**: The runoff flow rate, volume and velocity for the post-development condition of the Priority Development Project do not exceed the pre-development (i.e, naturally occurring condition for the 2-year, 24-hour rainfall event utilizing latest San Bernardino County Hydrology Manual.

    a. Submit a substantiated hydrologic analysis to justify your request.

3. **Diversion to Storage Area**: The drainage areas that divert to water storage areas which are considered as control/release point and utilized for water conservation.

    a. See Appendix F for the HCOC Exemption Map and the on-line Watershed Geodatabase (http://sbcounty.permitrack.com/wap) for reference.

4. **Less than One Acre**: The Priority Development Project disturbs less than one acre. The Co-permittee has the discretion to require a Project Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The project disturbs less than one acre and is not part of a common plan of development.

5. **Built Out Area**: The contributing watershed area to which the project discharges has a developed area percentage greater than 90 percent.

    a. See Appendix F for the HCOC Exemption Map and the on-line Watershed Geodatabase (http://sbcounty.permitrack.com/wap) for reference.

Summary of HCOC Exempted Area

	HCOC Exemption reasoning				
	1	2	3	4	5
Area					
A			X		X
B			X		
C					X
E			X		
F					X
G			X		X
H01	X		X		
H02	X		X		
H02A	X		X		
H02B			X		
H03			X		
H04	X		X		
H05	X				
H06			X		
H07	X				
H08	X		X		
H09	X				
H10	X		X		
H11	X		X		
H12	X				
J			X		
U			X		
W			X		
I			X		
II			X		
III					X
IV			X		X
V			X*		
VI					X
VII					X
VIII			X		
IX					X
X			X		
XIII			X		

*Detention/Conservation Basin

Section 6.4.3

Geotechnical Report

PETRA
GEOSCIENCES INC.

SOLID AS A ROCK

DESIGN-LEVEL GEOTECHNICAL EVALUATION RESIDENTIAL PORTION OF THE PROPOSED LPA REDLANDS PROJECT 16-ACRES± LOCATED AT THE SE CORNER OF TENNESSEE STREET AND FUTURE PENNSYLVANIA AVENUE CITY OF REDLANDS, SAN BERNARDINO COUNTY, CALIFORNIA

DIVERSIFIED PACIFIC COMMUNITIES

February 15, 2022
J.N. 21-458

ENGINEERS + GEOLOGISTS + ENVIRONMENTAL SCIENTISTS

PETRA GEOSCIENCES INC.
SOLID AS A ROCK

ENGINEERS + GEOLOGISTS + ENVIRONMENTAL SCIENTISTS

February 15, 2022
J.N. 21-458

DIVERSIFIED PACIFIC COMMUNITIES
10621 Civic Center Drive
Rancho Cucamonga, California 91730

Attention: Mr. Nolan C. Leggio

Subject: Design-Level Geotechnical Evaluation, Residential Portion of the Proposed *LPA Redlands Project,* 16-Acre± Site Located at the SEC of Tennessee Street and Future Pennsylvania Avenue, City of Redlands, San Bernardino County, California

Dear Mr. Leggio:

Petra Geosciences, Inc. (Petra) is submitting herewith our design level geotechnical evaluation report for the residential portion of the proposed LPA Redlands project located at the southeast corner of Tennessee Street and future Pennsylvania Avenue in the city of Redlands, San Bernardino County, California. This evaluation does not include the 8-acre± commercial portion of the LPA Redlands project located to the south at the northeast corner of Tennessee Street and W. Lugonia Avenue. This work was performed in general accordance with the scope of work outlined in our Revised Proposal No. 21-458P dated December 21, 2021. This report presents the results of our current field explorations, infiltration evaluation, the requirements of the 2019 California Building Code (CBC) and our engineering judgment, opinions, conclusions, and recommendations pertaining to geotechnical design aspects for the proposed development.

It has been a pleasure to be of service to you on this project. Should you have questions regarding the contents of this report or should you require additional information, please contact this office.

Respectfully submitted,

PETRA GEOSCIENCES, INC.

Edward Lump, CEG
Associate Geologist

Grayson R. Walker, GE
Principal Engineer

TABLE OF CONTENTS

TABLE OF CONTENTS

DESIGN-LEVEL GEOTECHNICAL EVALUATION
RESIDENTIAL PORTION OF THE PROPOSED LPA REDLANDS PROJECT
16-ACRES± LOCATED AT THE SOUTHEAST CORNER OF TENNESSEE STREET AND FUTURE PENNSYLVANIA AVENUE
CITY OF REDLANDS, SAN BERNARDINO COUNTY, CALIFORNIA

INTRODUCTION

Petra Geosciences, Inc. (Petra) is presenting herein the results of our design level geotechnical evaluation of the subject 16±-acre undeveloped property. Our geotechnical evaluation included a review of regional geological maps published by the California Geological Survey (CGS) and other sources that encompass the site, including review of limited historic aerial photos (EDR, 1938-2016) and online imagery (Google Earth Imagery, 1994-2021) in proximity of the project site. The current phase of work included the drilling of four exploratory borings and three infiltration test borings within the proposed residential portion of the LPA Redlands project. No subsurface exploration was conducted in the proposed commercial portion of the project located directly south of the subject site.

PURPOSE AND SCOPE OF SERVICES

The purposes of this geotechnical evaluation were to obtain information on the subsurface geologic and soil conditions within the project area, assess infiltration rates (locations and depths chosen by the design civil engineer), evaluate the field and laboratory data, and provide conclusions and recommendations for design and construction of the proposed building and other site improvements as influenced by the subsurface conditions.

The scope of our recent evaluation consisted of the following:

- Reconnaissance of the site to evaluate existing conditions, mark-out borings for DigAlert notification, and contact DigAlert.
- Review of available published and unpublished data and maps concerning geologic and soil conditions within and adjacent to the site, which could have an impact on the proposed improvements.
- Excavation of a total of seven exploratory borings, utilizing a truck-mounted hollow-stem auger drill rig, to evaluate the stratigraphy of the subsurface soils and collect representative undisturbed and bulk samples for laboratory testing. Three of the borings were subsequently utilized as percolation test borings to measure infiltration rates.
- Log and visually classify soil materials encountered in the borings in accordance with the Unified Soil Classification System.
- Conduct laboratory testing of representative samples (bulk and undisturbed) obtained from the hollow-stem auger borings to determine their engineering properties.

- Perform engineering and geologic analysis of the data with respect to the proposed improvements.
- Preparation of this report, including pertinent figures and appendices, presenting the results of our evaluation and recommendations for the proposed improvements in general conformance with the requirements of the 2019 California Building Code (CBC), as well as in accordance with applicable local jurisdictional requirements.

SITE LOCATION

The subject property, designated as the residential portion of the LPA Redlands project, is located north of W. Lugonia Avenue at the southeast corner of S. Tennessee Street, and the future extension of Pennsylvania Avenue in the city of Redlands, San Bernardino County, California. Overall, the *LPA Redlands Project* consists of approximately 16 acres of residential development on the north and approximately 8 acres of commercial development on the south. No physical markers designated the site boundary on the north, east and south. Vacant agricultural land is situated to the north, east and south. Tennessee Street bounds the subject property on the west, with a drainage channel and the 210 Freeway beyond. A site location map is included as Figure 1.

SITE DESCRIPTION

The subject site is comprised of vacant land within a portion of contiguous Assessor Parcel Numbers (APN's) 0167-171-07, -11, -12, and -14. The site slopes gently to the west with existing elevations on the order of approximately 1,280± feet above mean sea level (msl) along the west portion of the site, to 1,290± feet above msl along the east portion of the site.

Vehicular access to the subject property is via S. Tennessee Street, which is an improved road along the western boundary of the site. Secondary access is via a dirt road (future Pennsylvania Avenue) along the northern boundary of the subject property, with vacant land beyond. South of the subject property is vacant land comprising the commercial portion of the LPA Redlands Project (not a part of this assessment) with W. Lugonia Avenue beyond. To the east is a dirt road, with vacant land and a residential tract beyond. The surface of the subject property is slightly hummocky, consisting of loose silty sands and sands with a sparse growth of weeds. Minor amounts of exposed cobbles and concrete fragments were observed.

Based on aerial photographic information obtained (DER, 2021), the site appears to have been used for agricultural purposes use since at least 1938 until sometime between/during 1994 and 2002. Between 1975 and 1985, the orchards were removed from the subject property and replaced with irrigated crops. Between 1994 and 2002, the subject site appeared to be fallow land and has remained vacant land to present day.

Historical information reviewed during this assessment includes aerial photographs dating back to 1938 and USGS topographical maps dating back to 1899 (EDR, 2021).

PROPOSED DEVELOPMENT

Petra was provided with a Conceptual Land Use-Site Plan by AO Architects (plot-dated October 25, 2021) depicting 14, three-story apartment buildings, leasing/club/fitness center, pool and cabana area, and interior drive isles and parking areas. Access to the apartment complex area is proposed via Tennessee Street and future Pennsylvania Avenue. A boundary is proposed between the north residential area and the south commercial area of the project. Based upon percolation test borings request by the design civil engineer, some sort of near surface or subsurface water quality structures are proposed for the western portion of subject residential development.

It is expected that the buildings will be of wood-frame construction supported on conventional slab-on-ground foundations. Appurtenant structures will likely include paved access streets and driveways, concrete patio-type slabs and walkways, masonry block walls, surface and subsurface drainage control devices, landscaped areas, and above- and below-ground utilities Given the relatively level topography within the proposed development, earthwork within the site is generally expected to entail minor cuts and fills up to approximately 5 feet, except for water quality structures. It should be noted, however, that the ultimate amount of fill required throughout the project will be greater than the calculated raw yardage, due to the required remedial grading (i.e., removal and re-compaction of existing unsuitable surficial soils).

Literature Review

Petra was not provided geotechnical reports for review pertaining to the subject property by the client. Petra researched and reviewed available published and unpublished geologic data pertaining to regional geology, groundwater, faulting and geologic hazards that may affect the site. The results of this review are discussed under the Findings and Conclusions sections presented in this report.

Subsurface Exploration

A subsurface exploration program was performed by an engineering geologist from Petra on January 6, 2022. The exploration involved the drilling of four exploratory borings (B-1 through B-4) to a maximum depth of approximately 51.5 feet below existing grade (bgs). Additionally, three test borings (P-1 through P-3), drilled to a maximum depth of approximately 15 or 25 feet bgs, were sampled and logged prior to conversation to percolation test holes. Earth materials encountered within the seven exploratory borings were classified and logged by a professional geologist in accordance with the visual-manual procedures of the Unified Soil Classification System. The approximate locations of the exploratory borings are shown on Figure 2 (Field Exploration Map). The boring logs are presented in Appendix A.

Disturbed bulk samples and relatively undisturbed ring samples of soil materials were collected for classification, laboratory testing and engineering analyses. Undisturbed samples were obtained using a 3-inch outside diameter modified California split-spoon soil sampler lined with brass rings. The soil sampler was driven with successive 30-inch drops of a free-fall, 140-pound automatic trip hammer. The central portions of the driven-core samples were placed in sealed containers and transported to our laboratory for testing. The number of blows required to drive the split-spoon sampler 18 inches into the soil were recorded for each 6-inch driving increment; however, the number of blows required to drive the sampler for the final 12 inches was noted in the boring logs as *Blows per Foot*.

Standard Penetration Tests (SPT) were also performed at selected depth intervals in accordance with ASTM D 1586. This method consists of mechanically driving an unlined, 2.5-inch outside diameter (OD) standard split-barrel sampler 18 inches into the soil with successive 30-inch drops of the 140-pound automatic trip hammer. Blow counts for each 6-inch driving increment were recorded on the exploration logs. The number of blows required to drive the standard split-spoon sampler for the last 12 of the 18 inches was identified as the uncorrected standard penetration resistance (N). Disturbed soil samples from the unlined standard split-spoon samplers were placed in sealed plastic bags and transported to our laboratory for testing.

Laboratory Testing

In-situ dry density and moisture content, maximum dry density and optimum moisture content, expansion index, consolidation and collapse potential, corrosivity (sulfate and chloride content, pH, and resistivity), and shear strength for selected samples of onsite soils materials was conducted. A description of laboratory test methods and summaries of the laboratory test data are presented in Appendix B. The in-site dry density and moisture content results are presented on the boring logs (Appendix A).

FINDINGS

Regional Geologic Setting

The site lies within the northern portion of the Peninsular Ranges Geomorphic Province (CGS, 2002). The Peninsular Range Province extends from the tip of Baja California north to the Transverse Ranges Geomorphic Province and is characterized by northwest trending mountain ranges separated by subparallel fault zones. The San Bernardino Mountains, located on the north side of the valley, provides the boundary between the Peninsula Range Province and the Transverse Ranges Province. In general, the province is underlain primarily of plutonic rock of the Southern California Batholith. These rocks formed from the cooling of molten magma deep within the earth's crust. Intense heat associated with the plutonic magma metamorphosed the ancient sedimentary rocks into which the plutons intruded. The Peninsular Range Geomorphic Province is generally characterized by alluviated basins and elevated erosion surfaces.

More specifically, the subject site is mapped as middle-Holocene Young Axial-Valley Deposits, Unit 3 (Matti, Morton, Cox, and Kendrick 2003). These soils are described as unconsolidated to moderately consolidated silt, sand, and gravel deposits. Where encountered in borings on the subject property, alluvial soils consisted of moist to slightly moist, loose to medium dense, silty fine- to course-grain sand. No groundwater was encountered to the maximum depth of our borings (51.5 feet).

The site does not lie within an Alquist-Priolo Earthquake Fault Zone (Bryant and Hart, 2007) or a San Bernardino County Geologic Hazards Zone (San Bernardino County, 2009).

Local Geology and Subsurface Soil Conditions

Earth units encountered onsite consisted of disturbed topsoil and young alluvial deposits. The site is covered by approximately 2 to 3 feet of topsoil and disturbed alluvium generally consisting of loose, moist, silty sands. Below the topsoil, alluvial deposits were observed to consist predominately of olive gray/gray brown/gray, moist to slightly moist, loose to medium dense, silty fine- to medium-grain sand. Interbeds of coarse-grain sand and gravels were observed. Moist surficial soils were likely due to recent precipitation. Generally, the upper four to five feet of soils encountered within the subject property were loose. Logs of exploratory borings are presented in Appendix A and boring locations are presented on the Geotechnical Map (Figure 2).

Groundwater

The site is located within the San Bernardino Sub-Basin of the Bunker Hill (8-002.06) Groundwater Basin. The site and vicinity are located within the upper Santa Ana Valley Basin of the South Coast Hydrologic Region (California Department of Water Resources, [CDWR], 2003). In general, groundwater depth varies within the area and, though flow direction specifically beneath the subject property is unknown, it is reasonable to estimate flow to follow regional topography from east to the west–southwest. The high groundwater depth within the site vicinity, between 1973 and 1983, is reported to be approximately 95 feet below the ground surface (Matti and Carson, 1991). Groundwater was not encountered in any of our geotechnical borings drilled to a maximum depth of 51.5 feet bgs.

Groundwater depths in wells located in the vicinity of the subject property were reviewed on the California Department of Water Resources website (DWR, 2021). No public or municipal wells were mapped within the property. The closest well in alluvial areas is located east of the property in Texonia Park on Texas Street and reports depths greater than 170 feet since January 2012. The memorandum documenting this inquiry is included in Appendix B.

Data from groundwater measured in Spring 2021 (Tetra Tech, 2021) reported a depth of approximately 194 feet below the ground surface in two monitoring wells approximately 1,700 feet east of the subject property.

Groundwater in the central portion of the Bunker Hill Groundwater Basin occurs under unconfined water table conditions; however, groundwater along the western portion occurs under confined conditions (Tetra Tech, 2015). The basin contains three hydro stratigraphic units defined as containing productive water-bearing units. In the central basin (where the subject site is located), groundwater flow within the middle aquifer is in a west to southwesterly direction towards Colton Narrows. The Basin boundary between the Bunker Hill and Colton-Rialto is the San Jacinto Fault. Colton Narrows is an alluvium- and gouge-filled notch within the fault zone that allows surface water and shallow groundwater to exit the Bunker Hill Basin and enter the Colton-Rialto Basin. Deeper groundwater is inhibited from flowing through the fault zone.

Faulting

Based on our review of the referenced geologic maps and literature, no active faults are known to project through the property. Furthermore, the site does not lie within the boundaries of an “Earthquake Fault Zone” as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act (CGS, 2018). The Alquist-Priolo Earthquake Fault Zoning Act (AP Act) defines an *active fault* as one that “has had surface displacement within Holocene time (about the last 11,000 years).” The main objective of the AP Act is to prevent the construction of dwellings on top of active faults that could displace the ground surface resulting in loss of life and property.

However, it should be noted that according to the USGS Unified Hazard Tool website and/or 2010 CGS Fault Activity Map of California, the San Bernardino segment of the San Jacinto Fault zone, located approximately 6.75 kilometers (4.2± miles) southwest of the site, would probably generate the most severe site ground motions and, therefore, is the majority contributor to the deterministic minimum component of the ground motion models. The subject site is located at less than 5 miles (8 km) from the surface projection of this fault system, which is capable of producing a magnitude 8.02 or larger events with a slip rate along the fault greater than 0.04 inch per year. As such, the site should be considered as a **Near-Fault Site** in accordance with ASCE 7-16, Section 11.4.1.

Seismic Design Parameters

Earthquake loads on earthen structures and buildings are a function of ground acceleration which may be determined from the site-specific ground motion analysis. Alternatively, a design response spectrum can be developed for certain sites based on the code guidelines. To provide the design team with the parameters necessary to construct the design acceleration response spectrum for this project, we used two computer applications. Specifically, the first computer application, which was jointly developed by Structural Engineering Association of California (SEAOC) and California's Office of Statewide Health Planning and Development (OSHPD), the SEA/OSHPD Seismic Design Maps Tool website, https://seismicmaps.org, is used to calculate the ground motion parameters. The second computer application, the United Stated Geological Survey (USGS) Unified Hazard Tool website, https://earthquake.usgs.gov/hazards/interactive/, is used to estimate the earthquake magnitude and the distance to surface projection of the fault.

To run the above computer applications, site latitude and longitude, seismic risk category and knowledge of site class are required. The site class definition depends on the direct measurement and the ASCE 7-16 recommended procedure for calculating average small-strain shear wave velocity, Vs30, within the upper 30 meters (approximately 100 feet) of site soils.

A seismic risk category of II was assigned to the proposed buildings in accordance with 2019 CBC, Table 1604.5. No shear wave velocity measurement was performed at the site, however, the subsurface materials at the site appears to exhibit the characteristics of stiff soils condition for Site Class D designation. Therefore, an average shear wave velocity of 259 meters per second (850 feet per second) for the upper 100 feet was assigned to the site based on engineering judgment and geophysical experience. As such, in accordance with ASCE 7-16, Table 20.3-1, Site Class D (D- Default as per SEA/OSHPD software) has been assigned to the subject site.

The following table, Table 1, provides parameters required to construct the seismic response coefficient, C_s, curve based on ASCE 7-16, Article 12.8 guidelines. A printout of the computer output is attached in Appendix C.

TABLE 1

Seismic Design Parameters

Ground Motion Parameters	Specific Reference	Parameter Value	Unit
Site Latitude (North)	-	34.0726	°
Site Longitude (West)	-	-117. 1987	°
Site Class Definition	Section 1613.2.2 (1), Chapter 20 (2)	D-Default(4)	-
Assumed Seismic Risk Category	Table 1604.5 (1)	II	-
M_w - Earthquake Magnitude	USGS Unified Hazard Tool (3)	8.02 (3)	-
R – Distance to Surface Projection of Fault	USGS Unified Hazard Tool (3)	6.75 (3)	km
S_s - Mapped Spectral Response Acceleration Short Period (0.2 second)	Figure 1613.2.1(1) (1)	1.831 (4)	g
S_1 - Mapped Spectral Response Acceleration Long Period (1.0 second)	Figure 1613.2.1(2) (1)	0.73 (4)	g
F_a – Short Period (0.2 second) Site Coefficient	Table 1613.2.3(1) (1)	1.2 (4)	-
F_v – Long Period (1.0 second) Site Coefficient	Table 1613.2.3(2) (1)	Null (4)	-
S_{MS} – MCE_R Spectral Response Acceleration Parameter Adjusted for Site Class Effect (0.2 second)	Equation 16-36 (1)	2.197 (4)	g
S_{M1} - MCE_R Spectral Response Acceleration Parameter Adjusted for Site Class Effect (1.0 second)	Equation 16-37 (1)	Null (4)	g
S_{DS} - Design Spectral Response Acceleration at 0.2-s	Equation 16-38 (1)	1.464 (4)	g
S_{D1} - Design Spectral Response Acceleration at 1-s	Equation 16-39 (1)	Null (4)	g
$T_o = 0.2\ S_{D1}/\ S_{DS}$	Section 11.4.6 (2)	Null	s
$T_s = S_{D1}/\ S_{DS}$	Section 11.4.6 (2)	Null	s
T_L - Long Period Transition Period	Figure 22-14 (2)	8 (4)	s
PGA - Peak Ground Acceleration at MCE_G (*)	Figure 22-9 (2)	0.767	g
F_{PGA} - Site Coefficient Adjusted for Site Class Effect (2)	Table 11.8-1 (2)	1.2 (4)	-
PGA_M –Peak Ground Acceleration (2) Adjusted for Site Class Effect	Equation 11.8-1 (2)	0.92 (4)	g
Design PGA ≈ (⅔ PGA_M) - Slope Stability (†)	Similar to Eqs. 16-38 & 16-39 (2)	0.613	g
Design PGA ≈ (0.4 S_{DS}) – Short Retaining Walls (‡)	Equation 11.4-5 (2)	0.586	g
C_{RS} - Short Period Risk Coefficient	Figure 22-18A (2)	0.917 (4)	-
C_{R1} - Long Period Risk Coefficient	Figure 22-19A (2)	0.891 (4)	-
SDC - Seismic Design Category (§)	Section 1613.2.5 (1)	Null (4)	-

References:
(1) California Building Code (CBC), 2019, California Code of Regulations, Title 24, Part 2, Volume I and II.
(2) American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI), 2016, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, Standards 7-16.
(3) USGS Unified Hazard Tool - https://earthquake.usgs.gov/hazards/interactive/
(4) SEI/OSHPD Seismic Design Map Application – https://seismicmaps.org

Related References:
Federal Emergency Management Agency (FEMA), 2015, NEHERP (National Earthquake Hazards Reduction Program) Recommended Seismic Provision for New Building and Other Structures (FEMA P-1050).

Notes:
* PGA Calculated at the MCE return period of 2475 years (2 percent chance of exceedance in 50 years).
† PGA Calculated at the Design Level of ⅔ of MCE; approximately equivalent to a return period of 475 years (10 percent chance of exceedance in 50 years).
‡ PGA Calculated for short, stubby retaining walls with an infinitesimal (zero) fundamental period.
§ The designation provided herein may be superseded by the structural engineer in accordance with Section 1613.2.5.1, if applicable.

Discussion - General

Owing to the characteristics of the subsurface soils, as defined by Site Class D-Default designation, and proximity of the site to the sources of major ground shaking, the site is expected to experience strong ground shaking during its anticipated life span. Under these circumstances, where the code-specified design response spectrum may not adequately characterize site response, the 2019 CBC typically requires a site-specific seismic response analysis to be performed. This requirement is signified/identified by the "null" values that are output using SEA/OSHPD software in determination of short period, but mostly, in determination of long period seismic parameters, see Table 1.

For conditions where a "null" value is reported for the site, a variety of design approaches are permitted by 2019 CBC and ASCE 7-16 in lieu of a site-specific seismic hazard analysis. For any specific site, these alternative design approaches, which include Equivalent Lateral Force (ELF) procedure, Modal Response Spectrum Analysis (MRSA) procedure, Linear Response History Analysis (LRHA) procedure and Simplified Design procedure, among other methods, are expected to provide results that may or may not be more economical than those that are obtained if a site-specific seismic hazards analysis is performed. These design approaches and their limitations should be evaluated by the project structural engineer.

Discussion – Seismic Design Category

Please note that the Seismic Design Category, SDC, is also designated as "null" in Table 1. For condition where the mapped spectral response acceleration parameter at 1 – second period, S_1, is less than 0.75, the 2019 CBC, Section 1613.2.5.1 allows that seismic design category to be determined from Table 1613.2.5(1) alone provided that all four requirements concerning fundamental period of structure, story drift, seismic response coefficient, and relative rigidity of the diaphragms are met. Our interpretation of ASCE 7-16 is that for conditions where one or more of these 4 conditions are not met, seismic design category should be assigned based on: 1) 2019 CBC, Table 1613.2.5(1), 2) structure's risk category and 3) the value of S_{DS}, at the discretion of the project structural engineer.

Discussion – Equivalent Lateral Force Method

Should the Equivalent Lateral Force (ELF) method be used for seismic design of structural elements, the value of Constant Velocity Domain Transition Period, T_s, is estimated to be 0.565 second and the value of Long Period Transition Period, T_L, is provided in Table 1 for construction of Seismic Response Coefficient – Period (C_s -T) curve that is used in the ELF procedure.

As stated herein, the subject site is considered to be within a Site Class D-Default. A site-specific ground motion hazard analysis is not required for structures on Site Class D-Default with $S_1 \geq 0.2$ provided that the Seismic Response Coefficient, C_s, is determined in accordance with ASCE 7-16, Article 12.8 and structural design is performed in accordance with Equivalent Lateral Force (ELF) procedure.

CONCLUSIONS

Site Suitability

From a geotechnical engineering and engineering geologic point of view, the subject property is considered suitable for the proposed development provided the following conclusions and recommendations are incorporated into the design criteria and project specifications.

Primary Geologic/Geotechnical Considerations

Groundwater

Regional groundwater or perched groundwater was not encountered in any of our exploratory borings, drilled to a maximum depth of 51.5 feet below the ground surface. Data provided in a nearby well indicates groundwater is currently at depths exceeding 190 feet bgs. The high groundwater depth within the site vicinity, between 1973 and 1983, is reported approximately 95 feet below the ground surface (Matti and Carson, 1991). Regional groundwater is not anticipated to affect the subject development.

Fault Rupture

The site is not located within a currently designated State of California Alquist-Priolo Earthquake Fault Zone (CGS, 2021), nor is it within a San Bernardino County Geologic Hazard Zone (San Bernardino County, 2009). In addition, no known active faults have been identified on the site. While fault rupture would most likely occur along previously established fault traces, fault rupture could occur at other locations. However, the potential for active fault rupture at the site is considered to be very low.

Strong Ground Motions

The site is located in a seismically active area of southern California and will likely be subjected to very strong seismically related ground shaking during the anticipated life span of the project. Structures within the site should therefore be designed and constructed to resist the effects of strong ground motion in accordance with the 2019 California Building Code (CBC) and the seismic parameters included in Table 1 above.

Liquefaction, Landslides and Secondary Seismic Effects

The proposed residential development is not mapped within a San Bernadino County zone of suspected liquefaction susceptibility (San Bernardino County, 2009).

The site and immediate area exhibit level topography that is not prone to landsliding. Secondary effects of seismic activity normally considered as possible hazards to a site include several types of ground failure. Such ground failures, which might occur as a consequence of severe ground shaking at the site, include ground subsidence, ground lurching and lateral spreading. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from faults, topography, subsoils, and groundwater conditions, in addition to other factors. Based on the site conditions, proposed grading, depth to groundwater exceeding 100 feet, and gentle topography across the site, landsliding, liquefaction, ground subsidence, ground lurching and lateral spreading are considered unlikely at the site. The potential for seismic flooding due to a tsunami or seiche is considered negligible.

Compressible Soils

The most significant geotechnical factor affecting the project site is the presence of near-surface compressible soil materials. Such native materials consist of surficial topsoil and disturbed alluvium (due to former orchard and crop cultivation) as well as highly weathered young alluvium, which are not considered suitable for support of fill or structural loads in their present condition. Based on our subsurface assessment and laboratory test results, remedial removal depths on the order of 4 to 5 feet below existing grades are expected. Accordingly, these materials will require removal to competent alluvial soils and replacement with properly compacted fill.

Flooding

The subject property is depicted in Zone X (FEMA, 2008) on Map Number 06071C8704H (dated August 28, 2008). This zone is defined as "0.2% Annual Chance Flood Hazard. Areas of 1% annual chance flood with average depths less than one foot with drainage areas of less than one square mile."

EARTHWORK RECOMMENDATIONS

General Earthwork Recommendations

Earthwork should be performed in accordance with the Grading Code of the City of Redlands and/or County of San Bernardino, in addition to the applicable provisions of the 2019 CBC. Grading should also be performed in accordance with the following site-specific recommendations prepared by Petra based on the proposed construction.

Geotechnical Observations and Testing

Prior to the start of earthwork, a meeting should be held at the site with the owner, contractor, and geotechnical consultant to discuss the work schedule and geotechnical aspects of the grading. Earthwork, which in this instance will generally entail removal and re-compaction of the near surface soils, should be accomplished under full-time observation and testing of the geotechnical consultant. A representative of the project geotechnical consultant should be present onsite during all earthwork operations to document proper placement and compaction of fills, as well as to document compliance with the other recommendations presented herein.

Clearing and Grubbing

All existing weeds, grasses, brush, shrubs, trees/tree stumps, root balls, and similar vegetation existing within areas to be graded should be stripped and removed from the site. Clearing operations should also include the demolition and removal of all existing improvements (irrigation lines, valve risers, concrete water distribution boxes, concrete and brick irrigation channels, wind machines slabs, etc.), any remaining trash, debris, vegetation, and similar deleterious materials. Any cavities or excavations created upon removal of buried structures or root balls or any unknown subsurface structures should be cleared of loose soil, shaped to provide access for backfilling and compaction equipment and then backfilled with properly compacted (engineered) fill. Note that deleterious materials may be encountered within the site and may need to be removed by hand, i.e., root pickers, during the grading operations.

The project geotechnical consultant should provide periodic observation and testing services during clearing and grubbing operations to document compliance with the above recommendations. In addition, should unusual or adverse soil conditions or buried structures be encountered during grading that are not described herein, these conditions should be brought to the immediate attention of the project geotechnical consultant for corrective recommendations.

Excavation Characteristics

The existing site soils are expected to be readily excavated with conventional earthmoving equipment. If oversize rocks (i.e., 12-inches in one dimension or greater) are encountered they should either be disposed of either offsite or properly buried within the planned deeper fills in an approved engineered fashion, a minimum of 10 feet below finish pad grades.

Ground Preparation - General

Our field evaluation revealed that near-surface soils within the areas of proposed construction generally exhibit low to moderate in-place densities, may contain some rootlets and other isolated organic material, and have been locally disturbed from previous agricultural activities such as tree orchards. These soils are subject to compression and settlement under the proposed foundation and slab loadings and, if left unmitigated and may result in excessive differential settlement beneath the proposed structures, associated foundations, and/or associated appurtenant improvements.

To create a uniform compacted fill mat below the proposed improvements and reduce the potential for distress due to excessive differential settlement, it is recommended that all near surface low-density native materials be removed to underlying competent alluvial materials and replaced as properly compacted fill materials. Based on our subsurface exploration and laboratory test results, remedial removal depths on the order of 4 to 5 feet below existing grades are expected. The horizontal limits of removal and re-compaction should extend to a minimum distance of 5 feet beyond the proposed improvements.

It must be noted that the depths of remedial grading provided herein are estimates only and are based on conditions observed at the boring locations. Subsurface conditions can and usually do vary between points of exploration. For this reason, the actual removal depths will have to be determined on the basis of in-grading observations and testing performed by a representative of the project geotechnical consultant. The Client, civil engineer, and project grading contractor should allow contingencies for additional earthwork quantities should adverse conditions and deeper removals be required.

Unsuitable Soil Removals

Existing surficial soils including disturbed topsoil, alluvium, and upper highly weathered alluvium deposits that are considered unsuitable for support of proposed fills, structures, flatwork, pavement, or other improvements in their existing condition, should be removed to underlying competent alluvial deposit materials. All existing low-density, compressible surficial soils in areas to receive compacted fill or to support the residential building pads should be removed to underlying competent soils as approved by the project geotechnical consultant.

Based on our subsurface assessment and laboratory test results, remedial removal depths on the order 4 to 5 feet below existing grades are expected. Unsuitable soil removals may also need to be locally deeper, depending on the exposed conditions encountered during grading. The actual depths and horizontal limits of removals and over-excavations should be evaluated during grading on the basis of observations and testing performed by the project geotechnical consultant.

Prior to placing engineered fill, all exposed bottom surfaces in the removal areas should be approved by a representative of the project geotechnical consultant and then scarified to a minimum depth of 12 inches, flooded with water and compacted with heavy vibratory equipment to achieve near-optimum moisture conditions and then compacted in-place to no less than 90 percent relative compaction.

Ground Preparation - Roadways

For proposed roadways/drive isles/parking areas, the existing ground surfaces should be over-excavated to a minimum depth of 12 inches below the existing ground surface or 2 feet below the proposed subgrade elevations, whichever is deeper. After completion of over-excavation, the areas should be scarified to a minimum depth of 6 inches, moisture-conditioned, and re-compacted to a minimum 90 percent relative compaction during rough grading activities. The excavated materials may be replaced as properly compacted fill. The horizontal limits of over-excavation should extend to a minimum horizontal distance of 12 inches beyond the perimeter of the proposed improvements.

All fills should be placed in 6- to 8-inch-thick maximum lifts, watered or air dried as necessary to achieve slightly above-optimum moisture conditions, and then compacted to a minimum relative compaction of 90 percent per ASTM D 1557. Prior to paving, the pavement subgrade soils will require rework to a depth of 12 inches to achieve no less than 95 percent relative compaction. The laboratory maximum dry density and optimum moisture content for each change in soil type should be determined in accordance with Test Method ASTM D 1557.

Cut Lots

Lots located entirely in cut exceeding 1 foot should be over-excavated a minimum of 3 feet below the bottom of the proposed foundations and replaced as properly compacted fill. Cut lots with less than 1 foot of cut should be over-excavated to a minimum depth of 4 feet below existing grade. Prior to placing engineered fill, all exposed over-excavation bottom surfaces in the building pad areas should be first scarified to a depth of 12 inches, moisture-conditioned, as needed, and compacted with heavy vibratory equipment to achieve near-optimum moisture conditions and then compacted in-place to no less than 90 percent relative compaction.

Cut-Fill Transition Lots/Building Pads

Cut/fill transitions should be eliminated from building-pad areas to reduce the detrimental effects of differential settlement. This should be accomplished by over-excavating the "cut" or shallow-fill portions to a minimum depth of 3 feet below the bottom of the proposed foundations and replacing the excavated materials as properly compacted fill.

Horizontal limits of over-excavation should extend at least 5 feet outside the entire level portion of the building pad. Prior to placing engineered fill, all exposed over-excavation bottom surfaces in the removal areas should be first scarified to a depth of 12 inches, moisture-conditioned, as needed, and compacted with heavy vibratory equipment to achieve near-optimum moisture conditions and then compacted in-place to no less than 90 percent relative compaction.

Suitability of Site Soils as Fill

Site soils are suitable for use in engineered fills provided they are clean from organics and/or debris. Wet alluvial soils may also be encountered during site grading (depending upon the time of year grading occurs) and may require drying back before being reused as fill. Oversize rock, that exceeding 12 inches, should be excluded from placement in the upper 10 feet of the building pads.

Fill Placement

Fill materials should be placed in approximately 6- to 8-inch-thick loose lifts, watered or air-dried as necessary to achieve a moisture content approximately 2 percent above optimum moisture condition, and then compacted in-place to no less than 90 percent relative compaction. Where clean sands are encountered, moisture-conditioning may entail heavy watering to facilitate compaction. The laboratory maximum dry density and optimum moisture content for each major soil type should be determined in accordance with ASTM D 1557.

Import Soils for Grading

If import soils are needed to achieve final design grades, import soils should be free of deleterious materials, oversize rock, and any hazardous materials. The soils should also be non-expansive and essentially non-corrosive and approved by the project geotechnical consultant *prior* to being brought onsite. The geotechnical consultant should inspect the potential borrow site and conduct testing of the soil at least three days before the commencement of import operations.

Shrinkage and Subsidence

Volumetric changes in earth quantities will occur when excavated onsite soils are replaced as properly compacted fill. Following is an estimate of shrinkage factors for the alluvial soil present onsite. These estimates are based on in-place densities of the various materials and on the estimated average degree of relative compaction achieved during grading.

- Disturbed Surface Soils (0-2± feet)……………………………… Shrinkage of 15 to 20%±
- Alluvium (Upper 2-7± ft.) ………………………….................... Shrinkage of 10 to 15%±

Subsidence from scarification and re-compaction of exposed bottom surfaces in removal areas to receive fill is expected to vary from negligible to approximately 0.1 foot. The above estimates of shrinkage and subsidence are intended as an aid for project engineers in determining earthwork quantities. However, these estimates should not be considered as absolute values and should be used with some caution. Contingencies should be made for balancing earthwork quantities based on actual shrinkage and subsidence that occurs during the grading operations.

Temporary Excavations

Temporary excavations to a depth possibly as much as 10± feet below existing grades may be required to accommodate the recommended over-excavation of unsuitable materials or to construct subsurface storm water disposal structures. Based on the physical properties of the onsite cohesionless soils, temporary excavations which are constructed exceeding 4 feet in height should be cut back to a ratio of 1:1 (h:v) or flatter for the duration of the over-excavation of unsuitable soil material and replacement as compacted fill, as well as placement of underground utilities. However, the temporary excavations should be observed by a representative of the project geotechnical consultant for evidence of potential instability. Depending on the results of these observations, revised slope configurations may be necessary. Other factors which should be considered with respect to the stability of the temporary slopes include construction traffic and/or storage of materials on or near the tops of the slopes, construction scheduling, presence of nearby walls or structures on adjacent properties and weather conditions at the time of construction. Applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health act of 1970 and the Construction Safety Act should also be followed.

FOUNDATION DESIGN RECOMMENDATIONS

Allowable Soil Bearing Capacities

Pad Footings

An allowable soil bearing capacity of 1,500 pounds per square foot may be utilized for design of isolated 24-inch-square footings founded at a minimum depth of 12 inches below the lowest adjacent final grade for pad footings that are not a part of the slab system and are used for support of such features as roof overhang, second-story decks, patio covers, etc. This value may be increased by 20 percent for each additional foot of depth and by 10 percent for each additional foot of width, to a maximum value of 2,500 pounds per square foot. The recommended allowable bearing value includes both dead and live loads and may be increased by one-third for short duration wind and seismic forces.

Continuous Footings

An allowable soil bearing capacity of 1,500 pounds per square foot may be utilized for design of continuous footings founded at a minimum depth of 12 inches below the lowest adjacent final grade. This value may be increased by 20 percent for each additional foot of depth and by 10 percent for each additional foot of width, to a maximum value of 2,500 pounds per square foot. The recommended allowable bearing value includes both dead and live loads and may be increased by one-third for short duration wind and seismic forces.

Estimated Footing Settlement

Based on the allowable bearing values provided above, total static settlement of the footings under the anticipated loads is expected to be on the order of 3/4 inch. Differential settlement is expected to be less than 1/2 inch over a horizontal span of 20 feet. The majority of settlement is likely to take place as footing loads are applied or shortly thereafter.

Lateral Resistance

A passive earth pressure of 250 pounds per square foot per foot of depth, to a maximum value of 2,500 pounds per square foot, may be used to determine lateral bearing resistance for footings. In addition, a coefficient of friction of 0.30 times the dead load forces may be used between concrete and the supporting soils to determine lateral sliding resistance. The above values may be increased by one-third when designing for transient wind or seismic forces. It should be noted that the above values are based on the condition where footings are cast in direct contact with compacted fill or competent native soils. In cases where the footing sides are formed, all backfill placed against the footings upon removal of forms should be compacted to at least 90 percent of the applicable maximum dry density.

Guidelines for Footings and Slabs on-Grade Design and Construction

The results of our laboratory tests performed on representative samples of near-surface soils within the site during our evaluation indicate that these materials predominantly exhibit expansion indices that are less than 20. As indicated in Section 1803.5.3 of 2019 California Building Code (2019 CBC), these soils are considered non-expansive and, as such, the design of slabs on-grade is considered to be exempt from the procedures outlined in Sections 1808.6.2 of the 2019 CBC and may be performed using any method deemed rational and appropriate by the project structural engineer. However, the following minimum recommendations are presented herein for conditions where the project design team may require geotechnical engineering guidelines for design and construction of footings and slabs on-grade the project site.

> *The design and construction guidelines that follow are based on the above soil conditions and may be considered for reducing the effects of variability in fabric, composition and, therefore, the detrimental behavior of the site soils such as excessive short- and long-term total and differential heave or settlement. These guidelines have been developed on the basis of the previous experience of this firm on projects with similar soil conditions. Although construction performed in accordance with these guidelines has been found to reduce post-construction movement and/or distress, they generally do not positively eliminate all potential effects of variability in soils characteristics and future heave or settlement.*
>
> *It should also be noted that the suggestions for dimension and reinforcement provided herein are performance-based and intended only as preliminary guidelines to achieve adequate performance under the anticipated soil conditions. However, they should not be construed as replacement for structural engineering analyses, experience, and judgment. The project structural engineer, architect and/or civil engineer should make appropriate adjustments to slab and footing dimensions, and reinforcement type, size and spacing to account for internal concrete forces (e.g., thermal, shrinkage and expansion) as well as external forces (e.g., applied loads) as deemed necessary. Consideration should also be given to minimum design criteria as dictated by local building code requirements.*

Conventional Slabs on-Grade System

Given the expansion index of less than 20, as exhibited by onsite soils, we recommend that footings and floor slabs be designed and constructed in accordance with the following minimum criteria.

Footings

1. Exterior continuous footings supporting one- and two-story structures should be founded at a minimum depth of 12 inches below the lowest adjacent final grade, respectively. Exterior continuous footings supporting three-and four-story structures should be founded at a minimum depth of 18 inches below the lowest adjacent final grade, respectively. Interior continuous footings may be founded at a minimum depth of 10 inches below the top of the adjacent finish floor slabs.

2. In accordance with Table 1809.7 of 2019 CBC for light-frame construction, all continuous footings should have minimum widths of 12 inches for one- and two-story construction. All continuous footings should have minimum widths of 15 and 18 inches for three and four-story construction, respectively. We recommend all continuous footings should be reinforced with a minimum of two No. 4 bars, one top and one bottom.

3. A minimum 12-inch-wide grade beam founded at the same depth as adjacent footings should be provided across the garage entrances or similar openings (such as large doors or bay windows). The grade beam should be reinforced with a similar manner as provided above.

4. Interior isolated pad footings, if required, should be a minimum of 24 inches square and founded at a minimum depth of 12 inches below the bottoms of the adjacent floor slabs for one- and two-story buildings. Interior isolated pad footings for three- and four-story buildings should be a minimum of 24 inches square and founded at a minimum depth of 15 inches below the bottoms of the adjacent floor slabs. Pad footings should be reinforced with No. 4 bars spaced a maximum of 18 inches on centers, both ways, placed near the bottoms of the footings.

5. Exterior isolated pad footings intended for support of roof overhangs such as second-story decks, patio covers and similar construction for one- and two-story buildings should be a minimum of 24 inches square and founded at a minimum depth of 18 inches below the lowest adjacent final grade. Exterior isolated pad footings for three- and four-story buildings should be a minimum of 24 inches square and founded at a minimum depth of 24 inches below the lowest adjacent final grade. The pad footings should be reinforced with No. 4 bars spaced a maximum of 18 inches on centers, both ways, placed near the bottoms of the footings. Exterior isolated pad footings may need to be connected to adjacent pad and/or continuous footings via tie beams at the discretion of the project structural engineer.

6. The minimum footing dimensions and reinforcement recommended herein may be modified (increased or decreased subject to the constraints of Chapter 18 of the 2019 CBC) by the structural engineer responsible for foundation design based on his/her calculations, engineering experience and judgment.

Building Floor Slabs

1. Concrete floor slabs should be a minimum 4 inches thick and reinforced with No. 3 bars spaced a maximum of 24 inches on centers, both ways. All slab reinforcement should be supported on concrete chairs or brick to ensure the desired placement near mid-depth.

   Slab dimension, reinforcement type, size and spacing need to account for internal concrete forces (e.g., thermal, shrinkage and expansion) as well as external forces (e.g., applied loads), as deemed necessary.

2. Living area concrete floor slabs and areas to receive moisture sensitive floor covering should be underlain with a moisture vapor retarder consisting of a minimum 10-mil-thick polyethylene or polyolefin membrane that meets the minimum requirements of ASTM E96 and ASTM E1745 for vapor

retarders (such as Husky Yellow Guard®, Stego® Wrap, or equivalent). All laps within the membrane should be sealed, and at least 2 inches of clean sand should be placed over the membrane to promote uniform curing of the concrete. To reduce the potential for punctures, the membrane should be placed on a pad surface that has been graded smooth without any sharp protrusions. If a smooth surface cannot be achieved by grading, consideration should be given to lowering the pad finished grade an additional inch and then placing a 1-inch-thick leveling course of sand across the pad surface prior to the placement of the membrane.

At the present time, some slab designers, geotechnical professionals and concrete experts view the sand layer below the slab (blotting sand) as a place for entrapment of excess moisture that could adversely impact moisture-sensitive floor coverings. As a preventive measure, the potential for moisture intrusion into the concrete slab could be reduced if the concrete is placed directly on the vapor retarder. However, if this sand layer is omitted, appropriate curing methods must be implemented to ensure that the concrete slab cures uniformly. A qualified materials engineer with experience in slab design and construction should provide recommendations for alternative methods of curing and supervise the construction process to ensure uniform slab curing. Additional steps would also need to be taken to prevent puncturing of the vapor retarder during concrete placement.

3. Garage floor slabs should be a minimum 4 inches thick and reinforced in a similar manner as living area floor slabs. Garage slabs should also be poured separately from adjacent wall footings with a positive separation maintained using ¾-inch-minimum felt expansion joint material. To control the propagation of shrinkage cracks, garage floor slabs should be quartered with weakened plane joints. Consideration should be given to placement of a moisture vapor retarder below the garage slab, similar to that provided in Item 2 above, should the garage slab be overlain with moisture sensitive floor covering.

4. Presaturation of the subgrade below floor slabs will not be required; however, prior to placing concrete, the subgrade below all dwelling and garage floor slab areas should be thoroughly moistened to achieve a moisture content that is at least equal to or slightly greater than optimum moisture content. This moisture content should penetrate to a minimum depth of 12 inches below the bottoms of the slabs.

5. The minimum dimensions and reinforcement recommended herein for building floor slabs may be modified (increased or decreased subject to the constraints of Chapter 18 of the 2019 CBC) by the structural engineer responsible for foundation design based on his/her calculations, engineering experience and judgment.

Post-Tensioned Slab-on-Ground System (Optional)

The use of a post-tension system should be viewed as optional in this instance. In consideration of the expansion index of less than 20, as predominantly exhibited by onsite soils, any rational and appropriate procedure may be chosen by the project structural engineer for the design of post-tensioned slab-on-ground system. Should the design engineer choose to follow the latest Code-adopted edition of the procedure published by the Post-Tensioning Institute (PTI DC 10.5), the following minimum design criteria are provided Table 2, below.

TABLE 2

Presumptive Post-Tensioned Slab on-Grade Design Parameters for PTI Procedure

Soil Information	
Approximate Depth of Constant Suction, feet	9
Approximate Soil Suction, pF	3.9
Inferred Thornthwaite Index:	-20
Average Edge Moisture Variation Distance, e_m in feet:	
Center Lift	9.0
Edge Lift	4.7
Anticipated Swell, y_m in inches:	
Center Lift	0.25
Edge Lift	0.45

Modulus of Subgrade Reaction

The modulus of subgrade reaction for design of load bearing elements depends on the size of the element and soil-structure interaction. However, as a first level of approximation, this value may be assumed to be 125 pounds per cubic inch.

Minimum Design Recommendations

The soil values provided above may be utilized by the project structural engineer to design post-tensioned slabs on-ground in accordance with Section 1808.6.2 of the 2019 CBC and the PTI publication. Thicker floor slabs and larger footing sizes may be required for structural reasons and should govern the design if more restrictive than the minimum recommendations provided below:

1. Exterior continuous footings for one- and two-story structures should be founded at a minimum depth of 12 inches below the lowest adjacent finished ground surface. Exterior continuous footings for three- and four-story structures should be founded at a minimum depth of 18 inches below the lowest adjacent finished ground surface. Interior footings may be founded at a minimum depth of 10 inches below the tops of the adjacent finish floor slabs.

2. In accordance with Table 1809.7 of 2019 CBC for light-frame construction, all continuous footings should have minimum widths of 12 inches for one- and two-story construction. All continuous footings should have minimum widths of 15 and 18 inches for three-and four-story construction. We recommend all continuous footings should be reinforced with a minimum of two No. 4 bars, one top and one bottom. Alternatively, post-tensioned tendons may be utilized in the perimeter continuous footings in lieu of the reinforcement bars.

3. A minimum 12-inch-wide grade beam founded at the same depth as adjacent footings should be provided across the garage entrances or similar openings (such as large doors or bay windows). The grade beam should be reinforced in a similar manner as provided above.

4. Interior isolated pad footings, if required, should be a minimum of 24 inches square and founded at a minimum depth of 12 inches below the bottoms of the adjacent floor slabs for one- and two-story buildings. Interior isolated pad footings should be a minimum of 24 inches square and founded at a minimum depth of 15 inches below the bottoms of the adjacent floor slabs for three- and four-story buildings. Pad footings should be reinforced with No. 4 bars spaced a maximum of 18 inches on centers, both ways, placed near the bottoms of the footings.

5. Exterior isolated pad footings intended for support of roof overhangs such as second-story decks, patio covers and similar construction for one- and two-story buildings should be a minimum of 24 inches square and founded at a minimum depth of 18 inches below the lowest adjacent final grade. Exterior isolated pad footings for three- and four-story buildings should be a minimum of 24 inches square and founded at a minimum depth of 24 inches below the lowest adjacent final grade. The pad footings should be reinforced with No. 4 bars spaced a maximum of 18 inches on centers, both ways, placed near the bottoms of the footings. Exterior isolated pad footings may need to be connected to adjacent pad and/or continuous footings via tie beams at the discretion of the project structural engineer.

6. The thickness of the floor slabs should be determined by the project structural engineer with consideration given to the expansion index of the onsite soils; however; we recommend that a minimum slab thickness of 4 inches be considered.

7. As an alternative to designing 4-inch-thick post-tensioned slabs with perimeter footings as described in Items 1 and 2 above, the structural engineer may design the foundation system using a thickened slab design. The minimum thickness of this uniformly thick slab should be 7.5 inches. The engineer in charge of post-tensioned slab design may also opt to use any combination of slab thickness and footing embedment depth as deemed appropriate based on their engineering experience and judgment.

8. Living area concrete floor slabs and areas to receive moisture sensitive floor covering should be underlain with a moisture vapor retarder consisting of a minimum 10-mil-thick polyethylene or polyolefin membrane that meets the minimum requirements of ASTM E96 and ASTM E1745 for vapor retarders (such as Husky Yellow Guard®, Stego® Wrap, or equivalent). All laps within the membrane should be sealed, and at least 2 inches of clean sand should be placed over the membrane to promote uniform curing of the concrete. To reduce the potential for punctures, the membrane should be placed on a pad surface that has been graded smooth without any sharp protrusions. If a smooth surface cannot be achieved by grading, consideration should be given to lowering the pad finished grade an additional inch and then placing a 1-inch-thick leveling course of sand across the pad surface prior to the placement of the membrane.

   At the present time, some slab designers, geotechnical professionals and concrete experts view the sand layer below the slab (blotting sand) as a place for entrapment of excess moisture that could adversely impact moisture-sensitive floor coverings. As a preventive measure, the potential for moisture intrusion into the concrete slab could be reduced if the concrete is placed directly on the vapor retarder. However, if this sand layer is omitted, appropriate curing methods must be implemented to ensure that the concrete slab cures uniformly. A qualified materials engineer with experience in slab design and construction should provide recommendations for alternative methods of curing and supervise the construction process to ensure uniform slab curing. Additional steps would also need to be taken to prevent puncturing of the vapor retarder during concrete placement.

9. Garage floor slabs should be designed in a similar manner as living area floor slabs. Consideration should be given to placement of a moisture vapor retarder below the garage slab, similar to that provided in Item 6 above, should the garage slab be overlain with moisture sensitive floor covering.

10. Presaturation of the subgrade below floor slabs will not be required; however, prior to placing concrete, the subgrade below all dwelling and garage floor slab areas should be thoroughly moistened to achieve a moisture content that is at least equal to or slightly greater than optimum moisture content. This moisture content should penetrate to a minimum depth of 12 inches below the bottoms of the slabs.

11. The minimum footing dimensions and reinforcement recommended herein may be modified (increased or decreased subject to the constraints of Chapter 18 of the 2019 CBC) by the structural engineer responsible for foundation design based on his/her calculations, engineering experience and judgment.

Footing Observations

Foundation footing trenches should be observed by the project geotechnical consultant to document into competent bearing-soils. The foundation excavations should be observed prior to the placement of forms, reinforcement, or concrete. The excavations should be trimmed neat, level, and square. Prior to placing concrete, all loose, sloughed, or softened soils and/or construction debris should be removed. Excavated soils derived from footing and utility trench excavations should not be placed in slab-on-grade areas unless the soils are compacted to a relative compaction of 90 percent or more.

Preliminary Pavement Design Recommendations

Based upon our experience in Redlands, an R-value of 50 was estimated for the subject site. A traffic index (TI) of 4.5 was assumed for interior drive isles and parking, 5.5 was assumed for local streets (such as Pennsylvania Avenue extension) and 7.0 for minor arterial streets (such as Tennessee Street) in accordance with City of Redlands Standard Specifications and Details (2020). The traffic indices, along with the estimated design R-value, were utilized for preliminary pavement section design. The following pavement section has been computed in accordance with Caltrans design procedures and presented in the following table, Table 3. Based upon our experience, the thicker pavement section is provided below is recommended due to increased performance and life.

TABLE 3

Preliminary Pavement Design

Location	Design R-value	Traffic Index	Pavement Section
Interior Drive Aisles and Parking	50	4.5	3 in. AC / 4 in. AB[1]
Local Streets	50	5.5	3 in. AC / 4 in. AB[1]
Minor Arterial Streets	50	7.0	4 in. AC / 5 in. AB

Notes:
AC = Asphalt Concrete
AB = Aggregate Base
[1] = Min. section per Redlands standards

Subgrade soils immediately below the base should be compacted to 95 percent or more relative compaction based on ASTM D 1557 to a depth of 12 inches or more. Final subgrade compaction should be performed prior to placing base or asphalt-concrete and after utility-trench backfills have been compacted and tested. Subgrade should be firm and unyielding, as exhibited by proof-rolling, prior to placement of aggregate base.

Base materials should consist of Caltrans Class 2 aggregate base. Base materials should be compacted to 95 percent or more relative compaction based on ASTM D 1557. The base materials should be near optimum-moisture content when compacted. Asphalt concrete materials should conform to Section 203-6 of the most recent Standard Specifications for Public Works Construction (Greenbook) or as required by the City of Redlands Public Works Department - Standard Specifications and Detail Drawings.

General Corrosivity Screening

As a screening level study, limited chemical and electrical tests were performed on samples considered representative of the onsite soils to identify potential corrosive characteristics of these soils. The common indicators that are generally associated with soil corrosivity, among other indicators, include water-soluble sulfate (a measure of soil corrosivity on concrete), water-soluble chloride (a measure of soil corrosivity on metals embedded in concrete), pH (a measure of soil acidity), and minimum electrical resistivity (a measure of corrosivity on metals embedded in soils). Test methodology and results are presented in Appendix B.

> *It should be noted that Petra does not practice corrosion engineering; therefore, the test results, opinion and engineering judgment provided herein should be considered as general guidelines only. Additional analyses, and/or determination of other indicators, would be warranted, especially, for cases where buried metallic building materials (such as copper and cast or ductile*

> *iron pipes) in contact with site soils are planned for the project. In many cases, the project geotechnical engineer may not be informed of these choices. Therefore, for conditions where such elements are considered, we recommend that other, relevant project design professionals (e.g., the architect, landscape architect, civil and/or structural engineer, etc.) to be involved. We also recommend considering a qualified corrosion engineer to conduct additional sampling and testing of near-surface soils during the final stages of site grading to provide a complete assessment of soil corrosivity. Recommendations to mitigate the detrimental effects of corrosive soils on buried metallic and other building materials that may be exposed to corrosive soils should be provided by the corrosion engineer as deemed appropriate.*

In general, a soil's water-soluble sulfate levels and pH relate to the potential for concrete degradation; water-soluble chlorides in soils impact ferrous metals embedded or encased in concrete, e.g., reinforcing steel; and electrical resistivity is a measure of a soil's corrosion potential to a variety of buried metals used in the building industry, such as copper tubing and cast or ductile iron pipes. Table 4, below, presents test results with an interpretation of current code approach and guidelines that are commonly used in building construction industry. The table includes the code-related classifications of the soils as they relate to the various tests, as well as a general recommendation for possible mitigation measures in view of the potential adverse impact of corrosive soils on various components of the proposed structures in direct contact with site soils. The guidelines provided herein should be evaluated and confirmed, or modified, in their entirety by the project structural engineer, corrosion engineer and/or the contractor responsible for concrete placement for structural concrete used in exterior and interior footings, interior slabs on-ground, garage slabs, wall foundations and concrete exposed to weather such as driveways, patios, porches, walkways, ramps, steps, curbs, etc.

TABLE 4

Soil Corrosivity Screening Results

Test (Test Method Designation)	Test Results	Classification	General Recommendations
Soluble Sulfate (Cal 417)	SO_4^{2-} < 0.10 % by weight	**S0(1) - Not Applicable**	Type II cement; minimum f_c' = 2,500 psi; no water/cement ratio restrictions.
pH (Cal 643)	7.9 – 8.4	**Moderately Alkaline**	No special recommendations
Soluble Chloride (Cal 422)	Cl^{1-} < 500 ppm	**C1(2) - Moderate**	Residence: No special recommendations; f_c' should not be less than 2,500 psi.
Soluble Chloride (Cal 422)	< 500 ppm	**C2(4) - Severe**	Pools/Decking: Increase concrete cover thickness; maximum water/cement ratio of the fresh concrete should not exceed 0.40; f_c'(2) should not be less than 5,000 psi.
Resistivity (Cal 643)	10,000 – 20,000	**Mildly Corrosive(5)**	Protective wrapping/coating of buried pipes; corrosion resistant materials

Notes:

1. ACI 318-14, Section 19.3
2. ACI 318-14, Section 19.3
3. Pierre R. Roberge, "Handbook of Corrosion Engineering"
4. Exposure classification C2 applies specifically to swimming pools and appurtenant concrete elements
5. f_c': 28-day unconfined compressive strength of concrete

INFILTRATION TEST RESULTS

Three infiltration test holes (P-1 through P-3) were completed within the subject property at depths of 15 feet bgs or 25 feet bgs to assess infiltration rates of the near-surface onsite soils for preliminary design of detention basins to manage storm water runoff.

These tests used the Falling Head Test Method (RCFCD, 2011). Infiltration rates were then calculated using the Porchet Method (RCFCD, 2011), commonly called the "inversed auger-hole method." The infiltration tests were conducted in the lower five feet of each boring corresponding to five feet below the bottom elevation of the proposed basin. Each test hole consisted of an eight-inch diameter boring drilled with a truck-mounted hollow-stem auger drill rig. The holes were pre-soaked immediately after drilling.

Soils encountered in test locations consisted of fine- to medium-grained silty sand. Test locations are shown on Figure 2. Boring logs are provided in Appendix A. The un-factored infiltration rate results are summarized below in Table 5, and are provided in Appendix D.

TABLE 5

Summary of Infiltration Rates

Percolation Test Designation	Depth of Test Boring (feet below surface)	Percolation Rate (gallons/day/ft^2)	Infiltration Rate (inches/hour)
P-1	25’	104.9	14.5
P-2	15’	100.4	13.9
P-3	15’	43.5	6.0

POST-GRADING RECOMMENDATIONS

Site Drainage

Surface drainage systems consisting of sloping concrete flatwork, graded earth swales and/or an underground area drain system are anticipated to be constructed to collect and direct all surface waters to the adjacent streets and storm drain facilities. In addition, the ground surface around the proposed buildings should be sloped at a positive gradient away from the structures. The purpose of the precise grading is to prevent ponding of surface water within the level areas of the site and against building foundations and associated site improvements. The drainage systems should be properly maintained throughout the life of the proposed development.

It should be emphasized that the slopes away from the structures area drain inlets and storm drain structures to be properly maintained, not to be obstructed, and that future improvements not to alter established gradients unless replaced with suitable alternative drainage systems.

Slope Landscaping and Maintenance

Adequate slope and pad drainage facilities are essential in the design of grading for the subject site. An anticipated rainfall equivalency on the order of 60 to 100 inches per year at the site can result due to irrigation. The overall stability of the graded slopes should not be adversely affected provided drainage provisions are properly constructed and maintained thereafter and provided engineered slopes are landscaped immediately following grading with a deep-rooted, drought-tolerant, and maintenance-free plant species, as recommended by the project landscape architect. Additional comments and recommendations are presented below with respect to slope drainage, landscaping, and irrigation.

A common type of slope failure in hillside areas is the surficial instability and usually involves the upper 1 to 6 feet. For a given gradient, these surficial slope failures are generally caused by a wide variety of conditions, such as overwatering, cyclic changes in moisture content and density of slope soils from both seasonal and irrigation-induced wetting and drying, soil expansiveness, time lapse between slope construction and slope planting, type and spacing of plant materials used for slope protection, rainfall intensity and/or lack of a proper maintenance program. Based on this discussion, the following recommendations are presented to mitigate potential surficial slope failures.

- Proper drainage provisions for engineered slopes should consist of concrete terrace drains, downdrains and energy dissipaters (where required) constructed in accordance with the Grading Code of the City of Redlands. Provisions should also be made for construction of compacted-earth berms along the tops of engineered slopes.

- Permanent engineered slopes should be landscaped as soon as practical at the completion of grading. As noted, the landscaping should consist of a deep-rooted, drought-tolerant, and maintenance-free plant species. If landscaping cannot be provided within a reasonable period of time, jute matting (or equivalent) or a spray-on product designed to seal slope surfaces should be considered as a temporary measure to inhibit surface erosion until such time permanent landscape plants have become well-established.

- Irrigation systems should be installed on the engineered slopes and a watering program then implemented which maintains a uniform, near-optimum moisture condition in the soils. Overwatering and subsequent saturation of the slope soils should be avoided. On the other hand, allowing the soils to dry-out is also detrimental to slope performance.

- Irrigation systems should be constructed at the surface only. Construction of sprinkler lines in trenches should not be allowed without prior approval from the geotechnical engineer and engineering geologist.

- A permanent slope-maintenance program should be initiated for major slopes not maintained by individual homeowners. Proper slope maintenance should include the care of drainage- and erosion-control provisions, rodent control, and repair of leaking or damaged irrigation systems.

- Homeowners should be advised of the potential problems that can develop when drainage on the pads and slopes is altered. Drainage can be altered due to the placement of fill and construction of garden walls, retaining walls, walkways, patios, swimming pools, spas, and planters.

Utility Trenches

Utility-trench backfill within street rights-of-way, utility easements, under sidewalks, driveways and building-floor slabs should be compacted to a relative compaction of 90 percent or more. Where onsite soils are utilized as backfill, mechanical compaction should be used. Density testing, along with probing, should be performed by the project geotechnical consultant or his representative to document adequate compaction. Utility-trench sidewalls deeper than about 4 feet should be laid back at a ratio of 1:1 (h:v) or flatter or shored. A trench box may be used in lieu of shoring. If shoring is anticipated, the project geotechnical consultant should be contacted to provide design parameters.

For trenches with vertical walls, backfill should be placed in approximately 1- to 2-foot-thick loose lifts and then mechanically compacted with a hydra-hammer, pneumatic tampers, or similar compaction equipment. For deep trenches with sloped walls, backfill materials should be placed in approximately 8- to 12-inch-thick loose lifts and then compacted by rolling with a sheepsfoot tamper or similar equipment.

Where utility trenches are proposed in a direction that parallels any building footing (interior and/or exterior trenches), the bottom of the trench should not be located within a 1:1 (h:v) plane projected downward from the outside bottom edge of the adjacent footing.

EXTERIOR CONCRETE FLATWORK

Non-Expansive Soils (Expansion Index, EI ≤ 20)

General

Near-surface compacted fill soils within the site are variable in fines content and expansion behavior, however, they are expected to exhibit a range of expansion indices that classify them as non-expansive, i.e., Expansion Index, EI, ≤ 20. Therefore, we recommend that all exterior concrete flatwork such as sidewalks, patio slabs, large decorative slabs, concrete subslabs that will be covered with decorative pavers, private and/or public vehicular parking, driveways and/or access roads within and adjacent to the site be designed by the project architect, civil and/or structural engineer with consideration given to mitigating the potential for cracking, curling, etc. that can potentially develop as a result of being underlain with soils that essentially exhibiting expansion index values that fall in the non-expansive category.

The guidelines that follow should be considered as minimums and are subject to review and revision by the project architect, civil engineer, structural engineer and/or landscape consultant as deemed appropriate.

Subgrade Preparation

Compaction
To reduce the potential for distress to concrete flatwork, the subgrade soils below concrete flatwork areas to a minimum depth of 12 inches (or deeper, as either prescribed elsewhere in this report or determined in the field) should be moisture conditioned to at least equal to, or slightly greater than, the optimum moisture content and then compacted to no less than 90 percent relative compaction. Where concrete public roads, concrete segments of roads and/or concrete access driveways and heavy recreational vehicles parking are proposed, the upper 6 inches of subgrade soil should be compacted to no less than 95 percent relative compaction.

Pre-Moistening

As a further measure to reduce the potential for concrete flatwork distress, subgrade soils should be thoroughly moistened prior to placing concrete. The moisture content of the soils should be at least 1.1 times the optimum moisture content and penetrate to a minimum depth of 12 inches into the subgrade. Flooding or ponding of the subgrade is not considered feasible to achieve the above moisture conditions since this method would likely require construction of numerous earth berms to contain the water. Therefore, moisture conditioning may be achieved with sprinklers or a light spray applied to the subgrade over a period of several hours to few days just prior to pouring concrete. Pre-watering of the soils is intended to promote uniform curing of the concrete, reduce the development of shrinkage cracks, and reduce the potential for differential expansion pressure on freshly poured flatwork. A representative of the project geotechnical consultant should observe and verify the density and moisture content of the soils, and the depth of moisture penetration prior to pouring concrete.

Thickness and Joint Spacing

To reduce the potential of unsightly cracking, concrete walkways, patio-type slabs, large decorative slabs and concrete subslabs to be covered with decorative pavers should be at least 4 inches thick and provided with construction joints or expansion joints every 6 feet or less. Private driveways that will be designed for the use of passenger cars for access to private garages should also be at least 4 inches thick and provided with construction joints or expansion joints every 10 feet or less. Concrete pavement that will be designed based on an unlimited number of applications of an 18-kip single-axle load in public access areas, segments of road that will be paved with concrete (such as bus stops and cross-walks) or access roads and driveways, which serve multiple residential units or garages, that will be subject to heavy truck loadings and parking of recreational vehicles should have a minimum thickness of 5 inches and be provided with control joints spaced at maximum 10-foot intervals. A modulus of subgrade reaction of 125 pounds per cubic foot may be used for design of the public and access roads.

Reinforcement

All concrete flatwork having their largest plan-view panel dimensions exceeding 10 feet should be reinforced with a minimum of No. 3 bars spaced 18 inches for 4-inch-thick slabs and No. 4 bars spaced 24 inches for 5-inch-thick slabs on centers, both ways. Alternatively, the slab reinforcement may consist of welded wire mesh of the sheet type (not rolled) with 6x6/W1.4xW1.4 WWF designations for 4-inch-thick slabs and 6x6/W2.9xW2.9 designations for 5-inch-thick slabs in accordance with the Wire Reinforcement Institute (WRI). The reinforcement should be properly positioned near the middle of the slabs. All foot and equipment traffic on the reinforcement should be avoided or reduced to a minimum.

> *The reinforcement recommendations provided herein are intended as a guideline to achieve adequate performance for anticipated soil conditions. As such, this guideline may not satisfy certain acceptable approaches, e.g., the area of reinforcement to be equal to or greater that 0.2 percent of the area of concrete. The project architect, civil and/or structural engineer should make appropriate adjustments in reinforcement type, size and spacing to account for concrete internal (e.g., shrinkage and thermal) and external (e.g., applied loads) forces as deemed necessary.*

Edge Beams (Optional)

Where the outer edges of concrete flatwork are to be bordered by landscaping, it is recommended that considerations be given to the use of edge beams (thickened edges) to prevent excessive infiltration and accumulation of water under the slabs. Edge beams, if used, should be 6 to 8 inches wide, extend 8 inches below the tops of the finish slab surfaces. Edge beams are not mandatory; however, their inclusion in flatwork construction adjacent to landscaped areas is intended to reduce the potential for vertical and horizontal movement and subsequent cracking of the flatwork related to uplift forces that can develop in expansive soils.

Drainage

Drainage from patios and other flatwork areas should be directed to local area drains and/or graded earth swales designed to carry runoff water to the adjacent streets or other approved drainage structures. The concrete flatwork should be sloped at a minimum gradient of one percent, or as prescribed by project civil engineer or local codes, away from building foundations, retaining walls, masonry garden walls and slope areas.

Tree Wells

Tree wells are not recommended in concrete flatwork areas because they typically introduce excessive water into the subgrade soils and allow root invasion, both of which can cause heaving and cracking of the flatwork.

Retaining Walls

Footing Embedment

The base of retaining-wall footings constructed on level ground may be founded at a depth of 12 inches or more below the lowest adjacent final grade for low height walls. Where retaining walls are proposed on or within 15 feet from the top of adjacent descending fill slope, the footings should be deepened such that a horizontal clearance of 7 feet or more is maintained between the outside bottom edges of the footings and the face of the slope. The above-recommended footing setback is preliminary and may be revised based on site-specific soil conditions. Footing trenches should be observed by the project geotechnical representative to document that the footing trenches have been excavated into competent bearing soils and to the embedments recommended above. These observations should be performed prior to placing forms or reinforcing steel.

Allowable Bearing Values and Lateral Resistance

Retaining wall footings may be designed using the allowable bearing values and lateral resistance values provided previously for building foundations; however, when calculating passive resistance, the resistance of the upper 6 inches of the soil cover in front of the wall should be ignored in areas where the front of the wall will not be covered with concrete flatwork.

Active Earth Pressures

As of the date of this report, it is uncertain whether the proposed retaining walls will be backfilled with on-site soils or imported granular materials. For this reason, active and at-rest earth pressures are provided below for both conditions. However, considering that the onsite earth materials have an expansion index of 0 to 20, the use of imported granular materials for backfilling behind the retaining walls as described in the following sections is optional.

1. Onsite Soils Used for Backfill

   Onsite soils have an expansion index of 0 to 20. Therefore, active earth pressures equivalent to fluids having a density of 35 psf/ft and 51 psf/ft should be used for design of cantilevered walls retaining a level backfill and ascending 2:1 backfill, respectively. For walls that are restrained at the top, at-rest earth pressures of 53 pounds per cubic foot (equivalent fluid pressures) should be used. The above values are for retaining walls that have been supplied with a proper subdrain system (see Figure RW-1). All walls should be designed to support any adjacent structural surcharge loads imposed by other nearby walls or footings in addition to the above recommended active and at-rest earth pressures.

2. Imported Sand, Pea Gravel or Rock Used for Wall Backfill

   Imported clean sand exhibiting a sand equivalent value (SE) of 30 or greater, pea gravel or crushed rock may be used for wall backfill to reduce the lateral earth pressures provided these granular backfill materials extend behind the walls to a minimum horizontal distance equal to one-half the wall height. In addition, the sand, pea gravel or rock backfill materials should extend behind the walls to a minimum horizontal distance of 2 feet at the base of the wall or to a horizontal distance equal to the heel width of the footing, whichever is greater (see Figures RW-2 and RW-3). For the above conditions, cantilevered walls retaining a level backfill and ascending 2:1 backfill may be designed to resist active earth pressures equivalent to fluids having densities of 30 and 41 pounds per cubic foot, respectively. For walls that are restrained at the top, at-rest earth pressures equivalent to fluids having densities of 45 and 62 pounds per cubic foot are recommended for design of restrained walls supporting a level backfill and ascending 2:1 backfill, respectively. These values are also for retaining walls supplied with a proper subdrain system. Furthermore, as with native soil backfill, the walls should be designed to support any adjacent structural surcharge loads imposed by other nearby walls or footings in addition to the recommended active and at-rest earth pressures.

All structural calculations and details should be provided to the project geotechnical consultant for verification purposes prior to grading and construction phases.

Earthquake Loads

It is our understanding that retaining wall plans are not available at the time of this report. Section 1803.5.12 of the 2019 CBC requires the determination of lateral loads on retaining walls from earthquake forces for structures in seismic design categories D through E that are supporting more than six feet of backfill height. Recommendations for design of walls exceeding six feet in height can be provided once retaining walls plans are available for review.

Geotechnical Observation and Testing

All grading associated with retaining wall construction, including backcut excavations, observation of the footing trenches, installation of the subdrainage systems, and placement of backfill should be provided by a representative of the project geotechnical consultant.

Backdrains

To reduce the likelihood of the entrapment of water in the backfill soils, weepholes or open vertical masonry joints may be considered for retaining walls not exceeding a height of 3 feet. Weepholes, if used, should be 3-inches minimum diameter and provided at intervals of 6 feet or less along the wall. Open vertical masonry joints, if used, should be provided at 32-inch intervals. A continuous gravel fill, 3 inches by 12 inches, should be placed behind the weepholes or open masonry joints. The gravel should be wrapped in filter fabric to prevent infiltration of fines and subsequent clogging of the gravel. Filter fabric may consist of Mirafi 140N or equivalent.

A perforated pipe-and-gravel backdrain should be constructed behind retaining walls exceeding a height of 3 feet (see Figure RW-1). Perforated pipe should consist of 4-inch-minimum diameter PVC Schedule 40, or ABS SDR-35, with the perforations laid down. The pipe should be encased in a 1-foot-wide column of ¾-inch to 1½-inch open-graded gravel. If on-site soils are used as backfill, the open-graded gravel should extend above the wall footings to a minimum height equal to one-third the wall height or to a minimum height of 1.5 feet above the footing, whichever is greater. The open-graded gravel should be completely wrapped in filter fabric consisting of Mirafi 140N or equivalent. Solid outlet pipes should be connected to the subdrains and then routed to a suitable area for discharge of accumulated water.

Waterproofing

The backfilled sides of retaining walls should be coated with an approved waterproofing compound or covered with a similar material to inhibit migration of moisture through the walls.

Temporary Excavations

Temporary slopes may be cut at a gradient no steeper than 1:1 (h:v). However, the project geotechnical engineer should observe temporary slopes for evidence of potential instability. Depending on the results of these observations, flatter slopes may be necessary. The potential effects of various parameters such as weather, heavy equipment travel, storage near the tops of the temporary excavations and construction scheduling should also be considered in the stability of temporary slopes.

Wall Backfill

Recommended active and at-rest earth pressures for design of retaining walls are based on the physical and mechanical properties of the onsite soil materials. The backfill behind the proposed retaining walls, they should be placed in approximately 6- to 8-inch-thick maximum lifts, watered as necessary to achieve near optimum moisture conditions, and then mechanically compacted in place to a minimum relative compaction of 90 percent. Flooding or jetting of the backfill materials should be avoided. A representative of the project geotechnical consultant should observe the backfill procedures and test the wall backfill to verify adequate compaction.

Masonry Block Screen Walls

Construction On or Near the Tops of Descending Slopes

Continuous footings for masonry walls proposed on or within 5 feet from the top of a descending cut or fill slope should be deepened such that a horizontal clearance of 5 feet is maintained between the outside bottom edge of the footing and the slope face. The footings should be reinforced with two No. 4 bars, one top and one bottom. Plans for top-of-slope masonry walls proposing pier and grade beam footings should be reviewed by the project geotechnical consultant prior to construction.

Construction on Level Ground

Where masonry walls are proposed on level ground and 5 feet or more from the tops of descending slopes, the footings for these walls may be founded 18 inches or more below the lowest adjacent final grade. These footings should also be reinforced with two No. 4 bars, one top and one bottom.

Construction Joints

In order to reduce the potential for unsightly cracking related to the effects of differential settlement, positive separations (construction joints) should be provided in the walls at horizontal intervals of approximately 20 to 25 feet and at each corner. The separations should be provided in the blocks only and not extend through the footings. The footings should be placed monolithically with continuous rebars to serve as effective "grade beams" along the full lengths of the walls.

Construction Services

This report has been prepared for the exclusive use of Diversified Pacific Communities to assist the project engineers and architect in the design of the proposed development. It is recommended that Petra be engaged to review the final-design drawings and specifications prior to construction. This is to document that the recommendations contained in this report have been properly interpreted and are incorporated into the project specifications. If Petra is not accorded the opportunity to review these documents, we can take no responsibility for misinterpretation of our recommendations.

We recommend that Petra be retained to provide soil-engineering services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design, specifications, or recommendations and to allow design changes if subsurface conditions differ from those anticipated prior to start of construction.

If the project plans change significantly (e.g., building loads or type of structures), we should be retained to review our original design recommendations and their applicability to the revised construction. If conditions are encountered during construction that appears to be different than those indicated in this report, this office should be notified immediately. Design and construction revisions may be required.

LIMITATIONS

This report is based on the project, as described and the geotechnical data obtained from the field tests performed and our laboratory test data. The materials encountered on the project site and utilized in our laboratory evaluation are believed representative of the total area. However, soil materials can vary in characteristics between excavations, both laterally and vertically.

The conclusions and opinions contained in this report are based on the results of the described geotechnical evaluations and represent our professional judgment. The findings, conclusions and opinions contained in this report are to be considered tentative only and subject to confirmation by the undersigned during the construction process. Without this confirmation, this report is to be considered incomplete and Petra or the undersigned professionals assume no responsibility for its use. In addition, this report should be reviewed and updated after a period of 1 year or if the site ownership or project concept changes from that described herein.

The professional opinions contained herein have been derived in accordance with current standards of practice and no warranty is expressed or implied.

Respectfully submitted,

PETRA GEOSCIENCES, INC.

EDWARD P. LUMP
No. 1924

2/15/22

Edward Lump
Associate Geologist
CEG 1924

Grayson R. Walker
Principal Engineer
GE 871

GRAYSON R. WALKER
GE 871

EL/GRW/lv

W:\2020-2025\2021\400\21-458\Reports\21-458 110 Geotechnical Evaluation and Perc.docx

REFERENCES

Adkan Engineering, 2021, Conceptual Grading, Tentative Tract No. 38016, in the County of Riverside, State of California, Pages 1-8 of 8, prepared January 2021.

American Concrete Institute, 2008, Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary.

American Society for Testing and Materials (ASTM) – Standard – Section Four – Construction, Volume 04.08 Soil and Rock

American Society of Civil Engineers (ASCE) 7-05 Minimum Design Loads for Buildings and Other Structures.

Bedrossian, T.L., Hayhurst, C.A., and Roffers, P.D., 2010, Geologic Compilation of Quaternary Surficial Deposits in Southern California, San Bernardino 30’ x 60’ Quadrangle, CGS Special Report 217, Plate 13, July.

Bryant, W.A., and Hart, E.W., 2007, Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps, California Geological Survey, Special Publication 42.

California Building Code (2019), California Code of Regulations, Title 24, Par 2, Volume 2 of 2, Based on the 2018 International Building Code, California Building Standards Commission.

California Department of Water Resources, 2021, Water Data Library, http://www.water.ca.gov/waterdatalibrary/groundwater/.

California Geological Survey (CGS), 2019, California Earthquake Hazards Zone Application (EQ Zapp), https://www.conservation.ca.gov/cgs/geohazards/eq-zapp, searched May 2021.

Cao, T., et al., 2003, Revised 2002 California Probabilistic Seismic Hazard Maps, June 2003: California Geological Survey.

Carson, S.E. and Matti, J.C., 1985, Contour Map Showing Minimum Depth to Ground Water, Upper Santa Ana River Valley, California, 1973-1979, West Half, USGS Miscellaneous Field Studies, MF-1802, Sheet 2 of 2.

County of Riverside, 2014a, Low Impact Development BMP Design Handbook, June.

Federal Emergency Management Agency (FEMA), 2008, Flood Insurance Rate Map (FIRMette), Riverside County, California and Incorporated Areas, Map Number 06065C0065G, revised August 28.

Google Earth™ 2021, by Google Earth, Inc., http://www.google.com/earth/index.html, accessed April.

Greenbook, 2012, Standard Specifications for Public Works Construction, by Public Works Standards, Inc., BNI Publishers.

REFERENCES

International Conference of Building Officials, 1998, "Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada", California Division of Mines and Geology.

Jennings, C.W. and Bryant, W.A., 2010, *Fault Activity Map of California*: California Geological Survey, Geologic Data Map No. 6.

Matti, J. C., Morton, D. M., Cox, B. F., and Kendrick, K. J., 2003, Geologic Map of the Redlands 7.5' Quadrangle, San Bernardino and Riverside Counties, California, CGS Open-File Report 03-302.

Office of Statewide Health Planning and Development (OSHPD), 2021, Seismic Design Maps, U.S. Seismic Design Maps (seismicmaps.org)

Post-Tensioning Institute, 2012, Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundation on Expansive Soils, Publication PTI DC1010.5-12.

SEAOC & OSHPD Seismic Design Maps Web Application – https://seismicmaps.org/

Southern California Earthquake Center (SCEC), 1999, Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California: organized through the Southern California Earthquake Center, University of Southern California.

Southern California Earthquake Data Center (SCEDC), 2014, http://www.data.scec.org/significant/index.html.

Tokimatsu, K. and Seed, H.B., 1987; Evaluation of Settlements in Sands due to Earthquake Shaking: *in Journal of Geotechnical Engineering*, Vol. 113, No. 8, p. 861-879.

United States Geologic Survey (U.S.G.S.), 1996a, Probabilistic Seismic Hazard Assessment for the State of California, Open-File Report 96-706.

______, 1996b, National Seismic-Hazards Maps, Open-File Report 96-532.

______, 2002, Documentations for the 2002 Update of the National Seismic Hazard Maps, Open-File Report 02-20.

______, 2007, Preliminary Documentation for the 2007 Update of the United States National Seismic Hazard Maps, Seismic Hazards Mapping Project, Open-File Report 2007-June Draft.

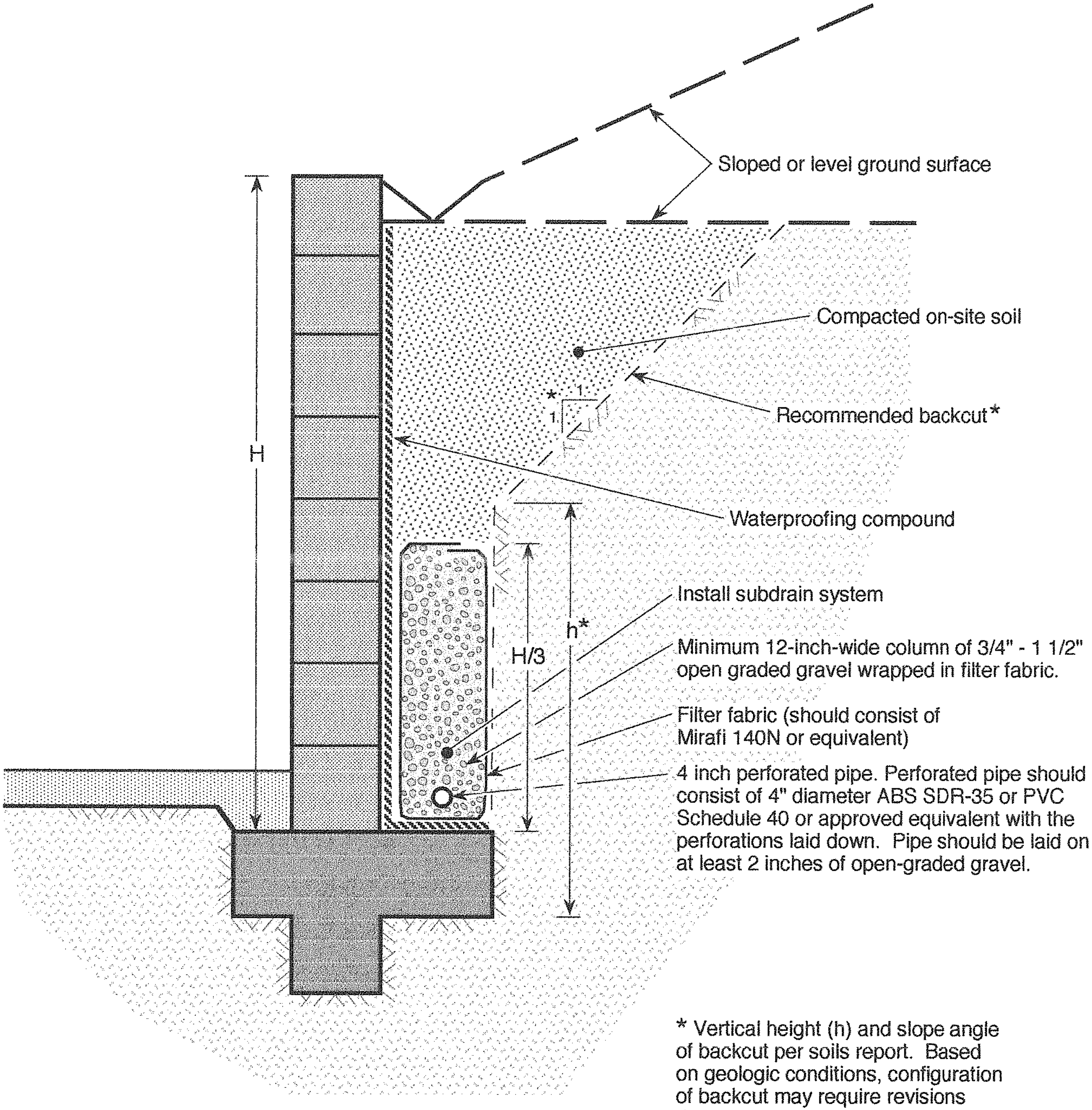
______, 2011, Earthquake Ground Motion Parameters, Version 5.1.0, utilizing ASCE 7 Standard Analysis Option, dated February 10.

______, 2021, Unified Hazard Tool Calculator, Unified Hazard Tool (usgs.gov)

Wire Reinforcement Institute (WRI), 1996, Design of Slabs on Ground.

FIGURES

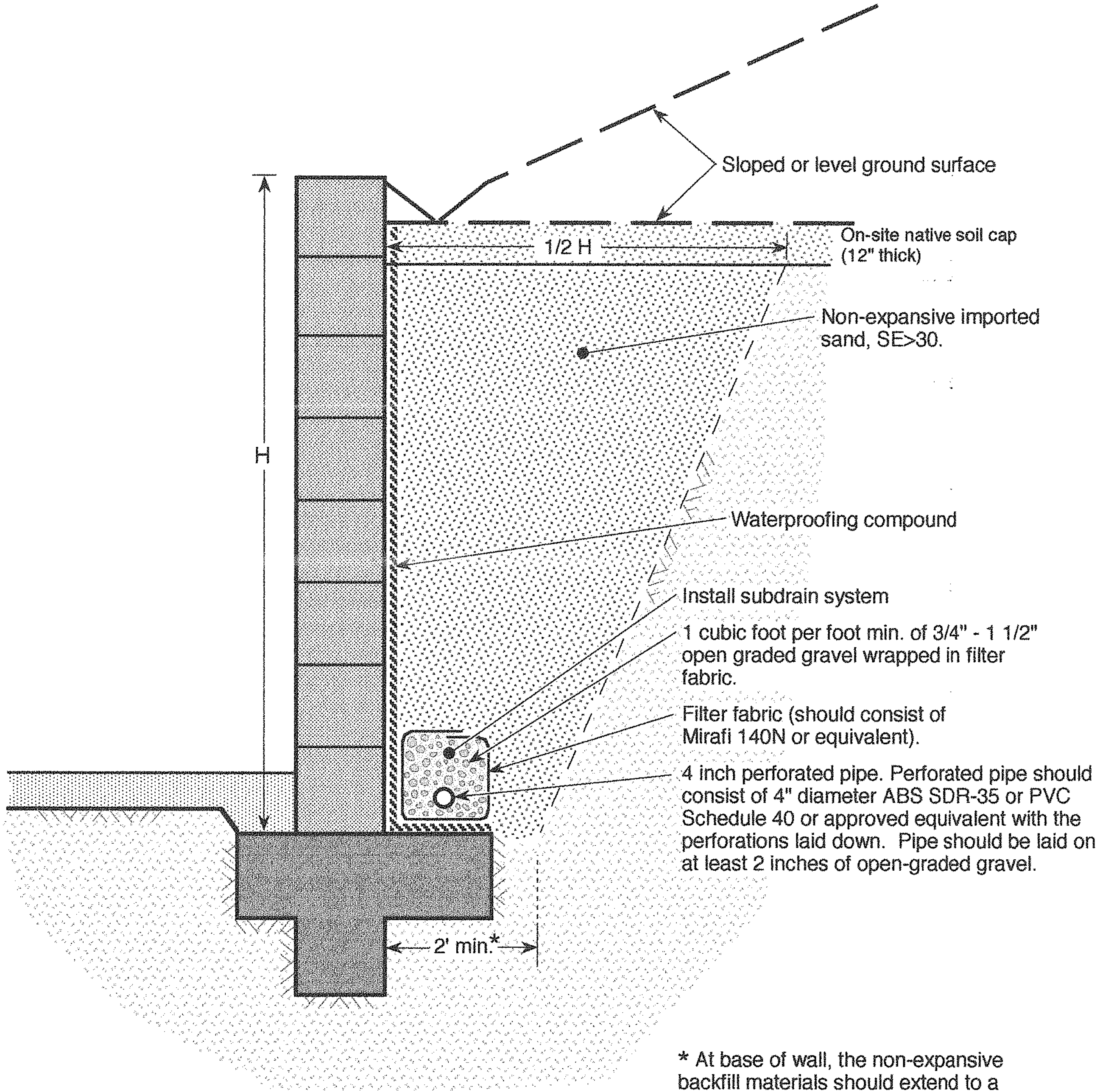
NATIVE SOIL BACKFILL



* Vertical height (h) and slope angle of backcut per soils report. Based on geologic conditions, configuration of backcut may require revisions (i.e. reduced vertical height, revised slope angle, etc.)

PETRA	RETAINING WALL BACKFILL AND SUBDRAIN DETAILS	FIGURE RW-1

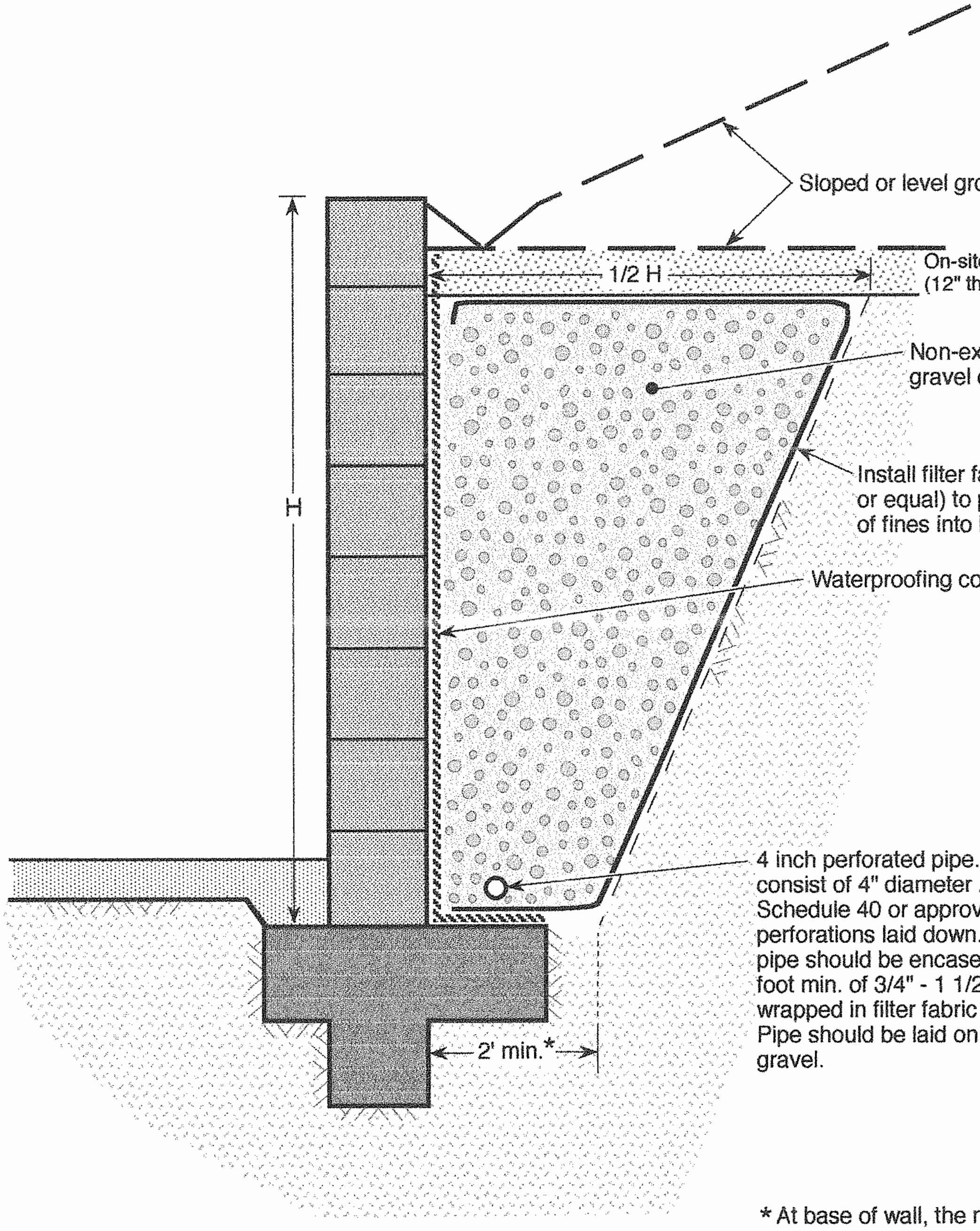
IMPORTED SAND BACKFILL



* At base of wall, the non-expansive backfill materials should extend to a min. distance of 2' or to a horizontal distance equal to the heel width of the footing, whichever is greater.

PETRA	**RETAINING WALL BACKFILL AND SUBDRAIN DETAILS**	**FIGURE RW-2**

IMPORTED GRAVEL OR CRUSHED ROCK BACKFILL



Sloped or level ground surface

On-site native soil cap (12" thick)

Non-expansive imported gravel or crushed rock

Install filter fabric (Mirafi 140N or equal) to prevent migration of fines into backfill.

Waterproofing compound

4 inch perforated pipe. Perforated pipe should consist of 4" diameter ABS SDR-35 or PVC Schedule 40 or approved equivalent with the perforations laid down. If pea gravel used, pipe should be encased in 1 cubic foot per foot min. of 3/4" - 1 1/2" open-graded gravel wrapped in filter fabric (Mirafi 140N or equal) Pipe should be laid on at least 2 inches of gravel.

* At base of wall, the non-expansive backfill materials should extend to a min. distance of 2' or to a horizontal distance equal to the heel width of the footing, whichever is greater.

PETRA	RETAINING WALL BACKFILL AND SUBDRAIN DETAILS	FIGURE RW-3

- Reproduced from: USGS, 2021, The National Map Viewer

LEGEND

🟥 - Approximate Site Location

PETRA GEOSCIENCES, INC.
40880 COUNTY CENTER DRIVE, SUITE M
TEMECULA, CALIFORNIA 92591
PHONE: (951) 600-9271
COSTA MESA MURRIETA PALM DESERT SANTA CLARITA

Site Location Map

LPA Redlands Project: Tennessee St. & Lugonia Ave.
Redlands, San Bernardino County, California

DATE: February 2022	J.N.: 21-458	**Figure 1**
DWG BY: epl	SCALE: NTS	

LEGEND

- - - - - Approximate Limits of Subject Property

P-3 ● - Approximate Location of Sample Boring (Percolation)

B-4 ● - Approximate Location of Sample Boring (Geotechnical)

Base Map Reference: Google Earth, 2021, Photograph dated August.

PETRA GEOSCIENCES, INC.
40880 County Center Drive, Suite M
Temecula, California 92591
PHONE: (714) 549-8921
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA

Boring and Sample Location Map

LPA Property, Tennessee St. & W. Lugonia Ave.
Redlands, San Bernardino County, California

DATE: February, 2022
J.N.: 21-458

Figure 2

APPENDIX A

EXPLORATION LOGS

EXPLORATION LOG

Project:	**NEC Tennessee and Lugonia Ave**			Boring No.:	**B-1**
Location:	**Redlands, California**			Elevation:	
Job No.:	**21-458**	Client:	**Diversified Pacific**	Date:	**January 6, 2022**
Drill Method:	**Truck Mounted CME-75 Hollowstem**	Driving Weight:	**140lbs**	Logged By:	**BR**

Depth (Feet)	Lith- ology	Material Description	WATER	Samples			Laboratory Tests		
				Blows per 6 in.	Core	Bulk	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
0		Topsoil Silty Sand (SM): Olive gray, moist, loose, silty fine to medium grained sand.		2 3	◩				
				2	◩				
		Olive gray, moist, loose, silty fine to medium sand.		2 4 4	■	■	1.8	107.4	
		Alluvium (Qal) Silty Sand (SM): Olive gray, moist, loose, silty fine to medium grained sand.		5		■			
5		Gray brown, moist, medium dense, silty fine to medium grained sand.		6 7 8	■	■	2.8	107.8	
		Gray, medium dense, silty fine to medium grained sand.		7 9 9	■		2.7	112.3	
		Gray, medium dense, silty fine to medium sand.		6 8 12	■		15.4	99.1	
10		Olive gray, moist, medium dense, silty fine grained sand.			■		2.3	102.8	
		Sand (SW): Gray, moist, medium dense, well graded fine to medium grained sand.		15 15 21	■		1.5	109.4	
15		Gray, moist, medium dense, well graded fine to medium grained sand.		11 15 16	■		2.8	99.9	
20		Gray brown, moist, medium dense, well graded fine to coarse grained sand.		8 8 8	◩				
25		Silty Sand (SM): Gray brown, moist, medium dense, silty fine grained sand.		8 10 14	■		18.4	93.8	
30		Olive gray, moist, medium dense, silty fine to medium grained sand.		5 5 6	◩				
35		Interbedded Sand and Silt (SW-SM): Olive brown to gray, moist, medium		14	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project:	**NEC Tennessee and Lugonia Ave**			Boring No.:	**B-1**
Location:	**Redlands, California**			Elevation:	
Job No.:	**21-458**	Client:	**Diversified Pacific**	Date:	**January 6, 2022**
Drill Method:	**Truck Mounted CME-75 Hollowstem**	Driving Weight:	**140lbs**	Logged By:	**BR**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		dense, interbedded silty silty fine grained sand and well graded fine to coarse grained sand.		16 17	■		9.3	106.1	
40		Silty Sand (SM): Gray brown, moist, medium dense, silty fine to medium grained sand.		7 9 12	◪				
45		Sand (SW): Gray, dry, medium dense, well graded fine to coarse grained sand.		20 21 26	■		5.1	118.9	
50		Gray, damp, dense, well graded fine to coarse grained sand.		12 14 21	◪				
		Total depth 51.5 feet. No groundwater or seepage. Backfilled with cuttings.							
55									
60									
65									
70									

PLATE

EXPLORATION LOG

Project:	**NEC Tennessee and Lugonia Ave**	Boring No.:	**B-2**
Location:	**Redlands, California**	Elevation:	
Job No.: **21-458**	Client: **Diversified Pacific**	Date:	**January 6, 2022**
Drill Method: **Truck Mounted CME-75 Hollowstem**	Driving Weight: **140lbs**	Logged By:	**BR**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0	▥	<u>Topsoil Silty Sand (SM):</u> Dark olive gray, moist, loose, silty fine to medium grained sand. loose.		2 3 4	◩ ◩				
	▒	<u>Alluvium (Qal) Sand (SW):</u> Gray, damp, medium dense, well graded fine to medium grained sand.		4 7 7 10	■		5.2	107.6	
5	▒	Gray, moist, medium dense, well graded fine to coarse grained sand.		8 9 10	■		1.8	110.1	
	▒	Gray, moist, medium dense, well graded fine to medium grained sand.		10 15 18	■		2.0	109.6	
	▒	Gray, moist, medium dense, well graded fine to coarse grained sand.		3 12 15	■		2.3	110.2	
10	▒	Gray, moist, medium dense, well graded fine to coarse grained sand.		12 16 30	■		2.6	118.7	
	▒	Light gray, moist, medium dense, well graded fine to coarse grained sand, with scattered sub rounded fine grained gravels.		13 16 20	■		1.7	108.1	
15	▒	Light gray, moist, dense, well graded fine to coarse grained sand.		15 21 34	■		1.8	126.0	
20	▦	<u>Interbedded Silt and Sand (SW-SM):</u> Olive brown to gray, damp, loose, interbedded silty fine grained sand and well graded fine to coarse grained sand.		7 5 7	■				
25	▥	<u>Silty Sand (SM):</u> Gray, damp, medium dense, silty fine to medium grained sand.		9 12 18	◩		7.7	108.1	
30									
35									

PLATE

Petra Geosciences, Inc.

E X P L O R A T I O N L O G

Project:	**NEC Tennessee and Lugonia Ave**	Boring No.:	**B-3**
Location:	**Redlands, California**	Elevation:	
Job No.: **21-458**	Client: **Diversified Pacific**	Date:	**January 6, 2022**
Drill Method: **Truck Mounted CME-75 Hollowstem**	Driving Weight: **140lbs**	Logged By:	**BR**

Depth (Feet)	Lith- ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		Silty Sand (SM): Dark olive brown to brown, moist, loose, silty fine to medium grained sand.		1 1 2	◪ ◪				
		Olive brown, moist, loose, silty fine to medium grained sand, with scattered coarse sand grains.		2 4 5 7	■	■	5.0	108.2	
		Alluvium (Qal) Silty Sand (SM): Gray brown, moist, loose, silty fine to medium grained sand.							
5		Light olive, moist, medium dense, silty fine sand.		8 9 11			2.0	100.6	
		Light brown, dry, medium dense, silty fine sand.		7 9 12	■		2.2	108.5	
10		Sand (SW): Gray, damp, medium dense, well graded fine to coarse sand, with sub rounded fine grained gravel.		6 10 13	■		1.4	105.6	
		Gray, damp, medium dense, well graded fine to coarse grained sand, with sub rounded fine grained gravel.		13 14 13	■		1.2	106.9	
15		Silty Sand (SM): Olive gray to gray, moist, medium dense, silty fine to medium grained sand.		7 6 11	■				
20		Interbedded Silt and Sand (SW-SM): Olive gray and gray, moist, medium dense, interbedded sandy silt and well graded fine to coarse grained sand.		8 11 15	■				
25		Olive brown to gray, moist, medium dense, interbedded sandy silt and well graded fine to coarse grained sand.		7 12 13	◪				
		Total depth 26.5 feet. No groundwater or seepage. Backfilled with cuttings.							
30									
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project:	**NEC Tennessee and Lugonia Ave**	Boring No.:	**B-4**
Location:	**Redlands, California**	Elevation:	
Job No.: **21-458**	Client: **Diversified Pacific**	Date:	**January 6, 2022**
Drill Method: **Truck Mounted CME-75 Hollowstem**	Driving Weight: **140lbs**	Logged By:	**BR**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples			Laboratory Tests		
				Blows per 6 in.	Core	Bulk	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
0		Topsoil Silty Sand (SM): Dark olive brown, damp to moist, loose, silty fine to medium grained sand, with scattered coarse grains. Olive brown, damp, loose, silty fine to medium grained sand.		2 4 3 4 10 7 7	◩ ◩ ■	■	7.3	103.3	
		Alluvium (Qal) Silty Sand: Olive gray, damp to moist, loose, silty fine to medium grained sand.							
5		Olive gray to gray, damp, medium dense, silty fine to medium grained sand.		6 8 10	■		1.6	106.7	
		Sand (SW): gray brown to gray, damp, medium dense, well graded fine to medium grained sand sand.		6 7 12	■		1.6	107.2	
10		Gray brown, damp, medium dense, well graded fine to coarse grained sand.		8 11 26	■		3.5	110.5	
		Silty Sand (SM): Gray, moist, medium dense, silty fine to medium grained sand.		12 11 19	■		1.6	96.4	
15		Gray, moist, medium dense, silty fine to medium grained sand.		10 10 14	■		3.5	110.2	
20		damp to moist, medium dense, silty fine to medium sand, with scattered coarse sand grains.		7 6 9	■		8.0	91.5	
25		Gray, moist, medium dense, silty fine to medium grained sand, with scattered coarse sand grains.		9 9 7	◩				
		Total depth 26.5 feet. No groundwater or seepage. Backfilled with cuttings.							
30									
35									

PLATE

Petra Geosciences, Inc.

E X P L O R A T I O N L O G

Project: **NEC Tennessee and Lugonia Ave**			Boring No.: **P-1**
Location: **Redlands, California**			Elevation:
Job No.: **21-458**		Client: **Diversified Pacific**	Date: **January 6, 2022**
Drill Method: **Truck Mounted CME-75**		Driving Weight: **140lbs**	Logged By: **BR**

Depth (Feet)	Lith- ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		Topsoil Silty Sand (SM): Dark Olive brown, damp, loost, silty fine to medium grained sand, with scattered organics.		2 3	◩	■			
		Sand (SW-SM): Olive brown, loose, well graded fine to medium grained, with scattered coarse sand grains.		2 3	◩	■			
		Alluvium (Qal) Sand (SW): Olive gray to gray, moist, medium dense, well graded fine to coarse grained sand.		3 6 9 3 6	■	■	5.8	109.2	
5		Gray, moist, medium dense, well graded fine to coarse grained sand, with scattered sub rounded fine gravels.		9 9 12 17	■		1.2	122.7	
		Gray, moist, medium dense, well graded fine to coarse grained sand.		11 12 16	■		2.1	104.7	
10		Gray, moist, dense, well graded fine to coarse grained sand, with scattered sub rounded fin to coarse gravels.		7 17 21	■		2.0	119.8	
		Gray, moist, dense, well graded fine to coarse grained, with scattered sub rounded fine to coarse grained gravels.		15 17 23	■		2.2	115.1	
15		Light gray, damp, dense, well graded fine to coarse grained sand.		14 19 32	■		1.5	108.0	
20		Gray, damp, very dense, well graded fine to coarse grained sand.		15 22 41	■		2.3	118.9	
		Gray, damp, medium dense, well graded fine to coarse grained sand.		17 10 8	◩				
25		Total depth 25.0 feet. No groundwater or seepage. Backfilled with cuttings.							
30									
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project:	**NEC Tennessee and Lugonia Ave**			Boring No.:	**P-2**
Location:	**Redlands, California**			Elevation:	
Job No.:	**21-458**	Client:	**Diversified Pacific**	Date:	**January 6, 2022**
Drill Method:	**CME75**	Driving Weight:	**140lbs**	Logged By:	**BR**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples			Laboratory Tests		
				Blows per 6 in.	Core	Bulk	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
0		Topsoil Silty Sand (SM): Dark olive brown, moist, loose, silty fine to medium grained. Olive gray, moist, loose, silty fine to medium grained.		1 2 2 3	◤ ◤				
		Alluvium (Qal) Sand (SW): Olive gray, moist, loose, well graded fine to coarse grained.		2 3	■		1.8	111.0	
5		Gray, damp, medium dense, well graded fine to coarse grained.		6 8 11	■		1.1	98.4	
		Gray brown, moist, dense, well graded fine to coarse grained sand.		8 11 18	■		2.0	105.7	
10		Gray, moist, medium dense, well graded fine to coarse grained sand.		12 13 18	■		2.1	107.6	
		Gray to gray brown, moist, medium dense, well graded fine to coarse rained.		14 20 30	■		1.8	116.1	
		Gray, moist, medium dense, well graded fine to coarse grained sand, with scattered sub rounded gravel.		7 12 15	◤				
15		Total depth 15.0 feet. No groundwater or seepage. Converted to percolation test boring.							
20									
25									
30									
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project:	**NEC Tennessee and Lugonia Ave**	Boring No.:	**P-3**
Location:	**Redlands, California**	Elevation:	
Job No.: **21-458**	Client: **Diversified Pacific**	Date:	**January 6, 2022**
Drill Method: **Truck Mounted CME-75 Hollowstem**	Driving Weight: **140lbs**	Logged By:	**BR**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0	⁝	Topsoil Silty Sand (SM): Dark olive brown, moist, loose, silty fine to medium grained.		2 3	◪				
	⁝	Olive gray, moist, loose, silty fine to medium grained.		2 2 4 4 5	◪ ■		1.9	110.2	
	⁝	Alluvium (Qal) Silty Sand (SM): Gray, moist, silty fine to medium grained sand.							
5	⁝	Silty Sand (SM): Gray, dry, medium dense, silty fine to coarse grained sand.		6 10 16	■		1.6	106.9	
	⁝	Gray, moist, medium dense, silty fine to medium grained sand.		8 11 11	■		1.8	105.2	
10	⁝	Gray, moist, medium dense, well graded fine to medium grained sand.		7 15 20	■		2.6	114.6	
	∴	Sand (SW): Gray, damp, medium dense, well graded fine to medium grained sand, with scattered coarse sand grains.		17 19 20	■		0.9	109.6	
	⁝	Silty Sand (SM): Gray brown, damp, loose, silty fine to medium grained.		4 6 8	◪				
15		Total depth 15.0 feet. No groundwater or seepage. Converted to percolation test boring.				■			
20									
25									
30									
35									

PLATE

Petra Geosciences, Inc.

APPENDIX B

LABORATORY TEST PROCEDURES

LABORATORY DATA SUMMARY

LABORATORY TEST PROCEDURES

Soil Classification

Soils encountered within the exploratory borings were initially classified in the field in general accordance with the visual-manual procedures of the Unified Soil Classification System (ASTM D 2488). The samples were re-examined in the laboratory and the classifications reviewed and then revised where appropriate. The assigned group symbols are presented in the Boring Logs (Appendix A).

In-Situ Moisture and Density

Moisture content and unit dry density of in-place soils were determined in representative strata. Test data are summarized in the Boring Logs (Appendix A).

Maximum Dry Density and Optimum Moisture Content

The maximum dry density and optimum moisture content of the on-site soils were determined for selected bulk samples in accordance with current version of ASTM D 1557. The results of these tests are presented on Plate B-1.

Expansion Index

The expansion index of onsite soils was determined per ASTM D 4829. The expansion index and expansion potential are presented in Plate B-1.

Corrosivity Tests

Chemical analyses were performed on a selected sample to determine concentrations of soluble sulfate and chloride, as well as pH and resistivity. These tests were performed in accordance with California Test Method Nos. 417 (sulfate), 422 (chloride) and 643 (pH and resistivity). Test results are presented in Plate B-1.

Consolidation Potential

Consolidation potential tests were performed in general accordance with ASTM D 2435-03. The test samples were inundated at 1.4 kips per square foot in order to evaluate the effects of a sudden increase in moisture content (hydro-collapse potential). Results of these tests in terms of percent consolidation are presented on Plates B-2 and B-3.

Single-Point Collapse

Volume change (collapse) characteristics of selected undisturbed soil samples were determined by one-dimensional single-point collapse test. This test was performed in general accordance with the latest version of the Test Method ASTM D 5333. Axial loads were applied to laterally restrained 1-inch-high samples. The resulting deformation was recorded at selected time intervals. At a load approximately corresponding to the existing overburden pressure or the anticipated future load, the test samples were inundated in order to evaluate the effect of an increase in moisture content, e.g., hydro-consolidation potential (or heave). Results of this test are graphically presented on Plate B-4.

Direct Shear

A direct shear test was run on a selected sample of soil in accordance with ASTM D 3030-03. Test values are given on Plate B-5.

Percent Passing No. 200 Sieve

Selected samples from the percolation test borings were run through a number 200 sieve in general accordance with the latest version of Test Method ASTM D 1140. The results of these tests are included on Plate B-1.

LABORATORY DATA SUMMARY

Laboratory Maximum Dry Density

Sample Location	Soil Type	Optimum Moisture (%)	Maximum Dry Density (pcf)
B-1 @ 2 – 5’	Grayish brown, silty fine- to medium grain SAND	7.5	126.5
B-2 @ 0 – 3’	Grayish brown, silty fine- to medium grain SAND	8.2	123.5

PER ASTM D 1557

Corrosivity

Sample Location	Sulfate[1] (%)	Chloride[2] (ppm)	pH[3]	Resistivity[3] (ohm-cm)
B-1 @ 2 – 5’	0.0039	255	7.96	13,000

(1) PER CALIFORNIA TEST METHOD NO. 417
(2) PER CALIFORNIA TEST METHOD NO. 422
(3) PER CALIFORNIA TEST METHOD NO. 643

Expansion Index

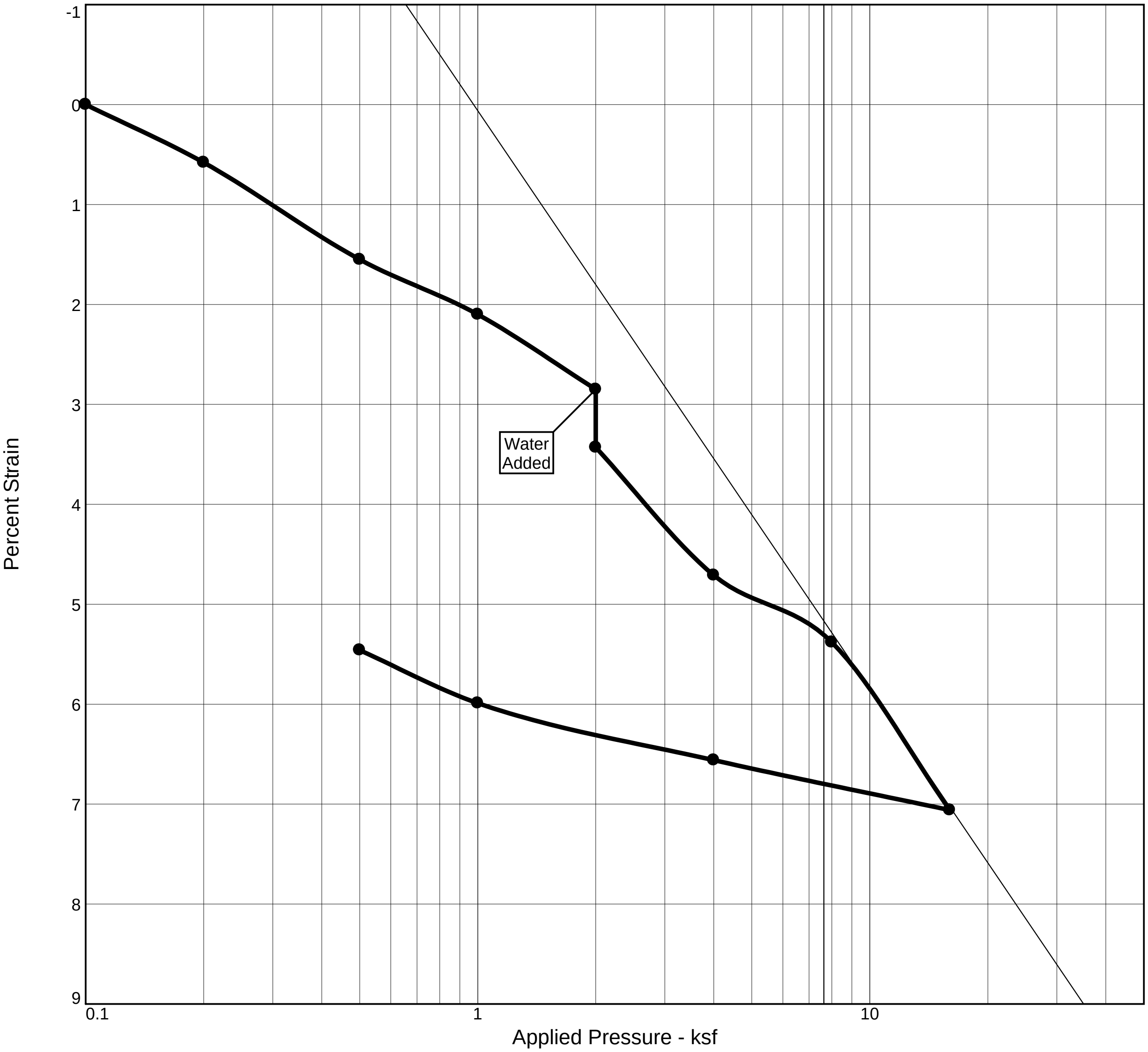
Sample Location Depth (feet)	Soil Type	Expansion[1] Index	Expansion Potential
B-1 @ 2 – 5’	Grayish brown, silty fine- to medium-grain SAND	0	Very Low

(1) PER ASTM D 4829

Percent Passing No. 200 Sieve

Sample Location & Depth (feet)	Percent Passing No. 200 Sieve
P-1 @ 11’	6.4
P-1 @ 20’	8.5
P-2 @ 7’	7.2
P-3 @ 7’	5.9

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
12.7 %	2.8 %	103.8			2.65	.43	8.3	0.09	0.02	0.593

MATERIAL DESCRIPTION	USCS	AASHTO
Olive Brown, fine to coarse Sand with Silt		

Project No. 21-458 **Client:** Diversified Pacific

Project: Redlands

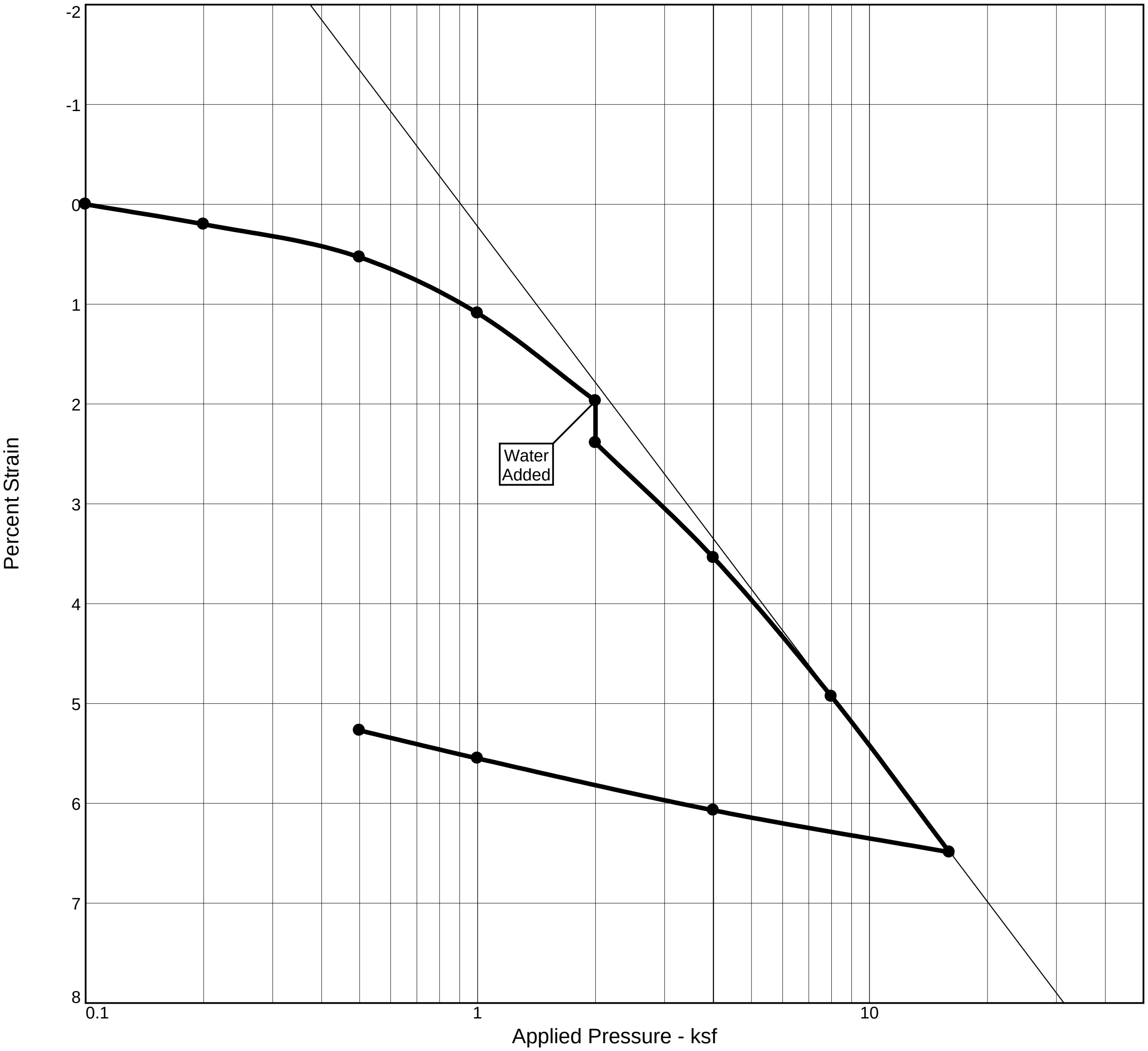
Source of Sample: 22L003 **Depth:** 4 **Sample Number:** B-1

PETRA GEOSCIENCES INC.

Remarks:

Figure B-2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
7.1 %	1.6 %	104.3			2.65	.53	4.6	0.08	0.01	0.586

MATERIAL DESCRIPTION	USCS	AASHTO
Light Gray, fine to coarse Sand		

Project No. 21-458 **Client:** Diversified Pacific

Project: Redlands

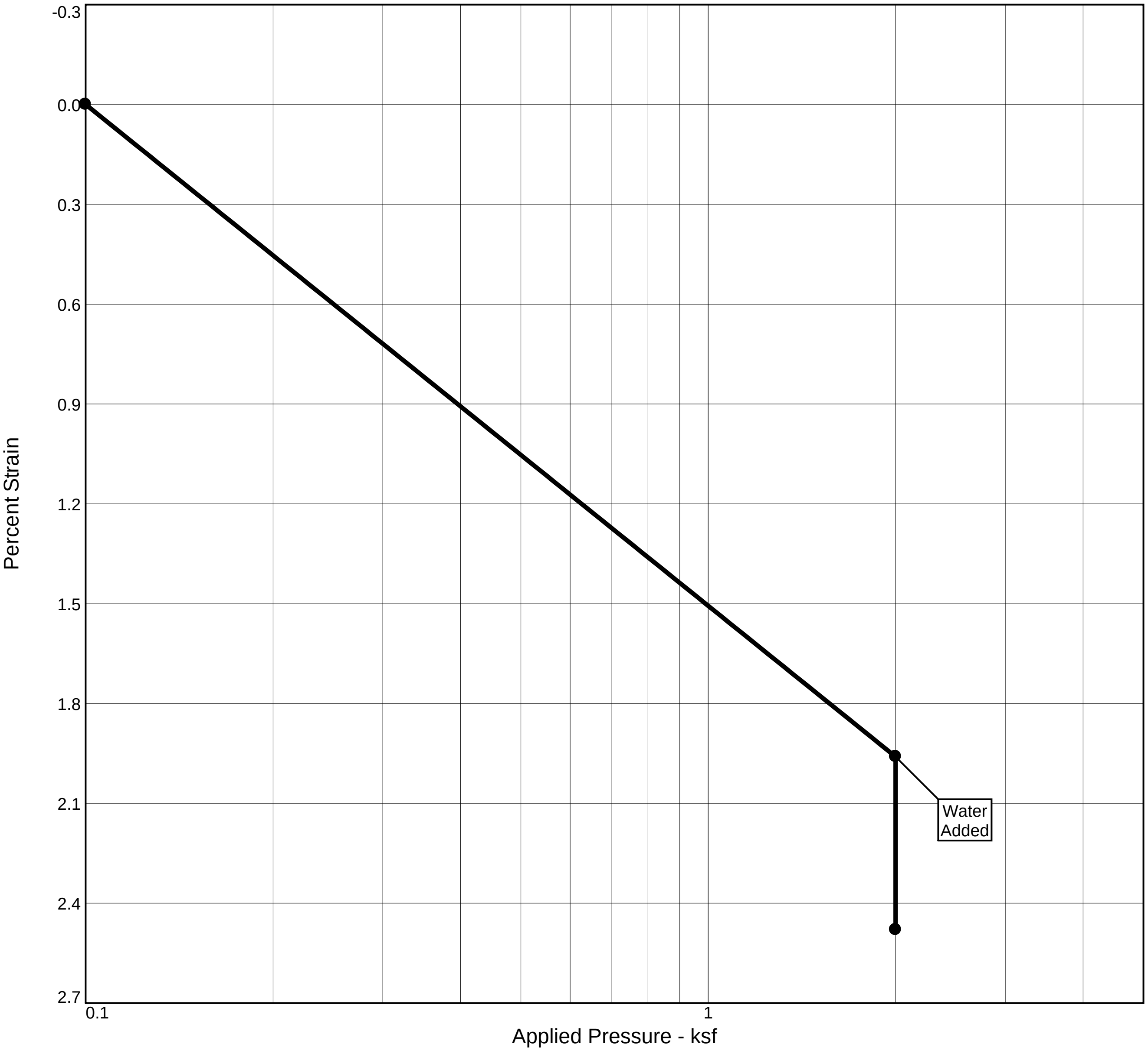
Source of Sample: 22L003 **Depth:** 5 **Sample Number:** B-4

PETRA GEOSCIENCES INC.

Remarks:

Figure B-3

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
77.8 %	5.6 %	103.8			2.65	0.22				0.191

MATERIAL DESCRIPTION	USCS	AASHTO
Light Gray, fine to coarse Sand	SP	

Project No. 21-458 **Client:** Diversified Pacific

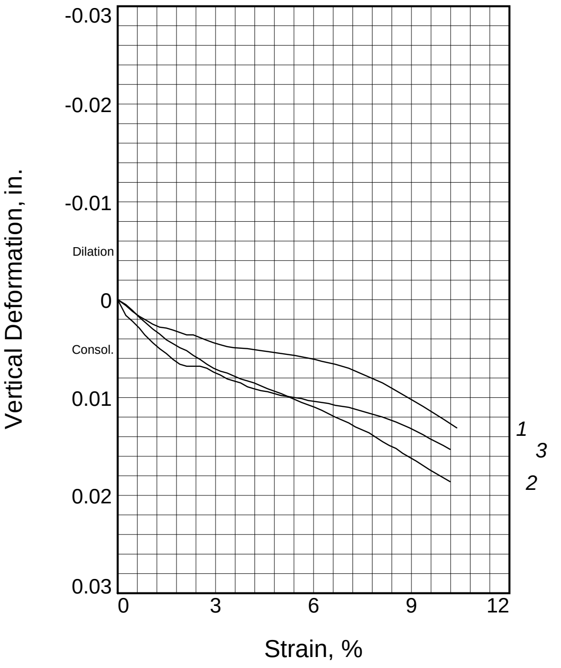
Project: Redlands

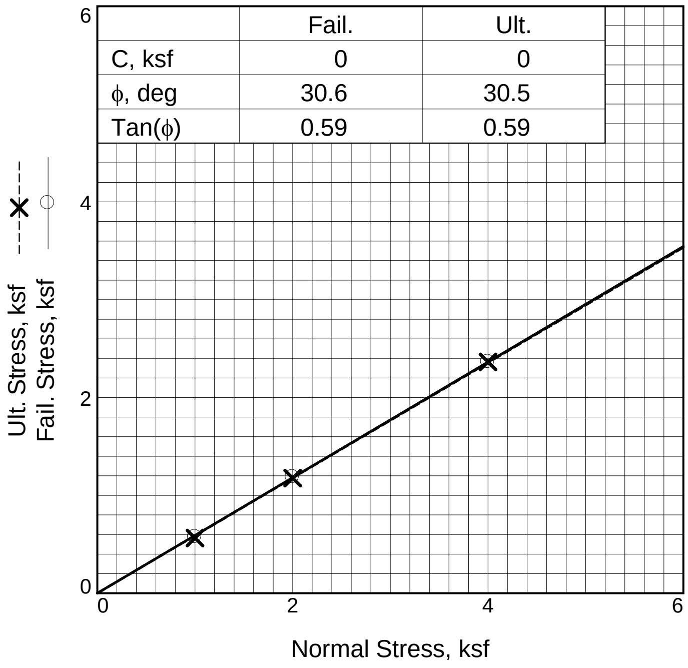
Source of Sample: 22L003 **Depth:** 2 **Sample Number:** P-2

PETRA GEOSCIENCES INC.

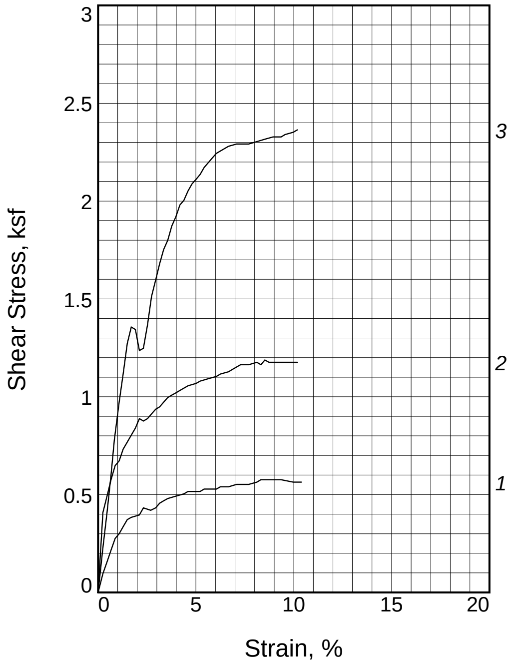
Remarks:

Figure B-4





	Fail.	Ult.
C, ksf	0	0
ϕ, deg	30.6	30.5
Tan(ϕ)	0.59	0.59



	Sample No.	1	2	3
Initial	Water Content, %	2.0	2.0	2.0
	Dry Density, pcf	95.7	99.0	99.2
	Saturation, %	7.4	8.1	8.1
	Void Ratio	0.7290	0.6707	0.6680
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	24.9	21.8	20.5
	Dry Density, pcf	99.6	104.6	107.1
	Saturation, %	99.8	99.6	100.0
	Void Ratio	0.6610	0.5813	0.5444
	Diameter, in.	2.42	2.42	2.42
	Height, in.	0.96	0.95	0.93
	Normal Stress, ksf	1.00	2.00	4.00
	Fail. Stress, ksf	0.58	1.19	2.36
	Strain, %	8.3	8.5	10.2
	Ult. Stress, ksf	0.56	1.18	2.36
	Strain, %	10.0	8.7	10.2
	Strain rate, in./min.	0.040	0.040	0.040

Sample Type: Undisturbed

Description: Light Brown, fine to medium Sandy Silt

Specific Gravity= 2.65

Remarks:

Figure B-5

Client: Diversified Pacific

Project: Redlands

Source of Sample: 22L003 **Depth:** 5

Sample Number: B-3

Proj. No.: 21-458 **Date Sampled:** 1/18/2022

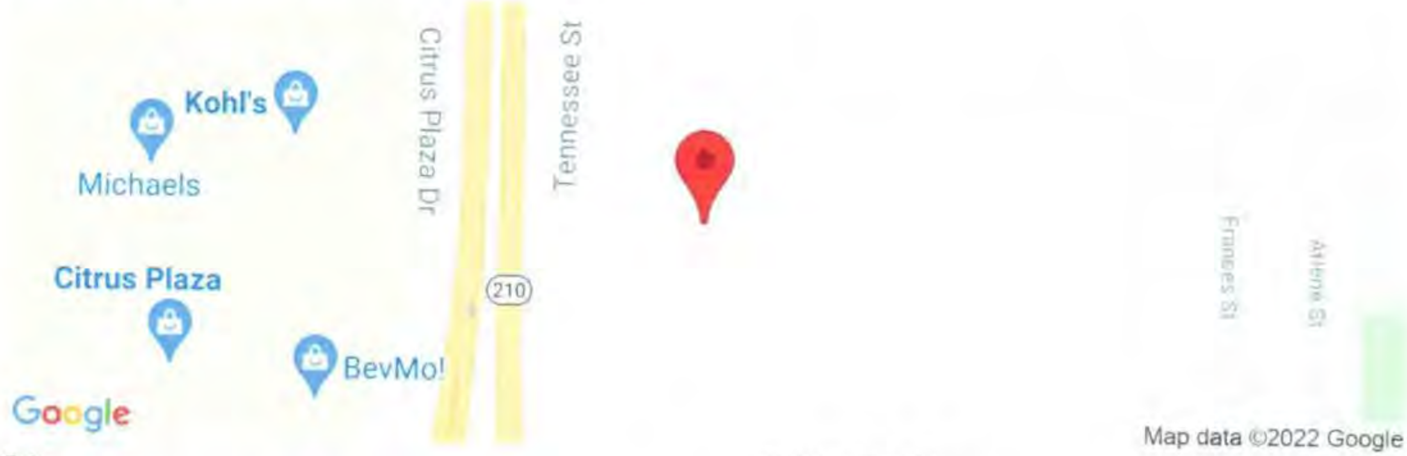
PETRA GEOSCIENCES INC.

APPENDIX C

SEISMIC DESIGN PARAMETERS

21-458 Redlands, CA

Latitude, Longitude: 34.072613, -117.198658



Map data ©2022 Google

Date	1/7/2022, 8:50:04 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	1.831	MCE_R ground motion. (for 0.2 second period)
S_1	0.73	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.197	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.464	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.767	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.92	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.582	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.815	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.831	Factored deterministic acceleration value. (0.2 second)
S1RT	1.017	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	1.141	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.73	Factored deterministic acceleration value. (1.0 second)
PGAd	0.767	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.917	Mapped value of the risk coefficient at short periods
C_{R1}	0.891	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

While the information presented on this website is believed to be correct, SEAOC /OSHPD and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in this web application should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. SEAOC / OSHPD do not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the seismic data provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the search results of this website.

APPENDIX D

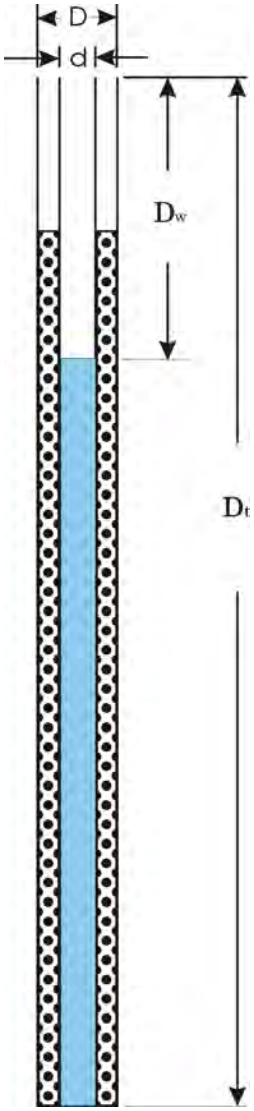
INFILTRATION TEST RESULTS

Test Number: P-1

Shallow Percolation Test Method

Total Depth of Boring, D_t (ft):	25.25
Diameter of Hole, D (in):	8
Diameter of Pipe, d (in):	3
Agg. Correction (% Voids):	40
Pre-soak depth (ft):	10

Time Interval (min)	Depth to Water Surface D_w (ft) 1st Reading	Depth to Water Surface D_w (ft) 2nd Reading	Change in Head (in)	Perc. Rate (min/in)	Perc. Rate (gal/day/ft^2)
10	19.31	24.12	57.72	0.17	113.02
10	18.10	23.95	70.20	0.14	115.86
10	18.40	23.80	64.80	0.15	108.81
10	20.21	23.97	45.12	0.22	98.31
10	18.55	23.85	63.60	0.16	109.33
10	19.50	23.95	53.40	0.19	104.85



Percolation Rate: **0.19** **min/in**

104.9 **gal/day/ft^2**

Infiltration Rate: **14.5** **in/hr***
(Porchet Method)

where Infiltration Rate, $I_t = \Delta H\,(60r) / \Delta t\,(r + 2H_{avg})$

$r = D / 2$

$H_o = D_t - D_o$

$H_f = D_t - D_f$

$\Delta H = \Delta D = H_o - H_f$

$H_{avg} = (H_o + H_f) / 2$

*Raw Number, Does Not Include a Factor of Safety

Reference: RCFCWCD, Design Handbook for LIDBMP, dated September, 2011

PETRA GEOSCIENCES, INC.
40880 County Center Drive, Suite M
Temecula, CA 92591
PHONE: (951) 600-9271
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA SAN DIEGO

PERCOLATION TEST SUMMARY

Diversified Pacific, LPA Redlands
Redlands, California

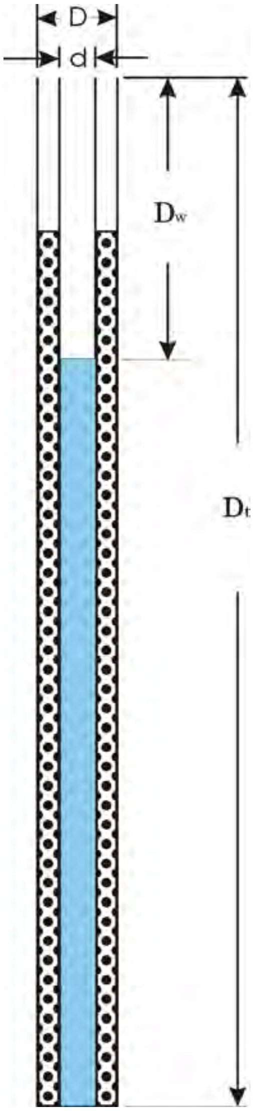
PETRA GEOSCIENCES
DATE: Jan 2022
J.N.: 21-458

Figure 1

Test Number: P-2

Shallow Percolation Test Method

Total Depth of Boring, D_t (ft):	15.5
Diameter of Hole, D (in):	8
Diameter of Pipe, d (in):	3
Agg. Correction (% Voids):	40
Pre-soak depth (ft):	5



Time Interval (min)	Depth to Water Surface D_w (ft)		Change in Head (in)	Perc. Rate (min/in)	Perc. Rate (gal/day/ft^2)
	1st Reading	2nd Reading			
10	10.30	13.83	42.36	0.24	85.25
10	10.30	13.80	42.00	0.24	84.18
10	9.60	13.70	49.20	0.20	88.79
10	8.00	13.30	63.60	0.16	91.89
10	8.50	13.72	62.64	0.16	99.64
10	8.70	13.80	61.20	0.16	100.44

Percolation Rate: **0.16** **min/in**

100.4 **gal/day/ft^2**

Infiltration Rate: **13.9** **in/hr***
(Porchet Method)

where Infiltration Rate, $I_t = \Delta H\ (60r) / \Delta t\ (r + 2H_{avg})$

$r = D / 2$

$H_o = D_t - D_o$

$H_f = D_t - D_f$

$\Delta H = \Delta D = H_o - H_f$

$H_{avg} = (H_o + H_f) / 2$

*Raw Number, Does Not Include a Factor of Safety

Reference: RCFCWCD, Design Handbook for LIDBMP, dated September, 2011

PETRA GEOSCIENCES, INC.
40880 County Center Drive, Suite M
Temecula, CA 92591
PHONE: (951) 600-9271
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA SAN DIEGO

PERCOLATION TEST SUMMARY

Diversified Pacific, LPA Redlands
Redlands, California

DATE: Jan 2022
J.N.: 21-458

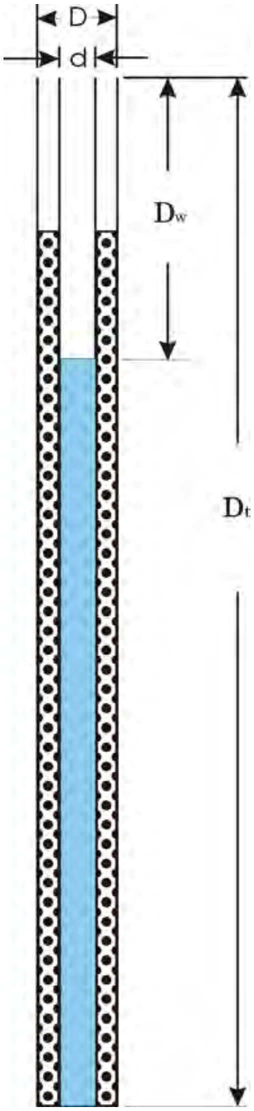
Figure 2

Test Number: P-3

Shallow Percolation Test Method

Total Depth of Boring, D_t (ft):	15.33
Diameter of Hole, D (in):	8
Diameter of Pipe, d (in):	3
Agg. Correction (% Voids):	40
Pre-soak depth (ft):	5

Time Interval (min)	Depth to Water Surface D_w (ft)		Change in Head (in)	Perc. Rate (min/in)	Perc. Rate (gal/day/ft^2)
	1st Reading	2nd Reading			
10	7.00	11.40	52.80	0.19	60.78
10	5.90	11.30	64.80	0.15	68.11
10	4.75	10.92	74.04	0.14	70.05
10	4.90	10.60	68.40	0.15	64.00
10	4.50	10.20	68.40	0.15	60.86
10	7.00	10.40	40.80	0.25	43.51



Percolation Rate: **0.25** **min/in**

43.5 **gal/day/ft^2**

Infiltration Rate: **6.0** **in/hr***
(Porchet Method)

where Infiltration Rate, $I_t = \Delta H\,(60r) / \Delta t\,(r + 2H_{avg})$

$r = D / 2$

$H_o = D_t - D_o$

$H_f = D_t - D_f$

$\Delta H = \Delta D = H_o - H_f$

$H_{avg} = (H_o + H_f) / 2$

*Raw Number, Does Not Include a Factor of Safety

Reference: RCFCWCD, Design Handbook for LIDBMP, dated September, 2011

PETRA GEOSCIENCES, INC.
40880 County Center Drive, Suite M
Temecula, CA 92591
PHONE: (951) 600-9271
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA SAN DIEGO

PERCOLATION TEST SUMMARY

Diversified Pacific, LPA Redlands
Redlands, California

DATE: Jan 2022
J.N.: 21-458

Figure 3

APPENDIX E

STANDARD GRADING SPECIFICATIONS

STANDARD GRADING SPECIFICATIONS

These specifications present the usual and minimum requirements for projects on which Petra Geosciences, Inc. (Petra) is the geotechnical consultant. No deviation from these specifications will be allowed, except where specifically superseded in the preliminary geology and soils report, or in other written communication signed by the Soils Engineer and Engineering Geologist of record (Geotechnical Consultant).

I. GENERAL

A. The Geotechnical Consultant is the Owner's or Builder's representative on the project. For the purpose of these specifications, participation by the Geotechnical Consultant includes that observation performed by any person or persons employed by, and responsible to, the licensed Soils Engineer and Engineering Geologist signing the soils report.

B. The contractor should prepare and submit to the Owner and Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" and the estimated quantities of daily earthwork to be performed prior to the commencement of grading. This work plan should be reviewed by the Geotechnical Consultant to schedule personnel to perform the appropriate level of observation, mapping, and compaction testing as necessary.

C. All clearing, site preparation, or earthwork performed on the project shall be conducted by the Contractor in accordance with the recommendations presented in the geotechnical report and under the observation of the Geotechnical Consultant.

D. It is the Contractor's responsibility to prepare the ground surface to receive the fills to the satisfaction of the Geotechnical Consultant and to place, spread, mix, water, and compact the fill in accordance with the specifications of the Geotechnical Consultant. The Contractor shall also remove all material considered unsatisfactory by the Geotechnical Consultant.

E. It is the Contractor's responsibility to have suitable and sufficient compaction equipment on the job site to handle the amount of fill being placed. If necessary, excavation equipment will be shut down to permit completion of compaction to project specifications. Sufficient watering apparatus will also be provided by the Contractor, with due consideration for the fill material, rate of placement, and time of year.

F. After completion of grading a report will be submitted by the Geotechnical Consultant.

II. SITE PREPARATION

A. Clearing and Grubbing

1. All vegetation such as trees, brush, grass, roots, and deleterious material shall be disposed of offsite. This removal shall be concluded prior to placing fill.

2. Any underground structures such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipe lines, etc., are to be removed or treated in a manner prescribed by the Geotechnical Consultant.

III. FILL AREA PREPARATION

A. Remedial Removals/Overexcavations

1. Remedial removals, as well as overexcavation for remedial purposes, shall be evaluated by the Geotechnical Consultant. Remedial removal depths presented in the geotechnical report and shown on the geotechnical plans are estimates only. The actual extent of removal should be determined by the Geotechnical Consultant based on the conditions exposed during grading. All soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be overexcavated to competent ground as determined by the Geotechnical Consultant.

2. Soil, alluvium, or bedrock materials determined by the Soils Engineer as being unsuitable for placement in compacted fills shall be removed from the site. Any material incorporated as a part of a compacted fill must be approved by the Geotechnical Consultant.

3. Should potentially hazardous materials be encountered, the Contractor should stop work in the affected area. An environmental consultant specializing in hazardous materials should be notified immediately for evaluation and handling of these materials prior to continuing work in the affected area.

B. Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide sufficient survey control for determining locations and elevations of processed areas, keys, and benches.

C. Processing

After the ground surface to receive fill has been declared satisfactory for support of fill by the Geotechnical Consultant, it shall be scarified to a minimum depth of 6 inches and until the ground surface is uniform and free from ruts, hollows, hummocks, or other uneven features which may prevent uniform compaction.

The scarified ground surface shall then be brought to optimum moisture, mixed as required, and compacted to a minimum relative compaction of 90 percent.

D. Subdrains

Subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, and/or with the recommendations of the Geotechnical Consultant. (Typical Canyon Subdrain details are given on Plate SG-1).

E. Cut/Fill & Deep Fill/Shallow Fill Transitions

In order to provide uniform bearing conditions in cut/fill and deep fill/shallow fill transition lots, the cut and shallow fill portions of the lot should be overexcavated to the depths and the horizontal limits discussed in the approved geotechnical report and replaced with compacted fill. (Typical details are given on Plate SG-7.)

IV. COMPACTED FILL MATERIAL

A. General

Materials excavated on the property may be utilized in the fill, provided each material has been determined to be suitable by the Geotechnical Consultant. Material to be used for fill shall be essentially free of organic material and other deleterious substances. Roots, tree branches, and other matter missed during clearing shall be removed from the fill as recommended by the Geotechnical Consultant. Material that is spongy, subject to decay, or otherwise considered unsuitable shall not be used in the compacted fill.

Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

B. Oversize Materials

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 12 inches in diameter, shall be taken offsite or placed in accordance with the recommendations of the Geotechnical Consultant in areas designated as suitable for rock disposal (Typical details for Rock Disposal are given on Plate SG-4).

Rock fragments less than 12 inches in diameter may be utilized in the fill provided, they are not nested or placed in concentrated pockets; they are surrounded by compacted fine grained soil material and the distribution of rocks is approved by the Geotechnical Consultant.

C. Laboratory Testing

Representative samples of materials to be utilized as compacted fill shall be analyzed by the laboratory of the Geotechnical Consultant to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material shall be conducted by the Geotechnical Consultant as soon as possible.

D. Import

If importing of fill material is required for grading, proposed import material should meet the requirements of the previous section. The import source shall be given to the Geotechnical Consultant at least 2 working days prior to importing so that appropriate tests can be performed and its suitability determined.

V. FILL PLACEMENT AND COMPACTION

A. Fill Layers

Material used in the compacting process shall be evenly spread, watered, processed, and compacted in thin lifts not to exceed 6 inches in thickness to obtain a uniformly dense layer. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Consultant.

B. Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly above optimum moisture content.

C. Compaction

Each layer shall be compacted to 90 percent of the maximum density in compliance with the testing method specified by the controlling governmental agency. (In general, ASTM D 1557-02, will be used.)

If compaction to a lesser percentage is authorized by the controlling governmental agency because of a specific land use or expansive soils condition, the area to received fill compacted to less than 90 percent shall either be delineated on the grading plan or appropriate reference made to the area in the soils report.

D. Failing Areas

If the moisture content or relative density varies from that required by the Geotechnical Consultant, the Contractor shall rework the fill until it is approved by the Geotechnical Consultant.

E. Benching

All fills shall be keyed and benched through all topsoil, colluvium, alluvium or creep material, into sound bedrock or firm material where the slope receiving fill exceeds a ratio of 5 horizontal to 1 vertical, in accordance with the recommendations of the Geotechnical Consultant.

VI. SLOPES

A. Fill Slopes

The contractor will be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses, and stabilization fills. This may be achieved by either overbuilding the slope and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure that produces the required compaction.

B. Side Hill Fills

The key for side hill fills shall be a minimum of 15 feet within bedrock or firm materials, unless otherwise specified in the soils report. (See detail on Plate SG-5.)

C. Fill-Over-Cut Slopes

Fill-over-cut slopes shall be properly keyed through topsoil, colluvium or creep material into rock or firm materials, and the transition shall be stripped of all soils prior to placing fill. (see detail on Plate SG-6).

D. Landscaping

All fill slopes should be planted or protected from erosion by other methods specified in the soils report.

E. Cut Slopes

1. The Geotechnical Consultant should observe all cut slopes at vertical intervals not exceeding 10 feet.
2. If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be evaluated by the Geotechnical Consultant, and recommendations shall be made to treat these problems (Typical details for stabilization of a portion of a cut slope are given in Plates SG-2 and SG-3.).
3. Cut slopes that face in the same direction as the prevailing drainage shall be protected from slope wash by a non-erodible interceptor swale placed at the top of the slope.
4. Unless otherwise specified in the soils and geological report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.
5. Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the Geotechnical Consultant.

VII. GRADING OBSERVATION

A. General

All cleanouts, processed ground to receive fill, key excavations, subdrains, and rock disposals must be observed and approved by the Geotechnical Consultant prior to placing any fill. It shall be the Contractor's responsibility to notify the Geotechnical Consultant when such areas are ready.

B. Compaction Testing

Observation of the fill placement shall be provided by the Geotechnical Consultant during the progress of grading. Location and frequency of tests shall be at the Consultants discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations may be selected to verify adequacy of compaction levels in areas that are judged to be susceptible to inadequate compaction.

C. Frequency of Compaction Testing

In general, density tests should be made at intervals not exceeding 2 feet of fill height or every 1000 cubic yards of fill placed. This criteria will vary depending on soil conditions and the size of the job. In any event, an adequate number of field density tests shall be made to verify that the required compaction is being achieved.

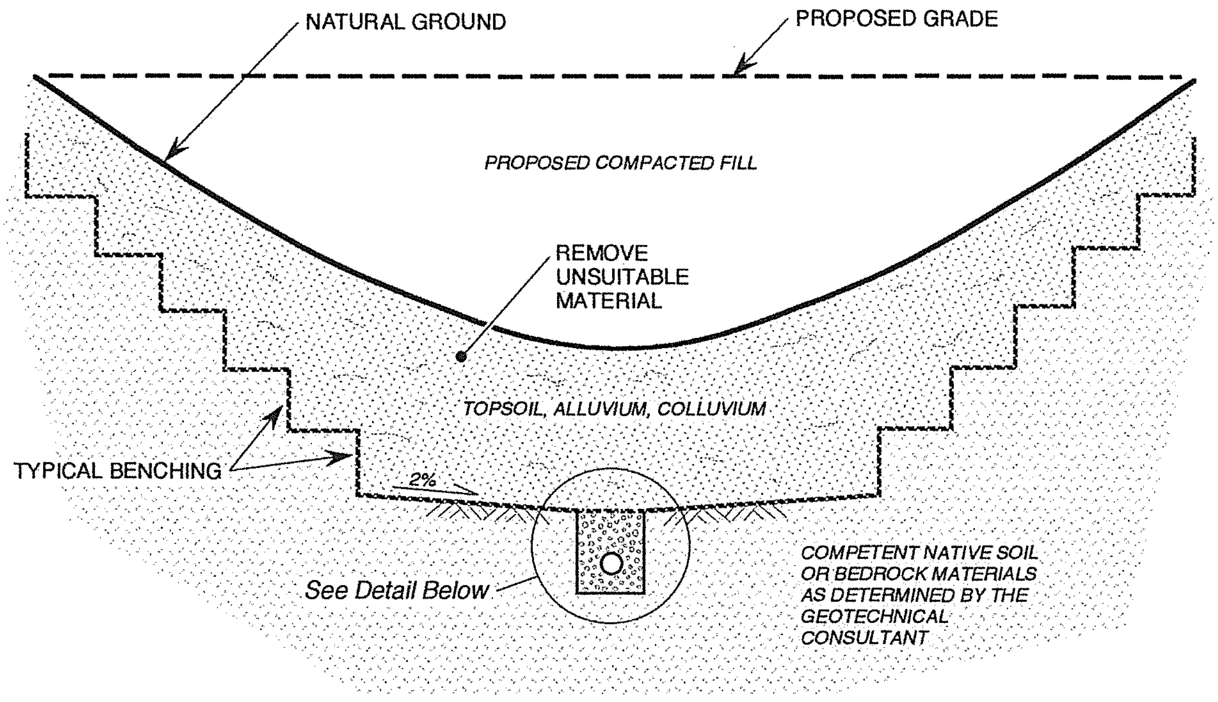
VIII. CONSTRUCTION CONSIDERATIONS

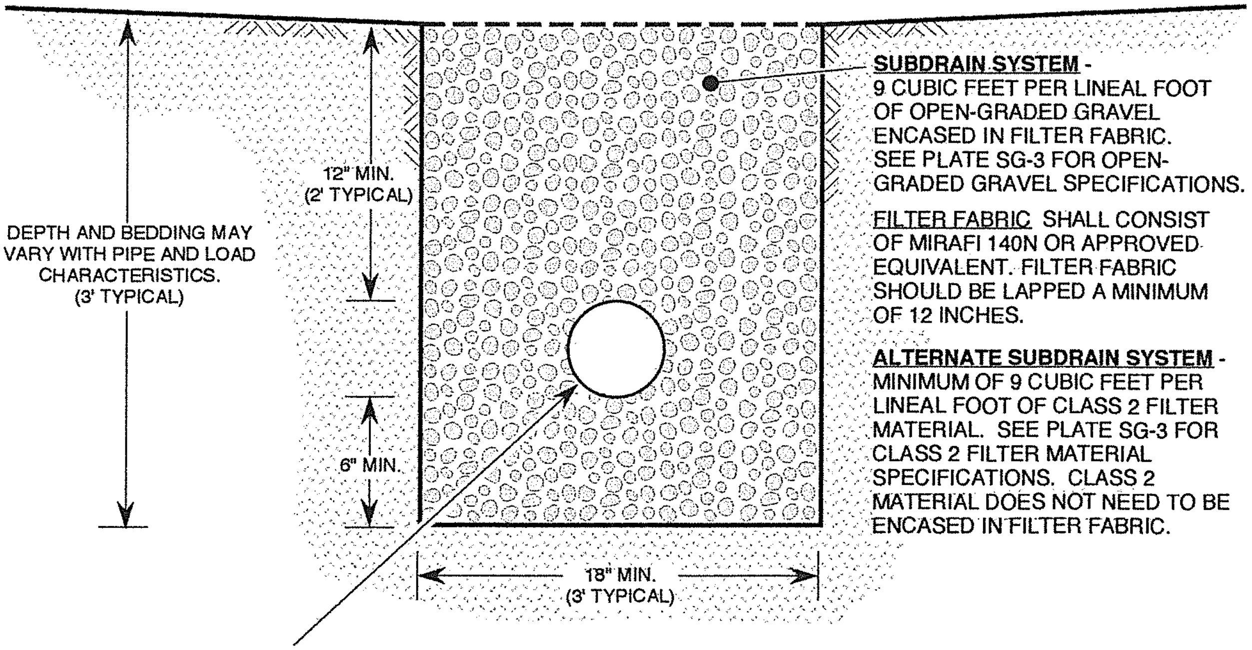
A. Erosion control measures, when necessary, shall be provided by the Contractor during grading and prior to the completion and construction of permanent drainage controls.

B. Upon completion of grading and termination of observations by the Geotechnical Consultant, no further filling or excavating, including that necessary for footings, foundations, large tree wells, retaining walls, or other features shall be performed without the approval of the Geotechnical Consultant.

C. Care shall be taken by the Contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of permanent nature on or adjacent to the property.

S:\!BOILERS-WORK\REPORT INSERTS\STANDARD GRADING SPECS





SUBDRAIN SYSTEM - 9 CUBIC FEET PER LINEAL FOOT OF OPEN-GRADED GRAVEL ENCASED IN FILTER FABRIC. SEE PLATE SG-3 FOR OPEN-GRADED GRAVEL SPECIFICATIONS.

FILTER FABRIC SHALL CONSIST OF MIRAFI 140N OR APPROVED EQUIVALENT. FILTER FABRIC SHOULD BE LAPPED A MINIMUM OF 12 INCHES.

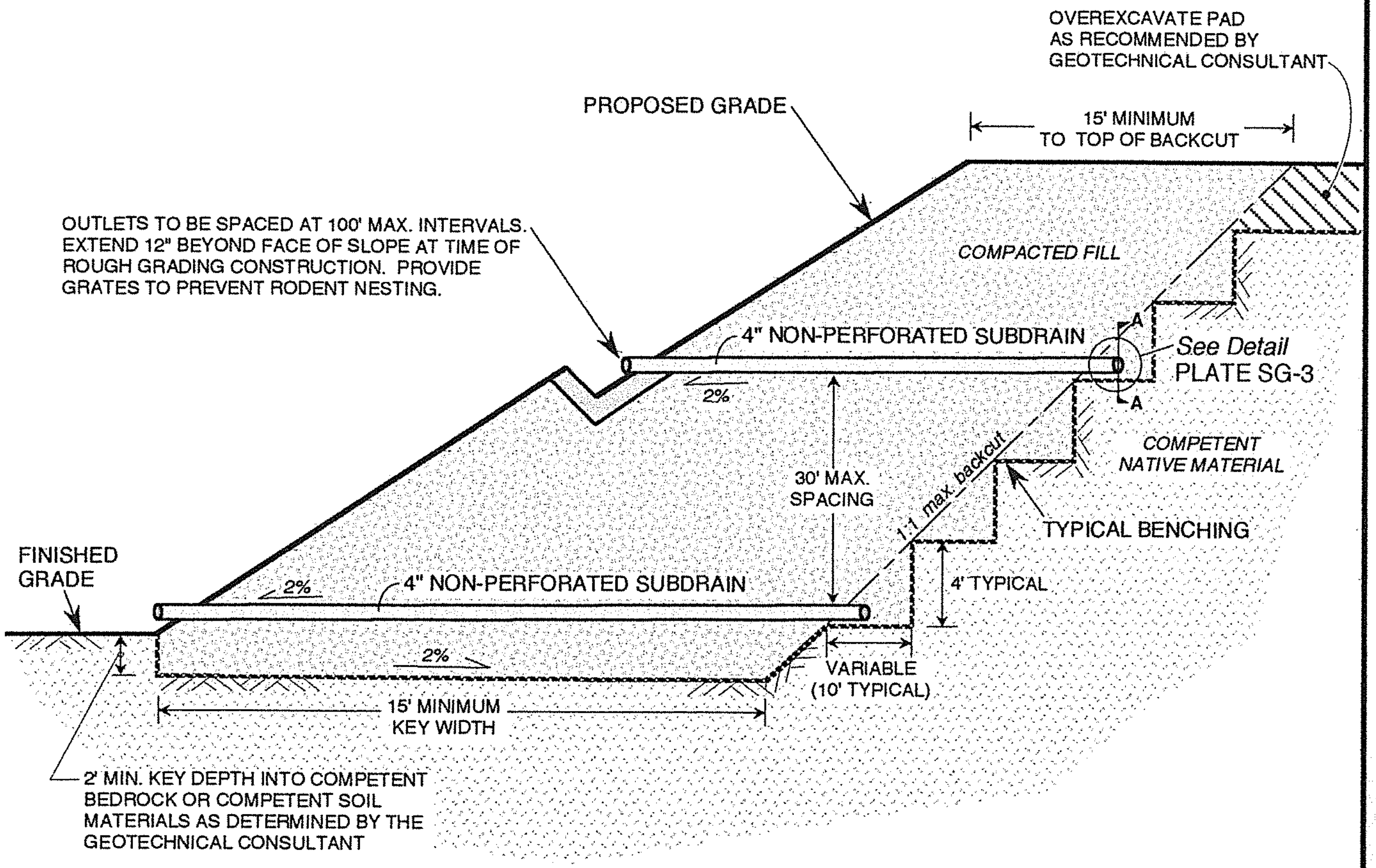
ALTERNATE SUBDRAIN SYSTEM - MINIMUM OF 9 CUBIC FEET PER LINEAL FOOT OF CLASS 2 FILTER MATERIAL. SEE PLATE SG-3 FOR CLASS 2 FILTER MATERIAL SPECIFICATIONS. CLASS 2 MATERIAL DOES NOT NEED TO BE ENCASED IN FILTER FABRIC.

MINIMUM 6-INCH DIAMETER PVC SCHEDULE 40, OR ABS SDR-35 WITH A MINIMUM OF EIGHT 1/4-INCH DIAMETER PERFORATIONS PER LINEAL FOOT IN BOTTOM HALF OF PIPE. PIPE TO BE LAID WITH PERFORATIONS FACING DOWN.

NOTES:

1. FOR CONTINUOUS RUNS IN EXCESS OF 500 FEET USE 8-INCH DIAMETER PIPE.
2. FINAL 20 FEET OF PIPE AT OUTLET SHALL BE NON-PERFORATED AND BACKFILLED WITH FINE-GRAINED MATERIAL.

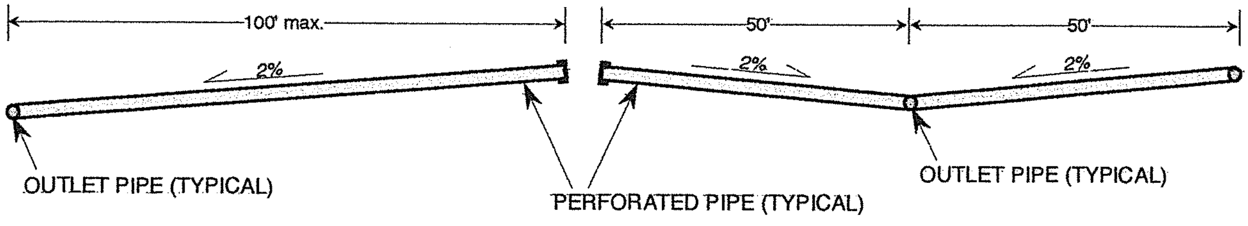
PETRA	CANYON SUBDRAIN DETAIL	PLATE SG-1



NOTES:

1. 30' MAXIMUM VERTICAL SPACING BETWEEN SUBDRAIN SYSTEMS.
2. 100' MAXIMUM HORIZONTAL DISTANCE BETWEEN NON-PERFORATED OUTLET PIPES. *(See Below)*
3. MINIMUM GRADIENT OF 2% FOR ALL PERFORATED AND NON-PERFORATED PIPE.

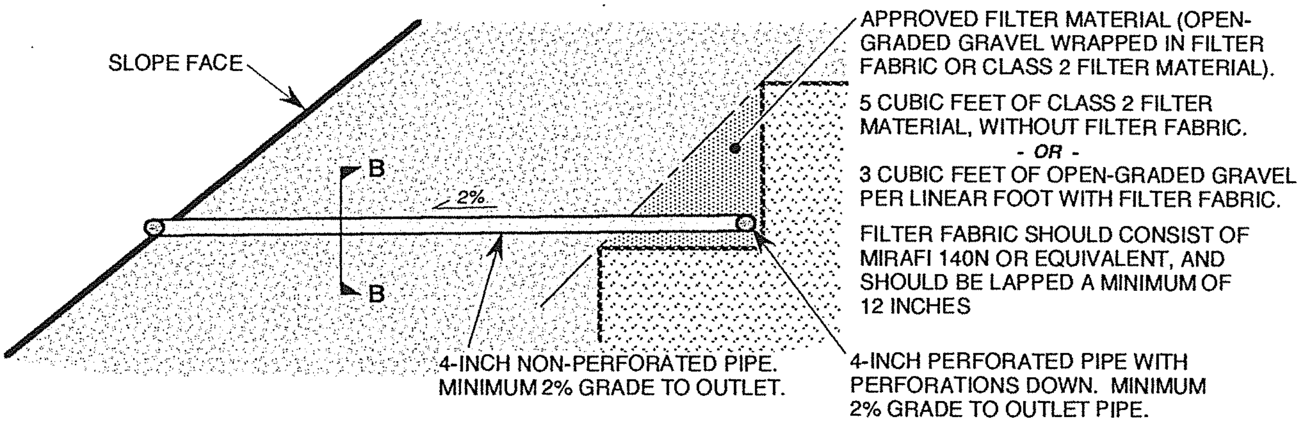
SECTION A-A (PERFORATED PIPE PROFILE)

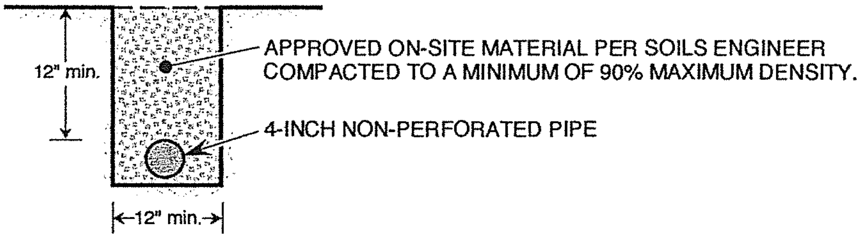


PETRA

BUTTRESS OR STABILIZATION FILL DETAIL

PLATE SG-2





SECTION B-B (OUTLET PIPE)

PIPE SPECIFICATIONS:

1. 4-INCH MINIMUM DIAMETER, PVC SCHEDULE 40 OR ABS SDR-35.
2. FOR PERFORATED PIPE, MINIMUM 8 PERFORATIONS PER FOOT ON BOTTOM HALF OF PIPE.

FILTER MATERIAL/FABRIC SPECIFICATIONS:

OPEN-GRADED GRAVEL ENCASED IN FILTER FABRIC.
(MIRAFI 140N OR EQUIVALENT)

OPEN-GRADED GRAVEL

SIEVE SIZE	PERCENT PASSING
1 1/2-INCH	88 - 100
1-INCH	5 - 40
3/4-INCH	0 - 17
3/8-INCH	0 - 7
No. 200	0 - 3

ALTERNATE:

CLASS 2 PERMEABLE FILTER MATERIAL PER CALTRANS
STANDARD SPECIFICATION 68-1.025.

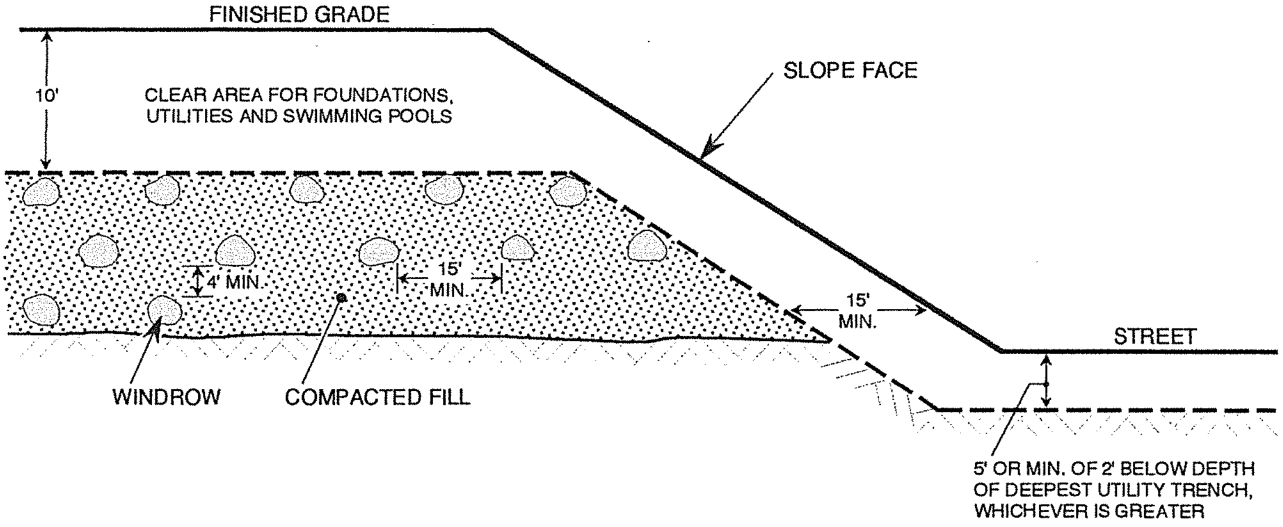
CLASS 2 FILTER MATERIAL

SIEVE SIZE	PERCENT PASSING
1-INCH	100
3/4-INCH	90 - 100
3/8-INCH	40 - 100
No. 4	25 - 40
No. 8	18 - 33
No. -30	5 - 15
No. -50	0 - 7
No. 200	0 - 3

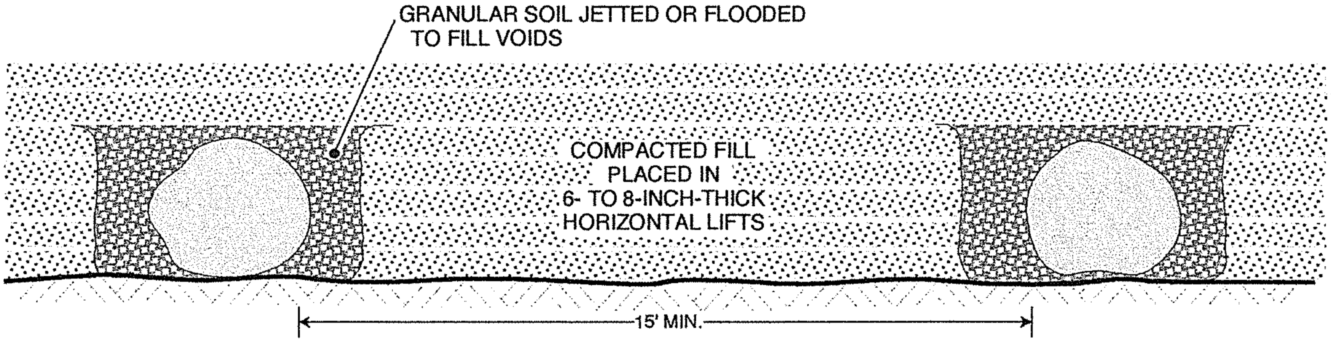
PETRA

BUTTRESS OR STABILIZATION FILL SUBDRAIN

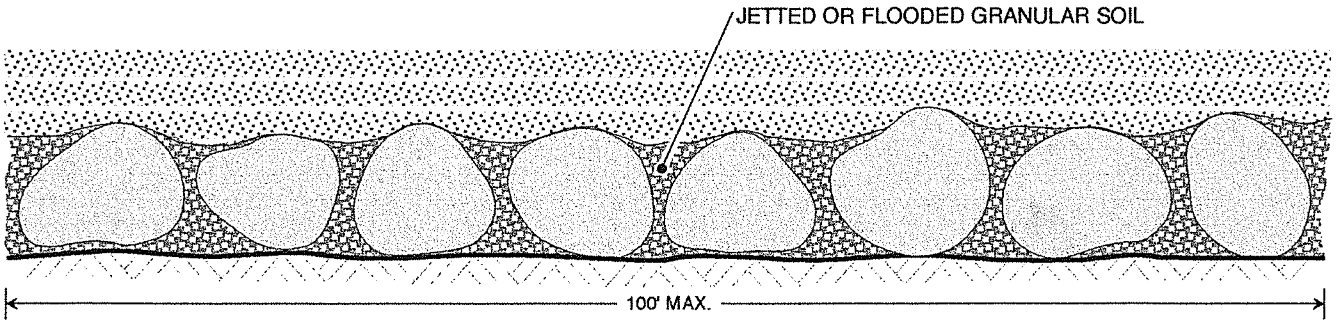
PLATE SG-3



TYPICAL WINDROW DETAIL (END VIEW)

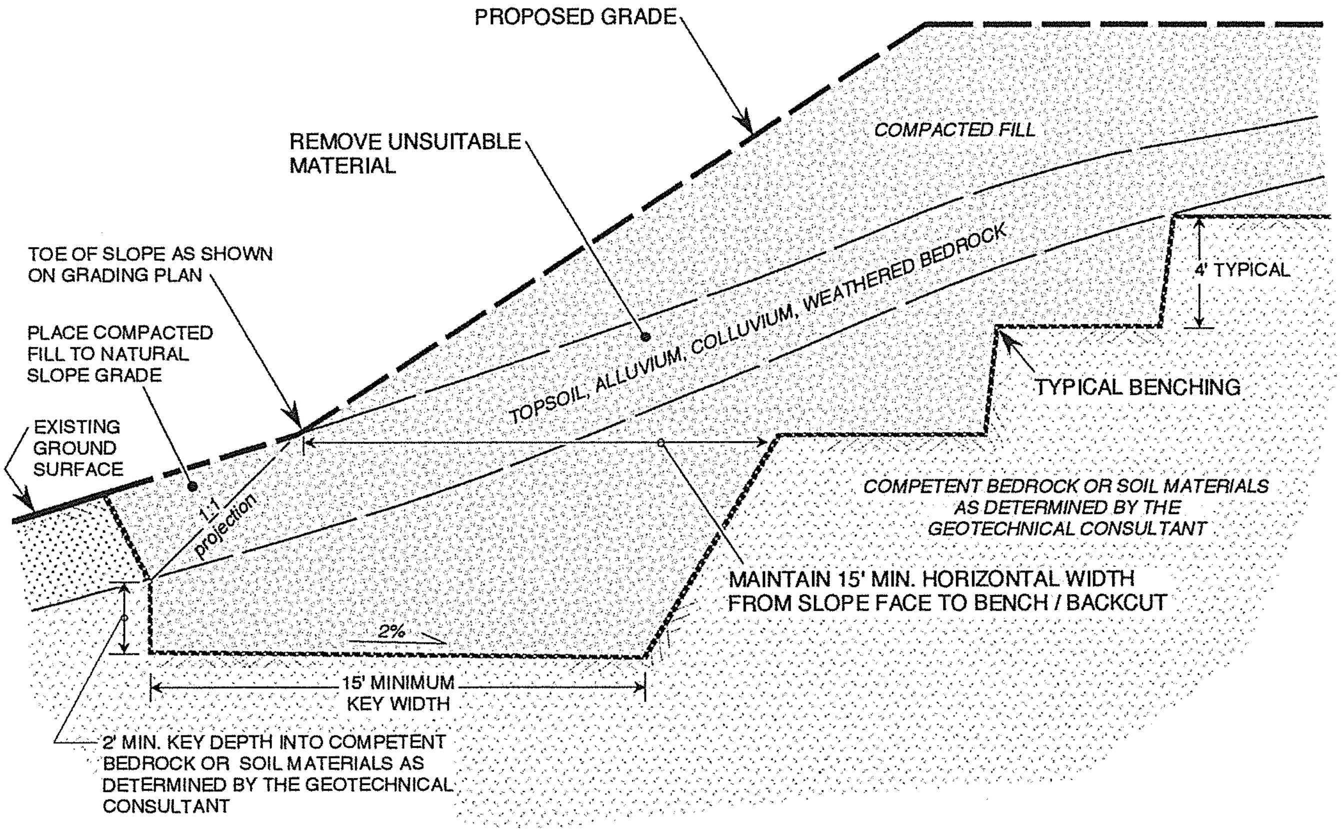


TYPICAL WINDROW DETAIL (PROFILE VIEW)



NOTE: OVERSIZE ROCK IS DEFINED AS CLASTS HAVING A MAXIMUM DIMENSION OF 12" OR LARGER

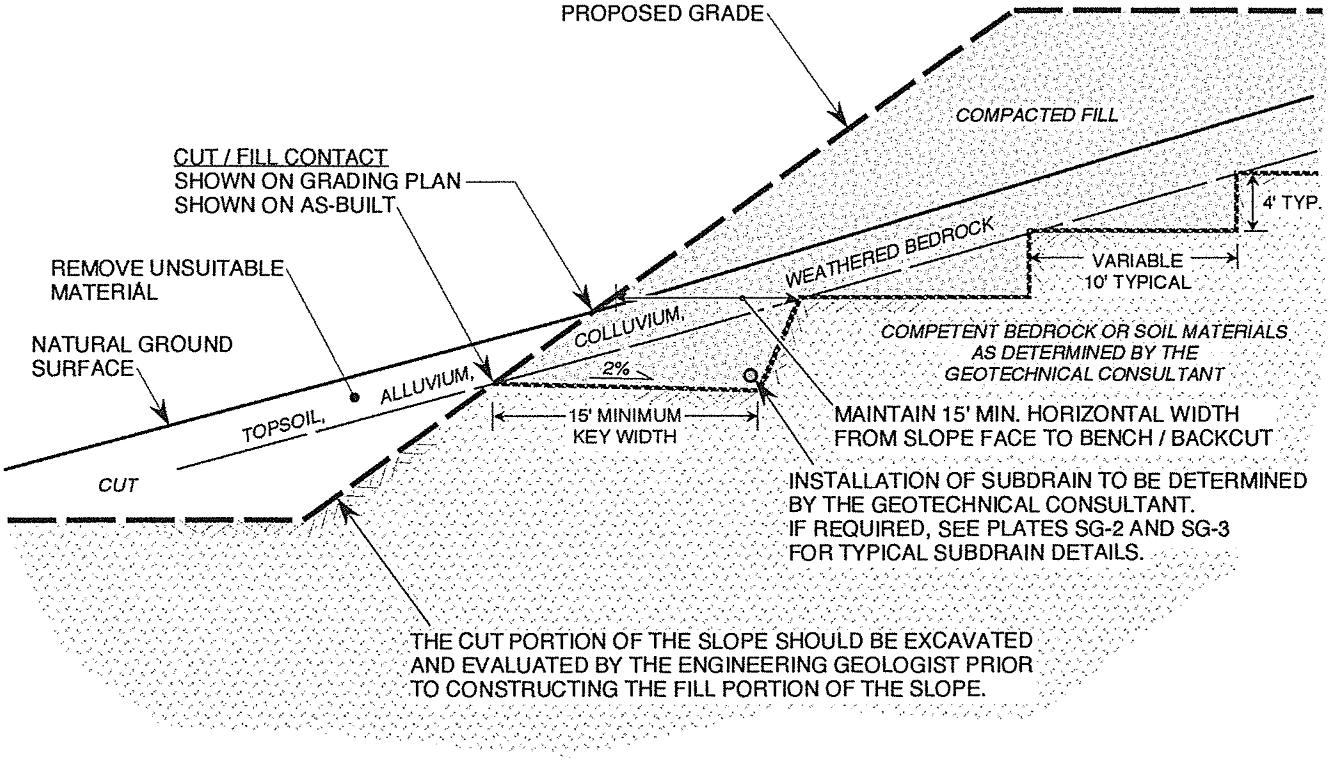
PETRA	**TYPICAL ROCK DISPOSAL DETAIL**	**PLATE SG-4**



NOTES:

1. WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, BENCHING IS NOT NECESSARY; HOWEVER, FILL IS NOT TO BE PLACED ON COMPRESSIBLE OR UNSUITABLE MATERIAL.
2. SOILS ENGINEER TO DETERMINE IF SUBDRAIN IS REQUIRED.

PETRA	**FILL SLOPE ABOVE NATURAL SLOPE**	**PLATE SG-5**



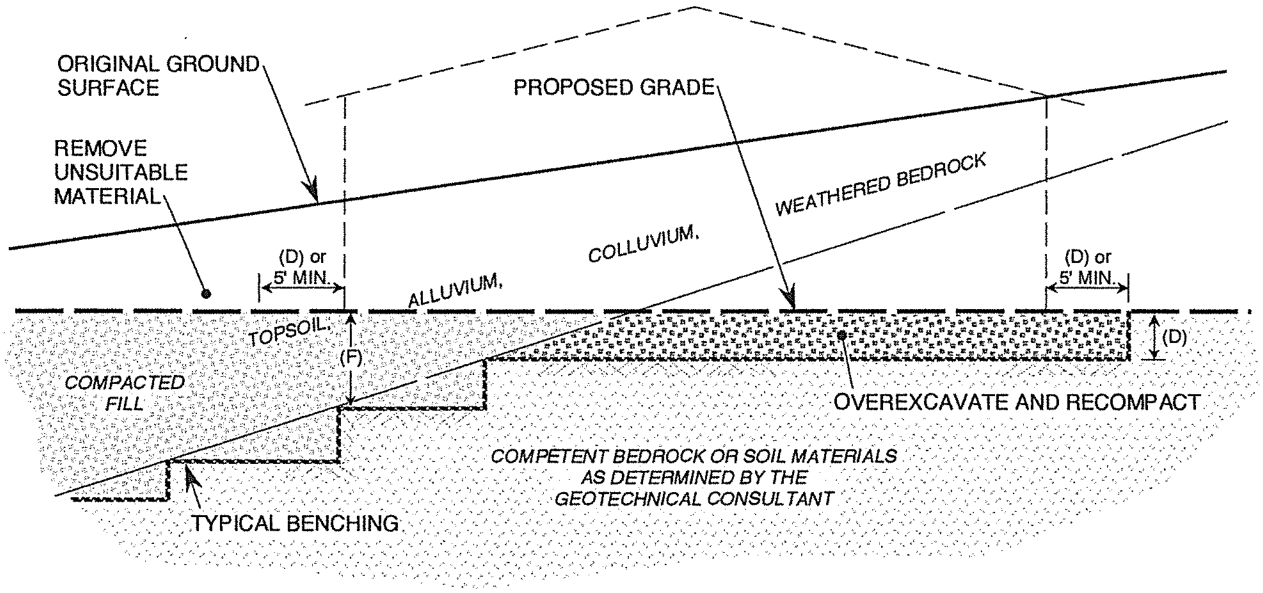
PETRA

FILL SLOPE ABOVE CUT SLOPE

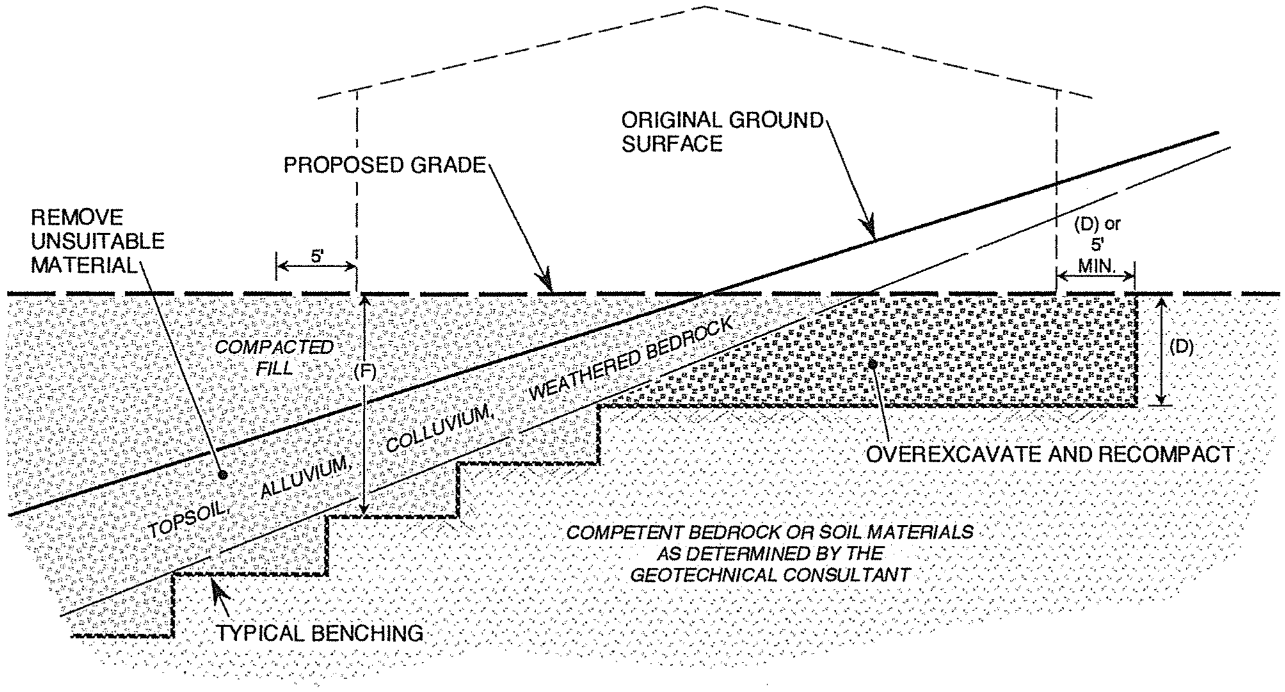
PLATE SG-6

CUT LOT

UNSUITABLE MATERIAL EXPOSED IN PORTION OF CUT PAD



CUT-FILL TRANSITION LOT

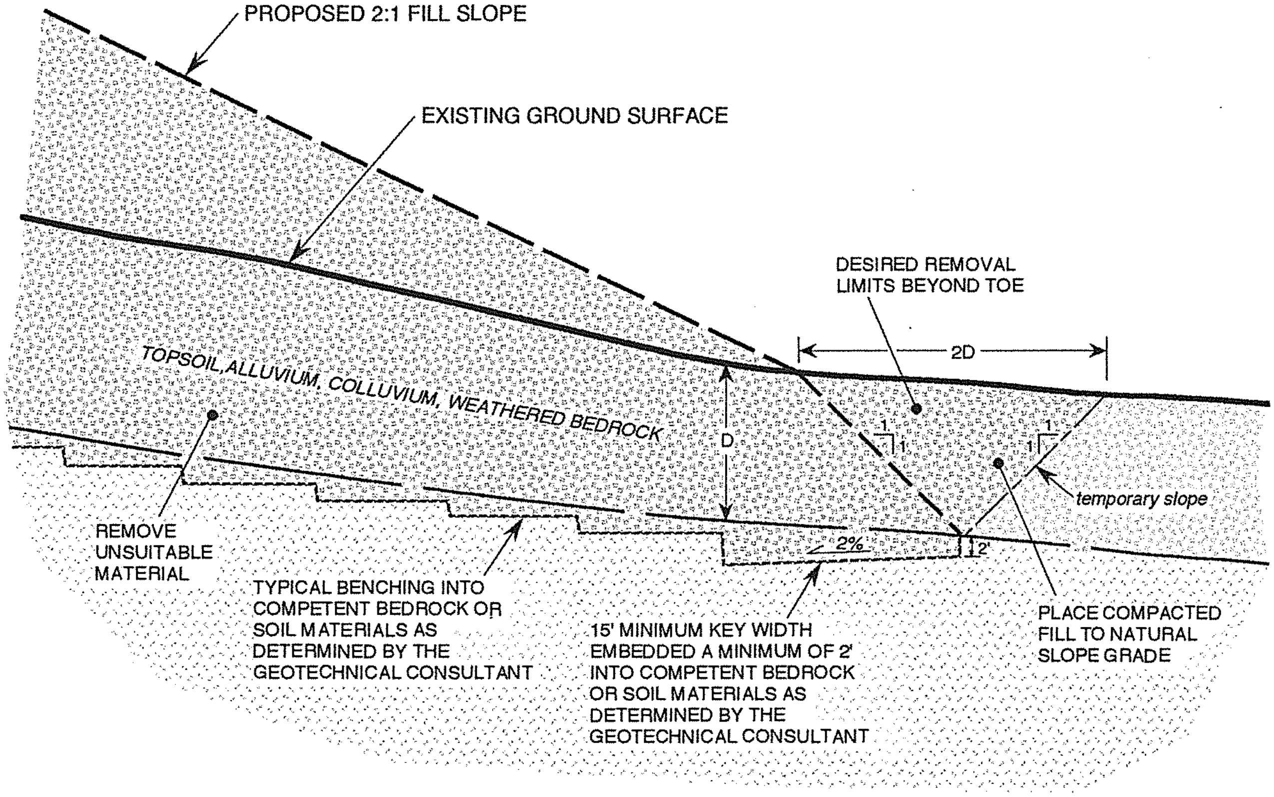


MAXIMUM FILL THICKNESS (F)	**DEPTH OF OVEREXCAVATION (D)**
FOOTING DEPTH TO 3 FEET	EQUAL DEPTH
3 TO 6 FEET	3 FEET
GREATER THAN 6 FEET	1/2 THE THICKNESS OF DEEPEST FILL PLACED WITHIN THE "FILL" PORTION (F) TO 15 FEET MAXIMUM

PETRA

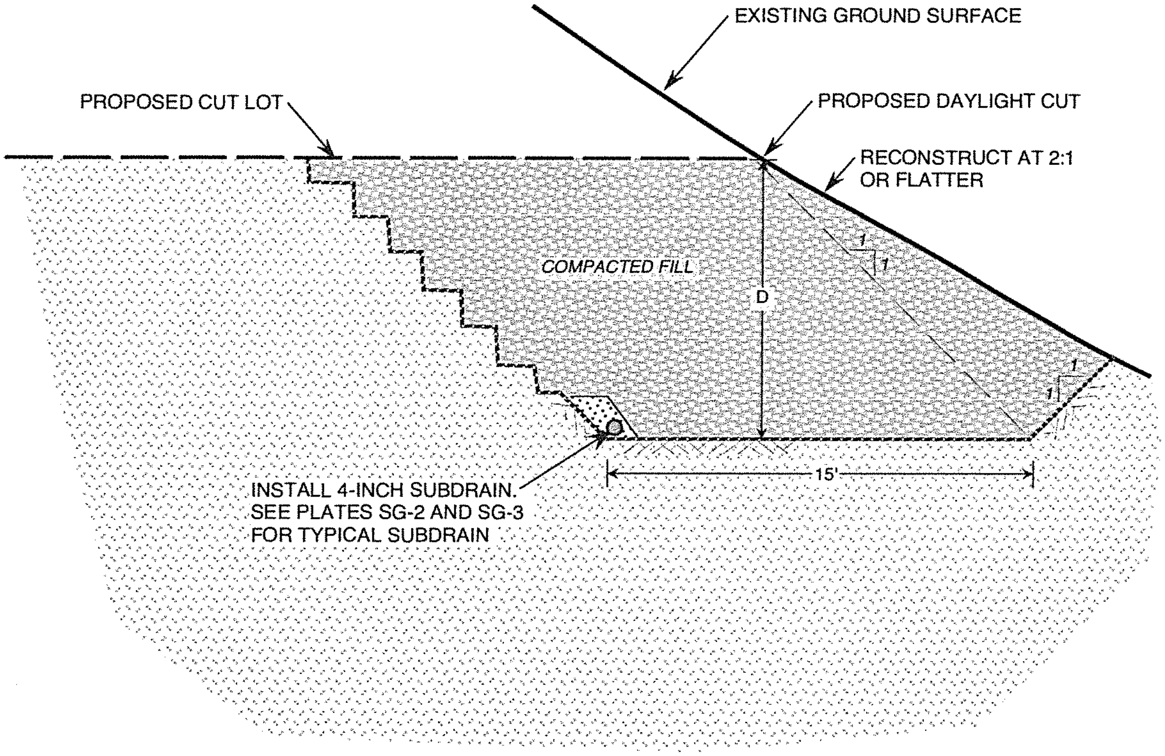
CUT LOTS AND CUT-FILL TRANSITION LOTS

PLATE SG-7



D = RECOMMENDED DEPTH OF REMOVAL
PER GEOTECHNICAL REPORT

PETRA	TYPICAL REMOVALS BEYOND TOE OF PROPOSED FILL SLOPE	PLATE SG-8



NOTE:

1. "D" SHALL BE 10 FEET MINIMUM OR AS DETERMINED BY SOILS ENGINEER.

PETRA	**SHEAR KEY ON DAYLIGHT CUT LOTS**	**PLATE SG-9**

Section 6.4.4

BMP Calculations

Detention Calculations

Drainage Area	i watershed impervioussness ratio	C_{BMP}	Detention Volume P_0	a drawdown coeficient	P_6	A	Design Capture Volume V_0 (CF)
DMA 1	0.93	0.780	1.069	1.963	0.698	6.46	25,065
DMA 2	0.93	0.780	1.069	1.963	0.698	5.30	20,555

notes:
1. Drawdown is 48 hrs; a=1.963
2. 2-year, 1-hr precipitation depth = 0.472 inches
3. infiltration rate = 2.6 inches/hr per Geotech report prepared by Petra Geosciences dated 02/15/2022 with Factor of Safety of 2

Treatment flows

				C	I (INTNSITY FROM NOAA ATLAS) (2YR 1HR)	A
25,062	-	0%	DMA 1	0.930	0.472	6.46
20,561	-	0%	DMA 2	0.930	0.472	5.30

Q
2.84
2.33

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	.25
		Predominant soil texture	0.25	1	.25
		Site soil variability	0.25	1	.25
		Depth to groundwater / impervious layer	0.25	1	.25
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			1
B	Design	Tributary area size	0.25	2	.5
		Level of pretreatment/ expected sediment loads	0.25	2	.5
		Redundancy	0.25	2	.5
		Compaction during construction	0.25	2	.5
		Design Safety Factor, $S_B = \Sigma p$			2
Combined Safety Factor, $S_{TOT} = S_A \times S_B$					2
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					13.9
Design Infiltration Rate, in/hr, $K_{DESIGN} = S_{TOT} \times K_M$					6.95

Supporting Data

Briefly describe infiltration test and provide reference to test forms:

All infiltration tests and results are provided in the Geotechnical report.

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

Detention Tank Sizing
DPC Redlands DMA 1

Orifice Calculations

Project Summary	
Title	
Engineer	
Company	
Date	1/3/2017

Notes

Table of Contents

Orifice Calculations

Subsection: User Notifications

User Notifications?	No user notifications generated.

Orifice Calculations

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
DA1	Base	0	105,132.00	960.300	21.27

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
O-1	Base	0	98,076.00	970.200	6.58

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
RDF-1 (IN)	Base	0	105,132.00	960.300	21.27	(N/A)	(N/A)
RDF-1 (OUT)	Base	0	97,812.00	970.200	6.58	3.53	15,910.00

Orifice Calculations

Subsection: Read Hydrograph Scenario: Base
Label: DA1

Peak Discharge	21.27 ft³/s
Time to Peak	960.300 min
Hydrograph Volume	105,132.06 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 9.900 min
Time on left represents time for first value in each row.

Time (min)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.000	0.00	0.51	0.51	0.52	0.52
49.500	0.52	0.53	0.53	0.53	0.54
99.000	0.54	0.55	0.55	0.55	0.56
148.500	0.56	0.56	0.57	0.57	0.58
198.000	0.58	0.59	0.59	0.59	0.60
247.500	0.60	0.61	0.61	0.62	0.62
297.000	0.63	0.63	0.64	0.65	0.65
346.500	0.66	0.66	0.67	0.67	0.68
396.000	0.69	0.70	0.70	0.71	0.72
445.500	0.73	0.73	0.74	0.75	0.76
495.000	0.77	0.78	0.79	0.80	0.81
544.500	0.82	0.83	0.85	0.85	0.87
594.000	0.88	0.90	0.91	0.93	0.94
643.500	0.96	0.97	1.00	1.01	1.04
693.000	1.05	1.08	1.10	1.24	1.26
742.500	1.30	1.32	1.37	1.39	1.45
792.000	1.48	1.54	1.58	1.66	1.70
841.500	1.79	1.85	1.98	2.05	2.24
891.000	2.35	2.63	2.81	3.80	4.16
940.500	5.37	6.89	21.27	4.68	3.04
990.000	2.48	2.14	1.91	1.75	1.62
1,039.500	1.51	1.42	1.34	1.28	1.12
1,089.000	1.07	1.02	0.98	0.95	0.92
1,138.500	0.89	0.86	0.84	0.81	0.79
1,188.000	0.77	0.76	0.74	0.72	0.71
1,237.500	0.69	0.68	0.67	0.65	0.64
1,287.000	0.63	0.62	0.61	0.60	0.59
1,336.500	0.58	0.57	0.57	0.56	0.55
1,386.000	0.54	0.54	0.53	0.52	0.52
1,435.500	0.51	0.00	0.00	(N/A)	(N/A)

Orifice Calculations

Subsection: Time vs. Elevation Scenario: Base

Label: RDF-1 (IN)

Time vs. Elevation (ft)

Output Time increment = 9.900 min
Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	0.00	0.03	0.10	0.16	0.21
49.500	0.25	0.29	0.32	0.34	0.36
99.000	0.37	0.38	0.39	0.40	0.40
148.500	0.41	0.41	0.41	0.41	0.42
198.000	0.42	0.42	0.42	0.42	0.43
247.500	0.43	0.43	0.43	0.43	0.43
297.000	0.44	0.44	0.44	0.44	0.44
346.500	0.45	0.45	0.45	0.45	0.45
396.000	0.46	0.46	0.46	0.46	0.47
445.500	0.47	0.47	0.47	0.48	0.48
495.000	0.48	0.49	0.49	0.49	0.50
544.500	0.50	0.51	0.51	0.51	0.52
594.000	0.52	0.52	0.53	0.53	0.54
643.500	0.54	0.55	0.55	0.56	0.56
693.000	0.57	0.58	0.58	0.60	0.61
742.500	0.63	0.64	0.65	0.66	0.67
792.000	0.68	0.69	0.71	0.72	0.74
841.500	0.75	0.77	0.79	0.81	0.84
891.000	0.87	0.91	0.95	1.03	1.16
940.500	1.33	1.62	2.77	3.53	3.06
990.000	2.56	2.11	1.74	1.43	1.18
1,039.500	0.99	0.86	0.79	0.74	0.69
1,089.000	0.66	0.63	0.61	0.59	0.57
1,138.500	0.56	0.55	0.54	0.53	0.52
1,188.000	0.51	0.51	0.50	0.49	0.49
1,237.500	0.48	0.48	0.47	0.46	0.46
1,287.000	0.45	0.45	0.45	0.44	0.44
1,336.500	0.43	0.43	0.43	0.42	0.42
1,386.000	0.42	0.41	0.41	0.41	0.41
1,435.500	0.40	0.37	0.37	(N/A)	(N/A)

Orifice Calculations

Subsection: Time vs. Volume
Scenario: Base
Label: RDF-1

Time vs. Volume (ft³)

Output Time increment = 9.900 min
Time on left represents time for first value in each row.

Time (min)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0.00	148.00	437.00	706.00	942.00
49.500	1,139.00	1,300.00	1,430.00	1,529.00	1,606.00
99.000	1,667.00	1,715.00	1,753.00	1,782.00	1,806.00
148.500	1,826.00	1,840.00	1,853.00	1,864.00	1,874.00
198.000	1,884.00	1,893.00	1,902.00	1,908.00	1,915.00
247.500	1,922.00	1,930.00	1,938.00	1,946.00	1,954.00
297.000	1,962.00	1,970.00	1,978.00	1,989.00	1,999.00
346.500	2,009.00	2,018.00	2,027.00	2,036.00	2,044.00
396.000	2,055.00	2,068.00	2,080.00	2,090.00	2,102.00
445.500	2,116.00	2,128.00	2,139.00	2,152.00	2,165.00
495.000	2,180.00	2,196.00	2,211.00	2,227.00	2,243.00
544.500	2,260.00	2,275.00	2,293.00	2,309.00	2,325.00
594.000	2,342.00	2,361.00	2,381.00	2,401.00	2,421.00
643.500	2,442.00	2,463.00	2,486.00	2,512.00	2,538.00
693.000	2,565.00	2,592.00	2,622.00	2,681.00	2,758.00
742.500	2,820.00	2,874.00	2,924.00	2,972.00	3,021.00
792.000	3,073.00	3,128.00	3,185.00	3,248.00	3,314.00
841.500	3,384.00	3,461.00	3,551.00	3,652.00	3,771.00
891.000	3,910.00	4,080.00	4,272.00	4,641.00	5,206.00
940.500	6,008.00	7,300.00	12,468.00	15,910.00	13,780.00
990.000	11,523.00	9,520.00	7,819.00	6,423.00	5,314.00
1,039.500	4,465.00	3,897.00	3,554.00	3,320.00	3,129.00
1,089.000	2,962.00	2,834.00	2,733.00	2,652.00	2,585.00
1,138.500	2,527.00	2,474.00	2,427.00	2,385.00	2,345.00
1,188.000	2,309.00	2,278.00	2,250.00	2,222.00	2,194.00
1,237.500	2,167.00	2,141.00	2,118.00	2,094.00	2,070.00
1,287.000	2,048.00	2,028.00	2,008.00	1,990.00	1,972.00
1,336.500	1,955.00	1,937.00	1,923.00	1,910.00	1,896.00
1,386.000	1,881.00	1,869.00	1,857.00	1,844.00	1,833.00
1,435.500	1,822.00	1,680.00	1,680.00	(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data	Scenario: Base

Label: Composite Outlet Structure - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	0.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	6.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	0.00	6.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data Scenario: Base

Label: Composite Outlet Structure - 1

Structure ID: Orifice - 1
Structure Type: Orifice-Circular

Number of Openings	1
Elevation	0.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base

Label: RDF-1

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft^3
Flow (Initial Outlet)	0.00 ft^3/s
Flow (Initial Infiltration)	0.00 ft^3/s
Flow (Initial, Total)	0.00 ft^3/s
Time Increment	9.900 min

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
0.00	0.00	0.00	0.000	0.00	0.00	0.00
0.10	0.03	450.54	6.448	0.00	0.03	1.55
0.20	0.13	901.09	25.794	0.00	0.14	3.17
0.30	0.29	1,351.63	58.035	0.01	0.30	4.85
0.40	0.50	1,802.17	103.174	0.02	0.52	6.59
0.50	0.76	2,252.71	161.210	0.03	0.79	8.37
0.60	1.07	2,703.26	232.142	0.04	1.11	10.21
0.70	1.41	3,153.80	315.971	0.05	1.46	12.08
0.80	1.78	3,604.34	412.697	0.07	1.85	13.98
0.90	2.17	4,054.89	522.319	0.08	2.26	15.91
1.00	2.67	4,505.43	644.839	0.10	2.78	17.95
1.10	2.93	4,955.97	780.255	0.13	3.05	19.74
1.20	3.16	5,406.51	928.568	0.15	3.31	21.52
1.30	3.38	5,857.06	1,089.777	0.18	3.56	23.28
1.40	3.59	6,307.60	1,263.884	0.20	3.79	25.03
1.50	3.78	6,758.14	1,450.887	0.23	4.01	26.77
1.60	3.96	7,208.69	1,650.787	0.27	4.23	28.50
1.70	4.14	7,659.23	1,863.584	0.30	4.44	30.23
1.80	4.31	8,109.77	2,089.277	0.34	4.65	31.95
1.90	4.47	8,560.31	2,327.868	0.37	4.85	33.67
2.00	4.63	9,010.86	2,579.355	0.41	5.04	35.38
2.10	4.78	9,461.40	2,843.739	0.46	5.24	37.10
2.20	4.93	9,911.94	3,121.019	0.50	5.43	38.80
2.30	5.07	10,362.49	3,411.197	0.55	5.62	40.51
2.40	5.21	10,813.03	3,714.271	0.60	5.81	42.22
2.50	5.35	11,263.57	4,030.242	0.65	5.99	43.92
2.60	5.48	11,714.11	4,359.110	0.70	6.18	45.62
2.70	5.61	12,164.66	4,700.874	0.76	6.36	47.32

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
2.80	5.73	12,615.20	5,055.536	0.81	6.55	49.02
2.90	5.86	13,065.74	5,423.094	0.87	6.73	50.72
3.00	5.98	13,516.29	5,803.548	0.93	6.91	52.42
3.10	6.10	13,966.83	6,196.900	1.00	7.09	54.12
3.20	6.21	14,417.37	6,603.148	1.06	7.27	55.82
3.30	6.33	14,867.91	7,022.294	1.13	7.46	57.52
3.40	6.44	15,318.46	7,454.336	1.20	7.64	59.21
3.50	6.55	15,769.00	7,899.274	1.27	7.82	60.91
3.60	6.66	16,219.54	8,357.110	1.34	8.00	62.61
3.70	6.76	16,670.09	8,827.842	1.42	8.18	64.31
3.80	6.87	17,120.63	9,311.471	1.50	8.37	66.01
3.90	6.97	17,571.17	9,807.997	1.58	8.55	67.71
4.00	7.07	18,021.71	10,317.419	1.66	8.73	69.41
4.10	7.17	18,392.97	10,610.725	1.71	8.88	70.81
4.20	7.27	18,764.23	10,908.142	1.75	9.03	72.21
4.30	7.37	19,135.49	11,209.670	1.80	9.17	73.60
4.40	7.47	19,506.75	11,515.308	1.85	9.32	75.00
4.50	7.56	19,878.01	11,825.058	1.90	9.46	76.39
4.60	7.65	20,249.27	12,138.918	1.95	9.61	77.79
4.70	7.75	20,620.53	12,456.889	2.00	9.75	79.18
4.80	7.84	20,991.79	12,778.971	2.06	9.89	80.57
4.90	7.93	21,363.05	13,105.164	2.11	10.04	81.97
5.00	8.02	21,734.31	13,435.467	2.16	10.18	83.36
5.10	8.11	22,105.57	13,769.882	2.22	10.32	84.75
5.20	8.20	22,476.83	14,108.407	2.27	10.46	86.14
5.30	8.28	22,848.09	14,451.043	2.32	10.61	87.54
5.40	8.37	23,219.34	14,797.790	2.38	10.75	88.93
5.50	8.45	23,590.60	15,148.648	2.44	10.89	90.32
5.60	8.54	23,961.86	15,503.617	2.49	11.03	91.71
5.70	8.62	24,333.12	15,862.696	2.55	11.17	93.10
5.80	8.70	24,704.38	16,225.887	2.61	11.31	94.49
5.90	8.78	25,075.64	16,593.188	2.67	11.45	95.88
6.00	8.87	25,446.90	16,964.600	2.73	11.59	97.27

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base

Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
0.00	0.0	0.00
0.10	6.4	0.00
0.20	25.8	0.00
0.30	58.0	0.01
0.40	103.2	0.02
0.50	161.2	0.03
0.60	232.1	0.04
0.70	316.0	0.05
0.80	412.7	0.07
0.90	522.3	0.08
1.00	644.8	0.10
1.10	780.3	0.13
1.20	928.6	0.15
1.30	1,089.8	0.18
1.40	1,263.9	0.20
1.50	1,450.9	0.23
1.60	1,650.8	0.27
1.70	1,863.6	0.30
1.80	2,089.3	0.34
1.90	2,327.9	0.37
2.00	2,579.4	0.41
2.10	2,843.7	0.46
2.20	3,121.0	0.50
2.30	3,411.2	0.55
2.40	3,714.3	0.60
2.50	4,030.2	0.65
2.60	4,359.1	0.70
2.70	4,700.9	0.76
2.80	5,055.5	0.81
2.90	5,423.1	0.87
3.00	5,803.5	0.93
3.10	6,196.9	1.00
3.20	6,603.1	1.06
3.30	7,022.3	1.13
3.40	7,454.3	1.20
3.50	7,899.3	1.27
3.60	8,357.1	1.34
3.70	8,827.8	1.42
3.80	9,311.5	1.50
3.90	9,808.0	1.58
4.00	10,317.4	1.66
4.10	10,610.7	1.71
4.20	10,908.1	1.75

Orifice Calculations

Subsection: Pond Infiltration Calculations — Scenario: Base

Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
4.30	11,209.7	1.80
4.40	11,515.3	1.85
4.50	11,825.1	1.90
4.60	12,138.9	1.95
4.70	12,456.9	2.00
4.80	12,779.0	2.06
4.90	13,105.2	2.11
5.00	13,435.5	2.16
5.10	13,769.9	2.22
5.20	14,108.4	2.27
5.30	14,451.0	2.32
5.40	14,797.8	2.38
5.50	15,148.6	2.44
5.60	15,503.6	2.49
5.70	15,862.7	2.55
5.80	16,225.9	2.61
5.90	16,593.2	2.67
6.00	16,964.6	2.73

Orifice Calculations

Subsection: Level Pool Pond Routing Summary Scenario: Base
Label: RDF-1 (IN)

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	9.900 min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	21.27 ft³/s	Time to Peak (Flow, In)	960.300 min
Infiltration (Peak)	1.29 ft³/s	Time to Peak (Infiltration)	970.200 min
Flow (Peak Outlet)	6.58 ft³/s	Time to Peak (Flow, Outlet)	970.200 min

Elevation (Water Surface, Peak)	3.53 ft
Volume (Peak)	15,910.09 ft³

Mass Balance (ft³)	
Volume (Initial)	0.00 ft³
Volume (Total Inflow)	105,132.00 ft³
Volume (Total Infiltration)	5,648.00 ft³
Volume (Total Outlet Outflow)	97,812.00 ft³
Volume (Retained)	1,441.00 ft³
Volume (Unrouted)	-231.00 ft³
Error (Mass Balance)	0.2 %

Orifice Calculations

Subsection: Pond Inflow Summary Scenario: Base
Label: RDF-1 (IN)

Summary for Hydrograph Addition at 'RDF-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	DA1	105,132.06	960.300	21.27
Flow (In)	RDF-1	105,132.06	960.300	21.27

Orifice Calculations

Index

Orifice Calculations

Project Summary

Title	
Engineer	
Company	
Date	1/3/2017

Notes

Table of Contents

Orifice Calculations

Subsection: User Notifications

User Notifications

Message Id	-1
Scenario	Base
Element Type	Scenario
Element Id	1
Label	Base
Time	(N/A)
Message	The output increment (0.130 hours) is not an equal interval of the simulation duration (24.120 hours). The actual simulation duration is 24.050 hours.
Source	Precalculation

Orifice Calculations

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA1	Base	0	85,873.00	15.930	20.54

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
O-1	Base	0	80,899.00	16.120	5.89

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
RDF-1 (IN)	Base	0	85,881.00	15.990	13.00	(N/A)	(N/A)
RDF-1 (OUT)	Base	0	80,899.00	16.120	5.89	2.93	12,128.00

Orifice Calculations

Subsection: Read Hydrograph Scenario: Base

Label: DA1

Peak Discharge	20.54 ft³/s
Time to Peak	15.930 hours
Hydrograph Volume	85,873.32 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.130 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.070	0.42	0.42	0.42	0.42	0.43
0.720	0.43	0.43	0.43	0.44	0.44
1.370	0.44	0.44	0.44	0.45	0.45
2.020	0.45	0.45	0.46	0.46	0.46
2.670	0.46	0.47	0.47	0.47	0.47
3.320	0.48	0.48	0.48	0.49	0.49
3.970	0.49	0.49	0.50	0.50	0.50
4.620	0.51	0.51	0.51	0.52	0.52
5.270	0.53	0.53	0.53	0.54	0.54
5.920	0.54	0.55	0.55	0.56	0.56
6.570	0.57	0.57	0.57	0.58	0.58
7.220	0.59	0.59	0.60	0.61	0.61
7.870	0.62	0.62	0.63	0.63	0.64
8.520	0.64	0.65	0.66	0.67	0.67
9.170	0.68	0.69	0.70	0.70	0.71
9.820	0.72	0.73	0.74	0.75	0.76
10.470	0.77	0.78	0.79	0.80	0.82
11.120	0.82	0.84	0.85	0.87	0.88
11.770	0.90	0.91	1.02	1.03	1.06
12.420	1.07	1.10	1.12	1.15	1.17
13.070	1.21	1.23	1.27	1.29	1.34
13.720	1.37	1.43	1.46	1.53	1.57
14.370	1.66	1.71	1.84	1.91	2.08
15.020	2.18	2.44	2.84	3.47	3.80
15.670	4.92	6.31	20.54	4.20	3.21
16.320	2.30	1.99	1.77	1.61	1.49
16.970	1.40	1.32	1.25	1.19	1.13
17.620	1.09	1.05	0.97	0.89	0.86
18.270	0.83	0.81	0.78	0.76	0.74
18.920	0.73	0.71	0.69	0.68	0.66
19.570	0.65	0.64	0.62	0.61	0.60
20.220	0.59	0.58	0.57	0.56	0.55
20.870	0.55	0.54	0.53	0.52	0.52
21.520	0.51	0.50	0.50	0.49	0.48
22.170	0.48	0.47	0.47	0.46	0.46
22.820	0.45	0.45	0.44	0.44	0.43
23.470	0.43	0.43	0.42	0.00	(N/A)

Orifice Calculations

Subsection: Time vs. Elevation Scenario: Base

Label: RDF-1 (IN)

Time vs. Elevation (ft)

Output Time increment = 0.130 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	0.00	0.02	0.07	0.11	0.15
0.650	0.19	0.22	0.25	0.27	0.29
1.300	0.31	0.32	0.33	0.34	0.34
1.950	0.35	0.35	0.36	0.36	0.36
2.600	0.37	0.37	0.37	0.37	0.37
3.250	0.37	0.38	0.38	0.38	0.38
3.900	0.38	0.38	0.38	0.39	0.39
4.550	0.39	0.39	0.39	0.39	0.39
5.200	0.40	0.40	0.40	0.40	0.40
5.850	0.40	0.41	0.41	0.41	0.41
6.500	0.41	0.41	0.42	0.42	0.42
7.150	0.42	0.42	0.42	0.43	0.43
7.800	0.43	0.43	0.43	0.44	0.44
8.450	0.44	0.44	0.44	0.45	0.45
9.100	0.45	0.45	0.46	0.46	0.46
9.750	0.46	0.47	0.47	0.47	0.48
10.400	0.48	0.48	0.49	0.49	0.50
11.050	0.50	0.50	0.51	0.51	0.52
11.700	0.52	0.52	0.53	0.54	0.55
12.350	0.56	0.57	0.58	0.59	0.59
13.000	0.60	0.61	0.62	0.63	0.64
13.650	0.65	0.66	0.67	0.68	0.69
14.300	0.71	0.72	0.74	0.76	0.78
14.950	0.81	0.84	0.88	0.94	1.03
15.600	1.14	1.31	1.88	2.72	2.93
16.250	2.57	2.20	1.86	1.56	1.31
16.900	1.11	0.95	0.84	0.77	0.72
17.550	0.68	0.66	0.63	0.61	0.59
18.200	0.57	0.55	0.54	0.53	0.52
18.850	0.51	0.50	0.49	0.49	0.48
19.500	0.47	0.47	0.46	0.46	0.45
20.150	0.44	0.44	0.44	0.43	0.43
20.800	0.42	0.42	0.42	0.41	0.41
21.450	0.41	0.41	0.40	0.40	0.40
22.100	0.39	0.39	0.39	0.39	0.38
22.750	0.38	0.38	0.38	0.37	0.37
23.400	0.37	0.37	0.37	0.35	0.32
24.050	0.29	(N/A)	(N/A)	(N/A)	(N/A)

Orifice Calculations

Subsection: Time vs. Volume Scenario: Base
Label: RDF-1

Time vs. Volume (ft³)

Output Time increment = 0.130 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0.00	96.00	285.00	465.00	631.00
0.650	781.00	913.00	1,025.00	1,118.00	1,198.00
1.300	1,264.00	1,318.00	1,360.00	1,394.00	1,422.00
1.950	1,446.00	1,464.00	1,479.00	1,493.00	1,505.00
2.600	1,515.00	1,523.00	1,532.00	1,540.00	1,546.00
3.250	1,552.00	1,559.00	1,565.00	1,571.00	1,578.00
3.900	1,584.00	1,589.00	1,594.00	1,600.00	1,606.00
4.550	1,611.00	1,617.00	1,624.00	1,629.00	1,636.00
5.200	1,643.00	1,651.00	1,658.00	1,664.00	1,671.00
5.850	1,677.00	1,683.00	1,689.00	1,695.00	1,702.00
6.500	1,709.00	1,716.00	1,723.00	1,728.00	1,734.00
7.150	1,741.00	1,748.00	1,755.00	1,763.00	1,772.00
7.800	1,781.00	1,789.00	1,798.00	1,806.00	1,814.00
8.450	1,822.00	1,830.00	1,838.00	1,849.00	1,860.00
9.100	1,870.00	1,880.00	1,892.00	1,903.00	1,914.00
9.750	1,925.00	1,937.00	1,950.00	1,963.00	1,977.00
10.400	1,992.00	2,006.00	2,021.00	2,036.00	2,052.00
11.050	2,069.00	2,085.00	2,102.00	2,119.00	2,137.00
11.700	2,155.00	2,174.00	2,201.00	2,244.00	2,290.00
12.350	2,330.00	2,366.00	2,400.00	2,433.00	2,466.00
13.000	2,500.00	2,534.00	2,569.00	2,604.00	2,640.00
13.650	2,679.00	2,721.00	2,767.00	2,816.00	2,869.00
14.300	2,928.00	2,992.00	3,063.00	3,146.00	3,241.00
14.950	3,350.00	3,479.00	3,654.00	3,913.00	4,249.00
15.600	4,709.00	5,450.00	7,808.00	11,261.00	12,128.00
16.250	10,666.00	9,139.00	7,713.00	6,477.00	5,436.00
16.900	4,587.00	3,941.00	3,500.00	3,207.00	2,996.00
17.550	2,839.00	2,717.00	2,617.00	2,522.00	2,432.00
18.200	2,352.00	2,286.00	2,229.00	2,181.00	2,138.00
18.850	2,101.00	2,069.00	2,039.00	2,010.00	1,983.00
19.500	1,957.00	1,932.00	1,909.00	1,886.00	1,864.00
20.150	1,844.00	1,825.00	1,807.00	1,789.00	1,772.00
20.800	1,757.00	1,743.00	1,731.00	1,717.00	1,704.00
21.450	1,692.00	1,681.00	1,669.00	1,659.00	1,648.00
22.100	1,636.00	1,624.00	1,613.00	1,603.00	1,592.00
22.750	1,582.00	1,572.00	1,562.00	1,552.00	1,542.00
23.400	1,532.00	1,523.00	1,516.00	1,467.00	1,340.00
24.050	1,192.00	(N/A)	(N/A)	(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data Scenario: Base

Label: Composite Outlet Structure - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	0.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	6.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	0.00	6.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data Scenario: Base

Label: Composite Outlet Structure - 1

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	0.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.130 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
0.00	0.00	0.00	0.000	0.00	0.00	0.00
0.10	0.03	414.50	5.933	0.00	0.03	1.81
0.20	0.13	829.00	23.730	0.00	0.14	3.68
0.30	0.29	1,243.50	53.393	0.01	0.30	5.62
0.40	0.50	1,658.00	94.920	0.02	0.52	7.60
0.50	0.76	2,072.50	148.313	0.02	0.79	9.64
0.60	1.07	2,487.00	213.571	0.03	1.10	11.73
0.70	1.41	2,901.50	290.693	0.05	1.46	13.86
0.80	1.78	3,316.00	379.681	0.06	1.84	16.01
0.90	2.17	3,730.49	480.534	0.08	2.25	18.19
1.00	2.67	4,144.99	593.252	0.10	2.77	20.48
1.10	2.93	4,559.49	717.834	0.12	3.04	22.53
1.20	3.16	4,973.99	854.282	0.14	3.30	24.56
1.30	3.38	5,388.49	1,002.595	0.16	3.54	26.57
1.40	3.59	5,802.99	1,162.773	0.19	3.77	28.57
1.50	3.78	6,217.49	1,334.816	0.21	3.99	30.57
1.60	3.96	6,631.99	1,518.724	0.24	4.21	32.55
1.70	4.14	7,046.49	1,714.497	0.28	4.42	34.53
1.80	4.31	7,460.99	1,922.135	0.31	4.62	36.50
1.90	4.47	7,875.49	2,141.638	0.34	4.82	38.47
2.00	4.63	8,289.99	2,373.006	0.38	5.01	40.44
2.10	4.78	8,704.49	2,616.240	0.42	5.20	42.40
2.20	4.93	9,118.99	2,871.338	0.46	5.39	44.36
2.30	5.07	9,533.49	3,138.301	0.50	5.58	46.32
2.40	5.21	9,947.99	3,417.129	0.55	5.76	48.27
2.50	5.35	10,362.49	3,707.823	0.60	5.94	50.23
2.60	5.48	10,776.98	4,010.381	0.65	6.12	52.18
2.70	5.61	11,191.48	4,324.804	0.70	6.30	54.13

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
2.80	5.73	11,605.98	4,651.093	0.75	6.48	56.08
2.90	5.86	12,020.48	4,989.246	0.80	6.66	58.03
3.00	5.98	12,434.98	5,339.265	0.86	6.84	59.98
3.10	6.10	12,849.48	5,701.148	0.92	7.01	61.92
3.20	6.21	13,263.98	6,074.897	0.98	7.19	63.87
3.30	6.33	13,678.48	6,460.510	1.04	7.36	65.82
3.40	6.44	14,092.98	6,857.989	1.10	7.54	67.77
3.50	6.55	14,507.48	7,267.332	1.17	7.72	69.71
3.60	6.66	14,921.98	7,688.541	1.24	7.89	71.66
3.70	6.76	15,336.48	8,121.615	1.31	8.07	73.61
3.80	6.87	15,750.98	8,566.553	1.38	8.25	75.56
3.90	6.97	16,165.48	9,023.357	1.45	8.42	77.51
4.00	7.07	16,579.98	9,492.026	1.53	8.60	79.45
4.10	7.17	16,921.54	9,761.867	1.57	8.74	81.06
4.20	7.27	17,263.09	10,035.491	1.61	8.89	82.66
4.30	7.37	17,604.65	10,312.896	1.66	9.03	84.26
4.40	7.47	17,946.21	10,594.084	1.70	9.17	85.86
4.50	7.56	18,287.77	10,879.053	1.75	9.31	87.46
4.60	7.65	18,629.33	11,167.804	1.80	9.45	89.06
4.70	7.75	18,970.89	11,460.338	1.84	9.59	90.66
4.80	7.84	19,312.45	11,756.653	1.89	9.73	92.26
4.90	7.93	19,654.00	12,056.750	1.94	9.87	93.86
5.00	8.02	19,995.56	12,360.630	1.99	10.01	95.46
5.10	8.11	20,337.12	12,668.291	2.04	10.15	97.06
5.20	8.20	20,678.68	12,979.734	2.09	10.28	98.65
5.30	8.28	21,020.24	13,294.960	2.14	10.42	100.25
5.40	8.37	21,361.80	13,613.967	2.19	10.56	101.85
5.50	8.45	21,703.36	13,936.756	2.24	10.69	103.44
5.60	8.54	22,044.91	14,263.327	2.29	10.83	105.04
5.70	8.62	22,386.47	14,593.681	2.35	10.97	106.64
5.80	8.70	22,728.03	14,927.816	2.40	11.10	108.23
5.90	8.78	23,069.59	15,265.733	2.46	11.24	109.83
6.00	8.87	23,411.15	15,607.432	2.51	11.38	111.42

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base
Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
0.00	0.0	0.00
0.10	5.9	0.00
0.20	23.7	0.00
0.30	53.4	0.01
0.40	94.9	0.02
0.50	148.3	0.02
0.60	213.6	0.03
0.70	290.7	0.05
0.80	379.7	0.06
0.90	480.5	0.08
1.00	593.3	0.10
1.10	717.8	0.12
1.20	854.3	0.14
1.30	1,002.6	0.16
1.40	1,162.8	0.19
1.50	1,334.8	0.21
1.60	1,518.7	0.24
1.70	1,714.5	0.28
1.80	1,922.1	0.31
1.90	2,141.6	0.34
2.00	2,373.0	0.38
2.10	2,616.2	0.42
2.20	2,871.3	0.46
2.30	3,138.3	0.50
2.40	3,417.1	0.55
2.50	3,707.8	0.60
2.60	4,010.4	0.65
2.70	4,324.8	0.70
2.80	4,651.1	0.75
2.90	4,989.2	0.80
3.00	5,339.3	0.86
3.10	5,701.1	0.92
3.20	6,074.9	0.98
3.30	6,460.5	1.04
3.40	6,858.0	1.10
3.50	7,267.3	1.17
3.60	7,688.5	1.24
3.70	8,121.6	1.31
3.80	8,566.6	1.38
3.90	9,023.4	1.45
4.00	9,492.0	1.53
4.10	9,761.9	1.57
4.20	10,035.5	1.61

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base

Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
4.30	10,312.9	1.66
4.40	10,594.1	1.70
4.50	10,879.1	1.75
4.60	11,167.8	1.80
4.70	11,460.3	1.84
4.80	11,756.7	1.89
4.90	12,056.8	1.94
5.00	12,360.6	1.99
5.10	12,668.3	2.04
5.20	12,979.7	2.09
5.30	13,295.0	2.14
5.40	13,614.0	2.19
5.50	13,936.8	2.24
5.60	14,263.3	2.29
5.70	14,593.7	2.35
5.80	14,927.8	2.40
5.90	15,265.7	2.46
6.00	15,607.4	2.51

Orifice Calculations

Subsection: Level Pool Pond Routing Summary Scenario: Base
Label: RDF-1 (IN)

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.130 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	13.00 ft³/s	Time to Peak (Flow, In)	15.990 hours
Infiltration (Peak)	0.82 ft³/s	Time to Peak (Infiltration)	16.120 hours
Flow (Peak Outlet)	5.89 ft³/s	Time to Peak (Flow, Outlet)	16.120 hours

Elevation (Water Surface, Peak)	2.93 ft
Volume (Peak)	12,128.19 ft³

Mass Balance (ft³)	
Volume (Initial)	0.00 ft³
Volume (Total Inflow)	85,881.00 ft³
Volume (Total Infiltration)	3,793.00 ft³
Volume (Total Outlet Outflow)	80,899.00 ft³
Volume (Retained)	1,072.00 ft³
Volume (Unrouted)	-117.00 ft³
Error (Mass Balance)	0.1 %

Orifice Calculations

Subsection: Pond Inflow Summary Scenario: Base

Label: RDF-1 (IN)

Summary for Hydrograph Addition at 'RDF-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	DA1	85,873.32	15.930	20.54
Flow (In)	RDF-1	85,880.88	15.990	13.00

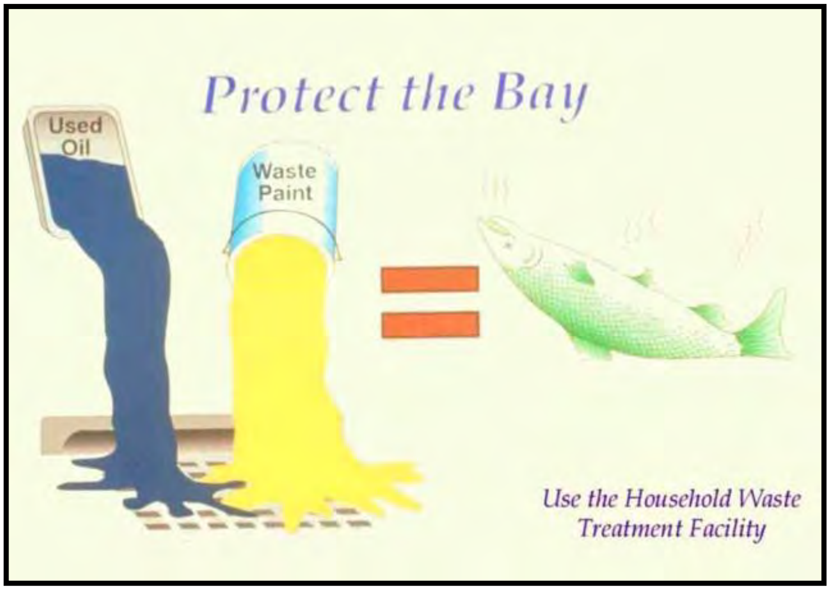
Orifice Calculations

Index

Section 6.4.5

BMP Education Materials/Fact Sheets

Non-Stormwater Discharges SC-10



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Description

Non-stormwater discharges are those flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, air conditioner condensate, etc. However there are certain non-stormwater discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains. They can generally be detected through a combination of detection and elimination. The ultimate goal is to effectively eliminate non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of pollutants on streets and into the storm drain system and creeks.

Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

CASQA
California
Stormwater
Quality
Association

Pollution Prevention

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

Suggested Protocols

Recommended Complaint Investigation Equipment

- Field Screening Analysis
    - pH paper or meter
    - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
    - Sample jars
    - Sample collection pole
    - A tool to remove access hole covers
- Laboratory Analysis
    - Sample cooler
    - Ice
    - Sample jars and labels
    - Chain of custody forms
- Documentation
    - Camera
    - Notebook
    - Pens
    - Notice of Violation forms
    - Educational materials

General

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- See SC44 Stormwater Drainage System Maintenance for additional information.

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

Visual Inspection and Inventory

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

Smoke Testing

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

Dye Testing

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

TV Inspection of Drainage System

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Reporting

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

Training

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.

- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.

- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.

- When a responsible party is identified, educate the party on the impacts of his or her actions.

Spill Response and Prevention

- See SC11 Spill Prevention Control and Cleanup.

Other Considerations

- Many facilities do not have accurate, up-to-date schematic drawings.

Requirements

Costs (including capital and operation & maintenance)

- The primary cost is for staff time and depends on how aggressively a program is implemented.

- Cost for containment and disposal is borne by the discharger.

- Illicit connections can be difficult to locate especially if there is groundwater infiltration.

- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

Maintenance (including administrative and staffing)

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Further Detail of the BMP

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.

- Establish a system for tracking incidents. The system should be designed to identify the following:

    - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a "non-stormwater" discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

Permit Requirements

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State's General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility's SWPPP.

Performance Evaluation

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Spill Prevention, Control & Cleanup SC-11

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental or illegal spills. Preparation for accidental or illegal spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills.

Approach

Pollution Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- Develop a Spill Prevention Control and Countermeasure (SPCC) Plan. The plan should include:

CASQA
California
Stormwater
Quality
Association

  - Description of the facility, owner and address, activities and chemicals present
  - Facility map
  - Notification and evacuation procedures
  - Cleanup instructions
  - Identification of responsible departments
  - Identify key spill response personnel

- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.

Suggested Protocols (including equipment needs)

Spill Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- If consistent illegal dumping is observed at the facility:
  - Post “No Dumping” signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - Landscaping and beautification efforts may also discourage illegal dumping.
  - Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.
- Store and contain liquid materials in such a manner that if the tank is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.
- If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.
- Routine maintenance:
  - Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
  - Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site’s spill control plan and/or proper spill cleanup procedures.
  - Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain.*

  - Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.

- Label all containers according to their contents (e.g., solvent, gasoline).

- Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).

- Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).

- Identify key spill response personnel.

Spill Control and Cleanup Activities

- Follow the Spill Prevention Control and Countermeasure Plan.

- Clean up leaks and spills immediately.

- Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste. Physical methods for the cleanup of dry chemicals include the use of brooms, shovels, sweepers, or plows.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.

- Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.

- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board.

- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).

- Report spills to local agencies, such as the fire department; they can assist in cleanup.

- Establish a system for tracking incidents. The system should be designed to identify the following:

  - Types and quantities (in some cases) of wastes

  - Patterns in time of occurrence (time of day/night, month, or year)

  - Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills)

  - Responsible parties

Training

- Educate employees about spill prevention and cleanup.

- Well-trained employees can reduce human errors that lead to accidental releases or spills:

  - The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.

  - Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.

- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.

- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).

- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.

- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.

- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.

- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.
- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don’t leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:
    - Cover fueling area if possible.
    - Use a perimeter drain or slope pavement inward with drainage to a sump.
    - Pave fueling area with concrete rather than asphalt.
- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off' of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities. The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department)
- Develop procedures to prevent/mitigate spills to storm drain systems
- Identify responsible departments
- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures
- Address spills at municipal facilities, as well as public areas

- Provide training concerning spill prevention, response and cleanup to all appropriate personnel

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Stormwater Managers Resource Center http://www.stormwatercenter.net/

Contaminated or Erodible Areas SC-40

Description

Areas within an industrial site that are bare of vegetation or are subject to activities that promote the suppression of vegetation are often subject to erosion. In addition, they may or may not be contaminated from past or current activities. If the area is temporarily bare because of construction, see SC-42, Building Repair, Remodeling, and Construction. Sites with excessive erosion or the potential for excessive erosion should consider employing the soil erosion BMPs identified in the Construction BMP Handbook. Note that this fact sheet addresses soils that are not so contaminated as to exceed hazardous waste criteria (see Title 22 California Code of Regulations for Hazardous Waste Criteria).

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

Preserve natural vegetation whenever possible. See also EC-2, Preservation of Existing Vegetation, in the Construction BMP Handbook.

Suggested Protocols

- Preserve natural vegetation.
- Analyze soil conditions.
- Re-vegetate when necessary.
- Remove contaminated soil.
- Utilize chemical stabilization when needed. See also EC-5, Soil Binders, and EC-13, Polyacrylamide, in the Construction BMP Handbook.
- Use geosynthetic membranes to control erosion if feasible. See also EC-7, Geotextiles and Mats, in the Construction BMP Handbook.

Training

Training is not a significant element of this best management practice.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

CASQA
California Stormwater Quality Association

Other Considerations

- Disadvantages of preserving natural vegetation or revegetation include:
  - Requires substantial planning to preserve and maintain the existing vegetation
  - May not be cost-effective with high land costs
  - Lack of rainfall, inadequate irrigation and/or poor soils may limit the success of re-vegetated areas
- Disadvantages of chemical stabilization include:
  - Creation of impervious surfaces
  - May cause harmful effects on water quality
  - Is usually more expensive than vegetative cover

Requirements

Costs

Except for preservation of natural vegetation, each of the above solutions can be quite expensive depending upon the size of the area.

Maintenance

Maintenance should be minimal, except possibly if irrigation of vegetation is necessary.

Supplemental Information

Preserving Vegetation to Minimize Erosion

Preserving stabilized areas minimizes erosion potential, protects water quality, and provides aesthetic benefits. The most effective way to control erosion is to preserve existing vegetation. Preservation of natural vegetation provides a natural buffer zone and an opportunity for infiltration of stormwater and capture of pollutants in the soil matrix. This practice can be used as a permanent source control measure.

Vegetation preservation should be incorporated into the site. Preservation requires good site management to minimize the impact of construction when construction is underway and exposure of soils after construction. Proper maintenance is important to ensure healthy vegetation that can control erosion. Different species, soil types, and climatic conditions will require different maintenance activities such as mulching, fertilizing, liming, irrigation, pruning and weed and pest control. Maintenance should be performed regularly especially during construction phases.

The preferred approach is to leave as much native vegetation on-site as possible, thereby reducing or eliminating any erosion problem. However, assuming the site already has contaminated or erodible surface areas, there are four possible courses of action which can be taken:

- The area can be revegetated if it is not in use and therefore not subject to damage from site activities. In as much as the area is already devoid of vegetation, special measures are likely necessary. Lack of vegetation may be due to the lack of water and/or poor soils. The latter can perhaps be solved with fertilization, or the ground may simply be too compacted from prior use. Improving soil conditions may be sufficient to support the recovery of vegetation. Use process wastewater for irrigation if possible. Finally, see the Construction BMP Handbook for further procedures on establishing vegetation.

- Chemical stabilization can be used as an alternate method in areas where temporary seeding practices cannot be used because of season or climate. It can provide immediate, effective, and inexpensive erosion control. Application rates and procedures recommended by the manufacturer should be followed as closely as possible to prevent the products from forming ponds and creating large areas where moisture cannot penetrate the soil. See also EC-5, Soil Binders, and EC-13, Polyacrylamide, in the Construction BMP Handbook for more information. Advantages of chemical stabilization include:
    - Applied easily to the surface
    - Stabilizes areas effectively
    - Provides immediate protection to soils that are in danger of erosion
- Contaminated soils can be removed, however this is a last resort and quite expensive. The level and extent of the contamination must be determined. This determination and removal must comply with State and Federal regulations, permits must be acquired and fees paid.
- Geosynthetics may be used. Geosynthetics include those materials that are designed as an impermeable barrier to contain or control large amounts of liquid or solid matter. Geosynthetics have been developed primarily for use in landfills and surface impoundments, and the technology is well established. There are two general types of geosynthetics: geomembranes (impermeable) and geotextiles (permeable). Geomembranes are composed of one of three types of impermeable materials: elastomers (rubbers), thermoplasics (plastics), or a combination of these two types of materials. See also EC-7, Geotextiles and Mats, in the Construction BMP Handbook for more information. The advantages of these materials include:
    - A variety of compounds are available
    - Sheeting is produced in a factory environment
    - Polymeric membranes are flexible
    - Installation is simple

    Disadvantages include:

    - Chemical resistance must be determined for each application
    - Seaming systems may be a weak link in the system
    - Many materials are subject to attack from biotic, mechanical, or environmental sources

Geotextiles are uncoated synthetic textile products that are not watertight. They are composed of a variety of materials, most commonly polypropylene and polyester. Geotextiles serve five basic functions:

- Filtration
- Drainage
- Separation
- Reinforcement
- Armoring

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building & Grounds Maintenance SC-41

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

CASQA California Stormwater Quality Association

- Encourage use of Integrated Pest Management techniques for pest control.

- Encourage proper onsite recycling of yard trimmings.

- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.

- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.

- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.

- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.

- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.

- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.

- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.

- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.

- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.

- Use mulch or other erosion control measures when soils are exposed.

- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.

- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.

- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.

- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.

- Do not use pesticides if rain is expected.

- Do not mix or prepare pesticides for application near storm drains.

- Use the minimum amount needed for the job.

- Calibrate fertilizer distributors to avoid excessive application.

- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.

- Apply pesticides only when wind speeds are low.

- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.

- Irrigate slowly to prevent runoff and then only as much as is needed.

- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.

- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building Repair and Construction SC-42

Description

Modifications are common particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

Approach

Pollution Prevention

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical.
- Buy recycled products to the maximum extent practical.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Recycle

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

CASQA
California
Stormwater
Quality
Association

- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Suggested Protocols

Repair & Remodeling

- Follow BMPs identified in Construction BMP Handbook.
- Maintain good housekeeping practices while work is underway.
- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside, particularly during the rainy season.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store materials properly that are normally used in repair and remodeling such as paints and solvents.
- Sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout if when repairing roofs, small particles have accumulated in the gutter. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Properly store and dispose waste materials generated from construction activities. See Construction BMP Handbook.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.

- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is significant risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Training

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Limitations

- This BMP is for minor construction only. The State's General Construction Activity Stormwater Permit has more requirements for larger projects. The companion "Construction Best Management Practice Handbook" contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.

Requirements

Costs

These BMPs are generally low to modest in cost.

Maintenance

N/A

Supplemental Information

Further Detail of the BMP

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. See Treatment Control Fact Sheet TC-20 Wet Pond/Basin in Section 5 of the New Development and Redevelopment Handbook regarding design criteria. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

CASQA
California Stormwater Quality Association

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

  - Do not allow discharges to the storm drain.

  - Vacuum/pump discharges to a tank or discharge to sanitary sewer.

  - Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.

- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.

- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.

- Use only as much water as necessary for dust control, to avoid runoff.

- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.

- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.

- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.

- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.

- Clean up fluid spills immediately with absorbent rags or material.

- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

CASQA
California Stormwater Quality Association

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.

- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.

- Keep accurate logs of the number of catch basins cleaned.

- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.

- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.

- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.

- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.

- Conduct routine maintenance at each pump station.

- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.

- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:

  - Is there evidence of spills such as paints, discoloring, etc?

  - Are there any odors associated with the drainage system?

  - Record locations of apparent illegal discharges/illicit connections?

  - Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.

  - Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.

- Establish a system for tracking incidents. The system should be designed to identify the following:

  - Illegal dumping hot spots

  - Types and quantities (in some cases) of wastes

  - Patterns in time of occurrence (time of day/night, month, or year)

  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)

  - Responsible parties

- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.

- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.

- Allow only properly trained individuals to handle hazardous materials/wastes.

- Have staff involved in detection and removal of illicit connections trained in the following:

  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

  - OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

  - Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.

- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.

- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.

- Regulations may include adoption of substantial penalties for illegal dumping and disposal.

- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.

- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.

  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.

  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.

  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line: http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Landscape Maintenance SC-73

Objectives

- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	
Bacteria	
Oil and Grease	
Organics	
Oxygen Demanding	☑

Description

Landscape maintenance activities include vegetation removal; herbicide and insecticide application; fertilizer application; watering; and other gardening and lawn care practices. Vegetation control typically involves a combination of chemical (herbicide) application and mechanical methods. All of these maintenance practices have the potential to contribute pollutants to the storm drain system. The major objectives of this BMP are to minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters; prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings, and educating employees and the public.

Approach

Pollution Prevention

- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.
- Choose low water using flowers, trees, shrubs, and groundcover.
- Consider alternative landscaping techniques such as naturescaping and xeriscaping.
- Conduct appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) to help preserve the landscapes water efficiency.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Consider grass cycling (grass cycling is the natural recycling of grass by leaving the clippings on the lawn when mowing. Grass clippings decompose quickly and release valuable nutrients back into the lawn).

Suggested Protocols

Mowing, Trimming, and Weeding

- Whenever possible use mechanical methods of vegetation removal (e.g mowing with tractor-type or push mowers, hand cutting with gas or electric powered weed trimmers) rather than applying herbicides. Use hand weeding where practical.

- Avoid loosening the soil when conducting mechanical or manual weed control, this could lead to erosion. Use mulch or other erosion control measures when soils are exposed.

- Performing mowing at optimal times. Mowing should not be performed if significant rain events are predicted.

- Mulching mowers may be recommended for certain flat areas. Other techniques may be employed to minimize mowing such as selective vegetative planting using low maintenance grasses and shrubs.

- Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at a landfill (see waste management section of this fact sheet).

- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to storm drains.

Planting

- Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them. Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs.

- Retain and/or plant selected native vegetation whose features are determined to be beneficial, where feasible. Native vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation.

- Consider using low water use groundcovers when planting or replanting.

Waste Management

- Compost leaves, sticks, or other collected vegetation or dispose of at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.

- Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.

- Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming.

- Avoid landscape wastes in and around storm drain inlets by either using bagging equipment or by manually picking up the material.

Irrigation

- Where practical, use automatic timers to minimize runoff.
- Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken.
- Ensure that there is no runoff from the landscaped area(s) if re-claimed water is used for irrigation.
- If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.
- Irrigate slowly or pulse irrigate to prevent runoff and then only irrigate as much as is needed.
- Apply water at rates that do not exceed the infiltration rate of the soil.

Fertilizer and Pesticide Management

- Utilize a comprehensive management system that incorporates integrated pest management (IPM) techniques. There are many methods and types of IPM, including the following:
    - Mulching can be used to prevent weeds where turf is absent, fencing installed to keep rodents out, and netting used to keep birds and insects away from leaves and fruit.
    - Visible insects can be removed by hand (with gloves or tweezers) and placed in soapy water or vegetable oil. Alternatively, insects can be sprayed off the plant with water or in some cases vacuumed off of larger plants.
    - Store-bought traps, such as species-specific, pheromone-based traps or colored sticky cards, can be used.
    - Slugs can be trapped in small cups filled with beer that are set in the ground so the slugs can get in easily.
    - In cases where microscopic parasites, such as bacteria and fungi, are causing damage to plants, the affected plant material can be removed and disposed of (pruning equipment should be disinfected with bleach to prevent spreading the disease organism).
    - Small mammals and birds can be excluded using fences, netting, tree trunk guards.
    - Beneficial organisms, such as bats, birds, green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seed head weevils, and spiders that prey on detrimental pest species can be promoted.
- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.

- Use pesticides only if there is an actual pest problem (not on a regular preventative schedule).
- Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- Do not mix or prepare pesticides for application near storm drains.
- Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- Periodically test soils for determining proper fertilizer use.
- Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Dispose of empty pesticide containers according to the instructions on the container label.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.
- Inspect pesticide/fertilizer equipment and transportation vehicles daily.

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution. Pesticide application must be under the supervision of a California qualified pesticide applicator.
- Train/encourage municipal maintenance crews to use IPM techniques for managing public green areas.
- Annually train employees within departments responsible for pesticide application on the appropriate portions of the agency's IPM Policy, SOPs, and BMPs, and the latest IPM techniques.

- Employees who are not authorized and trained to apply pesticides should be periodically (at least annually) informed that they cannot use over-the-counter pesticides in or around the workplace.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup
- Have spill cleanup materials readily available and in a know in location
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- The Federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover: a list of approved pesticides and selected uses, updated regularly; general application information; equipment use and maintenance procedures; and record keeping. The California Department of Pesticide Regulations and the County Agricultural Commission coordinate and maintain the licensing and certification programs. All public agency employees who apply pesticides and herbicides in "agricultural use" areas such as parks, golf courses, rights-of-way and recreation areas should be properly certified in accordance with state regulations. Contracts for landscape maintenance should include similar requirements.
- All employees who handle pesticides should be familiar with the most recent material safety data sheet (MSDS) files.
- Municipalities do not have the authority to regulate the use of pesticides by school districts, however the California Healthy Schools Act of 2000 (AB 2260) has imposed requirements on California school districts regarding pesticide use in schools. Posting of notification prior to the application of pesticides is now required, and IPM is stated as the preferred approach to pest management in schools.

Requirements

Costs

Additional training of municipal employees will be required to address IPM techniques and BMPs. IPM methods will likely increase labor cost for pest control which may be offset by lower chemical costs.

Maintenance

Not applicable

Supplemental Information

Further Detail of the BMP

Waste Management

Composting is one of the better disposal alternatives if locally available. Most municipalities either have or are planning yard waste composting facilities as a means of reducing the amount of waste going to the landfill. Lawn clippings from municipal maintenance programs as well as private sources would probably be compatible with most composting facilities

Contractors and Other Pesticide Users

Municipal agencies should develop and implement a process to ensure that any contractor employed to conduct pest control and pesticide application on municipal property engages in pest control methods consistent with the IPM Policy adopted by the agency. Specifically, municipalities should require contractors to follow the agency's IPM policy, SOPs, and BMPs; provide evidence to the agency of having received training on current IPM techniques when feasible; provide documentation of pesticide use on agency property to the agency in a timely manner.

References and Resources

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Los Angeles County Stormwater Quality Model Programs. Public Agency Activities http://ladpw.org/wmd/npdes/model_links.cfm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Orange County Stormwater Program http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Landscaping and Lawn Care. Office of Water. Office of Wastewater Management. On-line: http://www.epa.gov/npdes/menuofbmps/poll_8.htm

Design Objectives

☑ Maximize Infiltration
☑ Provide Retention
☑ Slow Runoff
Minimize Impervious Land Coverage
Prohibit Dumping of Improper Materials
Contain Pollutants
Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Design Objectives

Maximize Infiltration
Provide Retention
Slow Runoff
Minimize Impervious Land Coverage
Prohibit Dumping of Improper Materials
☑ Contain Pollutants
Collect and Convey

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Section 5
Monitoring, Reporting, and Program Evaluation

Conducting a monitoring program, reviewing the monitoring information, evaluating BMPs, and record keeping and reporting are all important elements of the implementation phase of the SWPPP. The success of the SWPPP depends upon the thorough implementation of the monitoring plan and evaluation of the effectiveness of the plan elements once they have been implemented.

Monitoring, Reporting, and Evaluation Elements

- Conduct monitoring program
- Conduct record keeping and reporting
- Conduct annual site evaluation
  - Review monitoring information
  - Evaluate BMPs
  - Review and revise the SWPPP as necessary

5.1 Conduct Monitoring Program

The General Permit requires that a monitoring program be a component of the SWPPP. The program has the following objectives:

- To monitor the quality of the stormwater discharge
- To aid in SWPPP implementation
- To measure the BMP effectiveness

To meet these objectives the monitoring effort has these elements:

- Training
- Visual observations
- Stormwater monitoring
- Authorized non-stormwater discharges

5.1.1 Training

Familiarity with the requirements of the stormwater monitoring plan and competence in the techniques and protocols specified in the plan are essential to ensure that stormwater samples are collected in a manner that meets the goals of the plan, while protecting the health and safety of the monitoring team members. It is recommended that all stormwater monitoring personnel receive training prior to conducting any stormwater monitoring activities. Stormwater monitoring training should include the following basic elements:

- Review of the Monitoring Plan and Health and Safety Plan

- Classroom training session
- Field training and sampling simulation (dry run)
- Annual refresher training

5.1.2 Visual Observations

Visual observations of both stormwater and non-stormwater discharges should be made at all facilities to document the presence of any discolorations, odors, floating and suspended material, oil and grease, etc., and to identify the source of any pollutants and non-stormwater flows. Visual observations should be made under the leadership of the SWPPP Leader, with appropriate members of the Pollution Prevention Team, according to the following schedule:

- All drainage areas within the facility should be checked for the presence of unauthorized non-stormwater discharges on a quarterly basis, during daylight hours, on days with no stormwater discharges.
- All authorized non-stormwater discharges and their sources should be observed quarterly during daylight hours, on days with no stormwater discharges.
- One storm event per month during the wet season (October 1-May 30) should be visually observed during the first hour of discharge at all discharge locations. These observations are only required of stormwater discharges that occur during daylight hours that are preceded by at least three working days without stormwater discharges and that occur during scheduled facility operating hours.

The results of the visual observations should be recorded and include: the date of the observation, locations observed, observations, response taken to eliminate unauthorized non-stormwater discharges, and actions taken to reduce or prevent pollutants from contacting non-stormwater or stormwater discharges. Results are included in the Annual Report.

5.1.3 Stormwater Monitoring

Each facility should either conduct an individual monitoring plan or participate in a group-sampling program. A group-monitoring program may be developed either by an entity representing a group of similar facilities or by a local stormwater agency that holds its own NPDES permit. According to the General Permit, the monitoring plan is to contain the rationale and description of the visual observation methods, location, and frequency; and the analytical methods and corresponding method detection limits used to detect constituents.

Selection of sites for industrial stormwater monitoring will depend on many factors including the following:

Representativeness

It is important to select sites that are representative of typical site operations.

- Runoff from the facility should combine to form a definable runoff stream.

- The runoff stream should represent the full range of activities at the facility.
- Runoff from the facility should not combine with runoff from other sources.
- Adequate flow volume must be available for sample collection.

Personal Safety

Development of a health and safety plan is recommended. Site selection should insure monitoring personnel from the following potential hazards:

- Traffic
- Uneven or slippery footing surface
- Poor night visibility (lighting)

Site Access

Ease of monitoring site access for monitoring personnel and vehicles parking is essential. Also, for sites that require installation of sample collection or flow metering equipment, adequate equipment access for maintenance and monitoring activities must be available.

Equipment Security

Permanently installed monitoring equipment must be located at a site that will minimize potential vandalism and other possible damage.

Adequate Flow Volume

Monitoring sites should be configured such that adequate flow volume is present for sample collection. Hydraulic conditions should be well mixed and free flowing.

Utility Access

If automated monitoring equipment is required, electrical power should be readily available at selected monitoring sites. Additionally, telephone service may be required for off-site station controlling and data transfer.

Stormwater samples should be collected during the first hour of discharge from (1) the first storm event of the wet season, and (2) at least one other storm event in the wet season. If the first event is missed, sampling of two events during the wet season is still required. Furthermore, a justification for failing to sample the first event should be provided in the Annual Report. Sample collection is only required of stormwater discharges that occur during scheduled facility operating hours and that are preceded by at least three working days without stormwater discharge. Sample collection is not required if dangerous weather conditions are present (e.g., flooding, electrical storm, etc.), when stormwater discharges begin after scheduled facility operating hours or when stormwater discharges are not preceded by three working days without discharge. When the required samples are not collected due to these exceptions, an explanation must be provided in the Annual Report. Visual observations and sample collection may be conducted more than one hour after discharge begins if it is determined that the monitoring objectives will be better satisfied. If this occurs, an explanation should be provided in the Annual Report.

Specific sampling and analysis requirements include the following:

Rules to Follow to Reduce Potential Sample Contamination

1. No smoking.
2. Never sample near a running vehicle. Do not park vehicles in immediate sample collection area (even non-running vehicles)
3. Always wear clean, powder-free nitrile gloves when handling composite bottles, lids, sterile grab sample bottles, tubing, or strainers.
4. Never touch the inside surface of a sample bottle or lid, even with gloved hands.
5. Never touch the exposed end of a sampling tube.
6. Never allow the inner surface of a sample bottle, lid, or sampling tube to be contacted by any material other than the sample water.
7. Never allow any object or material to fall into or contact the collected sample water.
8. Avoid allowing rain water to drip from rain gear or other surfaces into sample bottles.
9. Do not eat or drink during sample collection.
10. Do not breathe, sneeze or cough in the direction of an open sample bottle.

- All sampling and sample preservation should be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater".

- All monitoring instruments and equipment should be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements.

- All laboratory analyses should be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified by the RWQCB.

- Analyze samples for total suspended solids (TSS), pH, specific conductance, and total organic carbon (TOC). Oil and grease (O&G) may be substituted for TOC.

- Analyze toxic chemicals and other pollutants that are likely to be present in stormwater discharges. Any of these pollutants that are not detected in significant quantities after two consecutive sampling events may be eliminated from future sampling analysis until the pollutant is likely to be present again. (According to the definitions section of the General Permit, "significant quantities" is defined as the volume, concentration, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.)

- Other analytical parameters should be included based on the facility's standard industrial classification (see Table D of the General Permit).

In addition to the requirements above, which are outlined in the General Permit, the following procedures are recommended to maximize the ability of sampling personnel to collect samples reliably and with minimal sample contamination.

- Before stormwater samples are collected, personnel must ensure the safety of such activities at each sampling location.
- Select the appropriate sample bottles and equipment for each parameter to be measured. As general guidelines, all sampling equipment and sample bottles used for trace metals determination should be nonmetallic and free from any material that may contain metals. Only high-density plastic or Teflon containers should be used for metals analytical sample storage bottles. All sampling equipment and sample bottles used for trace organics determination should be glass or Teflon. Nutrients and most "conventional" parameters may be sampled using plastic or glass bottles.
- Employ "clean" sampling techniques to minimize potential sources of sample contamination, particularly from trace pollutants. Experience has shown that when clean sampling techniques are used, detected concentrations of constituents tend to be lower.

5.2 Conduct Record Keeping and Reporting

Records of all stormwater monitoring information, inspections and visual observations, certifications, corrective actions and follow-up activities, and copies of all reports should be retained for a period of at least five years. These records should include:

- The date, place, and time of site inspections, sampling, visual observations, and measurements
- The individual(s) who performed the site inspections, sampling, visual observations, and measurements
- Flow measurements or estimates (as required by Section B.6 of the General Permit)
- The date and approximate time of analyses
- The individual who performed the analyses
- Analytical results, method detection limits, and the analytical techniques or methods used
- Quality assurance and quality control records and results
- Non-stormwater discharge inspections and visual observations and stormwater discharge visual observation records
- Visual observations and sample collection exception records
- All calibration and maintenance records of onsite instruments used

- All sampling and analysis exemption and reduction certifications and supporting documentation
- The records of any corrective actions and follow-up activities that resulted from the visual observations

It is also recommended that information regarding the rain event be collected. A nearby recording gage should be identified and used to document the start and stop times and date of precipitation event. Some industries may want to consider installing a recording gage at the monitoring site.

Photographs can be useful. Also keep a record of maintenance activities or any other BMPs that are of an "action" nature. It is easy to demonstrate that a BMP that involves a physical change, such as berming or covering, has been accomplished. But actions that relate to good housekeeping can only be demonstrated by record keeping. Keeping a record of catch basin cleaning, for example, also provides insight into how soon it takes for the catch basin sump to refill.

An Annual Report including the items listed below should be submitted by July 1 of each year to the Executive Officer of the appropriate RWQCB.

- Summary of visual observations and sampling results
- Evaluation of the visual observations and sampling and analysis results
- Documentation that the BMPs in the SWPPP are being implemented and properly maintained as necessary
- Laboratory reports (including detection limits for each analytical parameter)
- The Annual Comprehensive Site Compliance Evaluation Report (as described below)
- Documentation, including the justification, of any deviations from the General Permit requirements (if not already included in the Evaluation Report)
- Records
- Detection limits for each analytical parameter

5.3 Conduct Annual Site Evaluation

All facilities should conduct an annual comprehensive site compliance evaluation. It may be helpful to involve the Pollution Prevention Team (PPT) in this effort (see Section 2). The SWPPP should be revised within 90 days of the evaluation based on the evaluation and the revisions implemented. Evaluations should include the following:

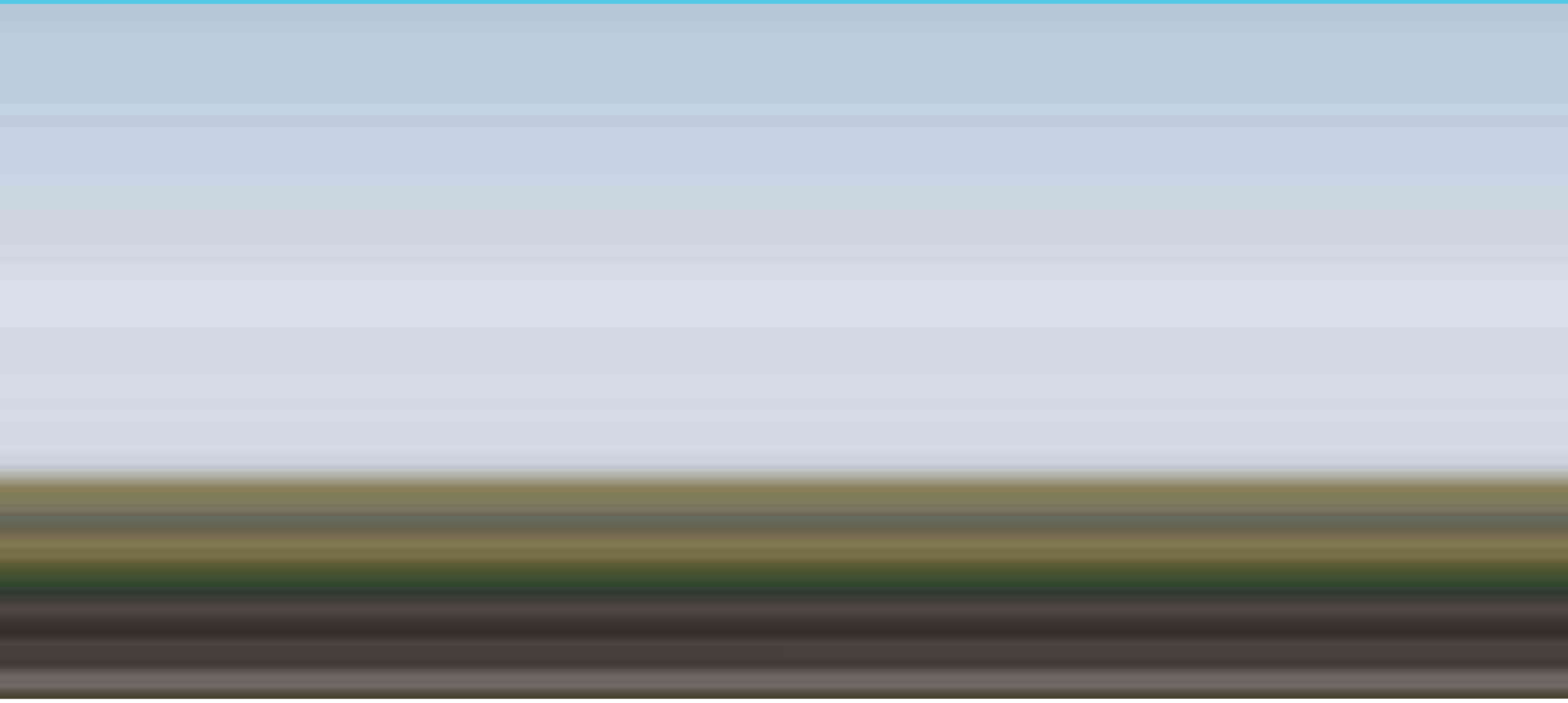
- A review of the results of visual inspections of potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system

- A review of visual observation records, inspection records, and sampling and analysis results
- A review and evaluation of each BMP to determine whether it is adequate, properly implemented, and maintained
- A review of site activities to ascertain if change has occurred, and if so, whether new or modified BMPs are needed
- A review of the list of significant materials to ascertain if the list has changed, and if so, whether new or modified BMPs are needed
- A review of spills that have occurred over the past 12 months, with a determination of cause(s) and possible solutions, including modified or new BMPs
- A determination of whether each BMP must be modified, replaced, and whether additional BMPs are needed
- An evaluation report

CONTECH®
ENGINEERED SOLUTIONS

Corrugated Metal Pipe
Detention & Infiltration

The experts you need to solve your stormwater challenges



Contech is the leader in stormwater solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.

With our responsive team of stormwater experts, local regulatory expertise and flexible solutions, Contech is the trusted partner you can count on for stormwater management solutions.

Your Contech Team

STORMWATER CONSULTANT

It's my job to recommend the best solution to meet permitting requirements.

STORMWATER DESIGN ENGINEER

I work with consultants to design the best approved solution to meet your project's needs.

REGULATORY MANAGER

I understand the local stormwater regulations and what solutions will be approved.

SALES ENGINEER

I make sure our solutions meet the needs of the contractor during construction.

Contech is your partner in stormwater management solutions

CMP Infiltration is used at Long Beach City College in Long Beach, California.

Subsurface Infiltration as a Stormwater Management Strategy

The only sure way to eliminate stormwater pollution is to eliminate stormwater runoff. In recognition of this fact, Green Infrastructure and Low Impact Development based stormwater management regulations prioritizing runoff reduction have proliferated throughout the United States.

Where site conditions allow, infiltration is typically the most cost effective and reliable runoff reduction approach. In urban environments where there are competing demands for land, subsurface infiltration can provide many of the benefits of landscape based systems but without requiring dedicated land area.

Infiltration systems are commonly comprised of a pretreatment component designed to remove sediment, trash, and oil, followed by plastic, metal or concrete storage units surrounded by permeable stone creating a high voids storage gallery.

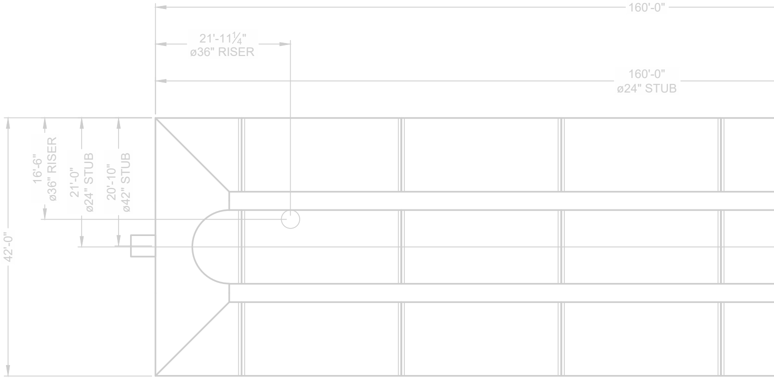
Infiltration systems are typically designed to support vehicular loading and to withstand lateral pressures from surrounding soil that allows the overlying land to be used for virtually any non-building application.

Corrugated Metal Pipe
The “Go To” Material for Stormwater Detention

For the majority of applications, corrugated metal pipe (CMP) is the “go to” material for stormwater detention and infiltration. With its low cost, a wide variety of diameters, layout configurations and coatings, no other material can match CMP’s flexibility and versatility.

- NCSPA service life guidance of 75+ years for certain materials in recommended environments. Please refer to the Corrugated Metal Pipe Detention Design Guide for additional information.
- Various pipe coatings and materials are available to accommodate site-specific needs: Aluminized Steel Type 2 (ALT2), Galvanized, CORLIX® Aluminum, and Polymeric.
- Wide range of gages, corrugations, and shapes, diameters 12”– 144”
- Pipe can be fully or partially perforated for infiltration or groundwater recharge applications
- Custom risers and manifolds provide direct access for maintenance
- Outlet control devices can be incorporated within the system, eliminating the need for a separate structure
- Customizable - a variety of fittings allow CMP to match most layout configurations
- May be designed for heavy loading and high maximum cover
- Contributes to LEED points
- Available locally; quick turnaround time
- The most economical installed solution

No other material can match the flexibility and versatility of CMP



Service Life for Corrugated Metal Pipe

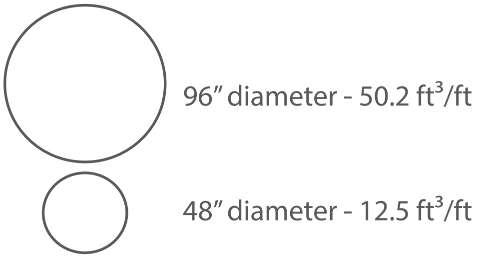
The durability of steel ...

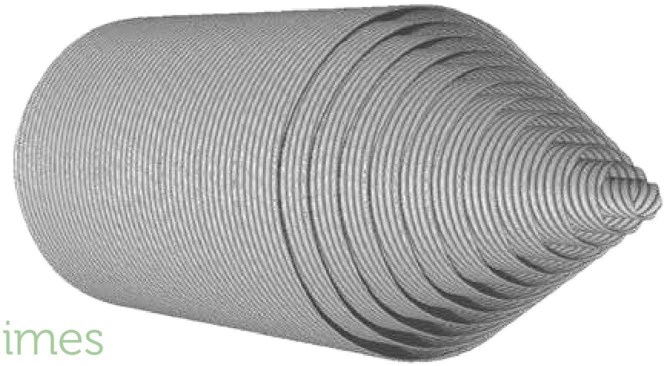
Learn More:
www.ncspa.org

Some engineers are hesitant to use corrugated metal pipe (CMP) for infiltration because they have heard about CMP drainage culverts that have corroded due to abrasion. Factors affecting longevity differ between culvert and infiltration applications. Culverts experience high velocity flows carrying abrasive sediment, which can wear off galvanized coatings used in older CMP culverts. Infiltration systems are designed for storage rather than conveyance, so velocity and abrasive forces are minimized. In addition, improved CMP coatings, such as Aluminized Type 2 (ALT2), are more abrasion resistant and have demonstrated superior in-ground performance against abrasion in long-term durability studies. Field studies also have indicated that ALT2 coating may extend service life in wider pH and resistivity ranges than galvanized coatings. Confirming and maintaining recommended environmental conditions helps ensure system longevity projected by the long term studies. Finally, properly designed infiltration systems include pretreatment, flow control and a stone backfill envelope that can reduce exposure to abrasion

Maximizing Vertical Space: Every Inch Counts

One of the most overlooked advantages of CMP is its ability to maximize vertical storage space. Increasing the depth of a CMP infiltration system allows for more water storage in the same footprint. For example, doubling the diameter of pipe yields four times as much storage volume in the pipe. This provides a significant cost savings per cubic foot of storage. In addition, more vertical storage space means a smaller footprint, less excavation, and lower project costs.





Twice the diameter provides four times the storage space.

System Sizing

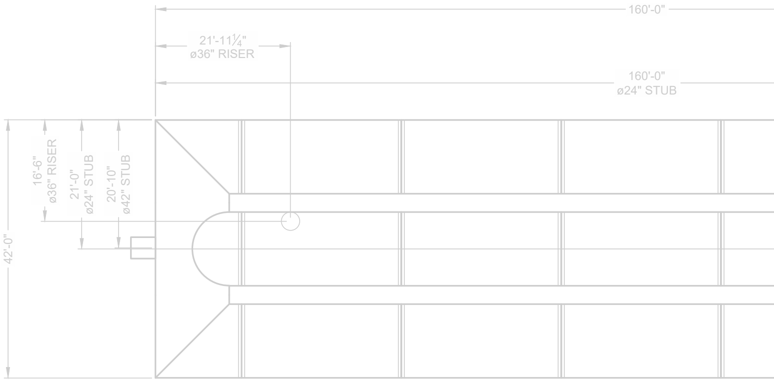
APPLICATION TIPS

- Use the largest diameter pipe possible to maximize vertical storage space and minimize the overall footprint. Doing so will reduce material, excavation, and backfill costs.
- Single manifold systems are most cost effective as they reduce the amount of fabrication needed.
- Incorporating flow controls into the CMP system can reduce costs by eliminating the need for additional concrete structures.
- The Contech MOBILE PIPE® mill can be delivered to remote locations and assembled on-site for fast and cost effective steel pipe manufacturing.

DIAMETER (IN)	VOLUME (FT³/FT)	MIN. COVER HEIGHT
6	0.20	12″
8	0.35	12″
10	0.55	12″
12	0.78	12″
15	1.22	12″
18	1.76	12″
21	2.40	12″
24	3.14	12″
30	4.90	12″
36	7.10	12″
42	9.60	12″
48	12.60	12″
54	15.90	12″
60	19.60	12″
66	23.80	12″
72	28.30	12″
78	33.20	12″
84	38.50	12″
90	44.20	12″
96	50.30	12″
102	56.80	18″
108	63.60	18″
114	70.90	18″
120	78.50	18″
126	86.60	18″
132	95.00	18″
138	103.90	18″
144	113.10	18″

Because of its low cost and flexible configurations, CMP is the ‘go to’ material for stormwater detention and filtration.

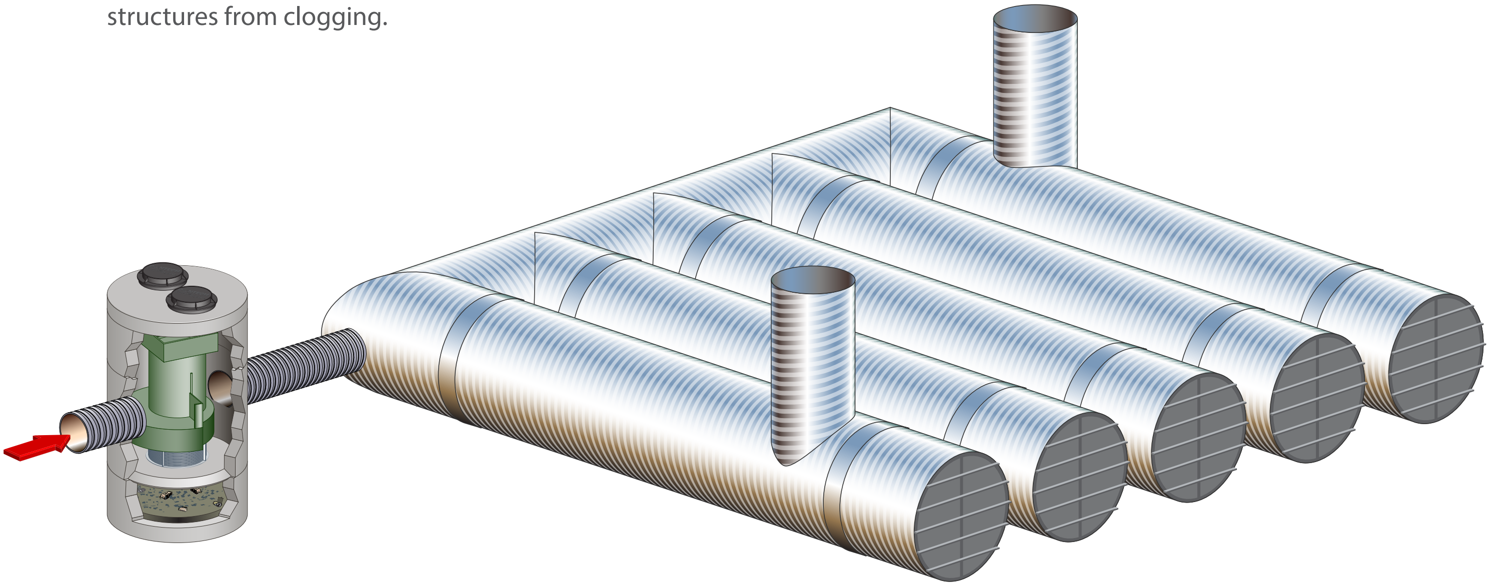
Contech’s CMP Detention systems maximize vertical storage space



The Need for Effective Pretreatment

Infiltration systems have multiple components, and one of the most important is pretreatment. The purpose of a pretreatment device is to prolong the life of the infiltration system by removing debris and sediment that can collect on the invert and within the stone backfill voids. Pretreatment will maintain the efficiency of an infiltration system as well as extend the life cycle, therefore preventing a premature replacement. Pretreatment also offers these additional benefits:

- Easier to clean and maintain compared to the infiltration system itself.
- Cost savings due to the extended service life of the system.
- Removing trash and debris protects downstream outlet control structures from clogging.



Pretreatment systems that are easy to maintain and do not rely on the use of geotextile fabric are preferred.

Pretreatment Design Considerations

When choosing a pretreatment system, consider the following ...

- Downstream outlet control structures may require protection from a pretreatment device that screens trash and debris.
- Pretreatment system selection depends on pollutant targets. Trash, debris, and larger particles can be removed with hydrodynamic separators. Removing high percentages of fine particles and associated heavy metals and nutrients requires filtration.
- Reduced long term maintenance or replacement cost of the infiltration system can help justify pretreatment construction costs.
- Inlet and pipe layout will influence the number and type of pretreatment systems used. A combination of different systems may be appropriate for the various inlet locations and flows.

The CDS® provides direct access to cleaning, using a combination of swirl concentration and indirect screening.

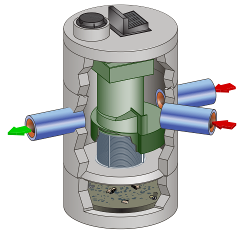
Learn More:
www.ContechES.com/cmp-detention

Reduce long term maintenance of
an infiltration system with pretreatment.

Pretreatment options extend the life of subsurface infiltration

Pretreatment Options

Contech offers a number of pretreatment options, all of which will extend the life of subsurface infiltration systems and improve water quality. The type of system chosen will depend on a number of factors including footprint, soil conditions, local regulations, and the desired level of pretreatment.



Hydrodynamic Separation

Hydrodynamic Separation (HDS) provides a basic level of pretreatment by capturing and retaining trash and debris, sediment, and oil from stormwater runoff.

CDS®

CDS provides superior trash and sediment removal, and is much easier to clean and maintain compared to the infiltration system itself.

Cascade Separator™

The Cascade Separator uses advanced sediment capture technology to provide the highest sediment removal efficiency to protect the stone backfill voids of infiltration systems, thus extending the life of the system.

Filtration

Filtration provides a higher level of pretreatment and improved water quality by removing trash and debris, oil, fine solids, and dissolved pollutants such as metals, hydrocarbons, and nutrients.

Filterra® Bioretention System

Filterra is an engineered bioretention system that has been optimized for high volume/flow treatment and high pollutant removal.

The Stormwater Management StormFilter®

The StormFilter system is comprised of a structure that houses rechargeable, media-filled cartridges. The media can be customized to target site-specific pollutants.

Jellyfish® Filter

The Jellyfish filter uses membrane filtration in a compact footprint to remove a high level and a wide variety of stormwater pollutants such as fine particulates, oil, trash and debris, metals, and nutrients.

Alternative Materials for Subsurface Infiltration

There may be instances where alternative materials are needed for subsurface infiltration due to site specific needs ...

Plastic Chambers

Plastic chambers are best suited to shallow depth applications; minimum cover is 18 inches, and maximum cover is 96 inches. Some benefits of chambers are:

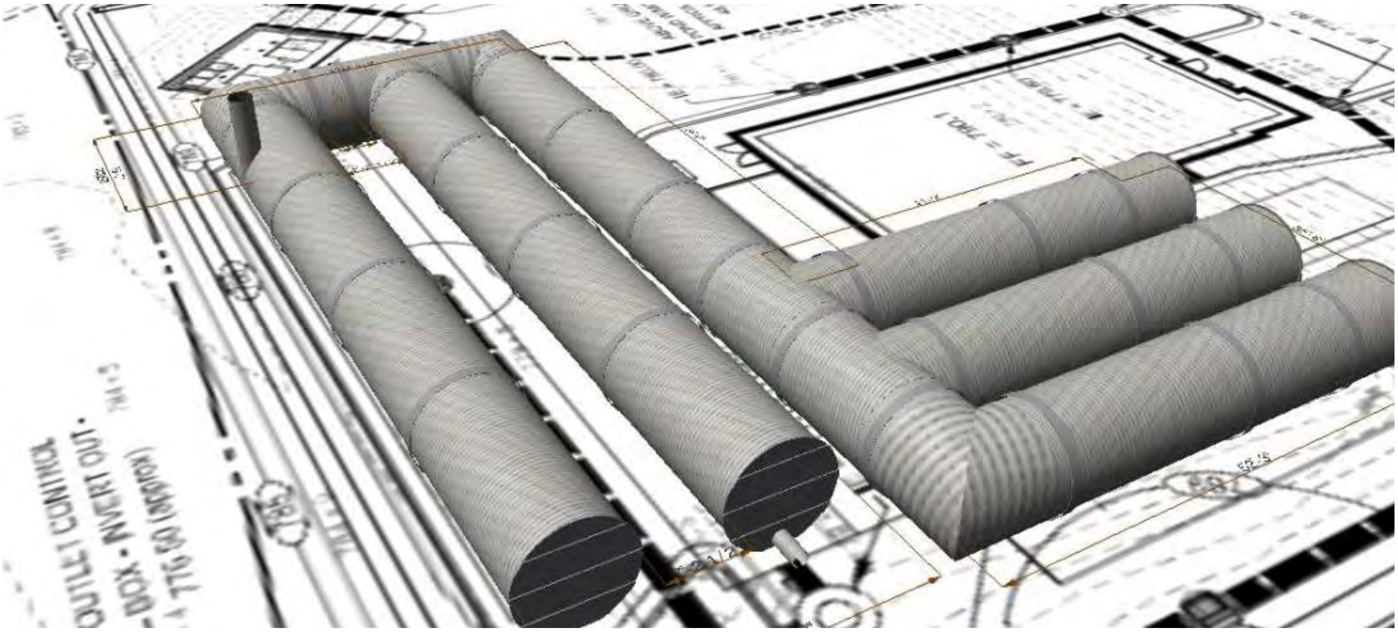
- Chambers may be beneficial for sites with limited vertical storage.
- Lightweight and installed by hand.
- Heavy equipment is not required to set units into place.
- Centralized stocking locations for short lead times.

Concrete Structures/Vaults

Some concrete structures and vaults are best suited for high loading applications such as railroads or airports. Concrete units are also ideal in corrosive environments or areas with high salinity. Some benefits of concrete structures are:

- Wide range of spans and heights.
- Greater underground infiltration storage in a smaller footprint.
- Ample and easy maintenance access.
- Fast installation.

Design Your Own Detention System (DYODS®)



Learn More:
www.ContechES.com/designcenter

Quickly prepare designs for estimates and project meetings ...

Engineers are always looking for new ways to quickly prepare designs for estimates and project meetings. We have a tool that does just that… the Design Your Own Detention System (DYODS®) tool.

Part of the Contech Design Center, this free, online tool fully automates the layout process for stormwater detention and infiltration systems. The tool allows you to design systems using corrugated metal pipe (CMP), ChamberMaxx® plastic chambers, or DuroMaxx® steel reinforced polyethylene (SRPE). You can also create multiple systems for each project while saving all project information for future use.

- "Drag and drop" feature allows users to customize layout
- A 2D/3D design environment with high-resolution graphics including BIM model output
- Optimize designs for the storage requirement or maximize storage for a given footprint
- Import a PDF site plan, scale and design a system over the plan and view the overlay in 2D
- Instant access to customized, project specific drawings, and CAD files
- Ability to co-workers or Contech design engineers to your project with the new Collaborator feature

CONTECH® DESIGNCENTER
DESIGN MADE EASY

A free, online tool that fully automates the layout process for stormwater detention systems.

A partner
you can rely on

STORMWATER SOLUTIONS

PIPE SOLUTIONS

STRUCTURES SOLUTIONS

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

THE CONTECH WAY

Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

TAKE THE NEXT STEP

For more information: www.ContechES.com

CONTECH®
ENGINEERED SOLUTIONS

Get social with us:

800-338-1122 | www.ContechES.com

This Page Intentionally Left Blank.

Hydrology and Hydraulics

for

DPC REDLANDS

Redlands, CA

SEPTEMBER 2023 | PRELIMINARY SUBMITTAL

Prepared By:

Kimley»Horn

Contents

Figures

Tables

INTRODUCTION

PROJECT DESCRIPTION AND PURPOSE

This project is proposing to develop an existing vacant 12.80-acre site, to a full build-out condition consisting of mixed residential and commercial land uses. The overall affected drainage area will be a 12.80-acre site. The project consists of 10 residential buildings and 1 commercial buildings, with at-grade and subsurface parking. The existing property is located in City of Redlands within San Bernardino County (SBC), CA. The site is in the valley region of SBC in Redlands, CA. It is located at the Southwest Corner of Tennessee Street and West Lugonia Avenue.

The purpose of this report is to provide information about the design of the Storm Water Management System for the project. This investigation was conducted to evaluate the hydrologic and hydraulic conditions of the project described above. The purpose of this report is to determine the impact the proposed development has on the local existing drainage system and to mitigate post development peak flows beyond the pre-development peak flows.

Figure 1: Project Site Location

PROJECT SITE CONDITIONS

EXISTING SITE (PRE-DEVELOPMENT) CONDITIONS

The existing site is a vacant 12.80-acre lot. The existing site is 100% pervious. The existing topography drains from the southeast to the northwest corner of the site (elevations ranging from 1294 to 1277). Overland flows continue to sheet flow across Tennessee Street and enters a culvert parallel to Foothill Freeway by a curb cut. Flows discharge into Santa Ana River Reach 5. Refer to the Existing Hydrology Exhibits in **Appendix D.**

PROPOSED SITE (POST-DEVELOPMENT) CONDITIONS

The project site will be delineated into 2 major drainage areas (DA). The DAs will capture on-site storm runoff and convey water to various on-site inlets throughout the site. These flows will be diverted to two onsite proprietary underground infiltration systems that will serve as the water quality facilities. Each infiltration system is outfitted with an orifice downstream. The water captured in the detention system will work in conjunction with proposed infiltration basins which will serve as the water quality infiltration BMPs. They will retain the 100-year storm 24 hour event so the ultimate post construction stormwater flow is no more than the pre-construction stormwater flow. Refer to the Final Water Quality Management Plan for water quality calculations and documentation. The underground infiltration/detention system was delineated based on the proposed grading.

There is no existing stormwater infrastructure for the project to connect to. To bring the stormwater to grade, a proprietary pump is included in the design at the western boundary of the site to bring stormwater to grade. As it is in the existing condition, stormwater will flow offsite across Tennessee Street, entering the culvert parallel to Foothill Freeway by a curb cut. Refer to the Proposed Hydrology Exhibit in **Appendix D.**

PRECIPITATION

Precipitation values for the hydrologic analysis were determined from site specific precipitation frequency estimates published online in the NOAA Atlas 14. For this site, the 100 year, 1-hr storm precipitation depth of 1.16 inches was used in the storm water flow calculations. The 100 year, 24-hr storm event was used in the volume calculations. **Appendix A** contains the site-specific tabular output from NOAA Atlas 14.

WATERSHED DESCRIPTION

The project is relatively flat and the regional topography slopes to the southwest. The project site is incorporated in the Cucamonga Creek Watershed that ultimately discharges into the Santa Ana River.

SOIL TYPES

The type of soil and its conditions are major factors affecting infiltration and resultant storm water runoff. The Natural Resources Conservation Service (NRCS) has classified soils into four general hydrologic groups for comparing infiltration and runoff rates. This Project Site has a hydrologic soil group classification of A. Group A soils typically have low runoff potential with high infiltration rates when thoroughly wetted and consist chiefly of deep, well drained sands or gravels. See **Appendix B** for soil type classifications.

LAND USE

The project site is located within the City of Redlands East Valley Corridor Specific Plan and has a land use designated as special development.

GROUNDWATER

Groundwater was not encountered during the Geotechnical field investigation prepared by Petra Geosciences Inc. The maximum depth explored was approximately 51.5 feet. The site's historical groundwater is currently unknown but anticipated to be approximately 95 feet below the ground surface. Additional information can be found in the Geotechnical Evaluation Report by Petra Geosciences dated February 15, 2022. (Project Number 21-458).

FEMA MAPPING

The project site is covered by FEMA Flood Insurance Rate Map (FIRM) Number 06071C8704H. The project area does not fall within a FEMA-mapped special flood hazard area. The site is classified as Zone X, which is an area of minimal flooding. The effective FIRMETTE is dated August 28, 2018 and is provided in **Appendix C.**

HYDROLOGIC ANALYSIS

METHODOLOGY

The design criteria for the hydrologic calculations for this project have been conducted per requirements as outlined in the San Bernardino County Hydrology Manual (August 1986).

Runoff calculations were performed using the Modified Rational Method as utilized by the HydroWin Advanced Engineering Software, (AES). The 100-year 1 hr storm was analyzed as it will generate the highest peak flow rate. AES was used to estimate time of concentrations and 100-year 1-hr peak flow rates generated from the pre-development and post-development conditions. These Rational Method calculations are included in this report as **Appendix E**. Curve numbers were established from Figures C-3 and C-4 of the Hydrology Manual. Intensity values were obtained from NOAA Atlas 14. Loss rates were calculated using equations found on pages E.7.1 of the Hydrology Manual.

Hydrograph calculations were performed using a computer program developed by AES. AES was used to estimate the 100-year peak flow rates and volumes over a 24-hour period for the proposed condition. These unit hydrograph calculations are included in this report as **Appendix F**. This method calculates a unit hydrograph using lag time, maximum watershed loss rates, low lost fraction and an S-graph as specified in the Hydrology Manual. Lag was calculated using the time of concentration calculated from the Rational Method analysis. The maximum watershed loss rate was obtained directly from the rational unit hydrographs that were prepared using the methodology described in Section E of the Hydrology Manual.

The computer program Pond Pack was used to design and model the proposed detention pipe and outlet structure for this project. The stage storage analysis and the hydrographs from AES were imported into PondPack to determine the required detained storage volume to mitigate proposed flows to the predevelopment peak flows. The underground infiltration/detention calculations are included in this report as **Appendix G**.

RESULTS AND CONCLUSIONS

To mitigate the impacts of the onsite post-development peak flows, underground detention systems were designed. Proprietary underground detention system, manufactured by Contech, has been selected for each DMA to store runoff in order to limit the post-development peak flows to the pre-development peak flows. Per San Bernardino water quality design requirements, the two (2) underground detention systems, also have the purpose of allowing storm runoff to infiltrate into the subsurface soils. The analysis performed to size the detention system is summarized above. The analysis performed to size the infiltration system is summarized in the Water Quality Management Report prepared by Kimley-Horn.

Table 1. Rational Method Analysis

Overall:

Analysis	Storm	Total Site Acreage	Peak Flow (cfs)
Existing	100-yr 1-hr	12.8	13.02 (Projected for area)
Proposed	100-yr 1-hr	11.8	50.04

Table 2. Pre Development vs Post Development Summary

Analysis	DMA 1	DMA 2	Total Proposed Prior to Underground Vault and Orifice	Existing	Total Proposed Post Underground Vaults and Orifices
DMA Area (AC)	6.5	5.3	11.8	12.80	11.8
Peak Flows (cfs)	27.71	22.33	50.04	13.02	12.47

The detention system for DMA 1 is designated to attenuate its peak flow to less the pre-development flow of 6.61 cfs. The infiltration/detention tank provides 41,670 cf of storage with 900 linear feet of 96” chambers. The peak flows discharge through a 12” orifice @ max of 5.82 cfs.

The detention system for DMA 2 is designated to attenuate its peak flow to less than the pre-development flow of 5.39 cfs. The infiltration/detention tank provides 32,615 cf of storage with 690 linear feet of 96” chambers. The surface run-off discharges through a 12” orifice @ max of 5.38 cfs.

With the infiltration systems also functioning as detention systems, the proposed development will not have an impact on the City of Redlands master stormwater drainage. The proposed peak flows leaving the site will be 11.2 cfs.

Table 3. Infiltration and Detention System Selection

DMA No.	Selected Detention System	Selected Infiltration System[1]	Peak Storage Volume Provided (CF)	Peak Flow With Mitigation (CFS)
DMA 1	Infiltration Vault (RV-1)	Infiltration Vault (RV-1)	41,670	5.82
DMA 2	Infiltration Vault (RV-2)	Infiltration Vault (RV-2)	32,615	5.38

HYDRAULIC ANALYSIS

METHODOLOGY

A new on-site storm drain system, designed for the 100-yr 1-hr storm, will be installed to collect surface runoff at designated storm inlet locations across the site and convey flows downstream. Each inlet will be sized to limit ponding depths to less than the 6-inch curb height.

Hydraulic calculations will be performed for the main storm drain pipes utilizing Flowmaster, a software program developed by Bentley. The software utilizes Manning's equation to determine acceptable friction slopes for design. An allowable friction slope of 0.50% was used to keep the hydraulic grades below ground surface. Pipe sizing calculations will also performed for the storm drain system within the public streets and the allowable friction slope was set at the lowest slope of each respective size.

Inlet sizing calculations will be provided below to show the max allowable CFS of each type of inlet. The drop inlets are designed to have a maximum ponding depth of 6 inches and will drain without inundating the adjacent finish floor in the event of onsite storm drain failure. The freeboard at each inlet in a sump condition will be illustrated in the inlet calculations located in **Appendix G**. Each inlet on the project will be adequately sized, refer to Hydrology Exhibit in **Appendix D** to see flow per inlet. Calculations will be performed to show that each building is situated 1 ft above the 100 year 1 hour storm event and will not inundate.

APPENDIX A

NOAA ATLAS 14

NOAA Atlas 14, Volume 6, Version 2
Location name: Redlands, California, USA*
Latitude: 34.072°, Longitude: -117.1983°
Elevation: 1287.05 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.098** (0.081-0.118)	**0.126** (0.105-0.153)	**0.164** (0.136-0.200)	**0.196** (0.161-0.241)	**0.240** (0.190-0.305)	**0.274** (0.213-0.356)	**0.310** (0.235-0.413)	**0.347** (0.256-0.476)	**0.399** (0.282-0.571)	**0.440** (0.300-0.652)
10-min	**0.140** (0.116-0.170)	**0.181** (0.150-0.220)	**0.235** (0.195-0.287)	**0.281** (0.231-0.345)	**0.344** (0.273-0.437)	**0.393** (0.305-0.511)	**0.444** (0.337-0.592)	**0.498** (0.366-0.682)	**0.572** (0.404-0.818)	**0.631** (0.430-0.935)
15-min	**0.169** (0.141-0.205)	**0.219** (0.182-0.266)	**0.285** (0.236-0.347)	**0.340** (0.279-0.417)	**0.416** (0.330-0.528)	**0.475** (0.369-0.617)	**0.537** (0.407-0.715)	**0.602** (0.443-0.825)	**0.691** (0.488-0.989)	**0.763** (0.520-1.13)
30-min	**0.251** (0.209-0.305)	**0.325** (0.270-0.395)	**0.423** (0.351-0.516)	**0.505** (0.415-0.620)	**0.618** (0.490-0.785)	**0.706** (0.549-0.918)	**0.798** (0.605-1.06)	**0.894** (0.659-1.23)	**1.03** (0.725-1.47)	**1.13** (0.772-1.68)
60-min	**0.365** (0.304-0.444)	**0.472** (0.393-0.574)	**0.615** (0.510-0.750)	**0.733** (0.603-0.901)	**0.898** (0.713-1.14)	**1.03** (0.798-1.33)	**1.16** (0.879-1.55)	**1.30** (0.957-1.78)	**1.49** (1.05-2.14)	**1.65** (1.12-2.44)
2-hr	**0.520** (0.433-0.632)	**0.668** (0.555-0.812)	**0.863** (0.716-1.05)	**1.02** (0.842-1.26)	**1.25** (0.991-1.59)	**1.42** (1.10-1.85)	**1.60** (1.21-2.13)	**1.78** (1.31-2.45)	**2.04** (1.44-2.92)	**2.24** (1.53-3.32)
3-hr	**0.640** (0.533-0.777)	**0.820** (0.681-0.996)	**1.06** (0.876-1.29)	**1.25** (1.03-1.54)	**1.52** (1.21-1.93)	**1.73** (1.34-2.25)	**1.94** (1.47-2.59)	**2.16** (1.59-2.97)	**2.47** (1.74-3.53)	**2.71** (1.84-4.01)
6-hr	**0.899** (0.748-1.09)	**1.15** (0.955-1.40)	**1.48** (1.23-1.80)	**1.75** (1.44-2.15)	**2.12** (1.68-2.69)	**2.40** (1.87-3.12)	**2.69** (2.04-3.59)	**2.99** (2.20-4.10)	**3.40** (2.40-4.87)	**3.72** (2.54-5.51)
12-hr	**1.20** (0.998-1.46)	**1.54** (1.28-1.87)	**1.98** (1.64-2.42)	**2.34** (1.93-2.88)	**2.84** (2.25-3.61)	**3.21** (2.50-4.17)	**3.59** (2.72-4.79)	**3.99** (2.94-5.47)	**4.52** (3.19-6.47)	**4.93** (3.36-7.31)
24-hr	**1.61** (1.42-1.85)	**2.08** (1.84-2.40)	**2.69** (2.37-3.11)	**3.19** (2.79-3.71)	**3.86** (3.27-4.64)	**4.37** (3.63-5.37)	**4.89** (3.96-6.16)	**5.42** (4.27-7.01)	**6.14** (4.64-8.27)	**6.69** (4.89-9.33)
2-day	**1.99** (1.76-2.29)	**2.60** (2.30-3.00)	**3.41** (3.01-3.95)	**4.08** (3.57-4.75)	**4.98** (4.22-6.00)	**5.67** (4.71-6.98)	**6.38** (5.17-8.04)	**7.11** (5.61-9.21)	**8.10** (6.13-10.9)	**8.88** (6.49-12.4)
3-day	**2.15** (1.90-2.48)	**2.86** (2.53-3.30)	**3.80** (3.35-4.39)	**4.57** (4.00-5.33)	**5.65** (4.78-6.80)	**6.48** (5.38-7.97)	**7.35** (5.95-9.25)	**8.25** (6.50-10.7)	**9.49** (7.18-12.8)	**10.5** (7.66-14.6)
4-day	**2.32** (2.05-2.67)	**3.11** (2.75-3.58)	**4.16** (3.67-4.81)	**5.04** (4.41-5.87)	**6.26** (5.30-7.54)	**7.22** (5.99-8.87)	**8.21** (6.65-10.3)	**9.25** (7.30-12.0)	**10.7** (8.10-14.4)	**11.9** (8.67-16.5)
7-day	**2.68** (2.38-3.09)	**3.62** (3.20-4.18)	**4.88** (4.31-5.65)	**5.94** (5.19-6.92)	**7.40** (6.27-8.92)	**8.56** (7.10-10.5)	**9.76** (7.90-12.3)	**11.0** (8.68-14.3)	**12.8** (9.66-17.2)	**14.2** (10.4-19.8)
10-day	**2.91** (2.57-3.35)	**3.94** (3.49-4.55)	**5.34** (4.71-6.18)	**6.51** (5.69-7.59)	**8.13** (6.89-9.80)	**9.42** (7.81-11.6)	**10.7** (8.71-13.5)	**12.2** (9.58-15.7)	**14.1** (10.7-19.0)	**15.7** (11.5-21.8)
20-day	**3.59** (3.18-4.14)	**4.91** (4.35-5.67)	**6.70** (5.91-7.76)	**8.20** (7.18-9.57)	**10.3** (8.73-12.4)	**12.0** (9.94-14.7)	**13.7** (11.1-17.3)	**15.6** (12.3-20.1)	**18.1** (13.7-24.4)	**20.2** (14.8-28.1)
30-day	**4.22** (3.74-4.87)	**5.79** (5.12-6.68)	**7.92** (6.99-9.16)	**9.71** (8.50-11.3)	**12.2** (10.4-14.7)	**14.2** (11.8-17.5)	**16.3** (13.2-20.6)	**18.6** (14.6-24.0)	**21.7** (16.4-29.2)	**24.2** (17.7-33.7)
45-day	**5.05** (4.47-5.82)	**6.91** (6.11-7.98)	**9.45** (8.33-10.9)	**11.6** (10.1-13.5)	**14.6** (12.4-17.6)	**17.0** (14.1-20.9)	**19.5** (15.8-24.6)	**22.2** (17.5-28.7)	**26.0** (19.7-35.0)	**29.0** (21.2-40.4)
60-day	**5.91** (5.23-6.81)	**8.05** (7.12-9.29)	**11.0** (9.67-12.7)	**13.4** (11.7-15.7)	**16.9** (14.3-20.4)	**19.7** (16.3-24.2)	**22.6** (18.3-28.5)	**25.7** (20.3-33.3)	**30.0** (22.7-40.5)	**33.6** (24.6-46.8)

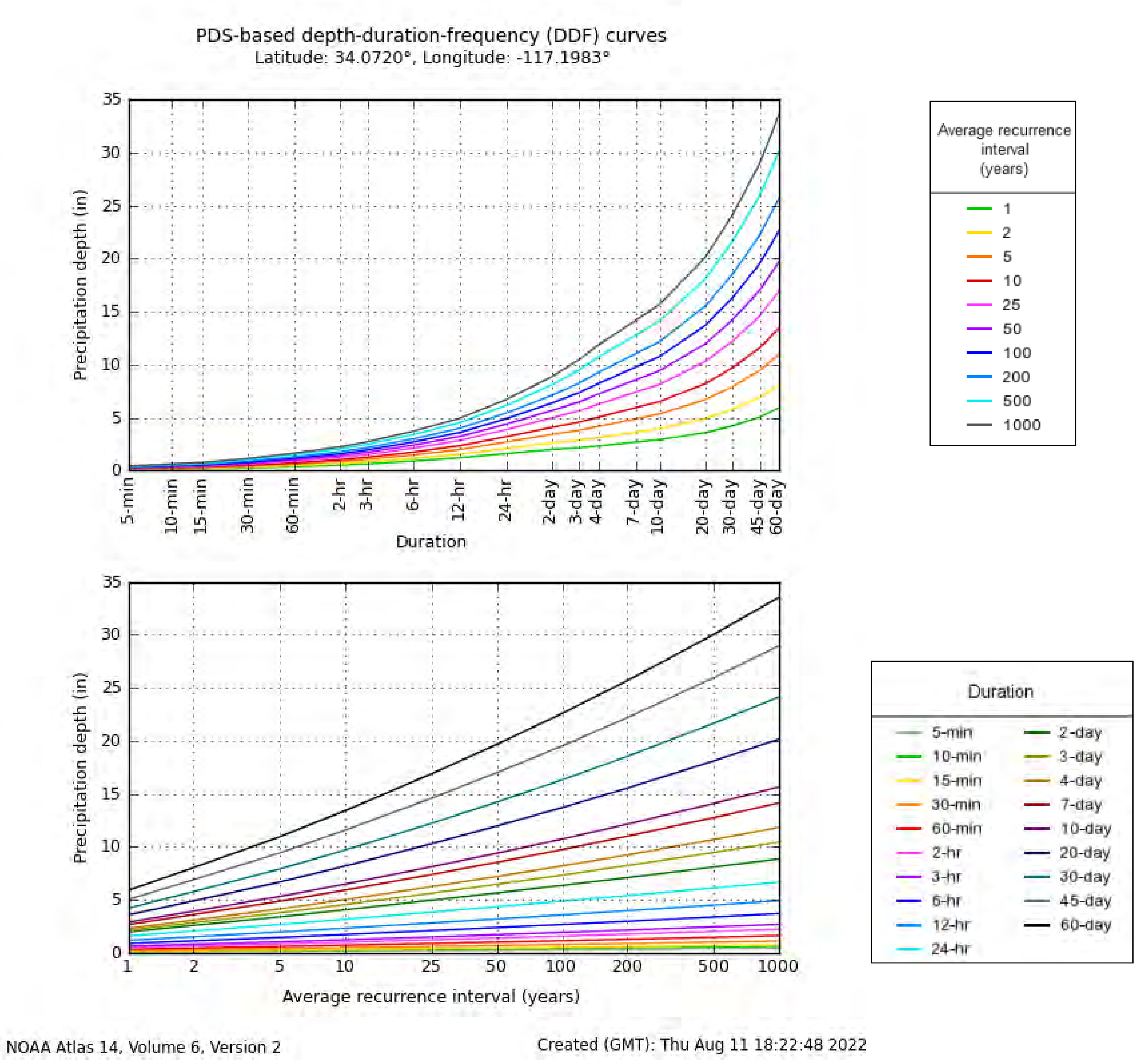
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



Back to Top

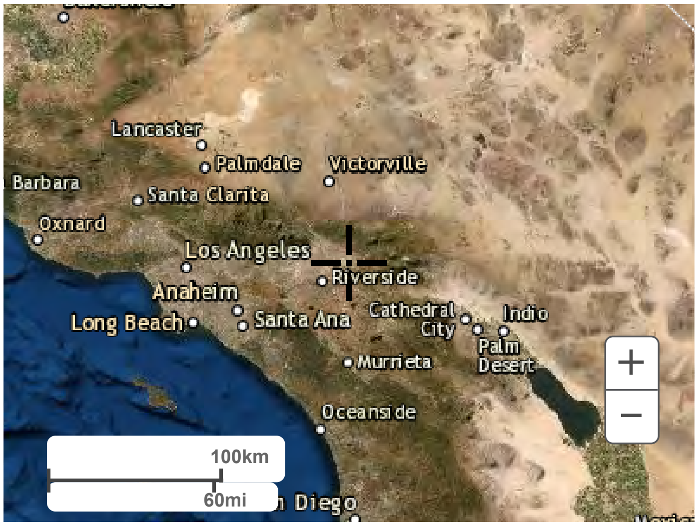
Maps & aerials

Small scale terrain

Large scale terrain

Large scale map

Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

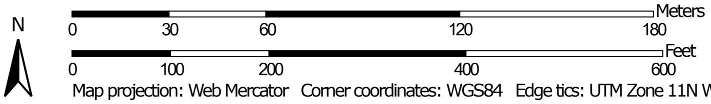
Disclaimer

APPENDIX B

SOIL TYPE

Soil Map—San Bernardino County Southwestern Part, California

Map Scale: 1:2,340 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 11, 2020—Nov 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HbA	Hanford sandy loam, 0 to 2 percent slopes	23.7	81.6%
TuB	Tujunga loamy sand, 0 to 5 percent slopes	5.3	18.4%
Totals for Area of Interest		**29.0**	**100.0%**

San Bernardino County Southwestern Part, California

HbA—Hanford sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2y8tv
Elevation: 790 to 1,610 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 65 to 65 degrees F
Frost-free period: 345 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 12 inches: sandy loam
C - 12 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: No

Minor Components

Hanford, steeper slopes
Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Greenfield, sandy loam
Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed
Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 13, Sep 13, 2021

APPENDIX C

FIRMette

National Flood Hazard Layer FIRMette

117°12'12"W 34°4'34"N

117°11'34"W 34°4'4"N

Feet

0 250 500 1,000 1,500 2,000

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
	ıııııı	Levee, Dike, or Floodwall
OTHER FEATURES	(B) 20.2 / 17.5	Cross Sections with 1% Annual Chance Water Surface Elevation
	8 — —	Coastal Transect
	~~ 513 ~~~	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 8/12/2022 at 3:08 PM 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 D

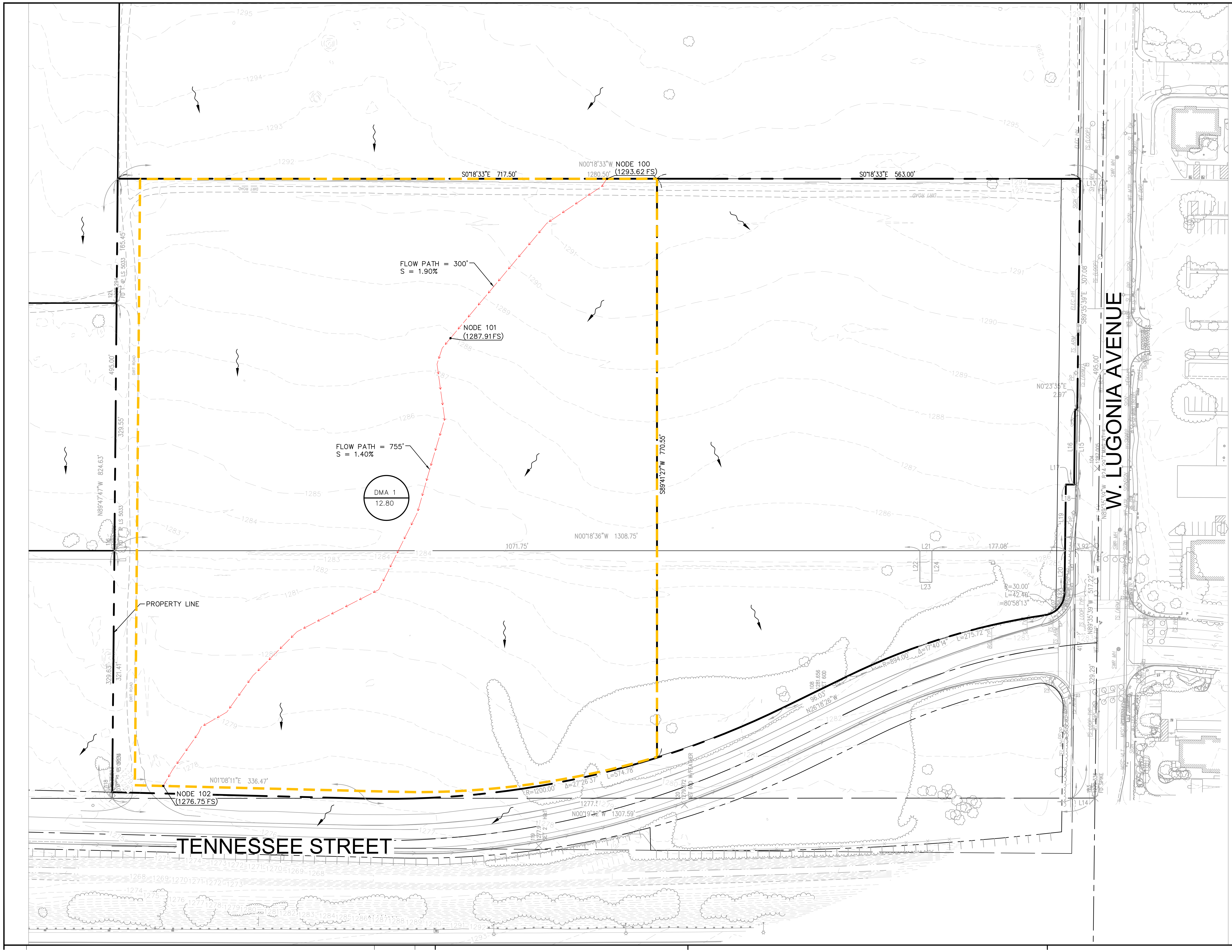
HYDROLOGY MAPS

EXISTING FLOW DIRECTION

PROPOSED SURFACE FLOW DIRECTION

PROPOSED STORM DRAIN PIPE FLOW DIRECTION

DRAINAGE MANAGEMENT AREA LABEL

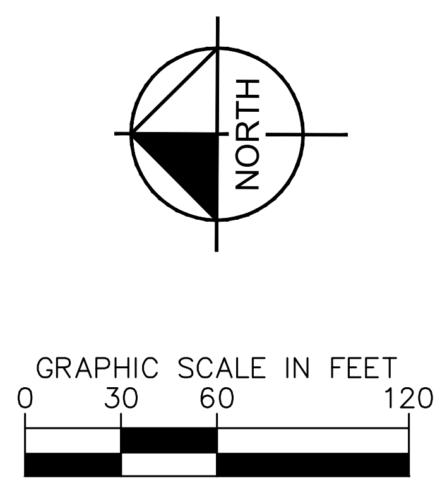


LEGEND

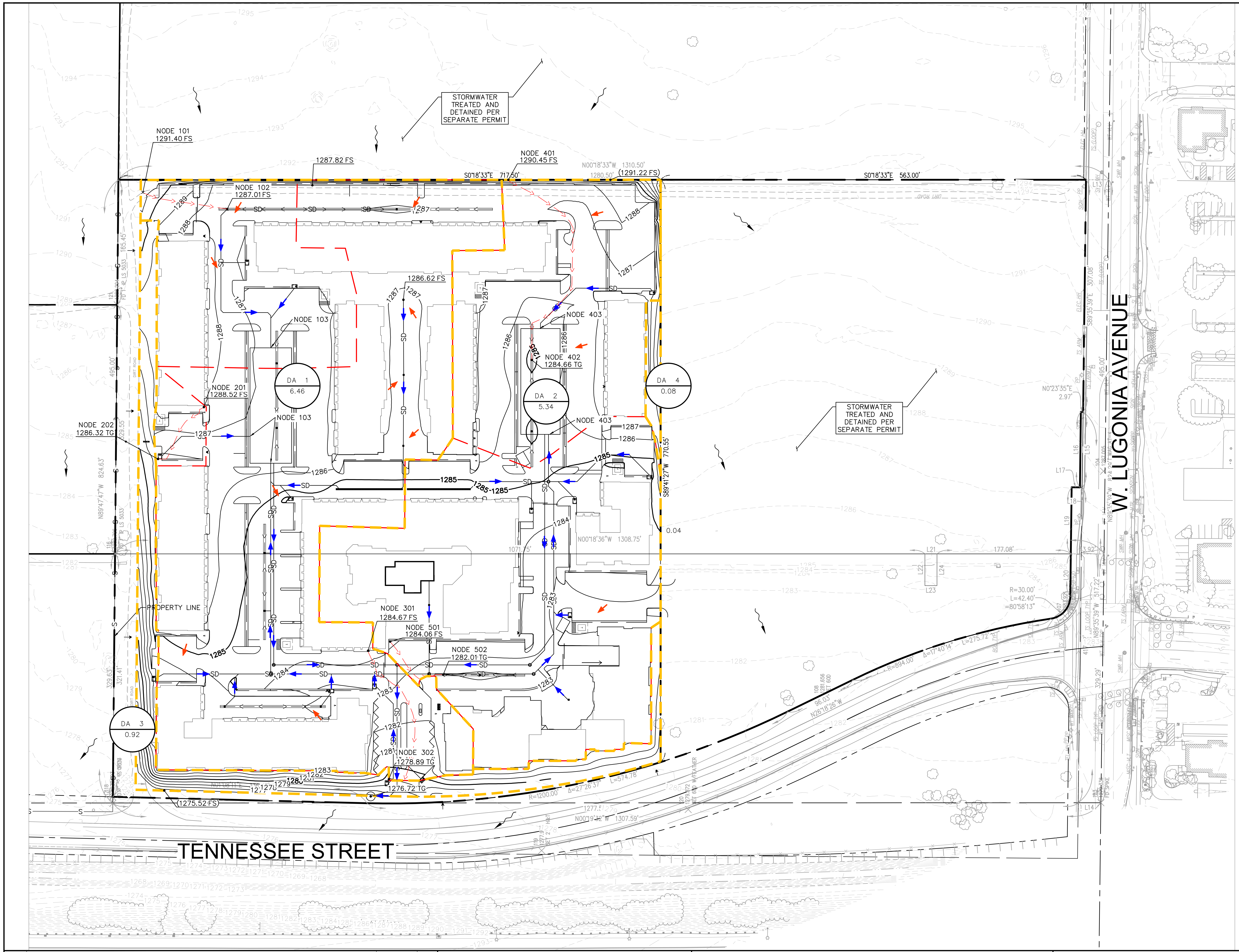
— - —	CENTER LINE
— - - —	PROPERTY LINE
— — — —	EASEMENT LINE
- - - -	LIMITS OF DRAINAGE AREA AND APPROXIMATE LIMITS OF DISTURBANCE
—> —> —>	LONGEST FLOW PATH
~→	EXISTING FLOW DIRECTION
DMA ID / ACRES	DRAINAGE MANAGEMENT AREA LABEL

FLOOD ZONE

FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD



EV\194423001 – DPC REDLANDS\CAD\EXHIBITS\REPORTS\DPC REDLANDS EXISTING HYDROLOGY EXHIBIT.DWG 2/2/2023 7:32:11 PM



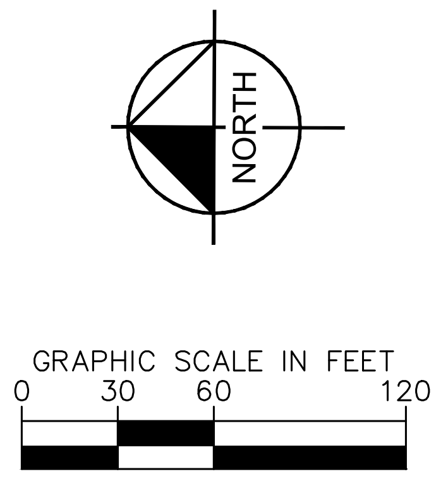
LEGEND

CENTER LINE
PROPERTY LINE
EASEMENT LINE
LIMITS OF DRAINAGE AREA AND APPROXIMATE LIMITS OF DISTURBANCE
DRAINAGE SUB AREA DELINEATION
—SD— PROPOSED STORM DRAIN PIPE
PROPOSED STORM DRAIN INLET
LONGEST FLOW PATH
EXISTING FLOW DIRECTION
PROPOSED SURFACE FLOW DIRECTION
PROPOSED STORM DRAIN PIPE FLOW DIRECTION
DA ID / ACRES DRAINAGE MANAGEMENT AREA LABEL

FLOOD ZONE

FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD

DMA ID	% IMPERVIOUS	AREA (ACRES)
DA-1	93.1%	6.46
DA-2	93.3%	5.34
DA-3	20%	0.92
DA-4	60%	0.08



No.	REVISIONS	DATE	BY

Kimley»Horn
© 2018 KIMLEY-HORN AND ASSOCIATES, INC.
3880 LEMON ST. RIVERSIDE, CA 92501
PHONE: 760-565-5103
WWW.KIMLEY-HORN.COM

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
DPC REDLANDS MARKETPLACE
REDLANDS, CALIFORNIA
APN'S 0167-171-007, 014

DRAWING NAME:
PROPOSED HYDROLOGY MAP

ISSUE: CONCEPTUAL
DATE: 2022-08-31
CHECKED: DRAWN:
DRAWING FILE:
PROJECT NO.:
SCALE: AS SHOWN

SHEET NUMBER

K:\ORA_LDEV\194423001 - DPC REDLANDS\CAD\EXHIBITS\REPORTS\DPC REDLANDS PROPOSED HYDROLOGY EXHIBIT.DWG 9/26/2023 9:04:23 AM

APPENDIX E

RATIONAL METHOD CALCULATIONS

```
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
         (c) Copyright 1983-2011 Advanced Engineering Software (aes)
             Ver. 18.0  Release Date: 07/01/2011  License ID 1499

                           Analysis prepared by:






 ************************** DESCRIPTION OF STUDY **************************
* PROPOSED 10 YEAR ANALYSIS                                                *
* DPC REDLANDS                                                             *
* DMA 1                                                                    *
 **************************************************************************

  FILE NAME: DPC100PR.DAT
  TIME/DATE OF STUDY: 18:52 02/02/2023
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 0.7330

  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

+--------------------------------------------------------------------------+
| INITIAL SUB-AREA DMA 1A: 0.5 AC                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  ELEVATION DATA: UPSTREAM(FEET) =   1290.77  DOWNSTREAM(FEET) =   1287.83

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  3.255
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A       0.50      0.98     0.100    32    5.00
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      1.42
  TOTAL AREA(ACRES) =      0.50   PEAK FLOW RATE(CFS) =      1.42

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    102.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  MAINLINE Tc(MIN.) =    5.00
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  3.255
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  COMMERCIAL                 A       0.86      0.98     0.100    32
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA AREA(ACRES) =    0.86      SUBAREA RUNOFF(CFS) =    2.44
  EFFECTIVE AREA(ACRES) =      1.36   AREA-AVERAGED Fm(INCH/HR) =  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.10
  TOTAL AREA(ACRES) =        1.4       PEAK FLOW RATE(CFS) =       3.87

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1283.83  DOWNSTREAM(FEET) =  1282.43
  FLOW LENGTH(FEET) =   279.22   MANNING'S N =  0.011
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.69
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.87
  PIPE TRAVEL TIME(MIN.) =   0.99    Tc(MIN.) =    5.99
  LONGEST FLOWPATH FROM NODE    101.00 TO NODE    103.00 =     374.22 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.99
  RAINFALL INTENSITY(INCH/HR) =   2.92
  AREA-AVERAGED Fm(INCH/HR) =  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       1.36
  TOTAL STREAM AREA(ACRES) =       1.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       3.87

+--------------------------------------------------------------------------+
| INTIAL SUB-AREA DMA 1B 0.16 AC                                           |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    99.75
  ELEVATION DATA: UPSTREAM(FEET) =   1289.16  DOWNSTREAM(FEET) =   1285.40

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  3.255
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A        0.16      0.98     0.100    32    5.00
```

```
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.97
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      0.45
  TOTAL AREA(ACRES) =      0.16   PEAK FLOW RATE(CFS) =      0.45

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1280.73  DOWNSTREAM(FEET) =  1280.10
  FLOW LENGTH(FEET) =   125.68   MANNING'S N =  0.011
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.69
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.45
  PIPE TRAVEL TIME(MIN.) =   0.78    Tc(MIN.) =    5.78
  LONGEST FLOWPATH FROM NODE    201.00 TO NODE    103.00 =     225.43 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.78
  RAINFALL INTENSITY(INCH/HR) =   2.98
  AREA-AVERAGED Fm(INCH/HR) =  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.97
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       0.16
  TOTAL STREAM AREA(ACRES) =       0.16
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       0.45

+--------------------------------------------------------------------------+
| INITIAL SUB-AREA DMA 1C: 0.5 AC                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   219.48
```

```
  ELEVATION DATA: UPSTREAM(FEET) =   1284.59  DOWNSTREAM(FEET) =   1278.93

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.459
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  3.088
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                  A        4.94      0.98     0.100    32    5.46
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =     13.30
  TOTAL AREA(ACRES) =      4.94   PEAK FLOW RATE(CFS) =     13.30

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1274.93  DOWNSTREAM(FEET) =  1271.93
  FLOW LENGTH(FEET) =   598.74   MANNING'S N =  0.011
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.39
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      13.30
  PIPE TRAVEL TIME(MIN.) =   1.56    Tc(MIN.) =    7.02
  LONGEST FLOWPATH FROM NODE    301.00 TO NODE    103.00 =     818.22 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.02
  RAINFALL INTENSITY(INCH/HR) =   2.66
  AREA-AVERAGED Fm(INCH/HR) =  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       4.94
  TOTAL STREAM AREA(ACRES) =       4.94
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      13.30

  ** CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1        3.87    5.99    2.921  0.98( 0.10) 0.10       1.4     101.00
```

```
      2        0.45    5.78    2.984  0.97( 0.10) 0.10       0.2     201.00
      3       13.30    7.02    2.656  0.98( 0.10) 0.10       4.9     301.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  3 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       16.62    5.78    2.984  0.98( 0.10) 0.10       5.5     201.00
      2       16.83    5.99    2.921  0.97( 0.10) 0.10       5.7     101.00
      3       17.20    7.02    2.656  0.98( 0.10) 0.10       6.5     301.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      17.20    Tc(MIN.) =     7.02
  EFFECTIVE AREA(ACRES) =       6.46   AREA-AVERAGED Fm(INCH/HR) =  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.10
  TOTAL AREA(ACRES) =        6.5
  LONGEST FLOWPATH FROM NODE    301.00 TO NODE    103.00 =     818.22 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        6.5  TC(MIN.) =      7.02
  EFFECTIVE AREA(ACRES) =      6.46  AREA-AVERAGED Fm(INCH/HR)=  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap = 0.100
  PEAK FLOW RATE(CFS)   =      17.20

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       16.62    5.78    2.984  0.98( 0.10) 0.10       5.5     201.00
      2       16.83    5.99    2.921  0.97( 0.10) 0.10       5.7     101.00
      3       17.20    7.02    2.656  0.98( 0.10) 0.10       6.5     301.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS

↑
```

```
____________________________________________________________________________
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
         (c) Copyright 1983-2011 Advanced Engineering Software (aes)
             Ver. 18.0  Release Date: 07/01/2011  License ID 1499

                           Analysis prepared by:







 ************************** DESCRIPTION OF STUDY **************************
* PROPOSED 100  YEAR ANALYSIS                                              *
* DPC REDLANDS                                                             *
* DMA 1                                                                    *
 **************************************************************************

  FILE NAME: DPC100PR.DAT
  TIME/DATE OF STUDY: 18:27 02/02/2023
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.1600

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

+--------------------------------------------------------------------------+
| INITIAL SUB-AREA DMA 1A: 0.5 AC                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  ELEVATION DATA: UPSTREAM(FEET) =   1290.77  DOWNSTREAM(FEET) =   1287.83

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.152
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                  A        0.50      0.74     0.100    52    5.00
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      2.28
  TOTAL AREA(ACRES) =      0.50   PEAK FLOW RATE(CFS) =      2.28

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    102.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  MAINLINE Tc(MIN.) =    5.00
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.152
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  COMMERCIAL                  A        0.86      0.74     0.100    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA AREA(ACRES) =    0.86      SUBAREA RUNOFF(CFS) =    3.93
  EFFECTIVE AREA(ACRES) =      1.36   AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74  AREA-AVERAGED Ap =  0.10
  TOTAL AREA(ACRES) =        1.4       PEAK FLOW RATE(CFS) =       6.22

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1283.83  DOWNSTREAM(FEET) =  1282.43
  FLOW LENGTH(FEET) =   279.22   MANNING'S N =  0.011
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.22
  PIPE TRAVEL TIME(MIN.) =   0.88    Tc(MIN.) =    5.88
  LONGEST FLOWPATH FROM NODE    101.00 TO NODE    103.00 =     374.22 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.88
  RAINFALL INTENSITY(INCH/HR) =   4.67
  AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       1.36
  TOTAL STREAM AREA(ACRES) =       1.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       6.22

+--------------------------------------------------------------------------+
| INTIAL SUB-AREA DMA 1B 0.16 AC                                           |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    99.75
  ELEVATION DATA: UPSTREAM(FEET) =   1289.16  DOWNSTREAM(FEET) =   1285.40

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.152
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A        0.16      0.74     0.100    52    5.00
```

```
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      0.73
  TOTAL AREA(ACRES) =      0.16   PEAK FLOW RATE(CFS) =      0.73

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1280.73  DOWNSTREAM(FEET) =  1280.10
  FLOW LENGTH(FEET) =   125.68   MANNING'S N =  0.011
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.07
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.73
  PIPE TRAVEL TIME(MIN.) =   0.68    Tc(MIN.) =    5.68
  LONGEST FLOWPATH FROM NODE    201.00 TO NODE    103.00 =     225.43 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.68
  RAINFALL INTENSITY(INCH/HR) =   4.77
  AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       0.16
  TOTAL STREAM AREA(ACRES) =       0.16
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       0.73

+--------------------------------------------------------------------------+
| INITIAL SUB-AREA DMA 1C: 0.5 AC                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   219.48
```

```
  ELEVATION DATA: UPSTREAM(FEET) =   1284.59  DOWNSTREAM(FEET) =   1278.93

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.459
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.887
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A        4.94      0.74     0.100    52    5.46
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =     21.40
  TOTAL AREA(ACRES) =      4.94   PEAK FLOW RATE(CFS) =     21.40

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1274.93  DOWNSTREAM(FEET) =  1271.93
  FLOW LENGTH(FEET) =   598.74   MANNING'S N =  0.011
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  19.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.12
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      21.40
  PIPE TRAVEL TIME(MIN.) =   1.40    Tc(MIN.) =    6.86
  LONGEST FLOWPATH FROM NODE    301.00 TO NODE    103.00 =     818.22 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =    6.86
  RAINFALL INTENSITY(INCH/HR) =   4.26
  AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       4.94
  TOTAL STREAM AREA(ACRES) =       4.94
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      21.40

  ** CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1        6.22    5.88    4.674  0.74( 0.07) 0.10       1.4     101.00
```

```
      2        0.73    5.68    4.771  0.74( 0.07) 0.10       0.2     201.00
      3       21.40    6.86    4.261  0.74( 0.07) 0.10       4.9     301.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  3 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       26.75    5.68    4.771  0.74( 0.07) 0.10       5.6     201.00
      2       27.08    5.88    4.674  0.74( 0.07) 0.10       5.8     101.00
      3       27.71    6.86    4.261  0.74( 0.07) 0.10       6.5     301.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      27.71    Tc(MIN.) =     6.86
  EFFECTIVE AREA(ACRES) =       6.46   AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74  AREA-AVERAGED Ap =  0.10
  TOTAL AREA(ACRES) =        6.5
  LONGEST FLOWPATH FROM NODE    301.00 TO NODE    103.00 =     818.22 FEET.
=============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        6.5  TC(MIN.) =      6.86
  EFFECTIVE AREA(ACRES) =      6.46  AREA-AVERAGED Fm(INCH/HR)=  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74  AREA-AVERAGED Ap = 0.100
  PEAK FLOW RATE(CFS)   =      27.71

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       26.75    5.68    4.771  0.74( 0.07) 0.10       5.6     201.00
      2       27.08    5.88    4.674  0.74( 0.07) 0.10       5.8     101.00
      3       27.71    6.86    4.261  0.74( 0.07) 0.10       6.5     301.00
=============================================================================
=============================================================================
  END OF RATIONAL METHOD ANALYSIS

↑
```

```
____________________________________________________________________________
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
         (c) Copyright 1983-2011 Advanced Engineering Software (aes)
             Ver. 18.0  Release Date: 07/01/2011  License ID 1499

                           Analysis prepared by:







 ************************** DESCRIPTION OF STUDY **************************
* PROPOSED 10 YEAR ANALYSIS                                                *
* DPC REDLANDS                                                             *
* DMA 2                                                                    *
 **************************************************************************

  FILE NAME: DPC1002.DAT
  TIME/DATE OF STUDY: 18:54 02/02/2023
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 0.7330

  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

+--------------------------------------------------------------------------+
|                                                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    402.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   119.96
  ELEVATION DATA: UPSTREAM(FEET) =   1292.80  DOWNSTREAM(FEET) =   1287.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    6.057
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.902
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  RESIDENTIAL
  ".4 DWELLING/ACRE"          A        1.96      0.98     0.900    32    6.06
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.900
  SUBAREA RUNOFF(CFS) =      3.57
  TOTAL AREA(ACRES) =      1.96   PEAK FLOW RATE(CFS) =      3.57

****************************************************************************
  FLOW PROCESS FROM NODE    402.00 TO NODE    403.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1283.00  DOWNSTREAM(FEET) =  1282.19
  FLOW LENGTH(FEET) =   162.10   MANNING'S N =  0.011
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.61
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.57
  PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    6.64
  LONGEST FLOWPATH FROM NODE    401.00 TO NODE    403.00 =     282.06 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    403.00 TO NODE    403.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
```

```
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    6.64
  RAINFALL INTENSITY(INCH/HR) =   2.75
  AREA-AVERAGED Fm(INCH/HR) =  0.88
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.90
  EFFECTIVE STREAM AREA(ACRES) =       1.96
  TOTAL STREAM AREA(ACRES) =       1.96
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       3.57

+--------------------------------------------------------------------------+
|                                                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    502.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    96.83
  ELEVATION DATA: UPSTREAM(FEET) =   1284.06  DOWNSTREAM(FEET) =   1282.01

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  3.255
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A        3.38      0.98     0.100    32    5.00
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.98
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      9.61
  TOTAL AREA(ACRES) =      3.38   PEAK FLOW RATE(CFS) =      9.61

****************************************************************************
  FLOW PROCESS FROM NODE    502.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1278.01  DOWNSTREAM(FEET) =  1276.76
  FLOW LENGTH(FEET) =   450.11   MANNING'S N =  0.011
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  17.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.56
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.61
```

```
  PIPE TRAVEL TIME(MIN.) =   1.65    Tc(MIN.) =    6.65
  LONGEST FLOWPATH FROM NODE    501.00 TO NODE    103.00 =     546.94 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    6.65
  RAINFALL INTENSITY(INCH/HR) =   2.74
  AREA-AVERAGED Fm(INCH/HR) =  0.10
  AREA-AVERAGED Fp(INCH/HR) =  0.98
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       3.38
  TOTAL STREAM AREA(ACRES) =       3.38
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       9.61

  ** CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1        3.57    6.64    2.745  0.98( 0.88) 0.90       2.0     401.00
      2        9.61    6.65    2.744  0.98( 0.10) 0.10       3.4     501.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       13.18    6.64    2.745  0.98( 0.38) 0.39       5.3     401.00
      2       13.18    6.65    2.744  0.98( 0.38) 0.39       5.3     501.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      13.18    Tc(MIN.) =     6.65
  EFFECTIVE AREA(ACRES) =       5.34   AREA-AVERAGED Fm(INCH/HR) =  0.38
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap =  0.39
  TOTAL AREA(ACRES) =        5.3
  LONGEST FLOWPATH FROM NODE    501.00 TO NODE    103.00 =     546.94 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        5.3  TC(MIN.) =      6.65
  EFFECTIVE AREA(ACRES) =      5.34  AREA-AVERAGED Fm(INCH/HR)=  0.38
  AREA-AVERAGED Fp(INCH/HR) =  0.98  AREA-AVERAGED Ap = 0.394
  PEAK FLOW RATE(CFS)   =      13.18

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
```

```
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       13.18    6.64    2.745  0.98( 0.38) 0.39       5.3    401.00
      2       13.18    6.65    2.744  0.98( 0.38) 0.39       5.3    501.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS

↑
```

```
____________________________________________________________________________
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
         (c) Copyright 1983-2011 Advanced Engineering Software (aes)
             Ver. 18.0  Release Date: 07/01/2011  License ID 1499

                           Analysis prepared by:






 ************************** DESCRIPTION OF STUDY **************************
* PROPOSED 100 YEAR ANALYSIS                                               *
* DPC REDLANDS                                                             *
* DMA 2                                                                    *
 **************************************************************************

  FILE NAME: DPC1002.DAT
  TIME/DATE OF STUDY: 18:49 02/02/2023
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.1600

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

+--------------------------------------------------------------------------+
|                                                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    402.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   119.96
  ELEVATION DATA: UPSTREAM(FEET) =   1292.80  DOWNSTREAM(FEET) =   1287.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    6.057
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.592
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  RESIDENTIAL
  ".4 DWELLING/ACRE"          A        1.96      0.74     0.900    52    6.06
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.900
  SUBAREA RUNOFF(CFS) =      6.92
  TOTAL AREA(ACRES) =      1.96   PEAK FLOW RATE(CFS) =      6.92

****************************************************************************
  FLOW PROCESS FROM NODE    402.00 TO NODE    403.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1283.00  DOWNSTREAM(FEET) =  1282.19
  FLOW LENGTH(FEET) =   162.10   MANNING'S N =  0.011
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.39
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.92
  PIPE TRAVEL TIME(MIN.) =   0.50    Tc(MIN.) =    6.56
  LONGEST FLOWPATH FROM NODE    401.00 TO NODE    403.00 =     282.06 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    403.00 TO NODE    403.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
```

```
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    6.56
  RAINFALL INTENSITY(INCH/HR) =   4.38
  AREA-AVERAGED Fm(INCH/HR) =  0.67
  AREA-AVERAGED Fp(INCH/HR) =  0.74
  AREA-AVERAGED Ap =  0.90
  EFFECTIVE STREAM AREA(ACRES) =       1.96
  TOTAL STREAM AREA(ACRES) =       1.96
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       6.92

+--------------------------------------------------------------------------+
|                                                                          |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    502.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    96.83
  ELEVATION DATA: UPSTREAM(FEET) =   1284.06  DOWNSTREAM(FEET) =   1282.01

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.152
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A        3.38      0.74     0.100    52    5.00
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.74
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =     15.45
  TOTAL AREA(ACRES) =      3.38   PEAK FLOW RATE(CFS) =     15.45

****************************************************************************
  FLOW PROCESS FROM NODE    502.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1278.01  DOWNSTREAM(FEET) =  1276.76
  FLOW LENGTH(FEET) =   450.11   MANNING'S N =  0.011
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  18.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.28
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      15.45
```

```
  PIPE TRAVEL TIME(MIN.) =   1.42    Tc(MIN.) =    6.42
  LONGEST FLOWPATH FROM NODE    501.00 TO NODE    103.00 =     546.94 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    6.42
  RAINFALL INTENSITY(INCH/HR) =   4.43
  AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.74
  AREA-AVERAGED Ap =  0.10
  EFFECTIVE STREAM AREA(ACRES) =       3.38
  TOTAL STREAM AREA(ACRES) =       3.38
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      15.45

  ** CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1        6.92    6.56    4.378  0.74( 0.67) 0.90       2.0     401.00
      2       15.45    6.42    4.434  0.74( 0.07) 0.10       3.4     501.00

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       22.33    6.42    4.434  0.74( 0.29) 0.39       5.3     501.00
      2       22.17    6.56    4.378  0.74( 0.29) 0.39       5.3     401.00

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      22.33    Tc(MIN.) =     6.42
  EFFECTIVE AREA(ACRES) =       5.30   AREA-AVERAGED Fm(INCH/HR) =  0.29
  AREA-AVERAGED Fp(INCH/HR) =  0.74  AREA-AVERAGED Ap =  0.39
  TOTAL AREA(ACRES) =        5.3
  LONGEST FLOWPATH FROM NODE    501.00 TO NODE    103.00 =     546.94 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        5.3  TC(MIN.) =      6.42
  EFFECTIVE AREA(ACRES) =      5.30  AREA-AVERAGED Fm(INCH/HR)=  0.29
  AREA-AVERAGED Fp(INCH/HR) =  0.74  AREA-AVERAGED Ap = 0.390
  PEAK FLOW RATE(CFS)   =      22.33

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
```

```
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1       22.33    6.42    4.434  0.74( 0.29) 0.39       5.3     501.00
      2       22.17    6.56    4.378  0.74( 0.29) 0.39       5.3     401.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS

↑
```

APPENDIX F

UNIT HYDROGRAPHS

```
DMA 1
 ============================================================================
 *** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
     AND LOW LOSS FRACTION ESTIMATIONS FOR AMC I:

     TOTAL 24-HOUR DURATION RAINFALL DEPTH =     1.16 (inches)

     SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
        TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
          1          6.46        6.90       32.(AMC II)     1.328       0.760

     TOTAL AREA (Acres) =      6.46
                              _
     AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.092
                                      _
     AREA-AVERAGED LOW LOSS FRACTION, Y = 0.240
 ============================================================================
```

```
DMA 2
 ============================================================================
 *** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
     AND LOW LOSS FRACTION ESTIMATIONS FOR AMC I:

     TOTAL 24-HOUR DURATION RAINFALL DEPTH =    1.16 (inches)

     SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
        TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
          1          5.34        6.90       32.(AMC II)     1.328       0.760

     TOTAL AREA (Acres) =      5.34

                              _
     AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.092
                                      _
     AREA-AVERAGED LOW LOSS FRACTION, Y = 0.240
 ============================================================================
```

```
DMA 1
----------------------------------------------------------------------------


     RATIONAL METHOD CALIBRATION COEFFICIENT = 1.38
     TOTAL CATCHMENT AREA(ACRES) =    6.46
     SOIL-LOSS RATE, Fm,(INCH/HR) =  0.092
     LOW LOSS FRACTION = 0.240
     TIME OF CONCENTRATION(MIN.) =  6.86
     SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
     USER SPECIFIED RAINFALL VALUES ARE USED
     RETURN FREQUENCY(YEARS) = 100
        5-MINUTE POINT RAINFALL VALUE(INCHES) =  0.31
       30-MINUTE POINT RAINFALL VALUE(INCHES) =  0.80
        1-HOUR   POINT RAINFALL VALUE(INCHES) =  1.16
        3-HOUR   POINT RAINFALL VALUE(INCHES) =  1.94
        6-HOUR   POINT RAINFALL VALUE(INCHES) =  2.69
       24-HOUR   POINT RAINFALL VALUE(INCHES) =  4.89

 ----------------------------------------------------------------------------

     TOTAL CATCHMENT   RUNOFF  VOLUME(ACRE-FEET) =     2.88
     TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) =    -0.25

 ****************************************************************************
   TIME     VOLUME       Q    0.        7.5      15.0      22.5      30.0
  (HOURS)    (AF)      (CFS)
 ----------------------------------------------------------------------------
   0.11     0.0026      0.60  Q         .         .         .         .
   0.22     0.0083      0.60  Q         .         .         .         .
   0.34     0.0139      0.60  Q         .         .         .         .
   0.45     0.0196      0.60  Q         .         .         .         .
   0.56     0.0253      0.61  Q         .         .         .         .
   0.68     0.0310      0.61  Q         .         .         .         .
   0.79     0.0368      0.61  Q         .         .         .         .
   0.91     0.0426      0.61  Q         .         .         .         .
   1.02     0.0484      0.62  Q         .         .         .         .
   1.14     0.0542      0.62  Q         .         .         .         .
   1.25     0.0600      0.62  Q         .         .         .         .
   1.37     0.0659      0.62  Q         .         .         .         .
   1.48     0.0718      0.63  Q         .         .         .         .
   1.59     0.0777      0.63  Q         .         .         .         .
   1.71     0.0837      0.63  Q         .         .         .         .
   1.82     0.0897      0.63  Q         .         .         .         .
   1.94     0.0957      0.64  Q         .         .         .         .
   2.05     0.1017      0.64  Q         .         .         .         .
   2.17     0.1078      0.64  Q         .         .         .         .
   2.28     0.1139      0.65  Q         .         .         .         .
   2.39     0.1200      0.65  Q         .         .         .         .
   2.51     0.1262      0.65  Q         .         .         .         .
```

```
2.62      0.1323      0.66  Q         .         .         .         .
2.74      0.1385      0.66  Q         .         .         .         .
2.85      0.1448      0.66  Q         .         .         .         .
2.97      0.1511      0.66  Q         .         .         .         .
3.08      0.1574      0.67  Q         .         .         .         .
3.19      0.1637      0.67  Q         .         .         .         .
3.31      0.1701      0.68  Q         .         .         .         .
3.42      0.1765      0.68  Q         .         .         .         .
3.54      0.1829      0.68  Q         .         .         .         .
3.65      0.1894      0.69  Q         .         .         .         .
3.77      0.1959      0.69  Q         .         .         .         .
3.88      0.2024      0.69  Q         .         .         .         .
3.99      0.2090      0.70  Q         .         .         .         .
4.11      0.2156      0.70  Q         .         .         .         .
4.22      0.2222      0.71  Q         .         .         .         .
4.34      0.2289      0.71  Q         .         .         .         .
4.45      0.2356      0.71  Q         .         .         .         .
4.57      0.2423      0.72  Q         .         .         .         .
4.68      0.2491      0.72  Q         .         .         .         .
4.80      0.2560      0.72  Q         .         .         .         .
4.91      0.2628      0.73  Q         .         .         .         .
5.02      0.2697      0.73  Q         .         .         .         .
5.14      0.2767      0.74  Q         .         .         .         .
5.25      0.2837      0.74  Q         .         .         .         .
5.37      0.2907      0.75  Q         .         .         .         .
5.48      0.2978      0.75  .Q        .         .         .         .
5.60      0.3049      0.76  .Q        .         .         .         .
5.71      0.3120      0.76  .Q        .         .         .         .
5.82      0.3192      0.77  .Q        .         .         .         .
5.94      0.3265      0.77  .Q        .         .         .         .
6.05      0.3338      0.78  .Q        .         .         .         .
6.17      0.3411      0.78  .Q        .         .         .         .
6.28      0.3485      0.79  .Q        .         .         .         .
6.40      0.3560      0.79  .Q        .         .         .         .
6.51      0.3635      0.80  .Q        .         .         .         .
6.62      0.3710      0.80  .Q        .         .         .         .
6.74      0.3786      0.81  .Q        .         .         .         .
6.85      0.3863      0.81  .Q        .         .         .         .
6.97      0.3940      0.82  .Q        .         .         .         .
7.08      0.4017      0.82  .Q        .         .         .         .
7.20      0.4095      0.83  .Q        .         .         .         .
7.31      0.4174      0.84  .Q        .         .         .         .
7.43      0.4254      0.84  .Q        .         .         .         .
7.54      0.4333      0.85  .Q        .         .         .         .
7.65      0.4414      0.86  .Q        .         .         .         .
7.77      0.4495      0.86  .Q        .         .         .         .
7.88      0.4577      0.87  .Q        .         .         .         .
8.00      0.4659      0.87  .Q        .         .         .         .
8.11      0.4742      0.88  .Q        .         .         .         .
8.23      0.4826      0.89  .Q        .         .         .         .
```

```
 8.34      0.4911      0.90  .Q        .         .         .         .
 8.45      0.4996      0.90  .Q        .         .         .         .
 8.57      0.5082      0.91  .Q        .         .         .         .
 8.68      0.5168      0.92  .Q        .         .         .         .
 8.80      0.5256      0.93  .Q        .         .         .         .
 8.91      0.5344      0.94  .Q        .         .         .         .
 9.03      0.5433      0.95  .Q        .         .         .         .
 9.14      0.5523      0.95  .Q        .         .         .         .
 9.25      0.5613      0.97  .Q        .         .         .         .
 9.37      0.5705      0.97  .Q        .         .         .         .
 9.48      0.5797      0.98  .Q        .         .         .         .
 9.60      0.5891      0.99  .Q        .         .         .         .
 9.71      0.5985      1.00  .Q        .         .         .         .
 9.83      0.6080      1.01  .Q        .         .         .         .
 9.94      0.6176      1.03  .Q        .         .         .         .
10.05      0.6274      1.03  .Q        .         .         .         .
10.17      0.6372      1.05  .Q        .         .         .         .
10.28      0.6471      1.06  .Q        .         .         .         .
10.40      0.6572      1.07  .Q        .         .         .         .
10.51      0.6674      1.08  .Q        .         .         .         .
10.63      0.6776      1.10  .Q        .         .         .         .
10.74      0.6881      1.11  .Q        .         .         .         .
10.85      0.6986      1.12  .Q        .         .         .         .
10.97      0.7093      1.13  .Q        .         .         .         .
11.08      0.7201      1.15  .Q        .         .         .         .
11.20      0.7310      1.16  .Q        .         .         .         .
11.31      0.7421      1.18  .Q        .         .         .         .
11.43      0.7533      1.20  .Q        .         .         .         .
11.54      0.7647      1.22  .Q        .         .         .         .
11.66      0.7763      1.23  .Q        .         .         .         .
11.77      0.7880      1.25  .Q        .         .         .         .
11.88      0.8000      1.27  .Q        .         .         .         .
12.00      0.8121      1.29  .Q        .         .         .         .
12.11      0.8246      1.37  .Q        .         .         .         .
12.23      0.8380      1.46  .Q        .         .         .         .
12.34      0.8519      1.48  .Q        .         .         .         .
12.46      0.8660      1.51  . Q       .         .         .         .
12.57      0.8803      1.53  . Q       .         .         .         .
12.68      0.8949      1.56  . Q       .         .         .         .
12.80      0.9097      1.58  . Q       .         .         .         .
12.91      0.9248      1.62  . Q       .         .         .         .
13.03      0.9402      1.64  . Q       .         .         .         .
13.14      0.9560      1.69  . Q       .         .         .         .
13.26      0.9720      1.71  . Q       .         .         .         .
13.37      0.9884      1.76  . Q       .         .         .         .
13.48      1.0051      1.79  . Q       .         .         .         .
13.60      1.0223      1.84  . Q       .         .         .         .
13.71      1.0398      1.87  . Q       .         .         .         .
13.83      1.0579      1.94  . Q       .         .         .         .
13.94      1.0764      1.98  . Q       .         .         .         .
```

```
14.06      1.0954      2.05  . Q       .         .         .         .
14.17      1.1149      2.08  . Q       .         .         .         .
14.28      1.1350      2.17  . Q       .         .         .         .
14.40      1.1557      2.22  . Q       .         .         .         .
14.51      1.1773      2.34  .  Q      .         .         .         .
14.63      1.1997      2.40  .  Q      .         .         .         .
14.74      1.2230      2.54  .  Q      .         .         .         .
14.86      1.2475      2.63  .  Q      .         .         .         .
14.97      1.2735      2.88  .  Q      .         .         .         .
15.09      1.3013      3.02  .   Q     .         .         .         .
15.20      1.3315      3.36  .   Q     .         .         .         .
15.31      1.3642      3.57  .   Q     .         .         .         .
15.43      1.4031      4.64  .     Q   .         .         .         .
15.54      1.4494      5.17  .     Q   .         .         .         .
15.66      1.5026      6.09  .       Q .         .         .         .
15.77      1.5630      6.70  .       Q .         .         .         .
15.89      1.6372      8.99  .         .Q        .         .         .
16.00      1.7353     11.78  .         .    Q    .         .         .
16.11      1.9219     27.71  .         .         .         .     Q   .
16.23      2.0884      7.53  .         Q         .         .         .
16.34      2.1504      5.58  .      Q  .         .         .         .
16.46      2.1947      3.81  .    Q    .         .         .         .
16.57      2.2277      3.18  .   Q     .         .         .         .
16.69      2.2558      2.75  .  Q      .         .         .         .
16.80      2.2804      2.47  .  Q      .         .         .         .
16.91      2.3028      2.28  .  Q      .         .         .         .
17.03      2.3236      2.13  . Q       .         .         .         .
17.14      2.3432      2.01  . Q       .         .         .         .
17.26      2.3617      1.91  . Q       .         .         .         .
17.37      2.3793      1.81  . Q       .         .         .         .
17.49      2.3960      1.73  . Q       .         .         .         .
17.60      2.4121      1.66  . Q       .         .         .         .
17.72      2.4275      1.60  . Q       .         .         .         .
17.83      2.4423      1.54  . Q       .         .         .         .
17.94      2.4567      1.49  .Q        .         .         .         .
18.06      2.4705      1.45  .Q        .         .         .         .
18.17      2.4834      1.28  .Q        .         .         .         .
18.29      2.4953      1.24  .Q        .         .         .         .
18.40      2.5069      1.21  .Q        .         .         .         .
18.52      2.5182      1.17  .Q        .         .         .         .
18.63      2.5291      1.14  .Q        .         .         .         .
18.74      2.5398      1.11  .Q        .         .         .         .
18.86      2.5502      1.09  .Q        .         .         .         .
18.97      2.5604      1.06  .Q        .         .         .         .
19.09      2.5703      1.04  .Q        .         .         .         .
19.20      2.5800      1.02  .Q        .         .         .         .
19.32      2.5895      1.00  .Q        .         .         .         .
19.43      2.5989      0.98  .Q        .         .         .         .
19.54      2.6080      0.96  .Q        .         .         .         .
19.66      2.6170      0.94  .Q        .         .         .         .
```

```
 19.77      2.6258      0.93  .Q        .         .         .         .
 19.89      2.6345      0.91  .Q        .         .         .         .
 20.00      2.6430      0.89  .Q        .         .         .         .
 20.12      2.6514      0.88  .Q        .         .         .         .
 20.23      2.6596      0.87  .Q        .         .         .         .
 20.34      2.6678      0.85  .Q        .         .         .         .
 20.46      2.6757      0.84  .Q        .         .         .         .
 20.57      2.6836      0.83  .Q        .         .         .         .
 20.69      2.6914      0.82  .Q        .         .         .         .
 20.80      2.6990      0.80  .Q        .         .         .         .
 20.92      2.7066      0.79  .Q        .         .         .         .
 21.03      2.7140      0.78  .Q        .         .         .         .
 21.14      2.7214      0.77  .Q        .         .         .         .
 21.26      2.7286      0.76  .Q        .         .         .         .
 21.37      2.7358      0.75  .Q        .         .         .         .
 21.49      2.7429      0.74  Q         .         .         .         .
 21.60      2.7498      0.74  Q         .         .         .         .
 21.72      2.7567      0.73  Q         .         .         .         .
 21.83      2.7636      0.72  Q         .         .         .         .
 21.95      2.7703      0.71  Q         .         .         .         .
 22.06      2.7770      0.70  Q         .         .         .         .
 22.17      2.7836      0.70  Q         .         .         .         .
 22.29      2.7901      0.69  Q         .         .         .         .
 22.40      2.7966      0.68  Q         .         .         .         .
 22.52      2.8030      0.67  Q         .         .         .         .
 22.63      2.8093      0.67  Q         .         .         .         .
 22.75      2.8156      0.66  Q         .         .         .         .
 22.86      2.8218      0.65  Q         .         .         .         .
 22.97      2.8280      0.65  Q         .         .         .         .
 23.09      2.8341      0.64  Q         .         .         .         .
 23.20      2.8401      0.64  Q         .         .         .         .
 23.32      2.8461      0.63  Q         .         .         .         .
 23.43      2.8520      0.62  Q         .         .         .         .
 23.55      2.8579      0.62  Q         .         .         .         .
 23.66      2.8637      0.61  Q         .         .         .         .
 23.77      2.8695      0.61  Q         .         .         .         .
 23.89      2.8752      0.60  Q         .         .         .         .
 24.00      2.8809      0.60  Q         .         .         .         .
 24.12      2.8837      0.00  Q         .         .         .         .
-----------------------------------------------------------------------------
--------------------------------------------------------------------------------
   TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
   (Note: 100% of Peak Flow Rate estimate assumed to have
   an instantaneous time duration)

   Percentile of Estimated                 Duration
       Peak Flow Rate                      (minutes)
   =======================                 =========
              0%                            1440.6
             10%                             102.9
```

20%	48.0
30%	20.6
40%	13.7
50%	6.9
60%	6.9
70%	6.9
80%	6.9
90%	6.9

```
DMA 2
----------------------------------------------------------------------------


     RATIONAL METHOD CALIBRATION COEFFICIENT = 1.30
     TOTAL CATCHMENT AREA(ACRES) =    5.34
     SOIL-LOSS RATE, Fm,(INCH/HR) =  0.092
     LOW LOSS FRACTION = 0.240
     TIME OF CONCENTRATION(MIN.) =  6.42
     SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
     USER SPECIFIED RAINFALL VALUES ARE USED
     RETURN FREQUENCY(YEARS) = 100
        5-MINUTE POINT RAINFALL VALUE(INCHES) =  0.31
       30-MINUTE POINT RAINFALL VALUE(INCHES) =  0.80
        1-HOUR   POINT RAINFALL VALUE(INCHES) =  1.16
        3-HOUR   POINT RAINFALL VALUE(INCHES) =  1.94
        6-HOUR   POINT RAINFALL VALUE(INCHES) =  2.69
       24-HOUR   POINT RAINFALL VALUE(INCHES) =  4.89

 ----------------------------------------------------------------------------

     TOTAL CATCHMENT   RUNOFF  VOLUME(ACRE-FEET) =     2.25
     TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) =    -0.08

 ****************************************************************************
   TIME     VOLUME       Q    0.        7.5      15.0      22.5      30.0
  (HOURS)    (AF)      (CFS)
 ----------------------------------------------------------------------------
   0.06      0.0011      0.46  Q         .         .         .         .
   0.16      0.0052      0.46  Q         .         .         .         .
   0.27      0.0093      0.47  Q         .         .         .         .
   0.38      0.0135      0.47  Q         .         .         .         .
   0.48      0.0176      0.47  Q         .         .         .         .
   0.59      0.0218      0.47  Q         .         .         .         .
   0.70      0.0260      0.47  Q         .         .         .         .
   0.81      0.0302      0.48  Q         .         .         .         .
   0.91      0.0344      0.48  Q         .         .         .         .
   1.02      0.0386      0.48  Q         .         .         .         .
   1.13      0.0429      0.48  Q         .         .         .         .
   1.23      0.0471      0.48  Q         .         .         .         .
   1.34      0.0514      0.49  Q         .         .         .         .
   1.45      0.0557      0.49  Q         .         .         .         .
   1.55      0.0601      0.49  Q         .         .         .         .
   1.66      0.0644      0.49  Q         .         .         .         .
   1.77      0.0688      0.49  Q         .         .         .         .
   1.88      0.0731      0.50  Q         .         .         .         .
   1.98      0.0775      0.50  Q         .         .         .         .
   2.09      0.0820      0.50  Q         .         .         .         .
   2.20      0.0864      0.50  Q         .         .         .         .
   2.30      0.0909      0.50  Q         .         .         .         .
```

```
2.41      0.0953      0.51  Q         .         .         .         .
2.52      0.0998      0.51  Q         .         .         .         .
2.62      0.1043      0.51  Q         .         .         .         .
2.73      0.1089      0.51  Q         .         .         .         .
2.84      0.1134      0.52  Q         .         .         .         .
2.95      0.1180      0.52  Q         .         .         .         .
3.05      0.1226      0.52  Q         .         .         .         .
3.16      0.1272      0.52  Q         .         .         .         .
3.27      0.1319      0.53  Q         .         .         .         .
3.37      0.1365      0.53  Q         .         .         .         .
3.48      0.1412      0.53  Q         .         .         .         .
3.59      0.1459      0.53  Q         .         .         .         .
3.69      0.1507      0.54  Q         .         .         .         .
3.80      0.1554      0.54  Q         .         .         .         .
3.91      0.1602      0.54  Q         .         .         .         .
4.02      0.1650      0.54  Q         .         .         .         .
4.12      0.1698      0.55  Q         .         .         .         .
4.23      0.1747      0.55  Q         .         .         .         .
4.34      0.1796      0.55  Q         .         .         .         .
4.44      0.1845      0.56  Q         .         .         .         .
4.55      0.1894      0.56  Q         .         .         .         .
4.66      0.1943      0.56  Q         .         .         .         .
4.76      0.1993      0.57  Q         .         .         .         .
4.87      0.2043      0.57  Q         .         .         .         .
4.98      0.2094      0.57  Q         .         .         .         .
5.09      0.2144      0.57  Q         .         .         .         .
5.19      0.2195      0.58  Q         .         .         .         .
5.30      0.2246      0.58  Q         .         .         .         .
5.41      0.2298      0.58  Q         .         .         .         .
5.51      0.2350      0.59  Q         .         .         .         .
5.62      0.2402      0.59  Q         .         .         .         .
5.73      0.2454      0.59  Q         .         .         .         .
5.84      0.2507      0.60  Q         .         .         .         .
5.94      0.2560      0.60  Q         .         .         .         .
6.05      0.2613      0.61  Q         .         .         .         .
6.16      0.2667      0.61  Q         .         .         .         .
6.26      0.2721      0.61  Q         .         .         .         .
6.37      0.2775      0.62  Q         .         .         .         .
6.48      0.2830      0.62  Q         .         .         .         .
6.58      0.2885      0.62  Q         .         .         .         .
6.69      0.2940      0.63  Q         .         .         .         .
6.80      0.2996      0.63  Q         .         .         .         .
6.90      0.3052      0.64  Q         .         .         .         .
7.01      0.3108      0.64  Q         .         .         .         .
7.12      0.3165      0.65  Q         .         .         .         .
7.23      0.3222      0.65  Q         .         .         .         .
7.33      0.3280      0.65  Q         .         .         .         .
7.44      0.3338      0.66  Q         .         .         .         .
7.55      0.3396      0.66  Q         .         .         .         .
7.65      0.3455      0.67  Q         .         .         .         .
```

```
 7.76      0.3514      0.67  Q         .         .         .         .
 7.87      0.3574      0.68  Q         .         .         .         .
 7.97      0.3634      0.68  Q         .         .         .         .
 8.08      0.3695      0.69  Q         .         .         .         .
 8.19      0.3756      0.69  Q         .         .         .         .
 8.30      0.3817      0.70  Q         .         .         .         .
 8.40      0.3879      0.70  Q         .         .         .         .
 8.51      0.3942      0.71  Q         .         .         .         .
 8.62      0.4005      0.72  Q         .         .         .         .
 8.72      0.4068      0.72  Q         .         .         .         .
 8.83      0.4132      0.73  Q         .         .         .         .
 8.94      0.4197      0.73  Q         .         .         .         .
 9.05      0.4262      0.74  Q         .         .         .         .
 9.15      0.4328      0.75  Q         .         .         .         .
 9.26      0.4394      0.75  .Q        .         .         .         .
 9.37      0.4461      0.76  .Q        .         .         .         .
 9.47      0.4528      0.77  .Q        .         .         .         .
 9.58      0.4597      0.77  .Q        .         .         .         .
 9.69      0.4665      0.78  .Q        .         .         .         .
 9.79      0.4735      0.79  .Q        .         .         .         .
 9.90      0.4805      0.80  .Q        .         .         .         .
10.01      0.4876      0.80  .Q        .         .         .         .
10.12      0.4947      0.81  .Q        .         .         .         .
10.22      0.5019      0.82  .Q        .         .         .         .
10.33      0.5092      0.83  .Q        .         .         .         .
10.44      0.5166      0.84  .Q        .         .         .         .
10.54      0.5241      0.85  .Q        .         .         .         .
10.65      0.5316      0.86  .Q        .         .         .         .
10.76      0.5392      0.87  .Q        .         .         .         .
10.86      0.5469      0.88  .Q        .         .         .         .
10.97      0.5547      0.89  .Q        .         .         .         .
11.08      0.5626      0.90  .Q        .         .         .         .
11.18      0.5706      0.91  .Q        .         .         .         .
11.29      0.5787      0.92  .Q        .         .         .         .
11.40      0.5869      0.93  .Q        .         .         .         .
11.51      0.5952      0.94  .Q        .         .         .         .
11.61      0.6036      0.96  .Q        .         .         .         .
11.72      0.6121      0.97  .Q        .         .         .         .
11.83      0.6208      0.99  .Q        .         .         .         .
11.93      0.6295      1.00  .Q        .         .         .         .
12.04      0.6385      1.02  .Q        .         .         .         .
12.15      0.6480      1.12  .Q        .         .         .         .
12.26      0.6580      1.14  .Q        .         .         .         .
12.36      0.6682      1.16  .Q        .         .         .         .
12.47      0.6785      1.18  .Q        .         .         .         .
12.58      0.6890      1.19  .Q        .         .         .         .
12.68      0.6996      1.22  .Q        .         .         .         .
12.79      0.7105      1.23  .Q        .         .         .         .
12.90      0.7215      1.26  .Q        .         .         .         .
13.00      0.7327      1.28  .Q        .         .         .         .
```

```
13.11      0.7442      1.31  .Q        .         .         .         .
13.22      0.7558      1.33  .Q        .         .         .         .
13.32      0.7677      1.36  .Q        .         .         .         .
13.43      0.7798      1.38  .Q        .         .         .         .
13.54      0.7922      1.42  .Q        .         .         .         .
13.65      0.8049      1.44  .Q        .         .         .         .
13.75      0.8179      1.49  .Q        .         .         .         .
13.86      0.8311      1.51  . Q       .         .         .         .
13.97      0.8448      1.57  . Q       .         .         .         .
14.07      0.8588      1.60  . Q       .         .         .         .
14.18      0.8731      1.65  . Q       .         .         .         .
14.29      0.8878      1.68  . Q       .         .         .         .
14.40      0.9030      1.76  . Q       .         .         .         .
14.50      0.9187      1.80  . Q       .         .         .         .
14.61      0.9350      1.89  . Q       .         .         .         .
14.72      0.9519      1.94  . Q       .         .         .         .
14.82      0.9696      2.06  . Q       .         .         .         .
14.93      0.9883      2.15  . Q       .         .         .         .
15.04      1.0082      2.35  .  Q      .         .         .         .
15.14      1.0294      2.46  .  Q      .         .         .         .
15.25      1.0525      2.74  .  Q      .         .         .         .
15.36      1.0774      2.91  .  Q      .         .         .         .
15.47      1.1076      3.91  .    Q    .         .         .         .
15.57      1.1433      4.18  .    Q    .         .         .         .
15.68      1.1835      4.92  .     Q   .         .         .         .
15.79      1.2290      5.37  .      Q  .         .         .         .
15.89      1.2849      7.26  .        Q.         .         .         .
16.00      1.3590      9.51  .         . Q       .         .         .
16.11      1.4998     22.33  .         .         .        Q.         .
16.21      1.6254      6.09  .       Q .         .         .         .
16.32      1.6723      4.51  .     Q   .         .         .         .
16.43      1.7068      3.30  .   Q     .         .         .         .
16.53      1.7328      2.59  .  Q      .         .         .         .
16.64      1.7542      2.24  . Q       .         .         .         .
16.75      1.7730      1.99  . Q       .         .         .         .
16.86      1.7899      1.84  . Q       .         .         .         .
16.96      1.8057      1.72  . Q       .         .         .         .
17.07      1.8204      1.62  . Q       .         .         .         .
17.18      1.8344      1.54  . Q       .         .         .         .
17.28      1.8477      1.47  .Q        .         .         .         .
17.39      1.8603      1.40  .Q        .         .         .         .
17.50      1.8725      1.34  .Q        .         .         .         .
17.61      1.8841      1.29  .Q        .         .         .         .
17.71      1.8954      1.25  .Q        .         .         .         .
17.82      1.9062      1.21  .Q        .         .         .         .
17.93      1.9167      1.17  .Q        .         .         .         .
18.03      1.9269      1.13  .Q        .         .         .         .
18.14      1.9363      1.01  .Q        .         .         .         .
18.25      1.9451      0.98  .Q        .         .         .         .
18.35      1.9536      0.95  .Q        .         .         .         .
```

```
18.46      1.9619      0.93  .Q        .         .         .         .
18.57      1.9700      0.90  .Q        .         .         .         .
18.67      1.9779      0.88  .Q        .         .         .         .
18.78      1.9856      0.86  .Q        .         .         .         .
18.89      1.9932      0.84  .Q        .         .         .         .
19.00      2.0005      0.83  .Q        .         .         .         .
19.10      2.0078      0.81  .Q        .         .         .         .
19.21      2.0148      0.79  .Q        .         .         .         .
19.32      2.0218      0.78  .Q        .         .         .         .
19.42      2.0286      0.76  .Q        .         .         .         .
19.53      2.0353      0.75  Q         .         .         .         .
19.64      2.0418      0.74  Q         .         .         .         .
19.74      2.0483      0.72  Q         .         .         .         .
19.85      2.0547      0.71  Q         .         .         .         .
19.96      2.0609      0.70  Q         .         .         .         .
20.07      2.0671      0.69  Q         .         .         .         .
20.17      2.0731      0.68  Q         .         .         .         .
20.28      2.0791      0.67  Q         .         .         .         .
20.39      2.0850      0.66  Q         .         .         .         .
20.49      2.0908      0.65  Q         .         .         .         .
20.60      2.0965      0.64  Q         .         .         .         .
20.71      2.1021      0.63  Q         .         .         .         .
20.82      2.1077      0.63  Q         .         .         .         .
20.92      2.1132      0.62  Q         .         .         .         .
21.03      2.1186      0.61  Q         .         .         .         .
21.14      2.1240      0.60  Q         .         .         .         .
21.24      2.1293      0.60  Q         .         .         .         .
21.35      2.1345      0.59  Q         .         .         .         .
21.46      2.1397      0.58  Q         .         .         .         .
21.56      2.1448      0.58  Q         .         .         .         .
21.67      2.1499      0.57  Q         .         .         .         .
21.78      2.1549      0.56  Q         .         .         .         .
21.89      2.1599      0.56  Q         .         .         .         .
21.99      2.1648      0.55  Q         .         .         .         .
22.10      2.1696      0.55  Q         .         .         .         .
22.21      2.1744      0.54  Q         .         .         .         .
22.31      2.1792      0.54  Q         .         .         .         .
22.42      2.1839      0.53  Q         .         .         .         .
22.53      2.1886      0.52  Q         .         .         .         .
22.63      2.1932      0.52  Q         .         .         .         .
22.74      2.1978      0.52  Q         .         .         .         .
22.85      2.2023      0.51  Q         .         .         .         .
22.95      2.2068      0.51  Q         .         .         .         .
23.06      2.2112      0.50  Q         .         .         .         .
23.17      2.2157      0.50  Q         .         .         .         .
23.28      2.2200      0.49  Q         .         .         .         .
23.38      2.2244      0.49  Q         .         .         .         .
23.49      2.2287      0.48  Q         .         .         .         .
23.60      2.2330      0.48  Q         .         .         .         .
23.70      2.2372      0.48  Q         .         .         .         .
```

```
  23.81      2.2414      0.47  Q         .         .         .         .
  23.92      2.2456      0.47  Q         .         .         .         .
  24.02      2.2497      0.47  Q         .         .         .         .
  24.13      2.2518      0.00  Q         .         .         .         .
 -----------------------------------------------------------------------------
--------------------------------------------------------------------------------
    TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
    (Note: 100% of Peak Flow Rate estimate assumed to have
    an instantaneous time duration)

    Percentile of Estimated                 Duration
        Peak Flow Rate                      (minutes)
    =======================                 =========
               0%                            1444.5
              10%                             102.7
              20%                              44.9
              30%                              19.3
              40%                              12.8
              50%                               6.4
              60%                               6.4
              70%                               6.4
              80%                               6.4
              90%                               6.4
```

APPENDIX G

INFILTRATION/DETENTION CALCULATIONS

Orifice Calculations

Project Summary

Title	DPC DMA 1
Engineer	
Company	Kimley Horn
Date	2/2/2023

Notes

Table of Contents

Orifice Calculations

Subsection: User Notifications

User Notifications

Message Id	-1
Scenario	Base
Element Type	Scenario
Element Id	1
Label	Base
Time	(N/A)
Message	The output increment (6.833 min) is not an equal interval of the simulation duration (1,441.133 min). The actual simulation duration is 1,435.000 min.
Source	Precalculation

Orifice Calculations

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
DA1	Base	0	125,017.00	956.667	27.71

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
O-1	Base	0	21,841.00	963.500	5.82

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
RDF-1 (IN)	Base	0	125,017.00	956.667	27.71	(N/A)	(N/A)
RDF-1 (OUT)	Base	0	21,841.00	963.500	5.82	7.37	41,670.00

Orifice Calculations

Subsection: Read Hydrograph Scenario: Base

Label: DA1

Peak Discharge	27.71 ft³/s
Time to Peak	956.667 min
Hydrograph Volume	125,017.20 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 6.833 min
Time on left represents time for first value in each row.

Time (min)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.000	0.60	0.60	0.60	0.60	0.61
34.167	0.61	0.61	0.61	0.62	0.62
68.333	0.62	0.62	0.63	0.63	0.63
102.500	0.63	0.64	0.64	0.64	0.65
136.667	0.65	0.65	0.66	0.66	0.66
170.833	0.66	0.67	0.67	0.68	0.68
205.000	0.68	0.69	0.69	0.69	0.70
239.167	0.70	0.71	0.71	0.71	0.72
273.333	0.72	0.72	0.73	0.73	0.74
307.500	0.74	0.75	0.75	0.76	0.76
341.667	0.77	0.77	0.78	0.78	0.79
375.833	0.79	0.80	0.80	0.81	0.81
410.000	0.82	0.82	0.83	0.84	0.84
444.167	0.85	0.86	0.86	0.87	0.87
478.333	0.88	0.89	0.90	0.90	0.91
512.500	0.92	0.93	0.94	0.95	0.95
546.667	0.97	0.97	0.98	0.99	1.00
580.833	1.01	1.03	1.03	1.05	1.06
615.000	1.07	1.08	1.10	1.11	1.12
649.167	1.13	1.15	1.16	1.18	1.20
683.333	1.22	1.23	1.25	1.27	1.29
717.500	1.37	1.46	1.48	1.51	1.53
751.667	1.56	1.58	1.62	1.64	1.69
785.833	1.71	1.76	1.79	1.84	1.87
820.000	1.94	1.98	2.05	2.08	2.17
854.167	2.22	2.34	2.40	2.54	2.63
888.333	2.88	3.02	3.36	3.57	4.64
922.500	5.17	6.09	6.70	8.99	11.78
956.667	27.71	7.53	5.58	3.81	3.18
990.833	2.75	2.47	2.28	2.13	2.01
1,025.000	1.91	1.81	1.73	1.66	1.60
1,059.167	1.54	1.49	1.45	1.28	1.24
1,093.333	1.21	1.17	1.14	1.11	1.09
1,127.500	1.06	1.04	1.02	1.00	0.98
1,161.667	0.96	0.94	0.93	0.91	0.89
1,195.833	0.88	0.87	0.85	0.84	0.83
1,230.000	0.82	0.80	0.79	0.78	0.77

Orifice Calculations

Subsection: Read Hydrograph Scenario: Base
Label: DA1

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 6.833 min
Time on left represents time for first value in each row.

Time (min)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
1,264.167	0.76	0.75	0.74	0.74	0.73
1,298.333	0.72	0.71	0.70	0.70	0.69
1,332.500	0.68	0.67	0.67	0.66	0.65
1,366.667	0.65	0.64	0.64	0.63	0.62
1,400.833	0.62	0.61	0.61	0.60	0.60
1,435.000	0.00	(N/A)	(N/A)	(N/A)	(N/A)

Orifice Calculations

Subsection: Time vs. Elevation Scenario: Base

Label: RDF-1 (IN)

Time vs. Elevation (ft)

Output Time increment = 6.833 min
Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	0.00	0.04	0.09	0.13	0.17
34.167	0.22	0.26	0.31	0.35	0.39
68.333	0.44	0.48	0.52	0.57	0.61
102.500	0.65	0.69	0.74	0.78	0.82
136.667	0.86	0.90	0.94	0.98	1.02
170.833	1.06	1.10	1.14	1.17	1.21
205.000	1.25	1.29	1.32	1.36	1.39
239.167	1.43	1.46	1.49	1.53	1.56
273.333	1.59	1.62	1.65	1.68	1.71
307.500	1.74	1.77	1.80	1.82	1.85
341.667	1.88	1.90	1.93	1.96	1.98
375.833	2.01	2.03	2.05	2.08	2.10
410.000	2.12	2.14	2.16	2.19	2.21
444.167	2.23	2.25	2.27	2.29	2.31
478.333	2.33	2.35	2.37	2.38	2.40
512.500	2.42	2.44	2.46	2.48	2.49
546.667	2.51	2.53	2.55	2.57	2.58
580.833	2.60	2.62	2.64	2.65	2.67
615.000	2.69	2.71	2.73	2.74	2.76
649.167	2.78	2.80	2.82	2.84	2.86
683.333	2.88	2.90	2.92	2.94	2.96
717.500	2.98	3.01	3.04	3.07	3.10
751.667	3.14	3.17	3.20	3.23	3.27
785.833	3.30	3.34	3.37	3.41	3.45
820.000	3.49	3.53	3.57	3.61	3.66
854.167	3.70	3.76	3.81	3.87	3.93
888.333	4.00	4.08	4.18	4.29	4.44
922.500	4.65	4.88	5.13	5.41	5.78
956.667	6.71	7.37	7.19	6.91	6.59
990.833	6.27	5.97	5.71	5.48	5.30
1,025.000	5.16	5.05	4.96	4.89	4.82
1,059.167	4.76	4.70	4.65	4.60	4.54
1,093.333	4.48	4.42	4.36	4.30	4.24
1,127.500	4.18	4.12	4.06	4.00	3.94
1,161.667	3.89	3.83	3.78	3.73	3.68
1,195.833	3.64	3.59	3.55	3.51	3.47
1,230.000	3.43	3.39	3.36	3.32	3.29
1,264.167	3.26	3.22	3.19	3.16	3.14
1,298.333	3.11	3.08	3.05	3.03	3.00
1,332.500	2.98	2.96	2.93	2.91	2.89
1,366.667	2.87	2.85	2.83	2.81	2.79

Orifice Calculations

Subsection: Time vs. Elevation Scenario: Base
Label: RDF-1 (IN)

Time vs. Elevation (ft)

Output Time increment = 6.833 min
Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1,400.833	2.77	2.75	2.73	2.72	2.70
1,435.000	2.66	(N/A)	(N/A)	(N/A)	(N/A)

Orifice Calculations

Subsection: Time vs. Volume Scenario: Base
Label: RDF-1

Time vs. Volume (ft^3)

Output Time increment = 6.833 min
Time on left represents time for first value in each row.

Time (min)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
0.000	0.00	246.00	492.00	737.00	984.00
34.167	1,232.00	1,479.00	1,726.00	1,973.00	2,220.00
68.333	2,466.00	2,711.00	2,955.00	3,200.00	3,442.00
102.500	3,681.00	3,921.00	4,159.00	4,395.00	4,629.00
136.667	4,863.00	5,093.00	5,322.00	5,550.00	5,773.00
170.833	5,993.00	6,212.00	6,428.00	6,642.00	6,855.00
205.000	7,063.00	7,269.00	7,472.00	7,671.00	7,868.00
239.167	8,063.00	8,255.00	8,444.00	8,629.00	8,811.00
273.333	8,991.00	9,166.00	9,338.00	9,508.00	9,675.00
307.500	9,839.00	10,001.00	10,160.00	10,317.00	10,471.00
341.667	10,622.00	10,771.00	10,917.00	11,061.00	11,202.00
375.833	11,341.00	11,477.00	11,610.00	11,742.00	11,870.00
410.000	11,997.00	12,121.00	12,243.00	12,364.00	12,484.00
444.167	12,601.00	12,717.00	12,832.00	12,944.00	13,055.00
478.333	13,163.00	13,271.00	13,379.00	13,485.00	13,588.00
512.500	13,692.00	13,796.00	13,900.00	14,003.00	14,105.00
546.667	14,206.00	14,307.00	14,406.00	14,505.00	14,604.00
580.833	14,703.00	14,804.00	14,905.00	15,005.00	15,107.00
615.000	15,208.00	15,310.00	15,412.00	15,517.00	15,620.00
649.167	15,723.00	15,828.00	15,934.00	16,041.00	16,151.00
683.333	16,264.00	16,377.00	16,492.00	16,609.00	16,729.00
717.500	16,863.00	17,024.00	17,200.00	17,377.00	17,555.00
751.667	17,735.00	17,915.00	18,098.00	18,284.00	18,474.00
785.833	18,668.00	18,866.00	19,069.00	19,277.00	19,490.00
820.000	19,710.00	19,941.00	20,180.00	20,426.00	20,681.00
854.167	20,949.00	21,235.00	21,540.00	21,865.00	22,217.00
888.333	22,614.00	23,071.00	23,613.00	24,252.00	25,131.00
922.500	26,292.00	27,618.00	28,996.00	30,568.00	32,679.00
956.667	37,942.00	41,670.00	40,678.00	39,092.00	37,245.00
990.833	35,444.00	33,769.00	32,270.00	30,984.00	29,966.00
1,025.000	29,194.00	28,576.00	28,066.00	27,631.00	27,251.00
1,059.167	26,908.00	26,591.00	26,295.00	25,985.00	25,657.00
1,093.333	25,330.00	25,000.00	24,666.00	24,329.00	23,992.00
1,127.500	23,653.00	23,314.00	22,976.00	22,639.00	22,308.00
1,161.667	21,991.00	21,685.00	21,392.00	21,110.00	20,838.00
1,195.833	20,575.00	20,324.00	20,082.00	19,847.00	19,621.00
1,230.000	19,404.00	19,193.00	18,988.00	18,789.00	18,597.00
1,264.167	18,412.00	18,232.00	18,057.00	17,889.00	17,728.00
1,298.333	17,571.00	17,418.00	17,268.00	17,124.00	16,985.00
1,332.500	16,848.00	16,714.00	16,585.00	16,459.00	16,336.00
1,366.667	16,216.00	16,100.00	15,987.00	15,877.00	15,768.00

Orifice Calculations

Subsection: Time vs. Volume Scenario: Base

Label: RDF-1

Time vs. Volume (ft³)

Output Time increment = 6.833 min
Time on left represents time for first value in each row.

Time (min)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
1,400.833	15,662.00	15,559.00	15,458.00	15,360.00	15,264.00
1,435.000	15,052.00	(N/A)	(N/A)	(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data Scenario: Base

Label: Composite Outlet Structure - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	0.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	8.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	4.50	8.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data — Scenario: Base

Label: Composite Outlet Structure - 1

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	4.50 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	6.833 min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
0.00	0.00	0.00	0.000	0.00	0.00	0.00
0.10	0.00	565.49	7.069	0.00	0.00	2.76
0.20	0.00	1,130.97	28.274	0.00	0.00	5.52
0.30	0.00	1,696.46	63.617	0.01	0.01	8.29
0.40	0.00	2,261.95	113.097	0.02	0.02	11.05
0.50	0.00	2,827.43	176.715	0.03	0.03	13.82
0.60	0.00	3,392.92	254.469	0.04	0.04	16.59
0.70	0.00	3,958.41	346.361	0.06	0.06	19.37
0.80	0.00	4,523.89	452.389	0.07	0.07	22.14
0.90	0.00	5,089.38	572.555	0.09	0.09	24.92
1.00	0.00	5,654.87	706.858	0.11	0.11	27.70
1.10	0.00	6,220.35	855.299	0.14	0.14	30.48
1.20	0.00	6,785.84	1,017.876	0.16	0.16	33.27
1.30	0.00	7,351.33	1,194.591	0.19	0.19	36.05
1.40	0.00	7,916.81	1,385.442	0.22	0.22	38.84
1.50	0.00	8,482.30	1,590.431	0.26	0.26	41.63
1.60	0.00	9,047.79	1,809.557	0.29	0.29	44.43
1.70	0.00	9,613.27	2,042.821	0.33	0.33	47.22
1.80	0.00	10,178.76	2,290.221	0.37	0.37	50.02
1.90	0.00	10,744.25	2,551.759	0.41	0.41	52.82
2.00	0.00	11,309.73	2,827.433	0.45	0.45	55.62
2.10	0.00	11,875.22	3,117.245	0.50	0.50	58.43
2.20	0.00	12,440.71	3,421.194	0.55	0.55	61.24
2.30	0.00	13,006.19	3,739.281	0.60	0.60	64.05
2.40	0.00	13,571.68	4,071.504	0.66	0.66	66.86
2.50	0.00	14,137.17	4,417.865	0.71	0.71	69.67
2.60	0.00	14,702.65	4,778.362	0.77	0.77	72.49
2.70	0.00	15,268.14	5,152.997	0.83	0.83	75.31

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base

Label: RDF-1

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
2.80	0.00	15,833.63	5,541.769	0.89	0.89	78.13
2.90	0.00	16,399.11	5,944.679	0.96	0.96	80.95
3.00	0.00	16,964.60	6,361.725	1.02	1.02	83.78
3.10	0.00	17,530.09	6,792.909	1.09	1.09	86.61
3.20	0.00	18,095.57	7,238.229	1.16	1.16	89.44
3.30	0.00	18,661.06	7,697.687	1.24	1.24	92.27
3.40	0.00	19,226.55	8,171.282	1.31	1.31	95.10
3.50	0.00	19,792.03	8,659.015	1.39	1.39	97.94
3.60	0.00	20,357.52	9,160.884	1.47	1.47	100.78
3.70	0.00	20,923.01	9,676.891	1.56	1.56	103.62
3.80	0.00	21,488.49	10,207.035	1.64	1.64	106.46
3.90	0.00	22,053.98	10,751.315	1.73	1.73	109.31
4.00	0.00	22,619.47	11,309.734	1.82	1.82	112.16
4.10	0.00	23,184.95	11,545.179	1.86	1.86	114.95
4.20	0.00	23,750.44	11,783.049	1.90	1.90	117.75
4.30	0.00	24,315.93	12,023.345	1.93	1.93	120.55
4.40	0.00	24,881.41	12,266.067	1.97	1.97	123.35
4.50	0.00	25,446.90	12,511.214	2.01	2.01	126.14
4.60	0.03	26,012.39	12,758.787	2.05	2.09	128.98
4.70	0.13	26,577.87	13,008.785	2.09	2.23	131.87
4.80	0.29	27,143.36	13,261.209	2.13	2.43	134.83
4.90	0.50	27,708.85	13,516.059	2.17	2.68	137.84
5.00	0.76	28,274.33	13,773.334	2.22	2.98	140.90
5.10	1.07	28,839.82	14,033.034	2.26	3.33	144.01
5.20	1.41	29,405.31	14,295.160	2.30	3.71	147.15
5.30	1.78	29,970.79	14,559.712	2.34	4.12	150.32
5.40	2.17	30,536.28	14,826.689	2.39	4.56	153.51
5.50	2.67	31,101.77	15,096.092	2.43	5.10	156.82
5.60	2.93	31,667.25	15,367.921	2.47	5.40	159.87
5.70	3.16	32,232.74	15,642.174	2.52	5.68	162.91
5.80	3.38	32,798.23	15,918.854	2.56	5.94	165.93
5.90	3.59	33,363.71	16,197.959	2.61	6.19	168.94
6.00	3.78	33,929.20	16,479.489	2.65	6.43	171.94
6.10	3.96	34,494.69	16,763.446	2.70	6.66	174.93
6.20	4.14	35,060.17	17,049.827	2.74	6.88	177.91
6.30	4.31	35,625.66	17,338.634	2.79	7.10	180.88
6.40	4.47	36,191.15	17,629.867	2.84	7.31	183.85
6.50	4.63	36,756.63	17,923.526	2.88	7.51	186.81
6.60	4.78	37,322.12	18,219.609	2.93	7.71	189.77
6.70	4.93	37,887.61	18,518.119	2.98	7.91	192.73
6.80	5.07	38,453.09	18,819.054	3.03	8.10	195.68
6.90	5.21	39,018.58	19,122.414	3.08	8.29	198.62
7.00	5.35	39,584.07	19,428.201	3.13	8.47	201.56

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
7.10	5.48	40,149.55	19,736.412	3.18	8.65	204.50
7.20	5.61	40,715.04	20,047.049	3.23	8.83	207.44
7.30	5.73	41,280.53	20,360.112	3.28	9.01	210.38
7.40	5.86	41,846.01	20,675.601	3.33	9.18	213.31
7.50	5.98	42,411.50	20,993.514	3.38	9.35	216.24
7.60	6.10	42,976.99	21,313.854	3.43	9.52	219.17
7.70	6.21	43,542.47	21,636.619	3.48	9.69	222.09
7.80	6.33	44,107.96	21,961.809	3.53	9.86	225.02
7.90	6.44	44,673.45	22,289.425	3.59	10.02	227.94
8.00	6.55	45,238.93	22,619.467	3.64	10.19	230.86

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base

Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
0.00	0.0	0.00
0.10	7.1	0.00
0.20	28.3	0.00
0.30	63.6	0.01
0.40	113.1	0.02
0.50	176.7	0.03
0.60	254.5	0.04
0.70	346.4	0.06
0.80	452.4	0.07
0.90	572.6	0.09
1.00	706.9	0.11
1.10	855.3	0.14
1.20	1,017.9	0.16
1.30	1,194.6	0.19
1.40	1,385.4	0.22
1.50	1,590.4	0.26
1.60	1,809.6	0.29
1.70	2,042.8	0.33
1.80	2,290.2	0.37
1.90	2,551.8	0.41
2.00	2,827.4	0.45
2.10	3,117.2	0.50
2.20	3,421.2	0.55
2.30	3,739.3	0.60
2.40	4,071.5	0.66
2.50	4,417.9	0.71
2.60	4,778.4	0.77
2.70	5,153.0	0.83
2.80	5,541.8	0.89
2.90	5,944.7	0.96
3.00	6,361.7	1.02
3.10	6,792.9	1.09
3.20	7,238.2	1.16
3.30	7,697.7	1.24
3.40	8,171.3	1.31
3.50	8,659.0	1.39
3.60	9,160.9	1.47
3.70	9,676.9	1.56
3.80	10,207.0	1.64
3.90	10,751.3	1.73
4.00	11,309.7	1.82
4.10	11,545.2	1.86
4.20	11,783.0	1.90

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base

Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
4.30	12,023.3	1.93
4.40	12,266.1	1.97
4.50	12,511.2	2.01
4.60	12,758.8	2.05
4.70	13,008.8	2.09
4.80	13,261.2	2.13
4.90	13,516.1	2.17
5.00	13,773.3	2.22
5.10	14,033.0	2.26
5.20	14,295.2	2.30
5.30	14,559.7	2.34
5.40	14,826.7	2.39
5.50	15,096.1	2.43
5.60	15,367.9	2.47
5.70	15,642.2	2.52
5.80	15,918.9	2.56
5.90	16,198.0	2.61
6.00	16,479.5	2.65
6.10	16,763.4	2.70
6.20	17,049.8	2.74
6.30	17,338.6	2.79
6.40	17,629.9	2.84
6.50	17,923.5	2.88
6.60	18,219.6	2.93
6.70	18,518.1	2.98
6.80	18,819.1	3.03
6.90	19,122.4	3.08
7.00	19,428.2	3.13
7.10	19,736.4	3.18
7.20	20,047.0	3.23
7.30	20,360.1	3.28
7.40	20,675.6	3.33
7.50	20,993.5	3.38
7.60	21,313.9	3.43
7.70	21,636.6	3.48
7.80	21,961.8	3.53
7.90	22,289.4	3.59
8.00	22,619.5	3.64

Orifice Calculations

Subsection: Level Pool Pond Routing Summary Scenario: Base
Label: RDF-1 (IN)

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	6.833 min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	27.71 ft³/s	Time to Peak (Flow, In)	956.667 min
Infiltration (Peak)	3.31 ft³/s	Time to Peak (Infiltration)	963.500 min
Flow (Peak Outlet)	5.82 ft³/s	Time to Peak (Flow, Outlet)	963.500 min

Elevation (Water Surface, Peak)	7.37 ft
Volume (Peak)	41,670.45 ft³

Mass Balance (ft³)	
Volume (Initial)	0.00 ft³
Volume (Total Inflow)	125,017.00 ft³
Volume (Total Infiltration)	88,447.00 ft³
Volume (Total Outlet Outflow)	21,841.00 ft³
Volume (Retained)	14,729.00 ft³
Volume (Unrouted)	0.00 ft³
Error (Mass Balance)	0.0 %

Orifice Calculations

Subsection: Pond Inflow Summary
Scenario: Base
Label: RDF-1 (IN)

Summary for Hydrograph Addition at 'RDF-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA1

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (min)	Flow (Peak) (ft^3/s)
Flow (From)	DA1	125,017.20	956.667	27.71
Flow (In)	RDF-1	125,017.20	956.667	27.71

Index

Orifice Calculations

Project Summary

Title	DPC DMA 2
Engineer	
Company	Kimley Horn
Date	2/2/2023

Notes

Table of Contents

Orifice Calculations

Subsection: User Notifications

User Notifications

Message Id	-1
Scenario	Base
Element Type	Scenario
Element Id	1
Label	Base
Time	(N/A)
Message	The output increment (6.390 min) is not an equal interval of the simulation duration (1,431.360 min). The actual simulation duration is 1,429.867 min.
Source	Precalculation

Orifice Calculations

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
DA1	Base	0	97,579.00	957.500	22.33

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
O-1	Base	0	15,558.00	963.883	5.38

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
RDF-1 (IN)	Base	0	97,399.00	957.500	22.33	(N/A)	(N/A)
RDF-1 (OUT)	Base	0	15,558.00	963.883	5.38	7.52	32,615.00

Orifice Calculations

Subsection: Read Hydrograph Scenario: Base
Label: DA1

Peak Discharge	22.33 ft³/s
Time to Peak	957.500 min
Hydrograph Volume	97,578.83 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 6.383 min
Time on left represents time for first value in each row.

Time (min)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.000	0.46	0.46	0.47	0.47	0.47
31.917	0.47	0.47	0.48	0.48	0.48
63.833	0.48	0.48	0.49	0.49	0.49
95.750	0.49	0.49	0.50	0.50	0.50
127.667	0.50	0.50	0.51	0.51	0.51
159.583	0.51	0.52	0.52	0.52	0.52
191.500	0.53	0.53	0.53	0.53	0.54
223.417	0.54	0.54	0.54	0.55	0.55
255.333	0.55	0.56	0.56	0.56	0.57
287.250	0.57	0.57	0.57	0.58	0.58
319.167	0.58	0.59	0.59	0.59	0.60
351.083	0.60	0.61	0.61	0.61	0.62
383.000	0.62	0.62	0.63	0.63	0.64
414.917	0.64	0.65	0.65	0.65	0.66
446.833	0.66	0.67	0.67	0.68	0.68
478.750	0.69	0.69	0.70	0.70	0.71
510.667	0.72	0.72	0.73	0.73	0.74
542.583	0.75	0.75	0.76	0.77	0.77
574.500	0.78	0.79	0.80	0.80	0.81
606.417	0.82	0.83	0.84	0.85	0.86
638.333	0.87	0.88	0.89	0.90	0.91
670.250	0.92	0.93	0.94	0.96	0.97
702.167	0.99	1.00	1.02	1.12	1.14
734.083	1.16	1.18	1.19	1.22	1.23
766.000	1.26	1.28	1.31	1.33	1.36
797.917	1.38	1.42	1.44	1.49	1.51
829.833	1.57	1.60	1.65	1.68	1.76
861.750	1.80	1.89	1.94	2.06	2.15
893.667	2.35	2.46	2.74	2.91	3.91
925.583	4.18	4.92	5.37	7.26	9.51
957.500	22.33	6.09	4.51	3.30	2.59
989.417	2.24	1.99	1.84	1.72	1.62
1,021.333	1.54	1.47	1.40	1.34	1.29
1,053.250	1.25	1.21	1.17	1.13	1.01
1,085.167	0.98	0.95	0.93	0.90	0.88
1,117.083	0.86	0.84	0.83	0.81	0.79
1,149.000	0.78	0.76	0.75	0.74	0.72

Orifice Calculations

Subsection: Read Hydrograph Scenario: Base

Label: DA1

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 6.383 min
Time on left represents time for first value in each row.

Time (min)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
1,180.917	0.71	0.70	0.69	0.68	0.67
1,212.833	0.66	0.65	0.64	0.63	0.63
1,244.750	0.62	0.61	0.60	0.60	0.59
1,276.667	0.58	0.58	0.57	0.56	0.56
1,308.583	0.55	0.55	0.54	0.54	0.53
1,340.500	0.52	0.52	0.52	0.51	0.51
1,372.417	0.50	0.50	0.49	0.49	0.48
1,404.333	0.48	0.48	0.47	0.47	0.47
1,436.250	0.00	0.47	(N/A)	(N/A)	(N/A)

Orifice Calculations

Subsection: Time vs. Elevation Scenario: Base

Label: RDF-1 (IN)

Time vs. Elevation (ft)

Output Time increment = 6.390 min
Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	0.00	0.04	0.08	0.12	0.16
31.917	0.21	0.25	0.29	0.33	0.37
63.833	0.41	0.45	0.49	0.54	0.58
95.750	0.62	0.66	0.70	0.74	0.78
127.667	0.82	0.86	0.89	0.93	0.97
159.583	1.01	1.05	1.08	1.12	1.16
191.500	1.19	1.23	1.26	1.30	1.33
223.417	1.36	1.40	1.43	1.46	1.49
255.333	1.52	1.55	1.58	1.61	1.64
287.250	1.67	1.70	1.73	1.76	1.78
319.167	1.81	1.84	1.86	1.89	1.91
351.083	1.94	1.96	1.98	2.01	2.03
383.000	2.05	2.08	2.10	2.12	2.14
414.917	2.16	2.18	2.20	2.22	2.24
446.833	2.26	2.28	2.30	2.32	2.33
478.750	2.35	2.37	2.39	2.41	2.42
510.667	2.44	2.46	2.48	2.49	2.51
542.583	2.53	2.54	2.56	2.58	2.59
574.500	2.61	2.63	2.64	2.66	2.68
606.417	2.69	2.71	2.73	2.74	2.76
638.333	2.78	2.79	2.81	2.83	2.85
670.250	2.87	2.88	2.90	2.92	2.94
702.167	2.96	2.98	3.00	3.02	3.05
734.083	3.08	3.11	3.14	3.17	3.20
766.000	3.23	3.26	3.29	3.33	3.36
797.917	3.39	3.43	3.46	3.50	3.53
829.833	3.57	3.61	3.66	3.70	3.74
861.750	3.79	3.84	3.90	3.95	4.02
893.667	4.09	4.18	4.28	4.40	4.56
925.583	4.78	5.03	5.32	5.64	6.03
957.500	6.92	7.52	7.30	7.00	6.67
989.417	6.35	6.07	5.85	5.69	5.56
1,021.333	5.47	5.39	5.32	5.26	5.20
1,053.250	5.15	5.10	5.05	5.00	4.94
1,085.167	4.88	4.82	4.76	4.70	4.64
1,117.083	4.58	4.51	4.45	4.39	4.33
1,149.000	4.27	4.20	4.14	4.08	4.02
1,180.917	3.96	3.91	3.85	3.80	3.75
1,212.833	3.70	3.66	3.61	3.57	3.53
1,244.750	3.49	3.45	3.41	3.38	3.34
1,276.667	3.31	3.28	3.24	3.21	3.18

Orifice Calculations

Subsection: Time vs. Elevation Scenario: Base

Label: RDF-1 (IN)

Time vs. Elevation (ft)

Output Time increment = 6.390 min
Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1,308.583	3.16	3.13	3.10	3.08	3.05
1,340.500	3.03	3.00	2.98	2.96	2.94
1,372.417	2.91	2.89	2.87	2.85	2.83
1,404.333	2.81	2.80	2.78	2.76	2.74

Orifice Calculations

Subsection: Time vs. Volume
Scenario: Base
Label: RDF-1

Time vs. Volume (ft^3)

Output Time increment = 6.390 min
Time on left represents time for first value in each row.

Time (min)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
0.000	0.00	176.00	354.00	534.00	713.00
31.917	892.00	1,070.00	1,249.00	1,430.00	1,610.00
63.833	1,788.00	1,966.00	2,144.00	2,323.00	2,500.00
95.750	2,676.00	2,850.00	3,024.00	3,198.00	3,370.00
127.667	3,541.00	3,709.00	3,876.00	4,044.00	4,209.00
159.583	4,371.00	4,533.00	4,695.00	4,853.00	5,009.00
191.500	5,164.00	5,318.00	5,470.00	5,618.00	5,765.00
223.417	5,911.00	6,055.00	6,195.00	6,334.00	6,471.00
255.333	6,606.00	6,739.00	6,872.00	7,001.00	7,128.00
287.250	7,255.00	7,378.00	7,498.00	7,616.00	7,734.00
319.167	7,848.00	7,961.00	8,073.00	8,181.00	8,289.00
351.083	8,395.00	8,500.00	8,603.00	8,704.00	8,803.00
383.000	8,901.00	8,997.00	9,091.00	9,183.00	9,275.00
414.917	9,366.00	9,456.00	9,544.00	9,630.00	9,714.00
446.833	9,798.00	9,881.00	9,962.00	10,043.00	10,123.00
478.750	10,202.00	10,280.00	10,357.00	10,433.00	10,508.00
510.667	10,584.00	10,659.00	10,734.00	10,807.00	10,880.00
542.583	10,953.00	11,026.00	11,098.00	11,170.00	11,242.00
574.500	11,313.00	11,385.00	11,457.00	11,529.00	11,600.00
606.417	11,671.00	11,744.00	11,817.00	11,891.00	11,965.00
638.333	12,041.00	12,117.00	12,193.00	12,270.00	12,347.00
670.250	12,425.00	12,503.00	12,582.00	12,663.00	12,746.00
702.167	12,830.00	12,917.00	13,005.00	13,112.00	13,236.00
734.083	13,363.00	13,490.00	13,618.00	13,747.00	13,877.00
766.000	14,008.00	14,143.00	14,280.00	14,419.00	14,561.00
797.917	14,706.00	14,854.00	15,005.00	15,162.00	15,324.00
829.833	15,492.00	15,668.00	15,849.00	16,035.00	16,231.00
861.750	16,439.00	16,659.00	16,892.00	17,144.00	17,421.00
893.667	17,742.00	18,114.00	18,550.00	19,059.00	19,777.00
925.583	20,715.00	21,816.00	23,050.00	24,463.00	26,156.00
957.500	30,017.00	32,615.00	31,665.00	30,360.00	28,923.00
989.417	27,547.00	26,333.00	25,366.00	24,659.00	24,123.00
1,021.333	23,700.00	23,353.00	23,054.00	22,787.00	22,544.00
1,053.250	22,317.00	22,101.00	21,887.00	21,671.00	21,434.00
1,085.167	21,175.00	20,911.00	20,646.00	20,378.00	20,108.00
1,117.083	19,838.00	19,567.00	19,298.00	19,030.00	18,762.00
1,149.000	18,495.00	18,229.00	17,964.00	17,703.00	17,442.00
1,180.917	17,185.00	16,938.00	16,702.00	16,475.00	16,258.00
1,212.833	16,049.00	15,848.00	15,654.00	15,467.00	15,288.00
1,244.750	15,117.00	14,951.00	14,789.00	14,635.00	14,486.00
1,276.667	14,341.00	14,201.00	14,066.00	13,934.00	13,807.00

Orifice Calculations

Subsection: Time vs. Volume Scenario: Base
Label: RDF-1

Time vs. Volume (ft³)

Output Time increment = 6.390 min
Time on left represents time for first value in each row.

Time (min)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
1,308.583	13,684.00	13,565.00	13,449.00	13,337.00	13,229.00
1,340.500	13,121.00	13,017.00	12,917.00	12,820.00	12,726.00
1,372.417	12,633.00	12,543.00	12,455.00	12,369.00	12,285.00
1,404.333	12,202.00	12,123.00	12,046.00	11,970.00	11,897.00

Orifice Calculations

Subsection: Outlet Input Data Scenario: Base

Label: Composite Outlet Structure - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	0.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	8.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	5.00	8.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Orifice Calculations

Subsection: Outlet Input Data Scenario: Base

Label: Composite Outlet Structure - 1

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	5.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	6.383 min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
0.00	0.00	0.00	0.000	0.00	0.00	0.00
0.10	0.00	433.54	5.419	0.00	0.00	2.26
0.20	0.00	867.08	21.677	0.00	0.00	4.53
0.30	0.00	1,300.62	48.773	0.01	0.01	6.80
0.40	0.00	1,734.16	86.708	0.01	0.01	9.07
0.50	0.00	2,167.70	135.481	0.02	0.02	11.34
0.60	0.00	2,601.24	195.093	0.03	0.03	13.61
0.70	0.00	3,034.78	265.543	0.04	0.04	15.89
0.80	0.00	3,468.32	346.832	0.06	0.06	18.17
0.90	0.00	3,901.86	438.959	0.07	0.07	20.45
1.00	0.00	4,335.40	541.925	0.09	0.09	22.73
1.10	0.00	4,768.94	655.729	0.11	0.11	25.01
1.20	0.00	5,202.48	780.372	0.13	0.13	27.29
1.30	0.00	5,636.02	915.853	0.15	0.15	29.58
1.40	0.00	6,069.56	1,062.172	0.17	0.17	31.87
1.50	0.00	6,503.10	1,219.331	0.20	0.20	34.15
1.60	0.00	6,936.64	1,387.327	0.22	0.22	36.45
1.70	0.00	7,370.18	1,566.162	0.25	0.25	38.74
1.80	0.00	7,803.72	1,755.836	0.28	0.28	41.03
1.90	0.00	8,237.26	1,956.348	0.31	0.31	43.33
2.00	0.00	8,670.80	2,167.699	0.35	0.35	45.63
2.10	0.00	9,104.34	2,389.888	0.38	0.38	47.93
2.20	0.00	9,537.88	2,622.916	0.42	0.42	50.23
2.30	0.00	9,971.42	2,866.782	0.46	0.46	52.53
2.40	0.00	10,404.95	3,121.486	0.50	0.50	54.84
2.50	0.00	10,838.49	3,387.030	0.54	0.54	57.14
2.60	0.00	11,272.03	3,663.411	0.59	0.59	59.45
2.70	0.00	11,705.57	3,950.631	0.64	0.64	61.76

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base
Label: RDF-1

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
2.80	0.00	12,139.11	4,248.690	0.68	0.68	64.07
2.90	0.00	12,572.65	4,557.587	0.73	0.73	66.39
3.00	0.00	13,006.19	4,877.323	0.78	0.78	68.70
3.10	0.00	13,439.73	5,207.897	0.84	0.84	71.02
3.20	0.00	13,873.27	5,549.309	0.89	0.89	73.34
3.30	0.00	14,306.81	5,901.560	0.95	0.95	75.66
3.40	0.00	14,740.35	6,264.650	1.01	1.01	77.98
3.50	0.00	15,173.89	6,638.578	1.07	1.07	80.31
3.60	0.00	15,607.43	7,023.345	1.13	1.13	82.63
3.70	0.00	16,040.97	7,418.950	1.19	1.19	84.96
3.80	0.00	16,474.51	7,825.393	1.26	1.26	87.29
3.90	0.00	16,908.05	8,242.675	1.33	1.33	89.62
4.00	0.00	17,341.59	8,670.796	1.39	1.39	91.95
4.10	0.00	17,775.13	8,851.304	1.42	1.42	94.24
4.20	0.00	18,208.67	9,033.671	1.45	1.45	96.54
4.30	0.00	18,642.21	9,217.898	1.48	1.48	98.83
4.40	0.00	19,075.75	9,403.985	1.51	1.51	101.13
4.50	0.00	19,509.29	9,591.931	1.54	1.54	103.42
4.60	0.00	19,942.83	9,781.737	1.57	1.57	105.71
4.70	0.00	20,376.37	9,973.402	1.60	1.60	108.01
4.80	0.00	20,809.91	10,166.927	1.64	1.64	110.30
4.90	0.00	21,243.45	10,362.312	1.67	1.67	112.60
5.00	0.00	21,676.99	10,559.556	1.70	1.70	114.89
5.10	0.03	22,110.53	10,758.660	1.73	1.76	117.22
5.20	0.13	22,544.07	10,959.623	1.76	1.90	119.62
5.30	0.29	22,977.61	11,162.446	1.80	2.09	122.08
5.40	0.50	23,411.15	11,367.129	1.83	2.33	124.58
5.50	0.76	23,844.69	11,573.671	1.86	2.62	127.14
5.60	1.07	24,278.23	11,782.072	1.90	2.97	129.74
5.70	1.41	24,711.77	11,992.334	1.93	3.34	132.38
5.80	1.78	25,145.31	12,204.455	1.96	3.74	135.05
5.90	2.17	25,578.85	12,418.435	2.00	4.17	137.74
6.00	2.67	26,012.39	12,634.275	2.03	4.71	140.54
6.10	2.93	26,445.93	12,851.975	2.07	5.00	143.09
6.20	3.16	26,879.47	13,071.534	2.10	5.27	145.63
6.30	3.38	27,313.01	13,292.953	2.14	5.52	148.15
6.40	3.59	27,746.55	13,516.232	2.17	5.76	150.65
6.50	3.78	28,180.09	13,741.370	2.21	5.99	153.15
6.60	3.96	28,613.63	13,968.367	2.25	6.21	155.63
6.70	4.14	29,047.17	14,197.224	2.28	6.42	158.11
6.80	4.31	29,480.71	14,427.941	2.32	6.63	160.58
6.90	4.47	29,914.25	14,660.518	2.36	6.83	163.04
7.00	4.63	30,347.79	14,894.954	2.40	7.03	165.50

Orifice Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base

Label: RDF-1

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
7.10	4.78	30,781.32	15,131.249	2.43	7.22	167.95
7.20	4.93	31,214.86	15,369.405	2.47	7.40	170.40
7.30	5.07	31,648.40	15,609.419	2.51	7.58	172.85
7.40	5.21	32,081.94	15,851.294	2.55	7.76	175.29
7.50	5.35	32,515.48	16,095.028	2.59	7.94	177.73
7.60	5.48	32,949.02	16,340.621	2.63	8.11	180.16
7.70	5.61	33,382.56	16,588.074	2.67	8.28	182.60
7.80	5.73	33,816.10	16,837.387	2.71	8.44	185.03
7.90	5.86	34,249.64	17,088.560	2.75	8.61	187.45
8.00	5.98	34,683.18	17,341.591	2.79	8.77	189.88

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base
Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
0.00	0.0	0.00
0.10	5.4	0.00
0.20	21.7	0.00
0.30	48.8	0.01
0.40	86.7	0.01
0.50	135.5	0.02
0.60	195.1	0.03
0.70	265.5	0.04
0.80	346.8	0.06
0.90	439.0	0.07
1.00	541.9	0.09
1.10	655.7	0.11
1.20	780.4	0.13
1.30	915.9	0.15
1.40	1,062.2	0.17
1.50	1,219.3	0.20
1.60	1,387.3	0.22
1.70	1,566.2	0.25
1.80	1,755.8	0.28
1.90	1,956.3	0.31
2.00	2,167.7	0.35
2.10	2,389.9	0.38
2.20	2,622.9	0.42
2.30	2,866.8	0.46
2.40	3,121.5	0.50
2.50	3,387.0	0.54
2.60	3,663.4	0.59
2.70	3,950.6	0.64
2.80	4,248.7	0.68
2.90	4,557.6	0.73
3.00	4,877.3	0.78
3.10	5,207.9	0.84
3.20	5,549.3	0.89
3.30	5,901.6	0.95
3.40	6,264.6	1.01
3.50	6,638.6	1.07
3.60	7,023.3	1.13
3.70	7,418.9	1.19
3.80	7,825.4	1.26
3.90	8,242.7	1.33
4.00	8,670.8	1.39
4.10	8,851.3	1.42
4.20	9,033.7	1.45

Orifice Calculations

Subsection: Pond Infiltration Calculations Scenario: Base
Label: RDF-1 (IN)

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
4.30	9,217.9	1.48
4.40	9,404.0	1.51
4.50	9,591.9	1.54
4.60	9,781.7	1.57
4.70	9,973.4	1.60
4.80	10,166.9	1.64
4.90	10,362.3	1.67
5.00	10,559.6	1.70
5.10	10,758.7	1.73
5.20	10,959.6	1.76
5.30	11,162.4	1.80
5.40	11,367.1	1.83
5.50	11,573.7	1.86
5.60	11,782.1	1.90
5.70	11,992.3	1.93
5.80	12,204.5	1.96
5.90	12,418.4	2.00
6.00	12,634.3	2.03
6.10	12,852.0	2.07
6.20	13,071.5	2.10
6.30	13,293.0	2.14
6.40	13,516.2	2.17
6.50	13,741.4	2.21
6.60	13,968.4	2.25
6.70	14,197.2	2.28
6.80	14,427.9	2.32
6.90	14,660.5	2.36
7.00	14,895.0	2.40
7.10	15,131.2	2.43
7.20	15,369.4	2.47
7.30	15,609.4	2.51
7.40	15,851.3	2.55
7.50	16,095.0	2.59
7.60	16,340.6	2.63
7.70	16,588.1	2.67
7.80	16,837.4	2.71
7.90	17,088.6	2.75
8.00	17,341.6	2.79

Orifice Calculations

Subsection: Level Pool Pond Routing Summary　　Scenario: Base
Label: RDF-1 (IN)

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.9500 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	6.383 min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	22.33 ft³/s	Time to Peak (Flow, In)	957.500 min
Infiltration (Peak)	2.60 ft³/s	Time to Peak (Infiltration)	963.883 min
Flow (Peak Outlet)	5.38 ft³/s	Time to Peak (Flow, Outlet)	963.883 min

Elevation (Water Surface, Peak)	7.52 ft
Volume (Peak)	32,615.19 ft³

Mass Balance (ft³)	
Volume (Initial)	0.00 ft³
Volume (Total Inflow)	97,399.00 ft³
Volume (Total Infiltration)	70,190.00 ft³
Volume (Total Outlet Outflow)	15,558.00 ft³
Volume (Retained)	11,650.00 ft³
Volume (Unrouted)	0.00 ft³
Error (Mass Balance)	0.0 %

Orifice Calculations

Subsection: Pond Inflow Summary Scenario: Base
Label: RDF-1 (IN)

Summary for Hydrograph Addition at 'RDF-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA1

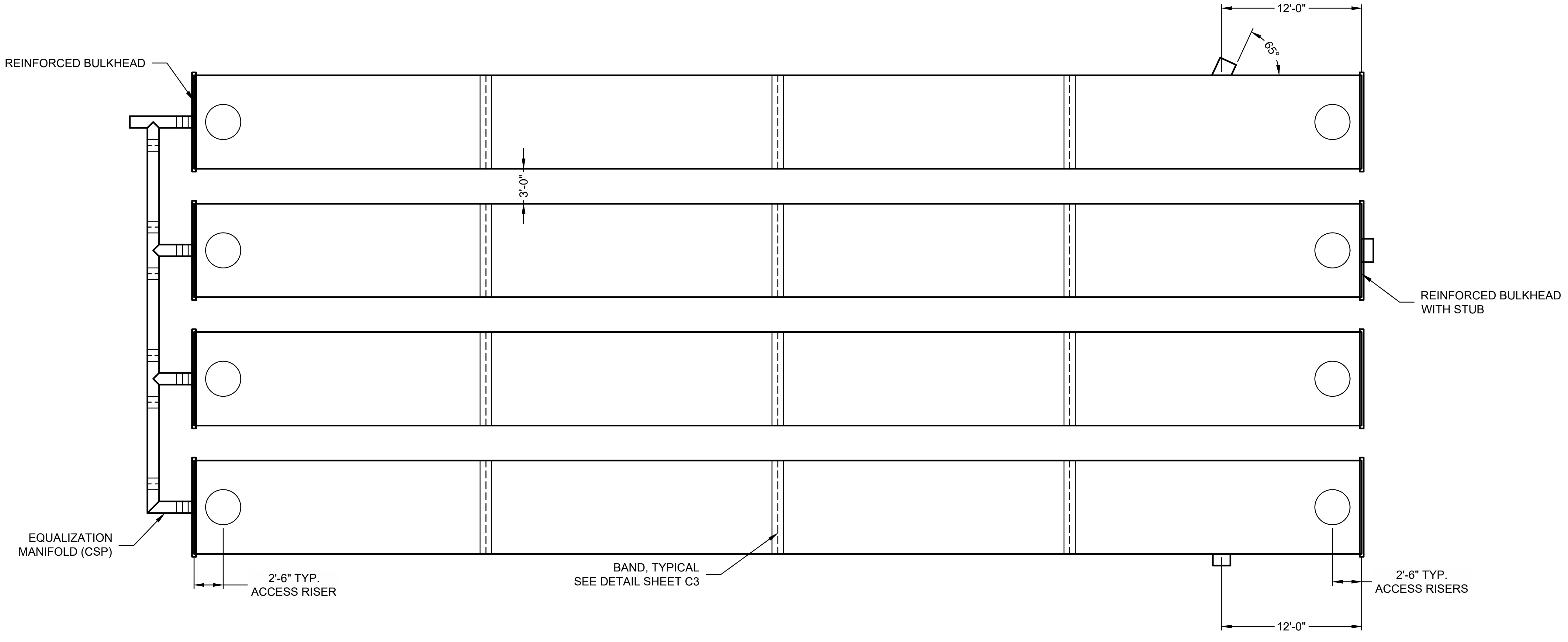
Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	DA1	97,578.83	957.500	22.33
Flow (In)	RDF-1	97,398.82	957.500	22.33

Orifice Calculations

Index

SAMPLE UNDERGROUND DETENTION SPECIFICITION



ASSEMBLY

SCALE: 1" = 10'

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (6) PAGES INCLUDING THE FOLLOWING:

- **MAINLINE PIPE GAGE = 18, 16, 14, 12, 10, 8**
- **WALL TYPE = SOLID OR PERF**
- **DIAMETER = 12 - 144"**
- **FINISH = ALT2, POLY, GALV, ALUM**
- **CORRUGATION = 2 2/3x1/2, 3x1, 5x1**

CUSTOMER ______________________ DATE ____________

NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD (EOR) PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.

C:\USERS\DHOPKINS\DESKTOP\000000-001-CMP SAMPLE SOLID - PERF.DWG 3/7/2019 5:49 PM

MARK	DATE	REVISION DESCRIPTION	BY

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

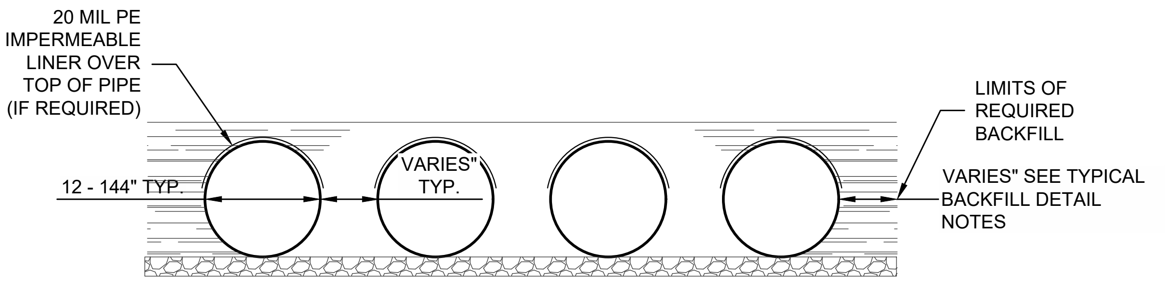
CONTECH®
CMP DETENTION SYSTEMS

CONTECH
CONTRACT
DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ----	SEQ. No.: ----	DATE: 1/10/2019
DESIGNED: XXX		DRAWN: DAH
CHECKED: XXX		APPROVED: XXX
SHEET NO.: C1 OF 6		

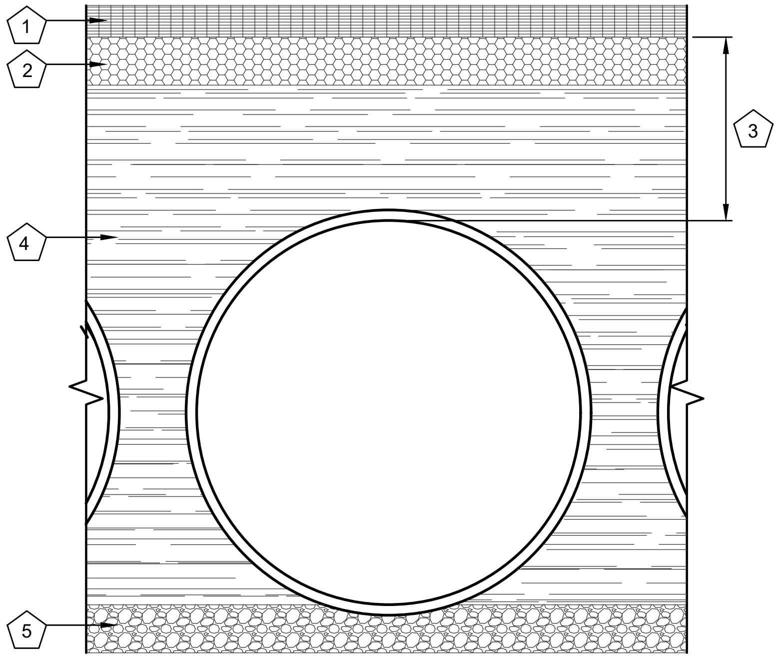
SAMPLE UNDERGROUND DETENTION SPECIFICITION



TYPICAL SECTION VIEW

NOT TO SCALE

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



KEY ⬠

1. RIGID OR FLEXIBLE PAVEMENT
2. GRANULAR ROAD BASE
3. 12" MIN. FOR DIAMETERS THROUGH 96"
   18" MIN. FOR DIAMETERS FROM 102"
   AND LARGER MEASURED TO TOP OF RIGID
   OR BOTTOM OF FLEXIBLE PAVEMENT.
4. SELECT GRANULAR FILL PER AASHTO M145
   A1, A2 OR A3, OR APPROVED EQUAL.
   PLACED IN 8" LIFTS (COMPACTED TO MIN.
   90% STANDARD DENSITY PER AASHTO T99.)
5. GRANULAR BEDDING, ROUGHLY SHAPED TO
   FIT THE BOTTOM OF PIPE, 4" TO 6" IN DEPTH

FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, 4" - 6" OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

BACKFILL

THE BACKFILL SHALL BE AN A1, A2 OR A3 GRANULAR FILL PER AASHTO M145, OR A WELL-GRADED GRANULAR FILL AS APPROVED BY THE SITE ENGINEER (SEE INSTALLATION GUIDELINES). THE MATERIAL SHALL BE PLACED IN 8" LOOSE LIFTS AND COMPACTED TO 90% AASHTO T99 STANDARD PROCTOR DENSITY. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.

BACKFILL DETAIL

NOT TO SCALE

C:\USERS\DHOPKINS\DESKTOP\000000-001-CMP SAMPLE SOLID - PERF.DWG 3/7/2019 5:49 PM

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH®
ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

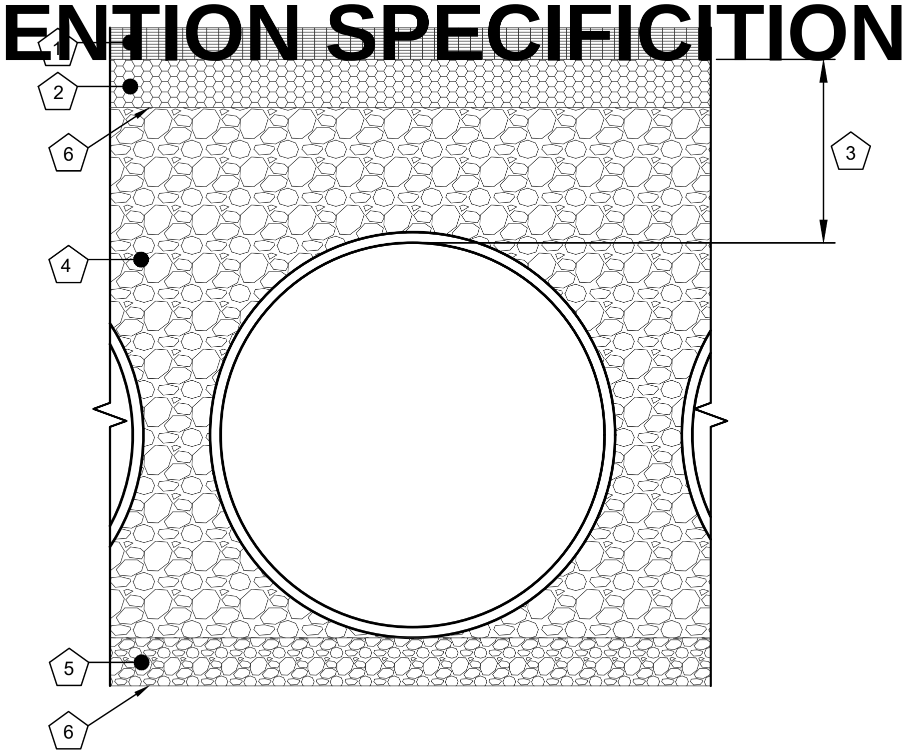
CONTECH®
CMP DETENTION SYSTEMS

CONTECH
CONTRACT
DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ----
SEQ. No.: ----
DATE: 1/10/2019
DESIGNED: XXX
DRAWN: DAH
CHECKED: XXX
APPROVED: XXX
SHEET NO.: C2 (2) OF 6

SAMPLE UNDERGROUND DETENTION SPECIFICITION



KEY

1.) RIGID OR FLEXIBLE PAVEMENT

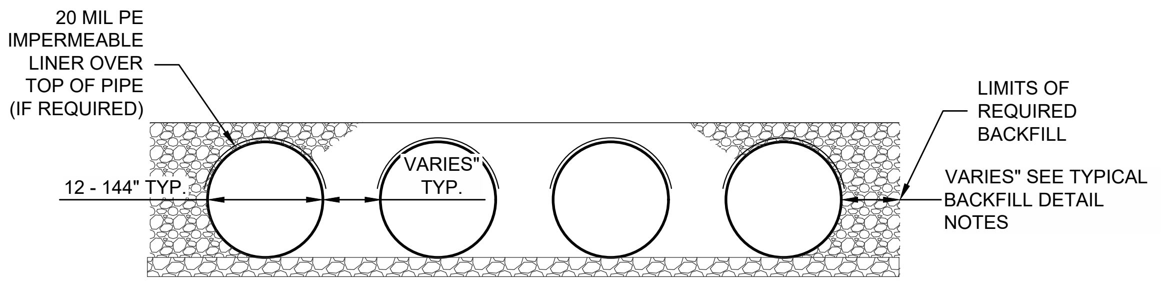
2.) GRANULAR ROAD BASE

3.) 12" MIN. FOR DIAMETERS THROUGH 96"
18" MIN. FOR DIAMETERS FROM 102" AND LARGER MEASURED TO TOP OF RIGID OR BOTTOM OF FLEXIBLE PAVEMENT.

4.) FREE DRAINING ANGULAR WASHED STONE 3/4" - 2" MIN. PARTICLE SIZE.

5.) GRANULAR BEDDING, ROUGHLY SHAPED TO FIT THE BOTTOM OF PIPE, 4"- 6" IN DEPTH.

6.) CONTECH C-40 OR C-45 NON-WOVEN GEOTEXTILE REQUIRED, WRAPPING TRENCH ONLY.



TYPICAL SECTION VIEW

NOT TO SCALE

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

BACKFILL

THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR HIS REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAINING BALANCED LOADING ON ALL PIPES IN THE SYSTEM, DURING ALL SUCH OPERATIONS.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

1 / C3 BACKFILL DETAIL

SCALE: N.T.S.

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

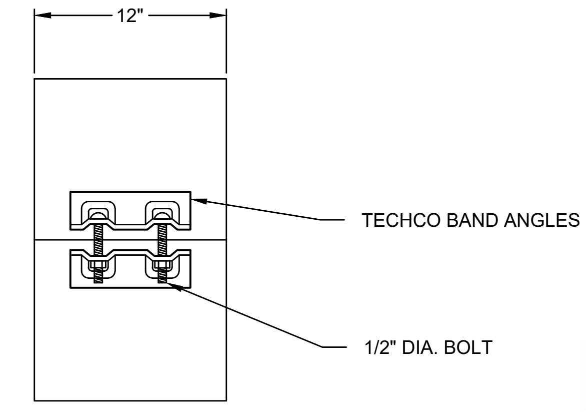
CONTECH CMP DETENTION SYSTEMS

CONTECH
CONTRACT
DRAWING

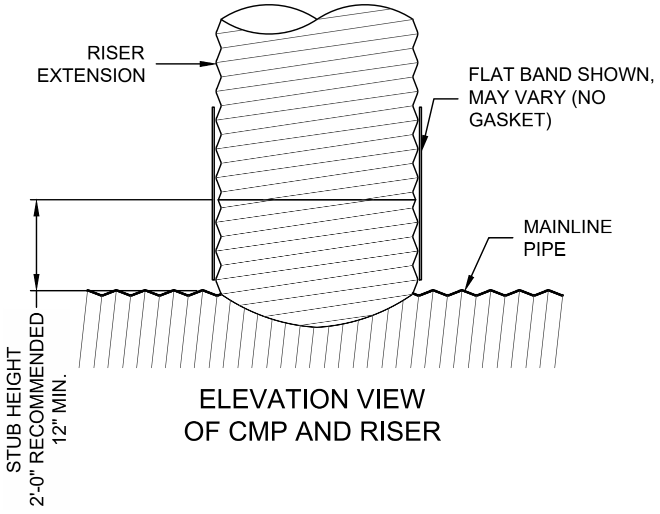
12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ----
SEQ. No.: ----
DATE: 1/10/2019
DESIGNED: XXX
DRAWN: DAH
CHECKED: XXX
APPROVED: XXX
SHEET NO.: C2 OF 6

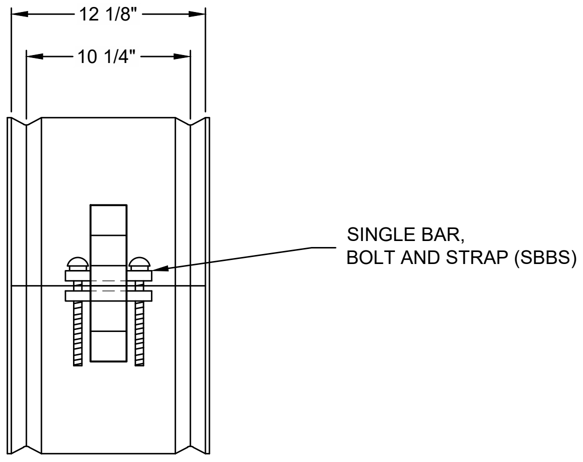
SAMPLE UNDERGROUND DETENTION SPECIFICITION



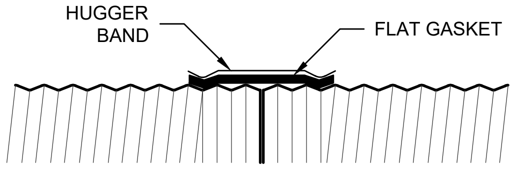
CONNECTION DETAIL
7 1/2" TECHCO SHOWN - MAY VARY



ELEVATION VIEW
OF CMP AND RISER



CONNECTION DETAIL
(SBBS)



FLAT GASKET

PLAIN END CMP RISER PIPE

GENERAL NOTES:

1. **DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.**
2. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
3. BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
4. IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
5. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" 2-PIECES
6. ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
7. MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
8. DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

12" RISER BAND DETAIL

NOT TO SCALE

2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" THRU 96" 2-PIECES
   - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

H-12 HUGGER BAND DETAIL

NOT TO SCALE

C:\USERS\DHOPKINS\DESKTOP\000000-001-CMP SAMPLE SOLID - PERF.DWG 3/7/2019 5:49 PM

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH®
ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

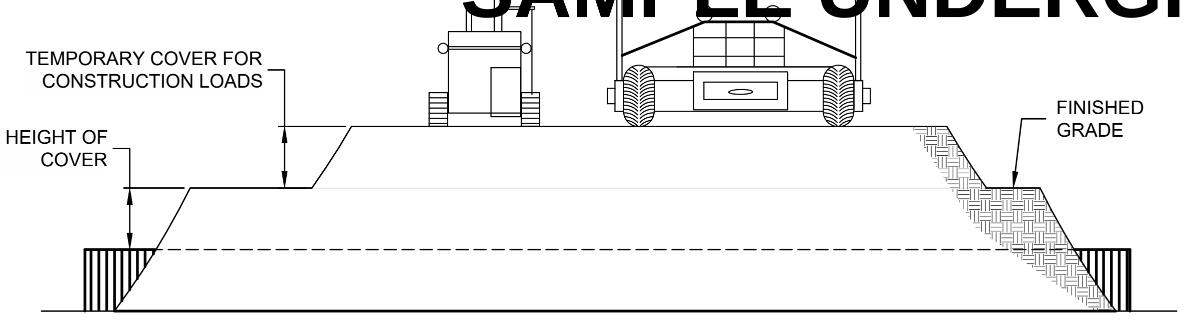
CONTECH®
CMP DETENTION SYSTEMS

CONTECH
CONTRACT
DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ----
SEQ. No.: ----
DATE: 1/10/2019
DESIGNED: XXX
DRAWN: DAH
CHECKED: XXX
APPROVED: XXX
SHEET NO.: C3 OF 6

SAMPLE UNDERGROUND DETENTION SPECIFICITION



CONSTRUCTION LOADS

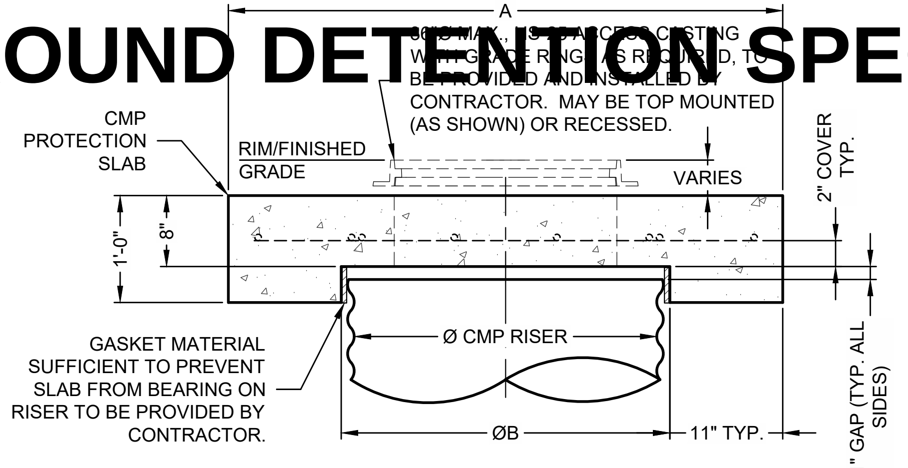
FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

NOT TO SCALE



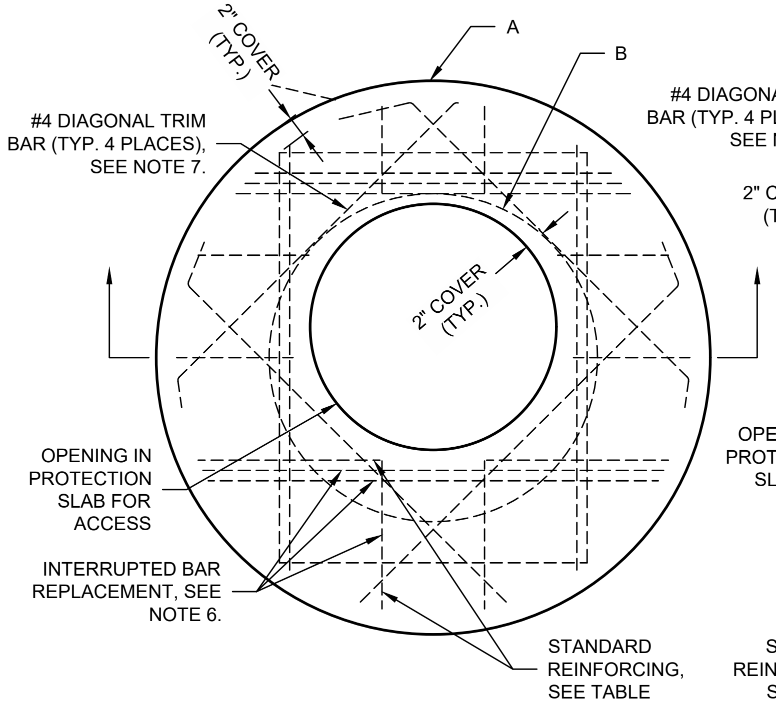
SECTION VIEW

REINFORCING TABLE

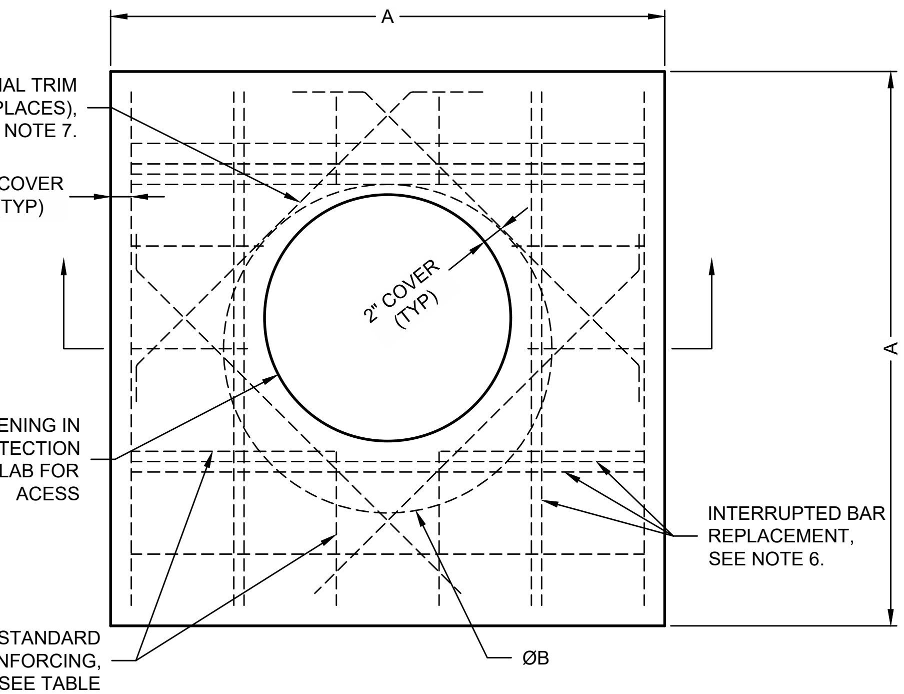
Ø CMP RISER	A	B Ø	REINFORCING	**BEARING PRESSURE (PSF)
24"	4'Ø 4'x4'	26"	#5 @ 10" OCEW #5 @ 10" OCEW	2,540 1,900
30"	4'-6"Ø 4'-6" x 4'-6"	32"	#5 @ 10" OCEW #5 @ 9" OCEW	2,260 1,670
36"	5'Ø 5' x 5'	38"	#5 @ 9" OCEW #5 @ 8" OCEW	2,060 1,500
42"	5'-6"Ø 5'-6" x 5'-6"	44"	#5 @ 8" OCEW #5 @ 8" OCEW	1,490 1,370
48"	6'Ø 6' x 6'	50"	#5 @ 7" OCEW #5 @ 7" OCEW	1,210 1,270

** ASSUMED SOIL BEARING CAPACITY

ACCESS CASTING NOT SUPPLIED BY CONTECH



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 4,000 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, ENDWELL, NY.

MANHOLE CAP DETAIL

NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA)

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

MATERIAL SPECIFICATION

NOT TO SCALE

C:\USERS\DHOPKINS\DESKTOP\000000-001-CMP SAMPLE SOLID - PERF.DWG 3/7/2019 5:49 PM

MARK	DATE	REVISION DESCRIPTION	BY

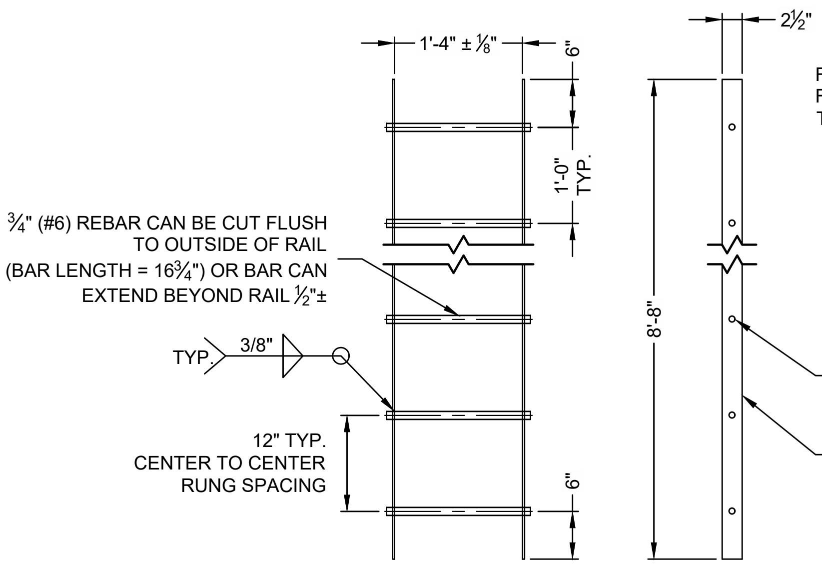
CONTECH®
ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH®
CMP DETENTION SYSTEMS
CONTECH
CONTRACT
DRAWING

12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.:	SEQ. No.:	DATE:
----	----	1/10/2019
DESIGNED: XXX		DRAWN: DAH
CHECKED: XXX		APPROVED: XXX
SHEET NO.: C4 OF 6		

SAMPLE UNDERGROUND DETENTION SPECIFICITION



ELEVATION SIDE

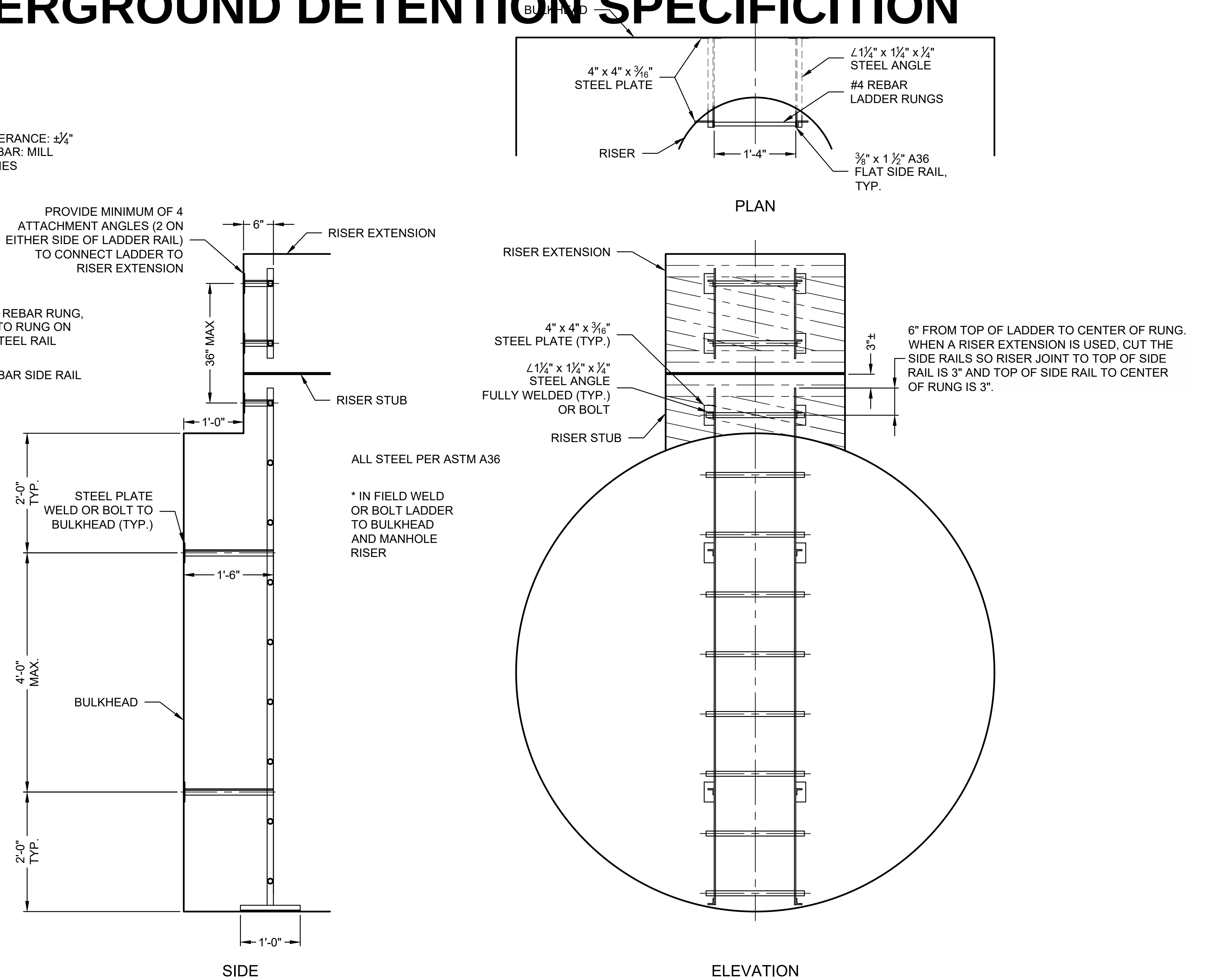
NOTES:

1. LADDERS CAN BE MADE IN STANDARD LENGTHS AND CUT TO FIT
2. ALL MATERIAL TO MEET ASTM A36
3. LADDER TO BE HOT DIPPED GALVANIZED PER ASTM A-123 AFTER FABRICATION IS COMPLETE

STANDARD LADDER DETAIL

NOT TO SCALE

PART No. HALAGVL16



SIDE ELEVATION

RISER LADDER DETAIL

NOT TO SCALE

NOTE:

THIS DRAWING IS INTENDED TO APPLY TO LADDERS INSTALLED IN RISERS HAVING A DIAMETER OF 36" OR LARGER AND LOCATED ONE FOOT FROM THE BULKHEAD ONLY

C:\USERS\DHOPKINS\DESKTOP\000000-001-CMP SAMPLE SOLID - PERF DWG 3/7/2019 5:49 PM

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH®
ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

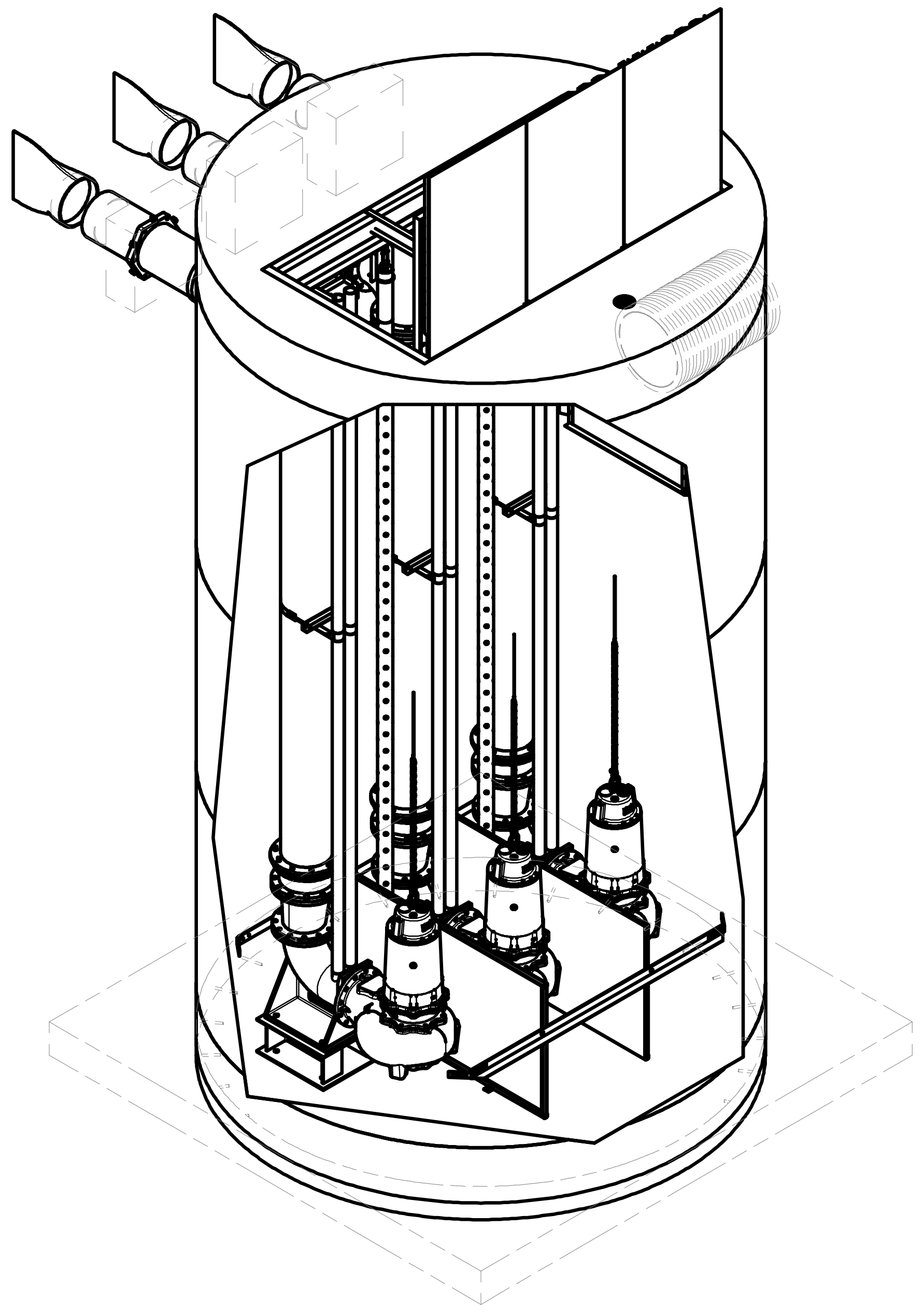
CONTECH®
CMP DETENTION SYSTEMS

CONTECH
CONTRACT
DRAWING

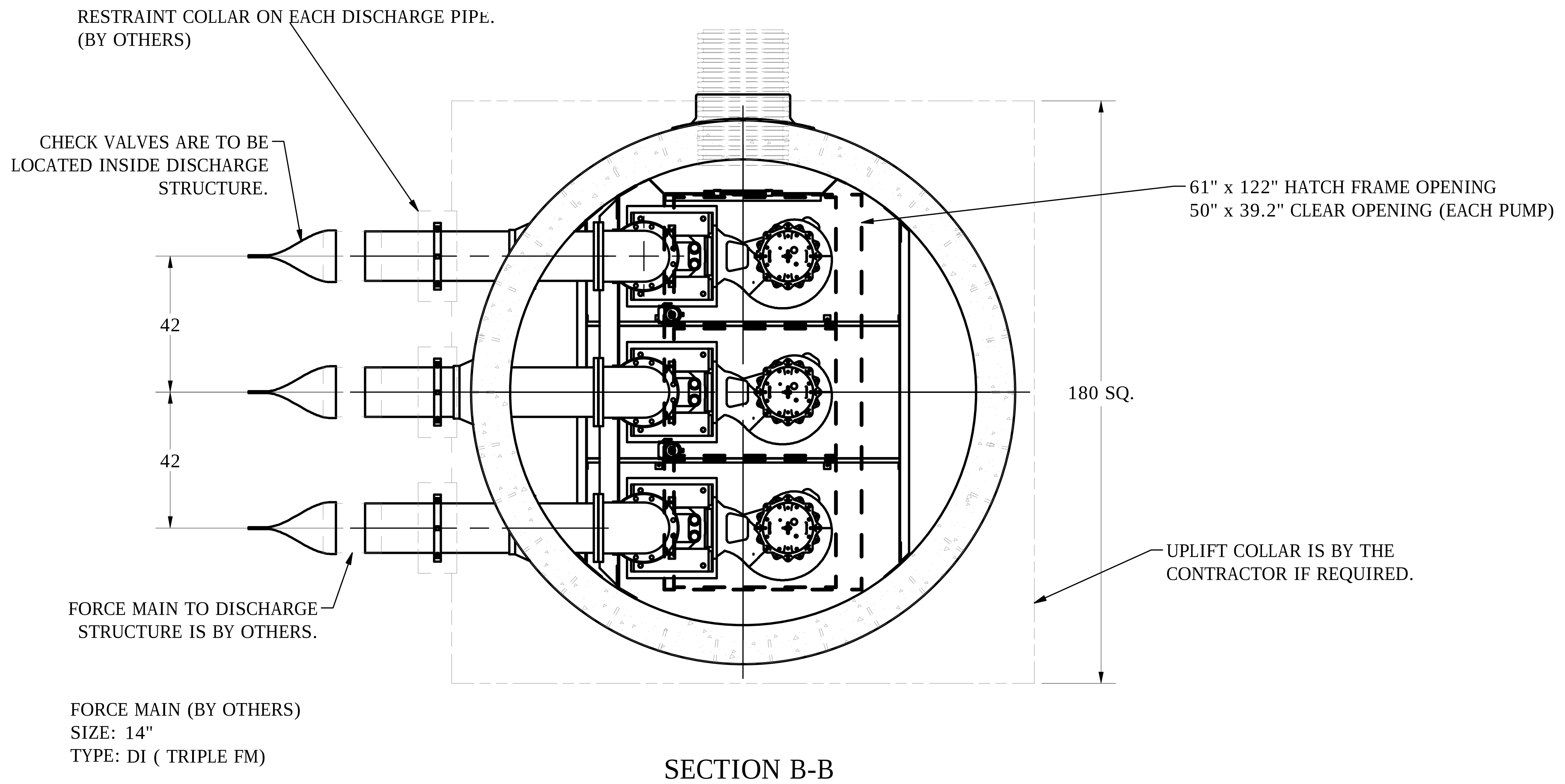
12 - 144"Ø SOLID OR PERFORATED UNDERGROUND SYSTEM - ---------
SAMPLE PROJECT
ANYTOWN, USA
SITE DESIGNATION: SAMPLE TANK

PROJECT No.: ----
SEQ. No.: ----
DATE: 1/10/2019
DESIGNED: XXX
DRAWN: DAH
CHECKED: XXX
APPROVED: XXX
SHEET NO.: C5 OF 6

SAMPLE PUMP SPECIFICATIONS



12'DIAMETER WET WELL
14"DISCHARGE PIPING
TRIPLEX KEEN PUMPS
14" TIDEFLEX CHECK VALVES



SECTION B-B
SCALE 1 / 36

PUMP PACKAGE

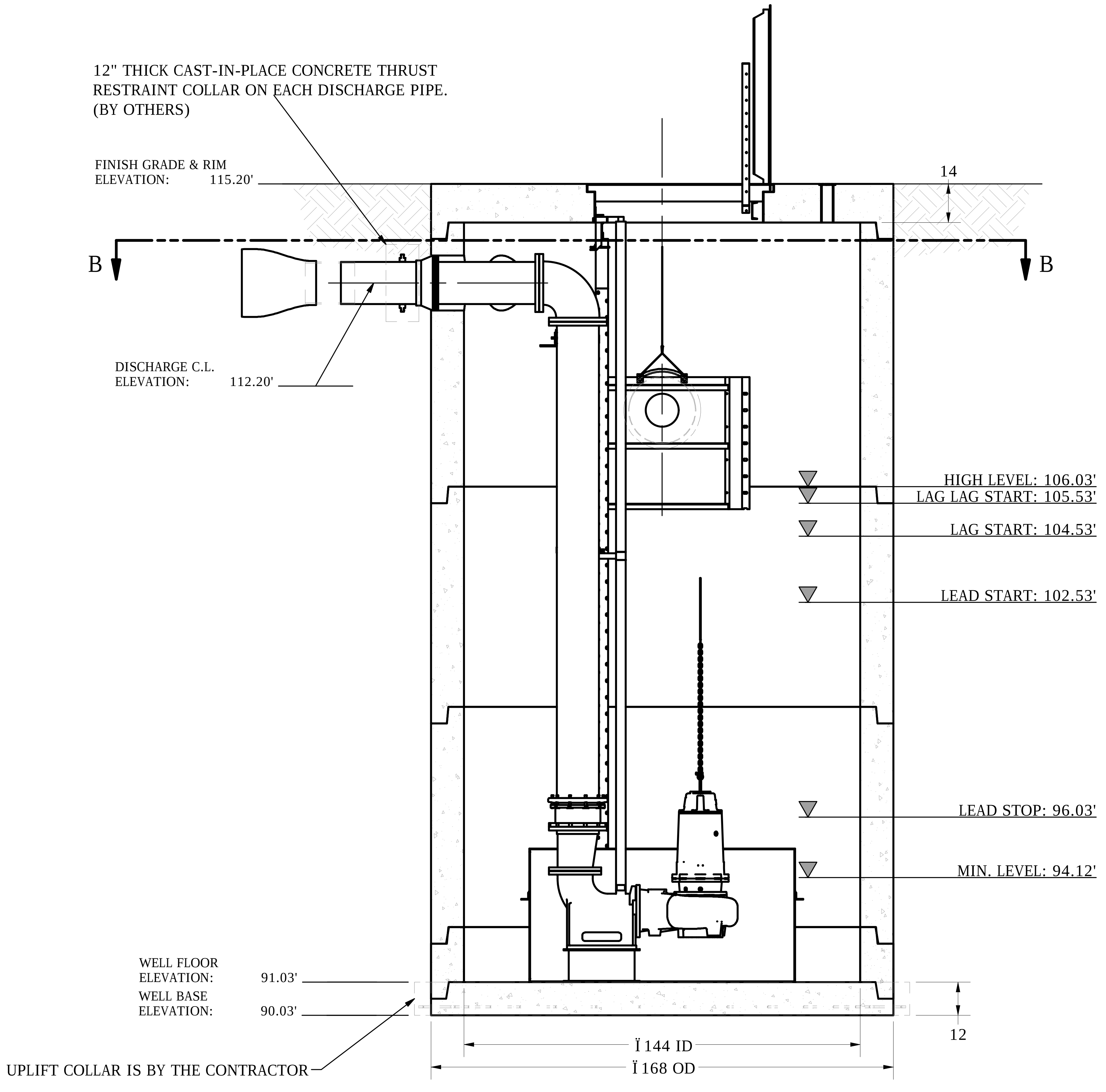
CONFIGURATION: TRIPLEX
MODEL: KEEN K12VK
HP: 25
DUTY POINT: 3639 GPM AT 20.3ft TDH

FEATURES

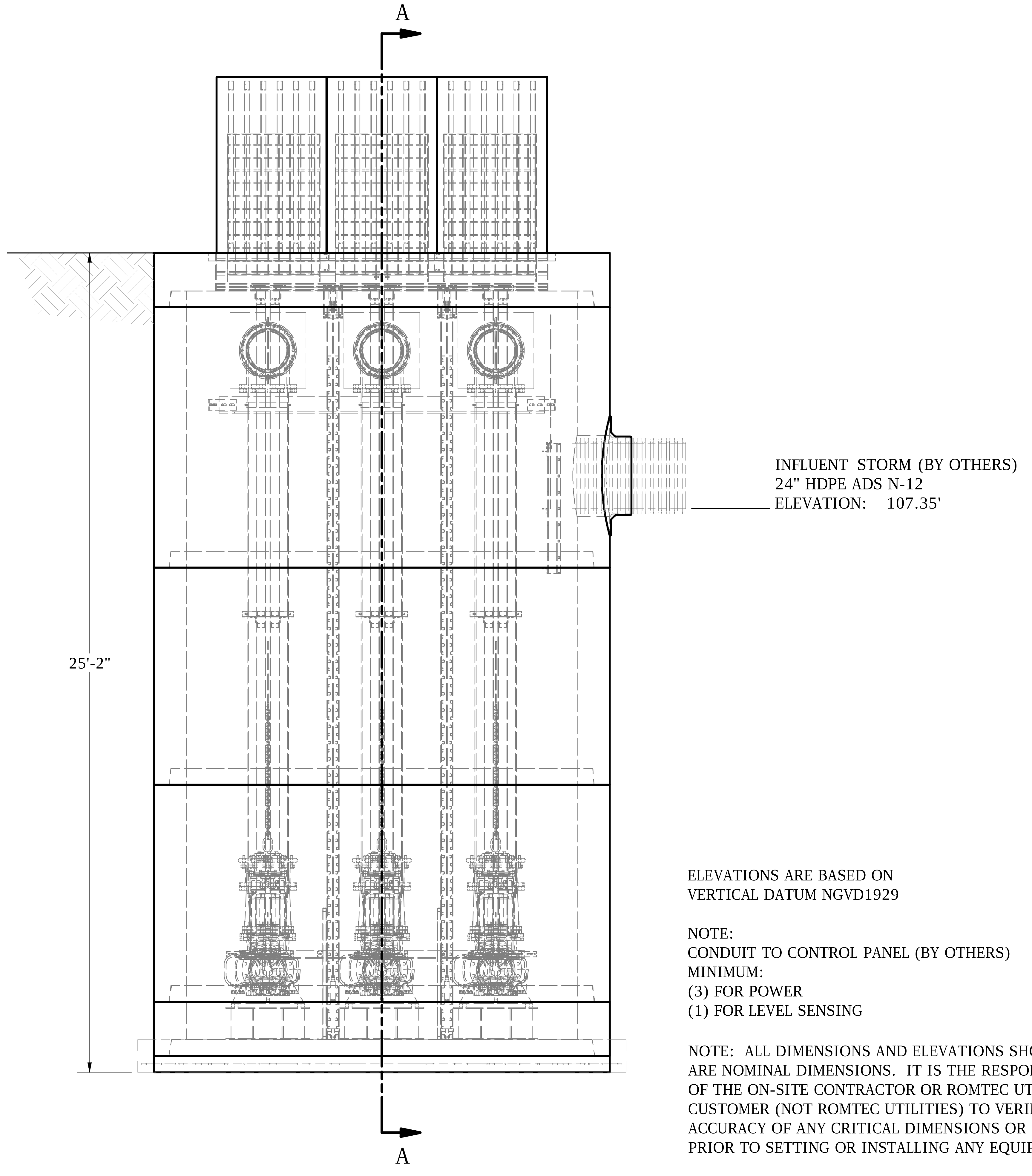
H20 HATCH
DUCTILE IRON PIPING, 14"
TIDE FLEX CHECK VALVES, 14"
(2) PRESSURE TRANSDUCER, LEVEL CONTROL
STAINLESS INLET DIFFUSER PANEL
STAINLESS GUIDE RAILS
QUICK CONNECT DISCHARGE ELBOWS
STAINLESS PUMP DIVIDER BAFFLES

NOTE: TOP SLAB AND HATCH ARE H-20 LOW-SPEED* TRAFFIC RATED

*LOW SPEED TRAFFIC: 15 MPH AND LOWER



SECTION A-A
SCALE 1 / 36



ALL MATERIALS SHOWN ON THIS SHEET WILL BE SUPPLIED BY ROMTEC UTILITIES AND DELIVERED TO THE SITE AFTER THE HOLE HAS BEEN EXCAVATED AND SHORED. THE CONTRACTOR SHALL SUPPLY A CRANE OF SUFFICIENT SIZE TO LOWER ALL THE CONCRETE PIECES INTO THE HOLE SAFELY. THE CONTRACTOR SHALL INSTALL THE WET WELL (AND VALVE VAULT AND METERING VAULT IF APPLICABLE). ROMTEC UTILITIES WILL PROVIDE A REPRESENTATIVE FOR TECHNICAL ASSISTANCE ON THE DAY OF INSTALLATION TO ANSWER ANY QUESTIONS THAT MAY ARISE. THE CONTRACTOR IS RESPONSIBLE FOR ALL PLUMBING AND ELECTRICAL CONNECTIONS AND INSTALLATION. ITEMS NOTED AS "BY OTHERS" WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. ROMTEC UTILITIES WILL NOT INSTALL ANY OF THE COMPONENTS SHOWN ON THIS PAGE.

ROMTEC UTILITIES

ELEVATIONS ARE BASED ON VERTICAL DATUM NGVD1929

NOTE:
CONDUIT TO CONTROL PANEL (BY OTHERS)
MINIMUM:
(3) FOR POWER
(1) FOR LEVEL SENSING

NOTE: ALL DIMENSIONS AND ELEVATIONS SHOWN ARE NOMINAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE ON-SITE CONTRACTOR OR ROMTEC UTILITIES CUSTOMER (NOT ROMTEC UTILITIES) TO VERIFY THE ACCURACY OF ANY CRITICAL DIMENSIONS OR ELEVATIONS PRIOR TO SETTING OR INSTALLING ANY EQUIPMENT.

REV	DATE	DESCRIPTION	BY
2	11/10/2021	ADDED VERTICAL DATUM NOTE	KB
1	3-19-21	BASIC DESIGN REVIEW	KB

REVISION HISTORY

VERIFY SCALE
DRAWING HAS BEEN FORMATTED FOR 34 x 22 SHEET. BAR EQUALS ONE INCH
0 —— 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

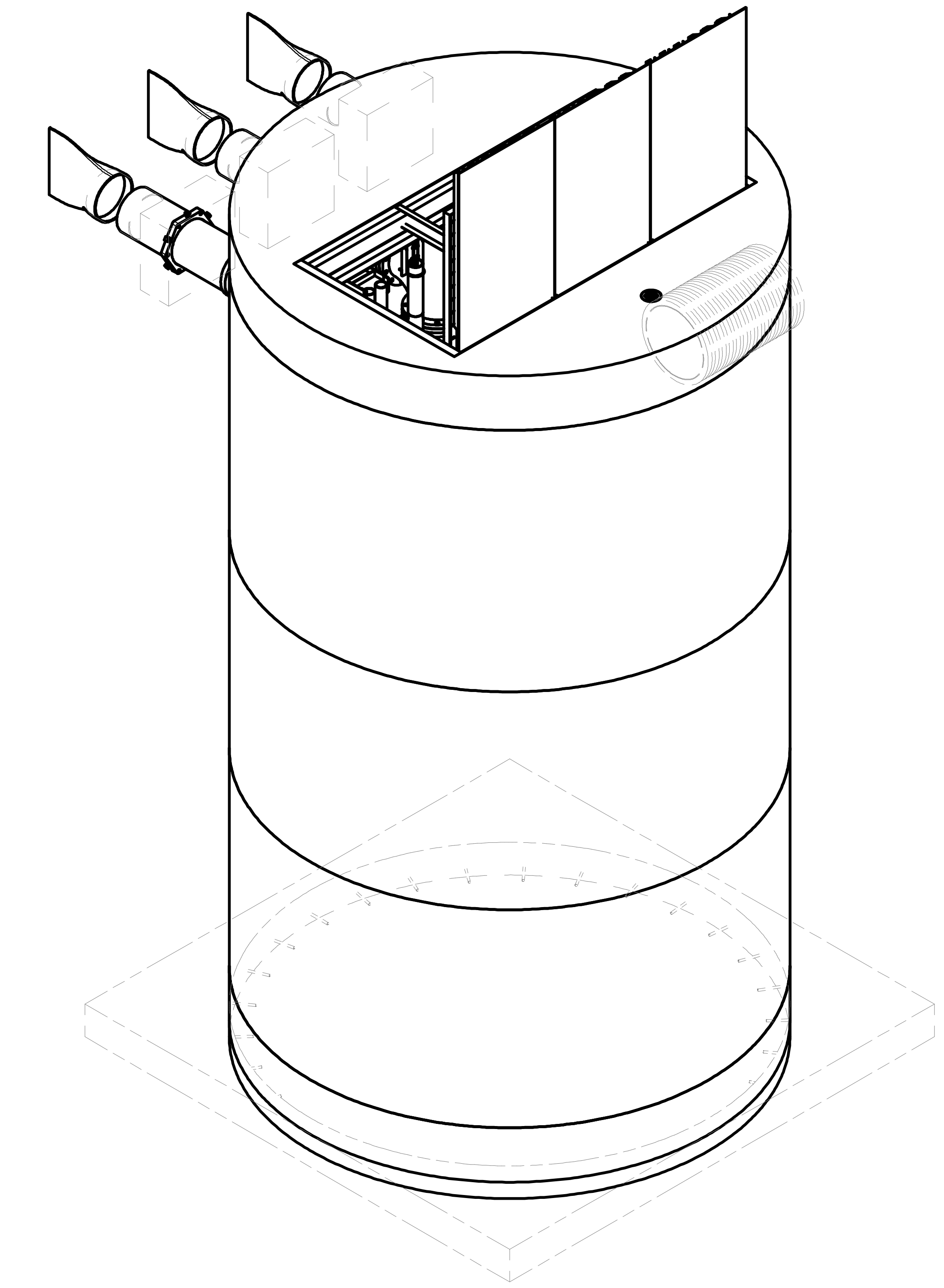
DSN: KB
DRN: KB & AD
CKD: KB
DATE: 10-29-20

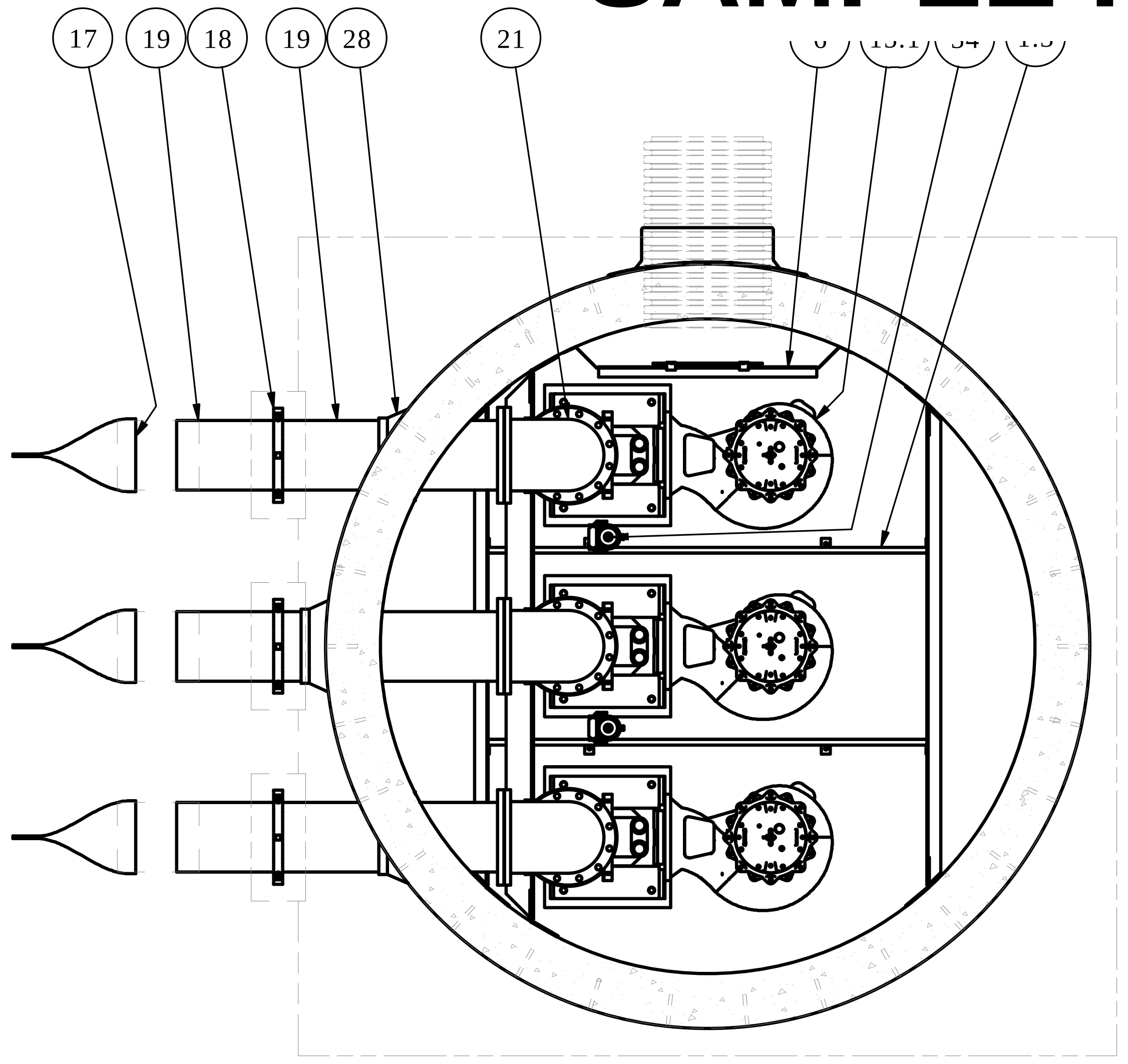
ROMTEC UTILITIES
18240 NORTH BANK ROAD
ROSEBURG, OREGON 97470
PHONE: (541) 496-9678
WWW.ROMTECUTILITIES.COM

HAMPTON PARK
CAPITOL HEIGHTS, MD
STORMWATER PUMP STATION
BASIC DESIGN DRAWING

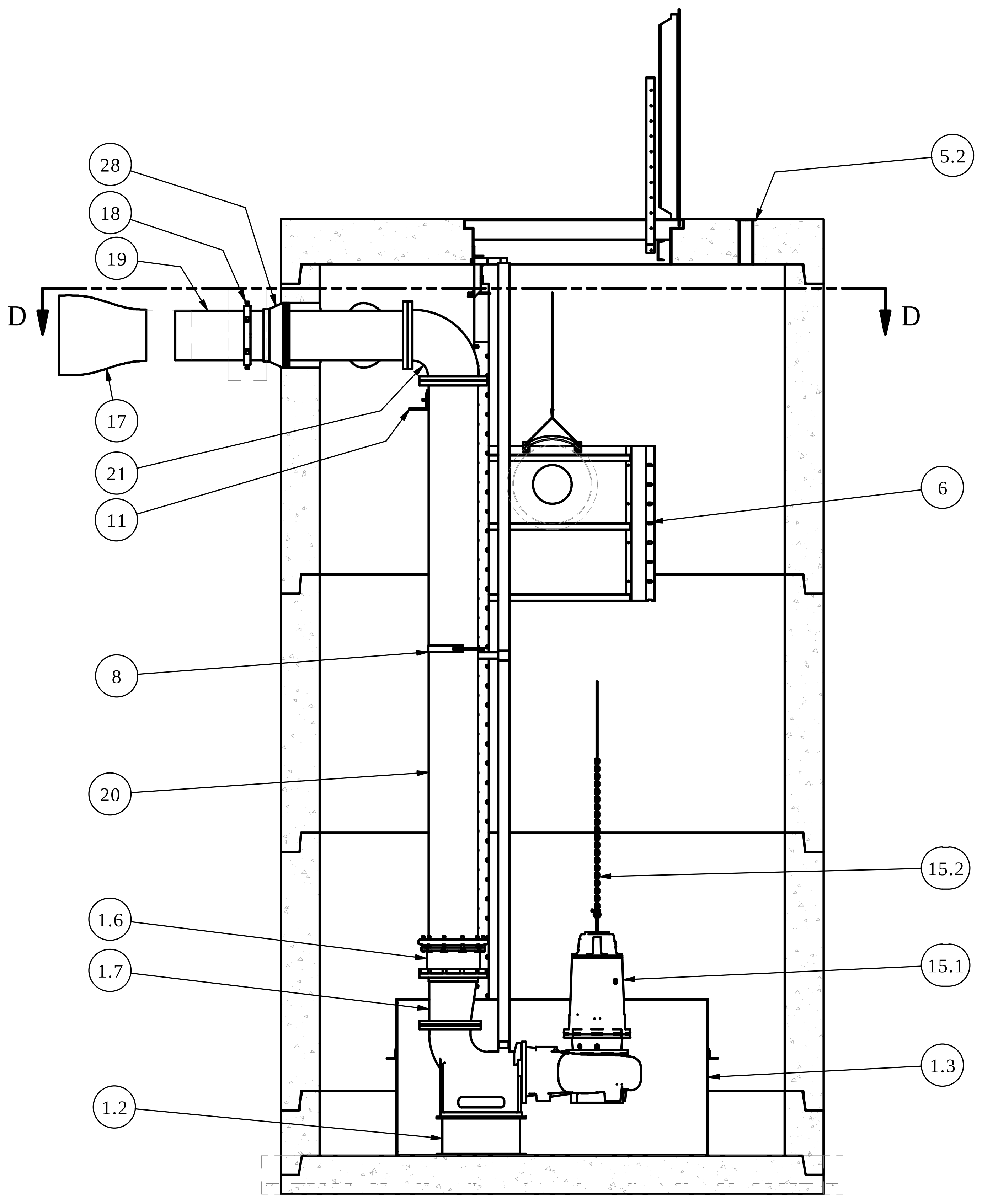
MECHANICAL SHEET
1 OF 3

SAMPLE PUMP SPECIFICATIONS

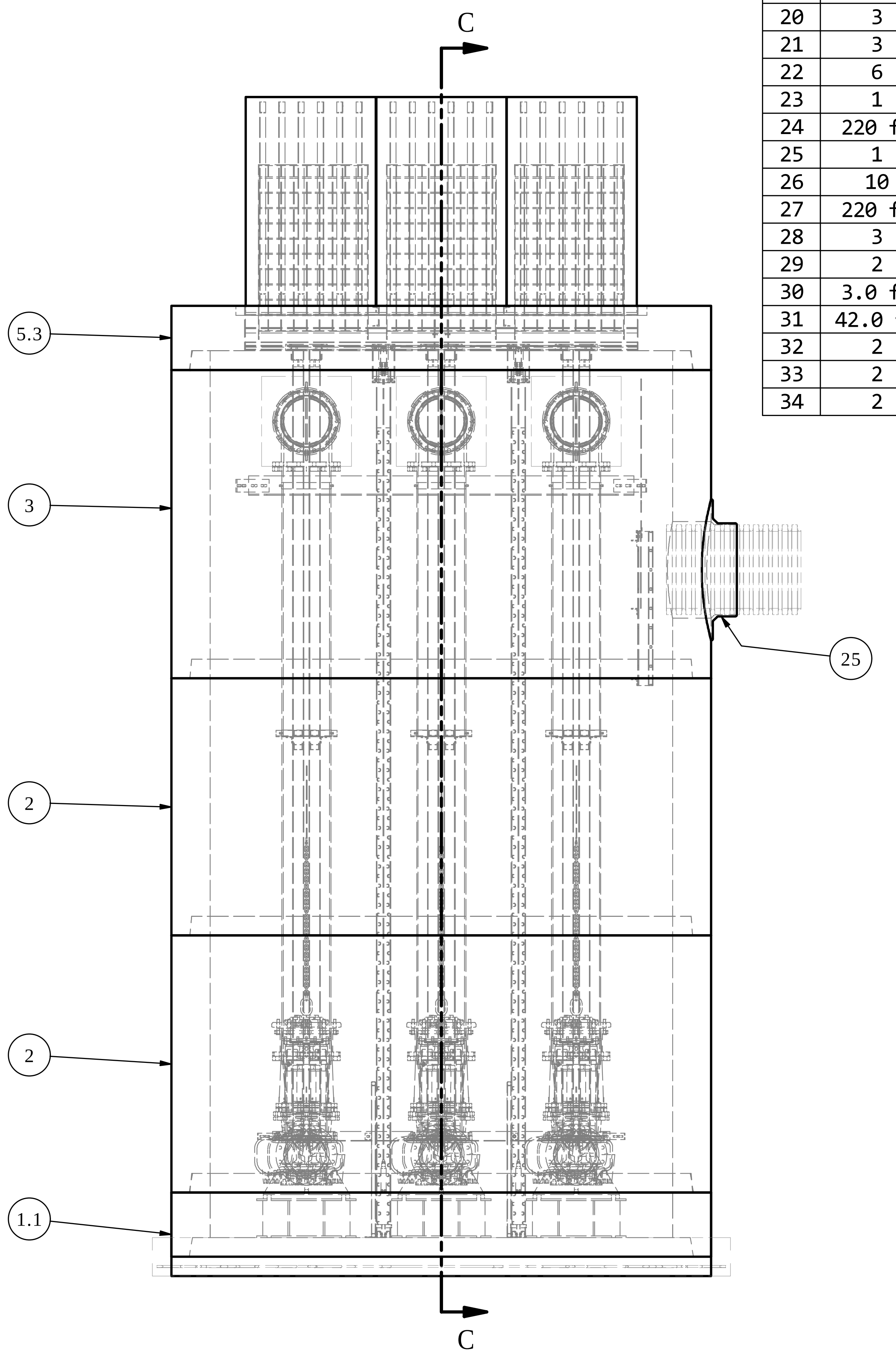




SECTION D-D
SCALE 1 / 36



SECTION C-C
SCALE 1 / 36



PARTS LIST			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	1	10-CB000000	BASE SLAB ASSEMBLY
1.1	1	10-CB122400	BASE - WW - 12ft DIA x 24in
1.2	3	31-99999999	PUMP PEDESTAL - STEEL
1.3	1	31-99999999	DIVIDER WALL ASSEMBLY - 304SS
1.4	3	31-EL1200KE	DISCHARGE ELBOW - 12in - KEEN
1.5	3	31-HW00AKS6	ANCHOR KIT - 316SS - DISCHARGE ELBOW
1.6	3	44-AD14RMD0	RFCA - 14in - ROMAC - FBEC w SS HARDWARE
1.7	3	48-RD1412DE	REDUCER - DI - 14in x 12in - ECCENTRIC
1.8	3	49-GS120000	GASKET - FLANGE - 12in
2	2	12-CR1272CP	BARREL - 12ft DIA x 6ft H
3	1	12-CR1296CP	BARREL - 12ft DIA x 8ft H
4	1	13-KY000000	HATCH KEY
5	1	14-CT000000	TOP SLAB ASSEMBLY
5.1	1	13-HH999999	HATCH - H20 - TRIPLEX
5.2	1	13-VT0400CS	VENT - STEEL - TRAFFIC AREAS
5.3	1	14-CT12HDD0	TOP SLAB - 12ft DIA - H20 - DUPLEX
6	1	15-DP100000	DEFLECTOR PANEL ASSEMBLY - 10ft
7	3	17-AC38000B	BOLT KIT - UPPER GUIDE BAR BRACKET
8	3	17-IG03S6KE	BRACKET - 304SS - INTERMEDIATE GUIDE - 3in
9	3	17-UG0300KN	BRACKET - 304SS - UPPER GUIDE - 3in
10	4	18-AC00CH00	CABLE HANGER ASSEMBLY - 316SS
11	1	18-BR000000	BRACKET ASSEMBLY - 316SS - DISCHARGE SUPPORT
12	2	18-BR04SWLO	STILLING WELL - LOWER SUPPORT - 4in
13	2	18-BR04SWUP	STILLING WELL - UPPER SUPPORT - 4in
14	4	18-HD080000	LIFTING CLUTCH - 8 TON
15	1	30-PU000000	PUMP SHIPPING CRATE
15.1	3	30-PU0000KE	PUMP - KEEN K12VK - 25HP
15.2	3	32-AC0000EB	LIFTING SLING ASSEMBLY - 316SS CHAIN
15.3	3	32-CGSS000E	CABLE SUPPORT GRIP - 304SS - 1in-1.24in
15.4	1	32-PLGE0000	GRIP EYE UNIT
16	120.0 ft	40-PP0300S4	PIPE - 304SS SCH40 - 3in DIA
17	3	42-TF140000	CHECK VALVE - TIDEFLEX - 14in
18	3	44-RG140STR	RETAINER GLAND - 14in
19	3	45-FP140720	SPOOL - DI - 14in DIA x 72in - FLGxPE
20	3	45-FP141860	SPOOL - DI - 14in DIA x 186in - FLGxPE
21	3	46-EL1490DI	ELBOW - DI - 14in x 90deg - FLG x FLG
22	6	49-GS140000	GASKET - FLANGE - 14in
23	1	51-AC00NSTB	NEVER SIEZE - TUBE
24	220 ft	51-JWCS2120	JOINT WRAP - 12in - CONSEAL CS-212
25	1	51-SECS1800	SEALANT - BUCKET - CONSEAL CS-1800
26	10	51-SECS190T	SEALANT - CONSEAL CS-1900 - 30oz TUBE
27	220 ft	51-SECS231L	SEALANT - 2in x 1in - CONSEAL CS-231
28	3	59-KB201400	KOR-N-SEAL - 20in CORE x 14in PIPE
29	2	62-CG00PT00	CORD GRIP - PRESSURE TRANSDUCER - WEDGE CLAMP
30	3.0 ft	70-PP0400P4	PIPE - PVC SCH40 - 4in DIA
31	42.0 ft	70-SW0400P4	STILLING WELL - 4in PVC PIPE - PERFORATED
32	2	80-ACBELLOW	ANEROID BELLOWS
33	2	80-FI00PT00	DESSICANT FILTER - PRESSURE TRANSDUCER
34	2	80-PT1500EH	PRESSURE TRANSDUCER - 0-15PSI - 60ft CABLE

ELEVATIONS ARE BASED ON
VERTICAL DATUM NGVD1929

REV	DATE	DESCRIPTION	BY
2	11/10/2021	ADDED VERTICAL DATUM NOTE	KB
1	3-19-21	BASIC DESIGN REVIEW	KB

REVISION HISTORY

VERIFY SCALE
DRAWING HAS BEEN
FORMATTED FOR
34 x 22 SHEET.
BAR EQUALS ONE INCH
0 —— 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

DSN: KB
DRN: KB
CKD:
DATE: 6-16-21

ROMTEC UTILITIES
18240 NORTH BANK ROAD
ROSEBURG, OREGON 97470
PHONE: (541) 496-9678
WWW.ROMTECUTILITIES.COM

HAMPTON PARK
CAPITOL HEIGHTS, MD
STORMWATER PUMP STATION
COMPONENT DRAWING

MECHANICAL SHEET
2 OF 3

ACCEPTED PUMP PERFORMANCE STANDARDS

A. ROMTEC UTILITIES PUMP EQUIPMENT FOR THIS SYSTEM TO MEET THE PROVIDED DESIGN CRITERIA. THE PUMP PERFORMANCE CURVE(S) SHOW THE PUMP ACHIEVING A PUMPING RATE IN GALLONS PER MINUTE (GPM) AT A SPECIFIC TOTAL DYNAMIC HEAD (TDH). THIS INDUSTRY STANDARDS FOR MEETING THIS TARGET POINT ARE AS FOLLOWS:

B. THE HYDRAULIC INSTITUTE SPECIFIES A LEVEL A AND A LEVEL B ACCEPTANCE. LEVEL A ALLOWS +10% FLOW AT THE RATED TDH, OR A +8% TDH AT THE RATED FLOW, WITH NO NEGATIVE TOLERANCE. LEVEL B ALLOWS +/-5% FLOW AT THE RATED TDH, OR +5%/-3% OF RATED TDH AT THE RATED FLOW.

C. THE PUMPS SHOULD PERFORM WITHIN THIS RANGE AS LONG AS THE TDH PROVIDED BY THE CUSTOMER IN THE GIVEN DESIGN CRITERIA IS TRUE AND CORRECT. WHEN ROMTEC UTILITIES CALCULATES THE TDH USING CUSTOMER SUPPLIED DOCUMENTS (E.G., FORCE MAIN PROFILES), AND THE ACTUAL FIELD CONDITIONS DIFFER FROM THE PROVIDED PLANS, ROMTEC UTILITIES CANNOT BE HELD RESPONSIBLE FOR PUMP PERFORMANCE ISSUES TIED TO CHANGES IN THE CALCULATED TO ACTUAL TDH.

NOT ALL ELECTRICAL COMPONENTS ARE SUBMERGENCE RATED

A. FLOW METERS, LIMIT SWITCHES, AND INTRUSION SWITCHES ARE EXAMPLES OF ELECTRICAL COMPONENTS THAT MAY NOT BE SUBMERGENCE RATED. THESE COMPONENTS WILL BE HOUSED IN A STRUCTURE THAT IS NOT INTENDED TO FILL WITH WATER AND HAS A MEANS FOR WATER EGRESS, SUCH AS A VAULT WITH A DRAINBACK PIPE.

B. WATER DAMAGE TO NON-SUBMERGENCE RATED ELECTRICAL COMPONENTS IS NOT COVERED UNDER THE ROMTEC UTILITIES WARRANTY. ROMTEC UTILITIES CAN ASSIST WITH THE REPLACEMENT OF DAMAGED COMPONENT(S), BUT ROMTEC UTILITIES IS NOT RESPONSIBLE FOR THE COST OF THE REPLACEMENT(S).

C. ANY POTTING KITS SUPPLIED BY ROMTEC UTILITIES MUST BE INSTALLED BY THE INSTALLING CONTRACTOR. IF WATER DAMAGE OCCURS TO ITEMS THAT SHOULD HAVE HAD A POTTING KIT INSTALLED, ROMTEC UTILITIES CAN ASSIST WITH REPLACING THE DAMAGED COMPONENT(S), BUT ROMTEC UTILITIES IS NOT RESPONSIBLE FOR THE COST OF THE REPLACEMENT(S).

FINAL CONCRETE DIMENSIONS

A. ACTUAL CONCRETE DIMENSIONS WILL BE WITHIN +/- 0.5ò FOR MAJOR DIMENSIONS ON THE APPROVED PRODUCTION DRAWING(S) (LENGTH, WIDTH, HEIGHT; CORE LOCATIONS; WALL THICKNESS; ETC.). ROMTEC UTILITIES WILL NOT ACCEPT ANY CHARGES FOR FIELD ADJUSTMENTS OR ENGINEERED PLAN REVISIONS BASED ON THESE SLIGHT CHANGES TO CONCRETE DIMENSIONS IN THE FIELD.

NOTE: MANUFACTURERS OF PRECAST CONCRETE CANNOT PRODUCE ITEMS SUCH AS BARRELS, BASES, OR TOP SLABS TO EXACT DIMENSIONS MEASURED IN HUNDREDTHS OF AN INCH. THE PRODUCTION DRAWINGS MAY SHOW DIMENSIONS IN THE HUNDREDTHS OF AN INCH, BUT IT IS NOT REALISTIC TO CAST CONCRETE TO THOSE EXACT DIMENSIONS.

B. ALL CONCRETE JOINTS MUST BE THOROUGHLY CLEANED AND DRIED PRIOR TO APPLYING BUTYL SEALANT, CAULKING, AND/OR JOINT WRAP.

C. CORED HOLES FOR ELECTRICAL WIRING AND CONDUITS ARE NOT BY ROMTEC UTILITIES. THEY ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

OUTFALL DESIGN

A. ROMTEC UTILITIES IS NOT RESPONSIBLE FOR THE OUTFALL STRUCTURE AT THE DISCHARGE END OF THE FORCE MAIN. ROMTEC UTILITIES HAS NOT REVIEWED THE SIZE OF THE OUTFALL STRUCTURE TO DETERMINE ITS ABILITY TO HANDLE THE SYSTEM'S PUMPING RATE. REVIEW OF THE OUTFALL STRUCTURE FOR COMPATIBILITY WITH THIS SYSTEM IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

B. ANY PROBLEMS WITH THE OUTFALL STRUCTURE DURING SYSTEM STARTUP AND GENERAL OPERATION ARE THE RESPONSIBILITY OF OTHERS, NOT ROMTEC UTILITIES.

STRUCTURAL AND MECHANICAL DISCLAIMERS

1. ROMTEC UTILITIES IS NOT RESPONSIBLE FOR STRUCTURAL OR LEAK TESTING

A. THE CUSTOMER IS RESPONSIBLE FOR ANY ONSITE HYDROSTATIC OR VACUUM TESTING OF UNDERGROUND STRUCTURES. THE ROMTEC UTILITIES WARRANTY TERMS REQUIRE THAT ANY AND ALL TESTING OF UNDERGROUND STRUCTURES OCCURS PRIOR TO BACKFILLING AROUND THE STRUCTURE(S).

B. ROMTEC UTILITIES RECOMMENDS THE FOLLOWING TEST METHODS IF NECESSARY:
  a. ASTM C497-05, SECTION 8, HYDROSTATIC TEST METHOD
  b. ASTM C497-05, SECTION 9, PERMEABILITY TEST METHOD

C. REPAIR OF CONCRETE STRUCTURES IS ALLOWABLE IF NECESSITATED BY DAMAGE THAT OCCURRED DURING SHIPPING. THE ROMTEC UTILITIES WARRANTY TERMS REQUIRE THAT ANY REPAIR TO CONCRETE STRUCTURES CONFORMS TO THE REQUIREMENTS OF ASTM C478-09, AND THAT ROMTEC UTILITIES BE NOTIFIED IF ANY REPAIRS ARE PLANNED.

D. ROMTEC UTILITIES STRONGLY RECOMMENDS AGAINST THE USE OF ANY TYPE OF CONCRETE AS BACKFILL MATERIAL.

2. ANY STRUCTURAL LEAKING FOUND DURING OR AFTER THE INSTALLATION OF UNDERGROUND STRUCTURES IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR

A. ROMTEC UTILITIES HAS MADE EVERY EFFORT IN THE SYSTEM DESIGN TO HELP THE INSTALLING CONTRACTOR ENSURE THAT UNDERGROUND STRUCTURES ARE WATER TIGHT. ALL PRECAST CONCRETE IS PRODUCED TO MEET OR EXCEED INDUSTRY STANDARDS, INCLUDING ASTM 318, ASTM 478, AND ASTM 857, AS APPLICABLE.

B. THE DESIGN OF THESE CONCRETE STRUCTURES INCLUDES MULTIPLE LAYERS OF LEAK PROOFING AT THE JOINTS BETWEEN THE BASE, BARRELS/RISERS, AND TOP SLAB AS SHOWN ON THE MECHANICAL AND STRUCTURAL DRAWINGS. THESE LAYERS TYPICALLY INCLUDE A COMBINATION OF BUTYL SEALANT, CAULKING, AND/OR JOINT WRAP.

ROMTEC
UTILITIES

SAMPLE PUMP SPECIFICATIONS

C.
ARI
STI

D. THE ROMTEC UTILITIES PLANS SHOW THE ALIGNMENT OF STRUCTURES IN RELATION TO EACH OTHER. INSTALLING CONTRACTORS ARE EXPECTED TO INSTALL STRUCTURES EXACTLY AS SPECIFIED. FOR EXAMPLE, THE CENTER LINE OF A WET WELL AND VALVE VAULT MUST ALIGN CORRECTLY FOR DISCHARGE PIPING TO ATTACH CORRECTLY. PROBLEMS ARISING FROM INCORRECTLY INSTALLED STRUCTURES AND/OR PIPING BETWEEN THE STRUCTURES ARE THE RESPONSIBILITY OF THE INSTALLER, NOT ROMTEC UTILITIES.

3. CONCRETE STRUCTURES LEAK FOR MANY REASONS DURING AND AFTER INSTALLATION

A. CONCRETE STRUCTURES MUST BE INSTALLED ON A COMPACTED, LEVEL FOUNDATION PER ASTM C1821-16. SPECIFICATION FOR THIS FOUNDATION IS SITE SPECIFIC, AND IS MADE BY OTHERS, NOT BY ROMTEC UTILITIES. ALL JOINTS BETWEEN STACKED CONCRETE SECTIONS MUST BE LEVEL AND EVENLY SUPPORTED. ANY LEANING OR UNEVENLY SUPPORTED STRUCTURES WILL RESULT IN MANY PROBLEMS, INCLUDING LEAKING AT THE JOINTS.

B. MOST STRUCTURAL LEAKS ORIGINATE AT CORED HOLES FOR PIPE PENETRATIONS. THE SYSTEM HAS BEEN DESIGNED SO THAT ALL PIPING ENTERING/EXITING THE STRUCTURE MUST PASS THROUGH PARALLEL TO THE CORED HOLE. IN OTHER WORDS, THE PIPING MUST GO STRAIGHT THROUGH CORED HOLES WITHOUT DEFLECTION. IF THE PIPING IS BROUGHT THROUGH ANY OF THE CORED HOLES AT AN ANGLE, THERE IS RISK OF LEAKING AT THAT LOCATION. IF FIELD CONDITIONS REQUIRE PIPING TO ENTER/EXIT THE STRUCTURE AT AN ANGLE, IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THE PENETRATION IS WATER TIGHT.

C. AREAS OF HIGH GROUND WATER WILL TEST THE WATER TIGHTNESS OF ALL JOINTS AND PENETRATIONS IN THE STRUCTURE. INSTALLING CONTRACTORS SHOULD TAKE EXTRA PRECAUTIONS TO ENSURE WATER TIGHTNESS WHEN INSTALLING IN AN AREA WITH HIGH GROUND WATER.

D. HIGH GROUND WATER CAN BE SEASONAL, SO THE INSTALLER OR OWNER SHOULD CHECK THE STRUCTURES FOR LEAKS DURING WET MONTHS, ESPECIALLY AFTER AN INSTALLATION DURING A DRY PERIOD.

E. A LEAK IN A LINED OR COATED STRUCTURE MAY COMPOUND THE PROBLEM THAT A LEAK CREATES. INFLOWING WATER FROM THE LEAK CAN FLOW BETWEEN THE LINING/COATING AND THE CONCRETE, CREATING A SEPARATION THAT REQUIRES REPAIR. REPAIR CAN BECOME EVEN MORE DIFFICULT IF THE ACTUAL POINT OF INGRESS IS CONCEALED BY THE LINING/COATING. IN OTHER WORDS, THE ACTUAL POINT OF INGRESS MAY NOT BE THE SAME POINT WHERE THE LEAK SHOWS THROUGH THE LINING/COATING.

F. WHILE ROMTEC UTILITIES MAY SUPPLY AND/OR PRE-INSTALL THE LINING OR COATING, ROMTEC UTILITIES IS NOT RESPONSIBLE FOR ANY COST ASSOCIATED WITH REPAIR OF THE LINING/COATING DUE TO STRUCTURAL LEAKING.

4. PRECAST CONCRETE INSPECTIONS

A. IF REQUIRED, ANY CUSTOMER INSPECTION OF PRECAST CONCRETE MUST BE MADE AT THE PRECASTER FACILITY, NOT AFTER DELIVERY TO THE JOB SITE. IN OTHER WORDS, IF THE CUSTOMER REQUIRES ADDITIONAL CONCRETE INSPECTION, THIS MUST BE PERFORMED PRIOR TO WHEN THE CONCRETE LEAVES THE PRECASTER FACILITY FOR DELIVERY.

5. LININGS AND COATINGS OF CONCRETE

A. MOST CONCRETE COATINGS AND LININGS REQUIRE SIGNIFICANT CURE TIMES (TYPICALLY FOUR WEEKS). ROMTEC UTILITIES IS NOT RESPONSIBLE FOR CONSTRUCTION DELAYS CAUSED BY LINING/COATING CURE TIMES. INSTALLATION OF STRUCTURES THAT OCCURS BEFORE THE CURING PROCESS IS COMPLETE WILL VOID BOTH THE LINING/COATING MANUFACTURER'S WARRANTY AND THE ROMTEC UTILITIES WARRANTY.

B. ANY DAMAGE TO LININGS OR COATINGS THAT OCCURS DURING SHIPPING OR CONSTRUCTION IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO REPAIR OR REPLACE.

INSTALLATION INFO AND RECOMMENDATIONS

ROMTEC UTILITIES DELIVERS THE FOLLOWING ITEMS WITH A TYPICAL PRECAST CONCRETE WET WELL.

A. PRECAST WET WELL BASE ASSEMBLY - THE BASE ARRIVES READY TO BE PLACED ON THE COMPACTED FOUNDATION (AS APPROVED BY THE SITE ENGINEER)

B. PRECAST WET WELL BARRELS - ALL PIPE PENETRATIONS SHOWN ON THE COMPONENT DRAWING(S) ARE PRE-CORED UNLESS OTHERWISE NOTED. PIPE BOOTS ARE PROVIDED FOR USE IN SEALING THE CORED HOLES.

C. PRECAST WET WELL TOP SLAB - THE TOP SLAB WILL INCLUDE THE PRE-INSTALLED HATCH AND IS READY TO BE PLACED.

D. ACCESSORY PALLET - THE PALLET INCLUDES THE FOLLOWING:
  a. BUTYL SEALANT, CAULKING, AND OR JOINT WRAP FOR CONCRETE JOINTS
  b. DISCHARGE PIPING
  c. GUIDE RAILS AND BRACKETS
  d. LEVEL SENSING DEVICES

NOTE: THE SUPPLIED DISCHARGE PIPING AND GUIDE RAILS ARE INTENTIONALLY TOO LONG. THE INSTALLING CONTRACTOR IS EXPECTED TO MEASURE THE PIPING AND TRIM TO FIT AS NEEDED. THE CONTRACTOR MUST ALSO PLUMB THE DISCHARGE PIPING AND SECURE IT TO THE PRE-INSTALLED BRACKET(S).

ROMTEC UTILITIES STRONGLY RECOMMENDS THAT THE INSTALLING CONTRACTOR PROVIDE THE FOLLOWING ITEMS DURING DELIVERY AND INSTALLATION

A. A PERSON ONSITE WHOSE SOLE RESPONSIBILITY IS TO BE IN CHARGE OF SAFETY

B. APPROPRIATE SHORING OF EXCAVATIONS TO PROVIDE A SAFE WORKSPACE

C. AN APPROPRIATELY SIZED CRANE FOR OFFLOADING AND PLACING CONCRETE SECTIONS.

D. AN APPROPRIATELY SIZED FORKLIFT FOR OFFLOADING PALLETS AND/OR CONTROL PANEL COMPONENTS

E. IDENTIFICATION OF ALL OVERHEAD OBSTRUCTIONS PRIOR TO DELIVERY

F. A SECURE COVERED AREA FOR STORING THE ACCESSORY PALLET, CONTROL PANEL, AND PUMPS. IF THIS AREA IS OFFSITE, AN APPROPRIATE TRANSPORTATION VEHICLE WILL BE REQUIRED TO MOVE THESE ITEMS TO THE SECURE LOCATION UNTIL FINAL INSTALLATION.

METHOD FOR PRECAST CONCRETE

ENTS ARE DESIGNED TO BE LIFTED AND PLACED BY USE OF THE PRE-INSTALLED ANCHORS AND LIFTING GEAR.

B. PRIOR TO PLACING THE CONCRETE COMPONENTS, ENSURE THAT THE EXCAVATION AND COMPACTED FOUNDATION IS COMPLETE AS SPECIFIED BY THE SITE ENGINEER. THE FOUNDATION MUST NOT ALLOW THE STRUCTURE TO SETTLE OR TILT DURING OR AFTER INSTALLATION.

C. PROVIDE A SAFE, OSHA-APPROVED METHOD OF CAVE-IN PROTECTION (SHORING).

D. USE LIFTING EQUIPMENT OF THE APPROPRIATE SIZE AND CAPACITY. FOR EXAMPLE, A PARTICULARLY HEAVY ITEM SHOULD BE LIFTED USING ONE APPROPRIATELY SIZED CRANE, NOT BY USING TWO UNDERSIZED EXCAVATORS.

NOTE: THE INSTALLING CONTRACTOR IS EXPECTED TO KNOW AND USE INDUSTRY BEST PRACTICES FOR LIFTING AND PLACING PRECAST CONCRETE.

E. THE INSTALLING CONTRACTOR IS EXPECTED TO PROVIDE THE APPROPRIATE LIFTING CABLES, STRAPS, OR CHAINS, AS WELL AS CONNECTION DEVICES TO ATTACH THE CABLES TO THE CRANE AND LIFTING CLUTCHES.

F. ALL LIFTING CABLES, STRAPS, OR CHAINS MUST BE LONG ENOUGH TO PREVENT RIGGING FROM PUTTING LATERAL PRESSURE ON ANY OF THE LIFT ANCHORS. ROMTEC UTILITIES RECOMMENDS THE USE OF A SPREADER BAR WHENEVER THE CABLE LENGTH IS QUESTIONABLE. DAMAGE RESULTING FROM FAILURE TO FOLLOW THIS RECOMMENDATION WILL NOT BE COVERED BY ROMTEC UTILITIES.

G. SEE THE CONCRETE PRODUCTION DRAWINGS FOR WEIGHT OF INDIVIDUAL COMPONENTS.

OFFLOADING AND STORING CONCRETE

A. ALL OFFLOADED CONCRETE THAT IS NOT IMMEDIATELY PLACED IN ITS FINAL INSTALLATION LOCATION MUST BE APPROPRIATELY STORED ON LEVEL DUNNAGE WITH EVEN, REGULAR SUPPORT UNDER THE CONCRETE, NOT DIRECTLY ON UNEVEN GROUND OR WITH UNEVEN, IRREGULAR SUPPORT. DAMAGE CAUSED BY FAILURE TO FOLLOW THIS RECOMMENDATION WILL NOT BE COVERED BY ROMTEC UTILITIES.

B. ALL CONCRETE THAT IS TEMPORARILY STORED PRIOR TO FINAL INSTALLATION SHOULD BE THOROUGHLY CLEANED BEFORE IT IS STACKED. FAILURE TO CLEAN CONCRETE JOINTS PRIOR TO STACKING CAN RESULT IN SEALANT FAILURE AND LEAKS. ROMTEC UTILITIES WILL NOT WARRANTY STRUCTURES THAT ARE NOT CLEAN AND DRY PRIOR TO INSTALLATION.

RECOMMENDATIONS FOR EXTENDED PUMP STORAGE

A. NEVER STORE PUMPS IN THE WET WELL PRIOR TO START-UP. STORE PUMPS IN AN UPRIGHT POSITION IN A CLEAN, DRY LOCATION FREE FROM TEMPERATURE EXTREMES AND DIRECT SUNLIGHT.

B. ONCE DURING EVERY MONTH OF STORAGE, THE PUMP IMPELLERS SHOULD BE MANUALLY ROTATED BY HAND TO ENSURE FREE MOVEMENT OF ALL ROTATING PARTS (SEALS, BEARINGS, AND IMPELLERS). ADD SILICONE SPRAY OR RUST-INHIBITING OIL TO THE LOWER CASING, COMPLETELY COATING THE IMPELLER AND INSIDE OF THE LOWER CASE. ALSO FULLY COAT THE DISCHARGE FLANGE FACE.

C. PROTECT PUMP CABLES FROM DAMAGE AND MOISTURE. CABLES SHOULD BE STORED SO THAT THERE IS NO TENSION ON THE CABLE ENTRY POINT INTO THE PUMP. THE FREE END OF THE CABLE MUST BE PROTECTED FROM MOISTURE AT ALL TIMES. NEVER LIFT A PUMP BY THE CABLE.

D. THE PUMP MANUFACTURER MAY HAVE MORE STORAGE AND HANDLING RECOMMENDATIONS.

INSTALLATION AND BACKFILL RECOMMENDATIONS

A. ALL EXCAVATIONS MUST BE KEPT DRY DURING INSTALLATION. THIS MAY REQUIRE THE USE OF MULTIPLE DEWATERING PUMPS.

B. PRECAST CONCRETE SECTIONS MUST BE LEVEL WHEN PLACED ON THE COMPACTED BASE. THIS COMPACTED BASE IS SPECIFIED BY THE SITE ENGINEER AND/OR GEOTECHNICAL REPORT. ROMTEC UTILITIES STRONGLY RECOMMENDS THAT THE BASE BE THOROUGHLY CLEANED AND TRANSIT-LEVELLED.

C. A SAFE WORKING AREA WILL BE REQUIRED AROUND THE PLACED STRUCTURE FOR THE INSTALLING CONTRACTOR TO APPLY THE SEALANT AND/OR JOINT WRAP.

D. ALL JOINTS MUST BE KEPT CLEAN AND DRY WHILE SEALANT AND/OR JOINT WRAP ARE BEING APPLIED.

E. JOINT SEALANTS SHOULD BE APPLIED PER THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. WHEN APPLYING SEALANT, MAKE SURE TO REMOVE THE PAPER BACKING AND MOLD/KNEAD CUT ENDS TOGETHER TO FORM ONE PIECE.

F. SEALANT SHOULD COMPRESS A MINIMUM OF 50% PRIOR TO ANY BACKFILLING. COLD WEATHER MAY DELAY THE TIME IT TAKES TO ACHIEVE PROPER COMPRESSION. IF BACKFILL IS ADDED PRIOR TO SEALANT COMPRESSION, IT MAY PREVENT FULL COMPRESSION AND RESULT IN LEAKS. ROMTEC UTILITIES IS NOT RESPONSIBLE FOR ANY LEAKS RESULTING FROM FAILURE TO FOLLOW THESE RECOMMENDATIONS.

G. PUSHING/PULLING OR MANUAL COMPRESSION OF CONCRETE SECTIONS WITH AN EXCAVATOR IS NOT RECOMMENDED. IF CONCRETE SECTIONS ARE MOVED OR REMOVED AFTER PLACEMENT, SEALANT MUST BE REAPPLIED.

H. SUITABLE BACKFILL MATERIAL (PER THE SITE ENGINEER AND/OR GEOTECHNICAL REPORT) MUST BE USED TO AVOID ANY DAMAGE OR SHIFTING OF CONCRETE SECTIONS. ROMTEC UTILITIES STRONGLY ADVISES AGAINST USING ANY TYPE OF CONCRETE AS BACKFILL MATERIAL. POTENTIAL FOR DAMAGE DURING INSTALLATION IS GREATLY INCREASED WITH CONCRETE AS BACKFILL MATERIAL. CONCRETE BACKFILL ALSO SEVERELY LIMITS ACCESS TO PIPING FOR FUTURE MAINTENANCE.

I. BACKFILL MUST BE PLACED EVENLY AROUND THE STRUCTURE IN A MAXIMUM OF 12ò COMPACTED LIFTS WITHIN 1' OF THE WALL. FAILURE TO FOLLOW THIS METHOD CAN RESULT IN UNEVEN PRESSURE ON THE CONCRETE STRUCTURE, RESULTING IN SHIFTING OF JOINTS AND/OR PIPING THAT EVENTUALLY CAUSES LEAKING. ROMTEC UTILITIES WILL NOT COVER LEAKS THAT RESULT FROM FAILURE TO FOLLOW THESE RECOMMENDATIONS.

J. USE CAUTION WHEN ADDING BACKFILL MATERIAL TO ENSURE THAT NO PRESSURE OR FORCE IS APPLIED TO THE CONCRETE STRUCTURE, ESPECIALLY NEAR JOINTS OR PIPING.

K. IF HYDROSTATIC OR VACUUM TESTING IS REQUIRED, IT MUST BE PERFORMED PRIOR TO BACKFILLING. ANY LEAKS DISCOVERED AFTER BACKFILLING AROUND THE STRUCTURE ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

ELEVATIONS ARE BASED ON
VERTICAL DATUM NGVD1929

REV	DATE	DESCRIPTION	BY
2	11/10/2021	ADDED VERTICAL DATUM NOTE	KB
1	3-19-21	BASIC DESIGN REVIEW	KB

REVISION HISTORY

VERIFY SCALE
DRAWING HAS BEEN FORMATTED FOR 34 x 22 SHEET. BAR EQUALS ONE INCH
0 —— 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN: AD
DRN: AD
CKD: AD
DATE: 10-29-20

ROMTEC
UTILITIES
18240 NORTH BANK ROAD
ROSEBURG, OREGON 97470
PHONE: (541) 496-9678
WWW.ROMTECUTILITIES.COM

HAMPTON PARK
CAPITOL HEIGHTS, MD
STORMWATER PUMP STATION
GENERAL NOTES

MECHANICAL SHEET
3 OF 3

This Page Intentionally Left Blank.

Preliminary Sewer Sizing Memo

DPC Redlands
Redlands, California

Southeast Corner of Tennessee Street and Future Pennsylvania Avenue

Date:

October 2023

Prepared for:

Diversified Pacific Communities

10621 Civic Center Drive

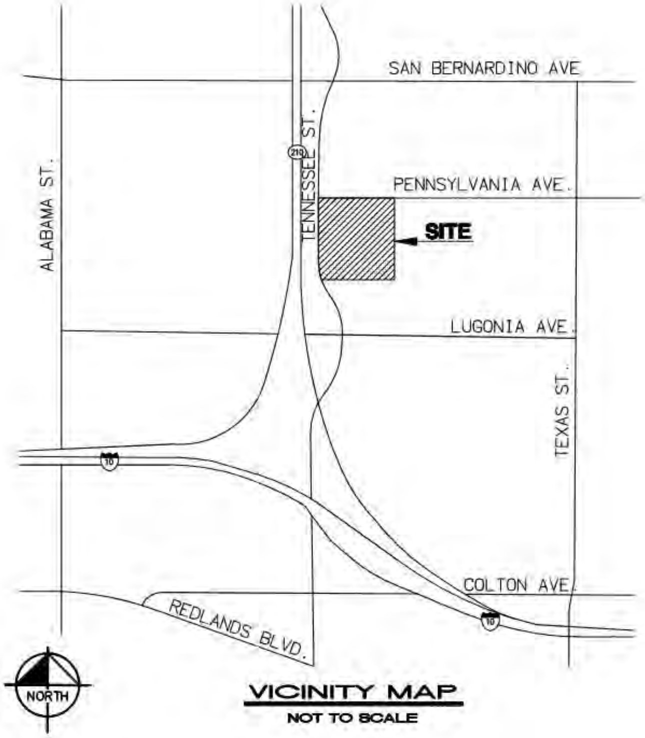
Rancho Cucamonga, CA 91730

909.481.1150

DPC REDLANDS PRELIMINARY SEWER SIZING MEMO

1. INTRODUCTION & PURPOSE

DPC Redlands (Project or Proposed Project) is a proposed development of 12.8-acres of undeveloped land into 10 high-density residential buildings and 1 commercial building. The Project Site (TPM 20688 or Tennessee Village) is located in Redlands, CA, East of Tennessee Avenue and South of the future Pennsylvania Avenue.



This technical memorandum provides sizing for the mainline proposed in the future Pennsylvania Avenue and Tennessee St based on City of Redlands Sewer Standards. This study was limited to the connection to the existing sewer in San Bernardino Avenue. The existing sewer downstream of this point was not studied as part of this report.

2. PROJECT ANALYSIS

Flow Rate Determination

The proposed Pennsylvania Avenue sewer mainline shall connect to the existing maintenance hole adjacent to TPM 20469 and flow westerly to Tennessee Street. The proposed Tennessee Street sewer mainline shall flow from Pennsylvania Avenue north to a mainline in San Bernardino Avenue. This analysis will include estimated peak flow from the existing sewer line within Pennsylvania Avenue and the tributary areas of TPM 20688, TPM 20469, and the Walmart Properties. Approximate tributary areas, and proposed sewer alignment and points of connection (POC) are shown in tributary map (**Attachment A**).

Flow monitoring was conducted by Downstream Services, Inc. in an existing maintenance hole at the intersection of Karon Street and Pennsylvania avenue. See **Attachment B** for the flow monitoring report. Based on the available as-built information, it is assumed that the monitored flow accurately represents the flow from the existing sewer into the proposed system. To be conservative, the largest measured daily maximum flow was selected to represent peak flow. Based on this assumption, the peak flow from the Pennsylvania Avenue mainline is estimated to be 26.3 gpm.

Building plans were not provided for the Walmart Properties, so peak flow from the tributary areas (A-1, A-2, and A-3) was estimated based on land use per City of Redlands Sanitary Sewer Systems Standard Specifications. Per City of Redlands instruction, the easterly 2 APN parcels of the Walmart Properties (A-1 and A-2) shall be considered multi-family land use. The tributary area outside of those APN parcels (A-3) will be considered commercial land use. Average flows for the tributary areas were obtained from Table 3, Section D of the Standard Specifications and multiplied by a peak factor obtained from Table 4, Section D (**Attachment F**). The average flow calculated was lower than the minimum average flow indicated in the table. Consequently, the peak factor for the minimum average flow in Table 4, Section D was used for the tributary areas, 3.3. Based on these assumptions the expected peak flow for the Walmart Properties is 52.1 GPM. *Table 1* provides expected peak flows and the values used for their computation.

Table 1: Peak Flows of Walmart Properties Tributary Areas

Tributary Area	Land Use	Area (AC)	Average Flow (CFS/AC)	Average Flow (CFS)	Peak Factor	Peak Flow (CFS)	Peak Flow (GPM)
A-1	Medium Density Residential	8.04	0.0033	0.0265	3.3	0.0876	39.3
A-2	Medium Density Residential	1.33	0.0033	0.00439	3.3	0.0145	6.50
A-3	Commercial	1.93	0.0022	0.00425	3.3	0.0140	6.29
							Total: 52.1

The architects provided fixture counts for B-1 (tributary area of TPM 20688) and C-1 (tributary area of TPM 20469), provided in **Attachment C and D** respectively. The fixtures were converted into DFUs (Drainage Fixture Units) using equivalent values from Table A103.1 in the California Plumbing Code (**Attachment E)**. Next, the DFUs were converted to peak flow by using Chart A 103.1(1) (**Attachment E**). The DFUs for B-1 exceed the maximum specified on the chart. To address this issue, the DFUs were divided into four equal parts, and peak flow values were determined for each part before being combined. *Table 2* summarizes the DFU to peak flow conversions for the Project.

Table 2: Conversion Summary and Total Flow Rate

Tributary Area	Associated Property	DFU Value	Peak Flow (GPM)
B-1	TPM 20688	9266	1440
C-1	TPM 20469	2216	350

B-1 and C-1 will both discharge into the Pennsylvania Avenue mainline at POC #2 and POC #3 respectively. To size the line conservatively, the Walmart Properties' tributary areas (A-1, A-2, and A-3) are assumed to discharge at POC #3.

Facility Sizing

Invert elevations of 1289.34 at POC #1 and 1250.91 at POC #4 were obtained from as-builts of the existing maintenance holes (**Attachment G**). Based on the approximate proposed sewer length of 2700 ft, the average slope is estimated to be 1.4%. Bentley Flowmaster was used to analyze the normal depth and velocity in the gravity sewer pipe. The proposed sewer was sized according to City of Redlands Sanitary Sewer Systems Standard Specifications (**Attachment F**). During peak flow conditions, pipes with a diameter of 12 inches or smaller should be flowing at less than half full, while pipes with a diameter of 15 inches or larger should be flowing at less than three-quarters full. Velocities in all sewers should be between 2.5 ft/s and 10 ft/s. The minimum pipe size is 8 inches. Based on these criteria and Bentley Flowmaster Calculations (**Attachment H**) the proposed sewer segments were sized. *Table 3* summarizes results.

Table 3: Gravity Sewer Mainline Sizing Summary

Segment Start	Segment End	Peak Flow (GPM)	Slope (ft/ft)	Diameter (in)	Velocity (ft/s)	d/D
POC #1	POC #2	26.3	0.014	8	2.01	0.14
POC #2	POC #3	78.4	0.014	8	2.78	0.24
POC #3	POC #4	1868	0.014	15	6.36	0.53

3. CONCLUSIONS

Based on the calculations and estimates provided in this report, a 8-inch and 15-inch diameter will be sufficient to convey flow through the proposed gravity sewer after development of TPM 20688, TPM 20469, and the Walmart Properties.

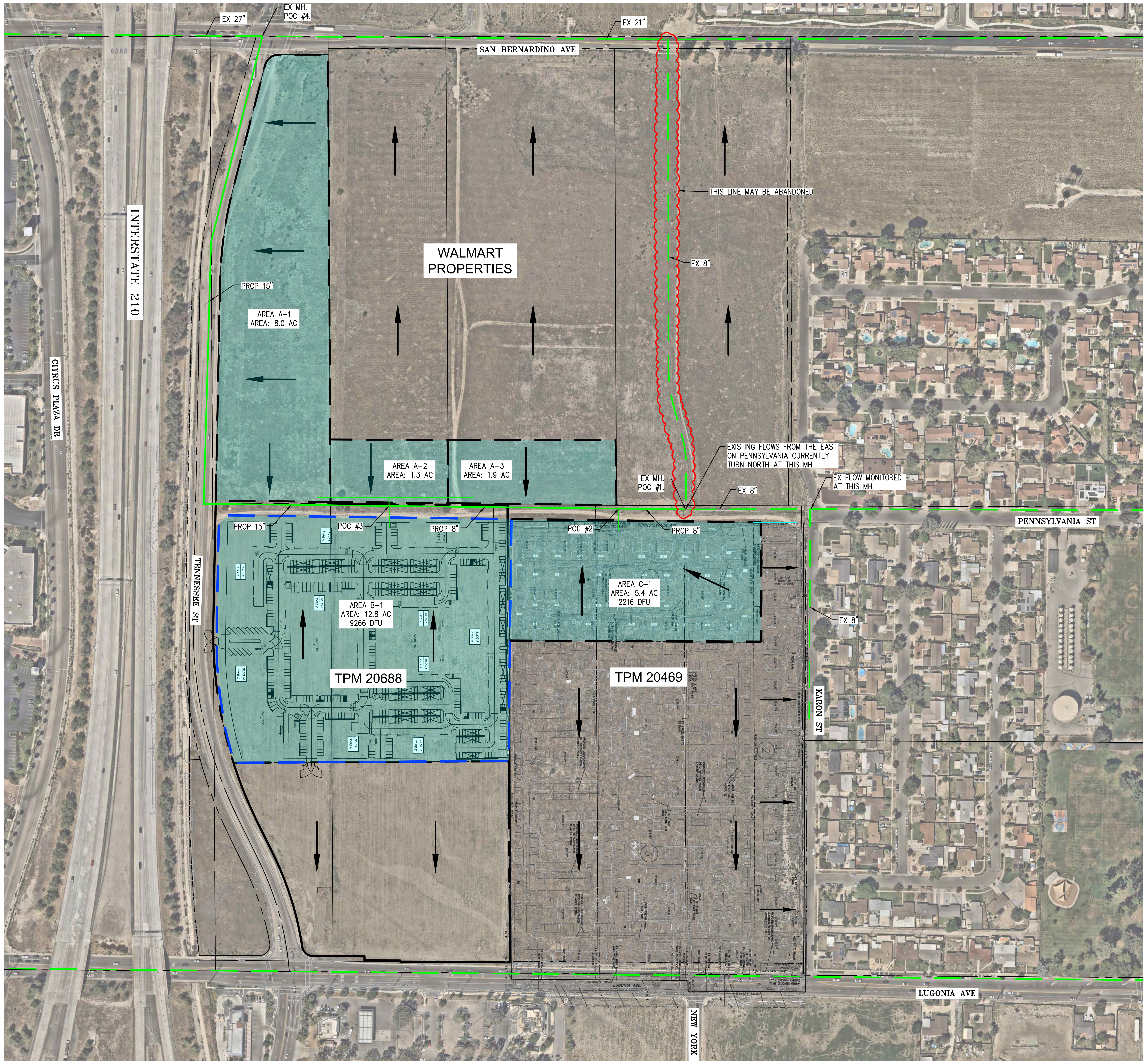
LICENSED PROFESSIONAL ENGINEER
TAYLOR MARTINET THORIG
C 93239
EXP. 3/31/24
CIVIL
STATE OF CALIFORNIA

Taylor Thorig, P.E.
C93239 Exp. 3/31/2024

ATTACHMENTS

A. TRIBUTARY MAP

PROPOSED PENNSYLVANIA AVENUE AND TENNESSEE STREET SEWER LINE
TRIBUTARY MAP



LEGEND

— — —	EXISTING SEWER
———	PROPOSED SEWER
▨	PROPOSED TRIBUTARY AREAS
▨	PROPOSED PROJECT AREA
→	TRIBUTARY FLOWLINE

SCALE 1"=150'

150 75 0 150 300 450

SCALE: 1"=150'

PREPARED BY:

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
3880 LEMON STREET, SUITE 420, RIVERSIDE, CA 92501
PHONE: 951-543-9868

Plotted By:Mangney, Luke Sheet Set:Kha Layout:Layout1 October 23, 2023 04:03:00pm K:\RIV_LDEV\194423001 - DPC Redlands\Reports\Sewer\Attachments\Exhibits\Tributary Area Exhibit.dwg

B. FLOW MONITORING REPORT

DownStream Services, Inc.

2855 Progress Place
Escondido, CA 92029
760.746.2544/1.800.262.0999

Tennessee Village Sewer

Flow Monitoring

7/5/2023 - 7/17/2023

TC TABLE OF CONTENTS

CP CERTIFICATION PAGE

Diversified Pacific Community Flow Monitoring Study
Tennessee Village Sewer

"I certify that Downstream Services, Inc. flow monitoring data reports were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the data submitted. Based on my inquiry of the person or persons who installed the system and those persons directly responsible for gathering the data, the information submitted in these reports are, to the best of my knowledge and belief, true, accurate, and complete. As the project manager, I am committed to provide services honestly and to protect the public health, safety, and welfare."

Clark Roberts
Project Manager

TD TECHNICAL DOCUMENTS

Confined Space Entry

A confined space (Photo 1.1) is defined as any space that is large enough and so configured that a person can bodily enter and perform assigned work, has limited or restricted means for entry or exit and is not designed for continuous employee occupancy. In general, the atmosphere must be constantly monitored for sufficient levels of oxygen (19.5% to 23.5%), and the presence of hydrogen sulfide (H2S) gas, carbon monoxide (CO) gas, and lower explosive limit (LEL) levels. A typical confined space entry crew has members with OSHA-defined responsibilities of Entrant, Attendant and Supervisor. The Entrant is the individual performing the work. He or she is equipped with the necessary personal protective equipment needed to perform the job safely, including a personal four-gas monitor (Photo 1.2). If it is not possible to maintain line-of-sight with the Entrant, then more Entrants are required until line-of-sight can be maintained. The Attendant is responsible for maintaining contact with the Entrants to monitor the atmosphere using another four-gas monitor and maintaining records of all Entrants, if there is more than one. The Supervisor is responsible for developing the safe work plan for the job at hand prior to entering.

Photo 1.1. Confined Space Entry

Photo 1.2. Typical Personal Four-Gas Monitor

Flow Meter Installation

A flow meter uses sonar to measure velocity and an ultrasonic sensor to measure depth. The sensor transmits ultrasonic pulses that travel through the water and reflect off the liquid surface. To monitor fluid velocity, the flow meter uses Doppler. This high frequency sound is reflected back to the sensor from particles or bubbles suspended in the liquid. If the fluid is in motion, the echoes return at an altered frequency proportionate to flow velocity.

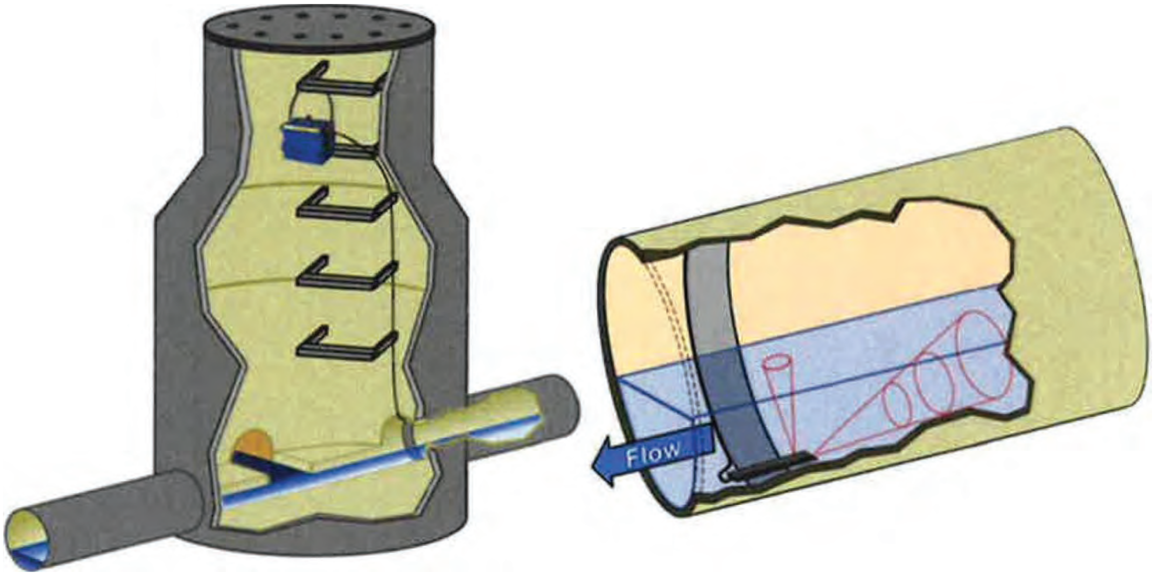


Figure 1.1 Typical Installation for Flow Meter with Submerged Sensor

Flow Calculations

Data retrieved from the flow meter was placed into a spreadsheet program for analysis. Data analysis includes data comparison to field calibration measurements, as well as necessary geometric adjustments as required for sediment (sediment reduces the pipe's wetted cross-sectional area available to carry flow). Area-velocity flow metering uses the continuity equation,

$Q = v \cdot A = v \cdot (AT - AS)$

where Q: volume flow rate
v: average velocity as determined by the ultrasonic sensor
A: cross-sectional area available to carry flow
AT: total cross-sectional area with both wastewater and sediment
As: cross-sectional area of sediment.

For circular pipe,

$$A_T = \left[\frac{D^2}{4}\cos^{-1}\left(1-\frac{2d_w}{D}\right)\right] - \left[\left(\frac{D}{2}-d_w\right)\left(\frac{D}{2}\right)\sin\left(\cos^{-1}\left(1-\frac{2d_w}{D}\right)\right)\right]$$

$$A_S = \left[\frac{D^2}{4}\cos^{-1}\left(1-\frac{2d_s}{D}\right)\right] - \left[\left(\frac{D}{2}-d_s\right)\left(\frac{D}{2}\right)\sin\left(\cos^{-1}\left(1-\frac{2d_s}{D}\right)\right)\right]$$

where dw: distance between wastewater level and pipe invert

ds: depth of sediment.

AREA 1

Site Name:	**Area 1**	Client:	**Diversified Pacific Community**
Site Type:	**Sewer Monitoring**	Effluent Type:	**Sewer**
Manhole ID:	**Area 1**	Site Address:	**Pennsylvania Ave & Karon St**
GPS Latitude:	**34.073745°**	GPS Longitude:	**-117.194415°**
Start Date:	**July 5, 2023**	End Date:	**July 17, 2023**

Map Image: Area 1

Site Name:	**Area 1**	Client:	**Diversified Pacific Community**

Site Image: Area 1

Flow Meter Serial Number: 220A01386

DownStream

Flow Monitor Installation Report

Client Diversified Pacific Community	**Project Name** TennesseeVillageFlow	**DSI Job #** 2023.5.169
Manhole ID	**Install Date** 7-5-2023	**Flow Measurement Increment** **Minutes:** 15 mins.

Address / Intersection 1501 Karon St. Redlands CA 92374	**Location** Middle of the Intersection!

Flow Monitoring Observations and Records:

✓	DESCRIPTION	COMMENT / DATA			
☑	A. Visual inspection of surrounding area.				
☑	B. Inspect for intruding laterals. If it will disturb flow another manhole must be chosen.	Theres one but Looks For Futer~~th~~efure to Pictures in one Drive. Theres No signs of Flow.			
☑	C. Inspect for signs of grease, scrub if necessary.	Super clean.			
☑	D. Inspect for sediment. Record depth:	None.			
☑	E. Inspect mounting surface of meter for imperfections.	Clean.			
☑	F. Inspect for signs of surcharging.	None, Looks Good!			
☑	G. Pipe Material:	Green PVC			
☑	H. Pipe Shape:	☑ Round	☐		
☐	I. Pipe Diameter (inches)	Top/Bottom	8"	Diagonal	8"
		Side/Side	8"	Opposite Diagonal	8"
☐	J. Flow Depth (inches)	Actual	1.00"	Indicated	1.005"
☐	K. Flow Velocity (feet per second)	Actual	1.00FPS	Indicated	1.00FPS
☑	L. With meter installed, take a downhole photograph with the top facing North.	Photo in One Drive			
☑	M. Record the serial number of the flow meter and the sensor.	Meter: 219H02144 Sensor: 220A01386			

General Comments:

The flow is very low. More then likley we wont be reading a flow! Unless High flow times. The sensor is reading accuratly with the low Flow. 10:00AM

Technician: Chris Moeller

Date: 7-5-23

Area 1

Diversified Pacific Community

Diameter: 8 inches **Shape: Circular** **Material: PVC**

From: 7/5/2023 10:00 AM to 7/17/2023 8:45 AM

Flow Level Summary (Inches)

Average:	**0.47**
Maximum:	**1.27**
Minimum:	**0.01**

Flow Level (Inches)

7/5/2023		7/6/2023		7/7/2023		7/8/2023	
Average	0.53	*Average*	0.48	*Average*	0.44	*Average*	0.55
Maximum	0.96	*Maximum*	0.93	*Maximum*	0.80	*Maximum*	1.27
Minimum	0.19	*Minimum*	0.05	*Minimum*	0.15	*Minimum*	0.11
7/9/2023		**7/10/2023**		**7/11/2023**		**7/12/2023**	
Average	0.50	*Average*	0.50	*Average*	0.34	*Average*	0.46
Maximum	0.77	*Maximum*	0.88	*Maximum*	0.80	*Maximum*	0.94
Minimum	0.06	*Minimum*	0.01	*Minimum*	0.13	*Minimum*	0.09

Inflow Rate Summary (GPM)

Average:	**2.9**
Maximum:	**26.3**
Minimum:	**0.0**

Flow Rate (In GPM)

7/5/2023		7/6/2023		7/7/2023		7/8/2023	
Average	3.7	*Average*	3.1	*Average*	2.5	*Average*	4.1
Maximum	15.3	*Maximum*	10.8	*Maximum*	7.9	*Maximum*	26.3
Minimum	0.0	*Minimum*	0.0	*Minimum*	0.2	*Minimum*	0.1
7/9/2023		**7/10/2023**		**7/11/2023**		**7/12/2023**	
Average	3.0	*Average*	3.4	*Average*	1.4	*Average*	2.7
Maximum	6.9	*Maximum*	9.1	*Maximum*	7.4	*Maximum*	10.3
Minimum	0.0	*Minimum*	0.0	*Minimum*	0.0	*Minimum*	0.0

Area 1

Diversified Pacific Community

Diameter: 8 inches **Shape: Circular** **Material: PVC**

From: 7/5/2023 10:00 AM to 7/17/2023 8:45 AM

Flow Level Summary (Inches)

Average: **0.44**
Maximum: **1.20**
Minimum: **0.04**

Flow Level (Inches)

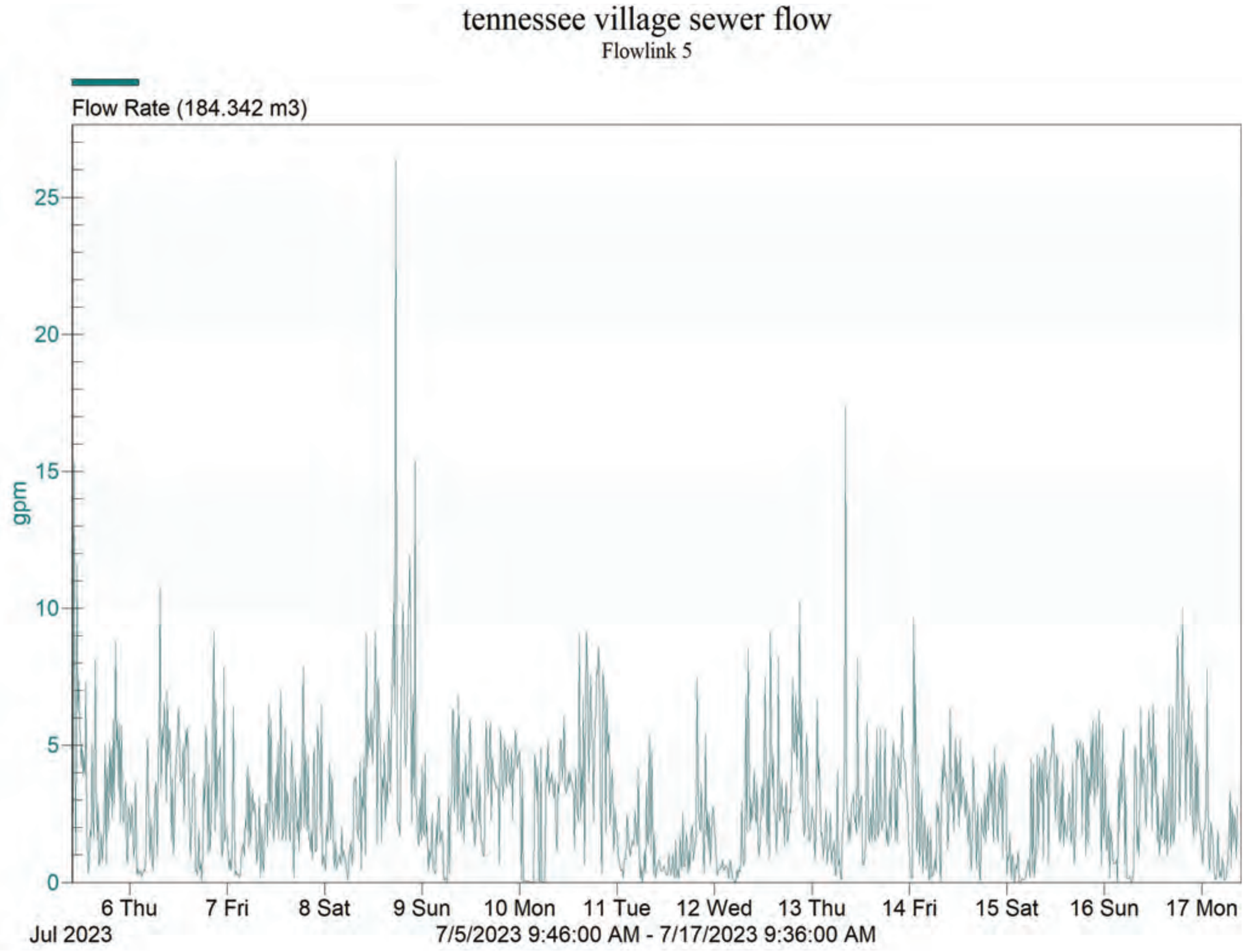
7/13/2023		7/14/2023		7/15/2023		7/16/2023	
Average	0.46	*Average*	0.44	*Average*	0.43	*Average*	0.48
Maximum	1.20	*Maximum*	0.88	*Maximum*	0.71	*Maximum*	0.90
Minimum	0.12	*Minimum*	0.05	*Minimum*	0.05	*Minimum*	0.04
7/17/2023							
Average	0.32	*Average*		*Average*		*Average*	
Maximum	0.79	*Maximum*		*Maximum*		*Maximum*	
Minimum	0.09	*Minimum*		*Minimum*		*Minimum*	

Inflow Rate Summary (GPM)

Average: **2.6**
Maximum: **17.4**
Minimum: **0.0**

Flow Rate (In GPM)

7/13/2023		7/14/2023		7/15/2023		7/16/2023	
Average	2.7	*Average*	2.5	*Average*	2.6	*Average*	3.1
Maximum	17.4	*Maximum*	9.7	*Maximum*	6.2	*Maximum*	10.0
Minimum	0.1	*Minimum*	0.0	*Minimum*	0.0	*Minimum*	0.0
7/17/2023							
Average	1.4	*Average*		*Average*		*Average*	
Maximum	7.8	*Maximum*		*Maximum*		*Maximum*	
Minimum	0.1	*Minimum*		*Minimum*		*Minimum*	



Flow Rate: Area 1

Flow Monitor Removal Report

Client Diversified Pacific Community	**Project Name** Tennessee Village Sewer	**DSI Job #** 2023.5.169
Manhole ID Area 1	**Install Date** 7/5/2023	**Removal Date** 7/17/2023

Address / Intersection 1501 Karon St. Redlands, CA 92374	**Location** Middle of intersection

Flow Monitoring Observations and Records:

✓	DESCRIPTION	COMMENT / DATA
✓	Sediment Depth (inches)	0.00
✓	Is there any grease?	No
✓	Are there any signs or surcharging?	No
✓	Does the recorded data look OK?	Yes
✓	Is the flowmeter still installed OK?	Yes
✓	Is the sensor ragged?	No
✓	Flow Level (inches)	Actual 1.00 Indicated 1.05
✓	Flow Velocity (feet per second)	Actual 1.00 Indicated 1.00
✓	Did you take a good, north-facing photo of the entire bottom of the manhole which includes the installed sensor?	Yes

General Comments:

Technician: Chris Moeller

Date: 7/17/2023

DOWNSTREAMSERVICES.COM

2855 Progress Place
Escondido CA 92029

Toll Free 800.262.0999
Local 760.746.2544
Fax 760.746.2667

info@downstreamservices.com

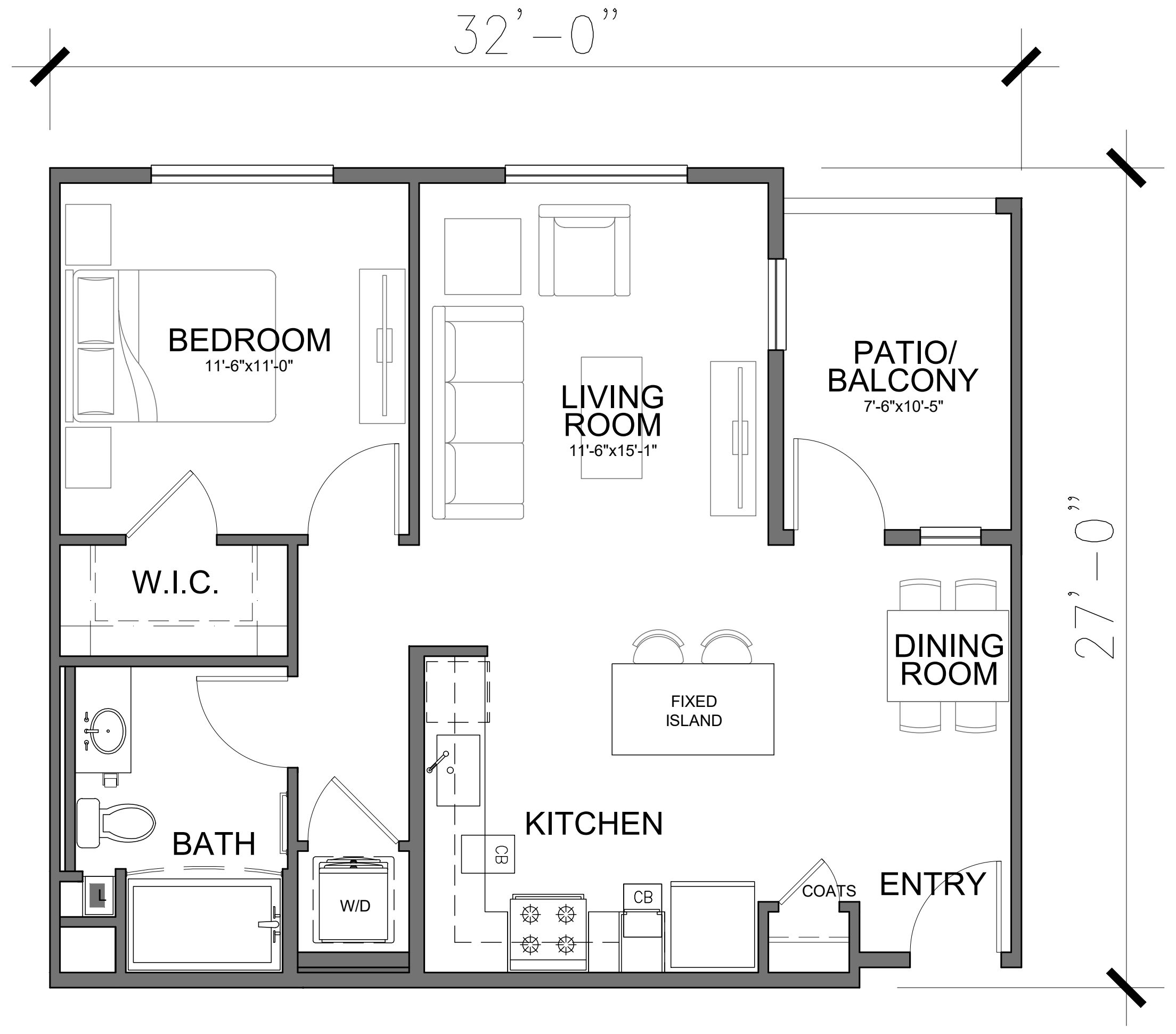
GRIT. INTEGRITY. EXPERTISE. FAMILY.

DownStream
Services, Inc.

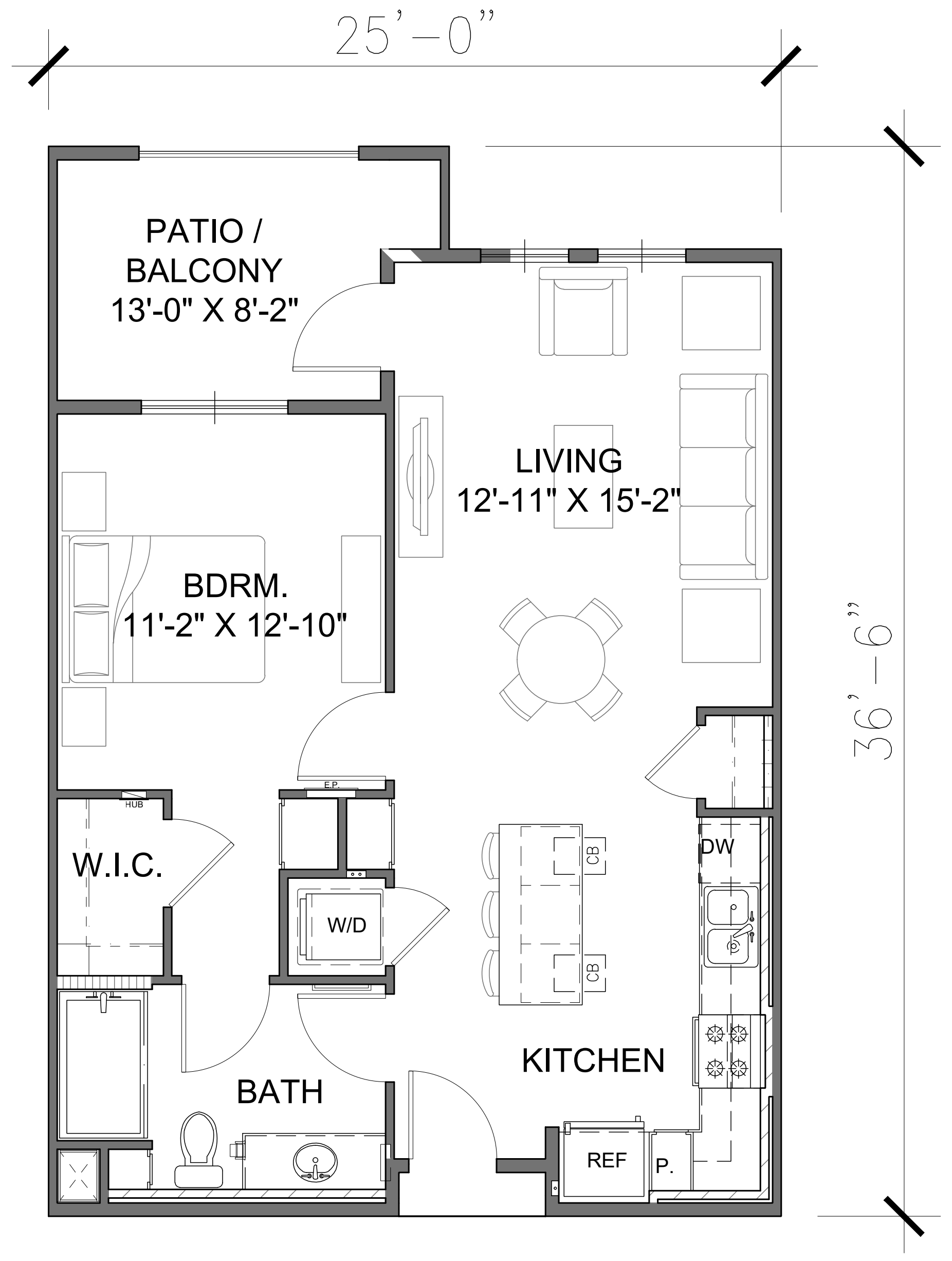
C. TPM 20688 (TRIBUTARY AREA B-1) FIXTURE UNIT MATRIX

Tennessee Fixture Count:

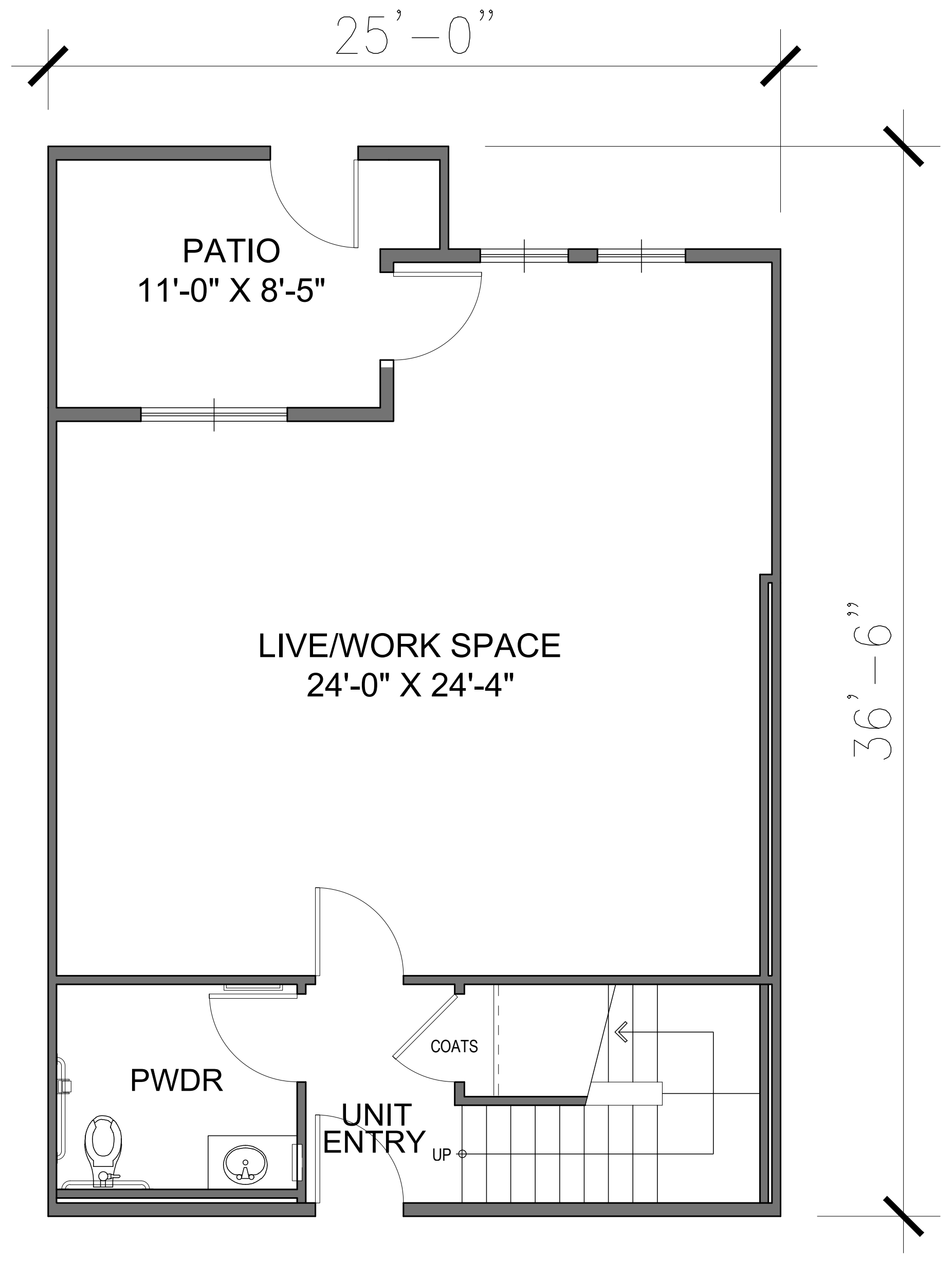
UNIT TYPE	UNIT QTY.	SINKS	TOTAL SINK	TOILET	TOTAL TOILET	TUB/SHOWER	TOTAL TUB	DISHWASHER	TOTAL DISHWASHER	LAUDRY	TOTAL LAUNDRY
A1	109	2	218	1	109	1	109	1	109	1	109
A1-DEN	21	2	42	1	21	1	21	1	21	1	21
A3	97	2	194	1	97	1	97	1	97	1	97
A4	5	2	10	1	5	1	5	1	5	1	5
A4-DEN	3	3	9	2	6	1	3	1	3	1	3
A3-LW	4	3	12	2	8	1	4	1	4	1	4
B1	53	4	212	2	106	2	106	1	53	1	53
B3	24	4	96	2	48	2	48	1	24	1	24
B4	20	4	80	2	40	2	40	1	20	1	20
B5	96	4	384	2	192	2	192	1	96	1	96
B4-LW	2	5	10	3	6	2	4	1	2	1	2
C1	20	4	80	3	60	3	60	1	20	1	20
C1-DEN	6	4	24	3	18	3	18	1	6	1	6
AMENITY	-	13	13	13	13	2	2	1	1	0	0
TOTAL	**460**	-	**1,384**	-	**729**	-	**709**	-	**461**	-	**460**

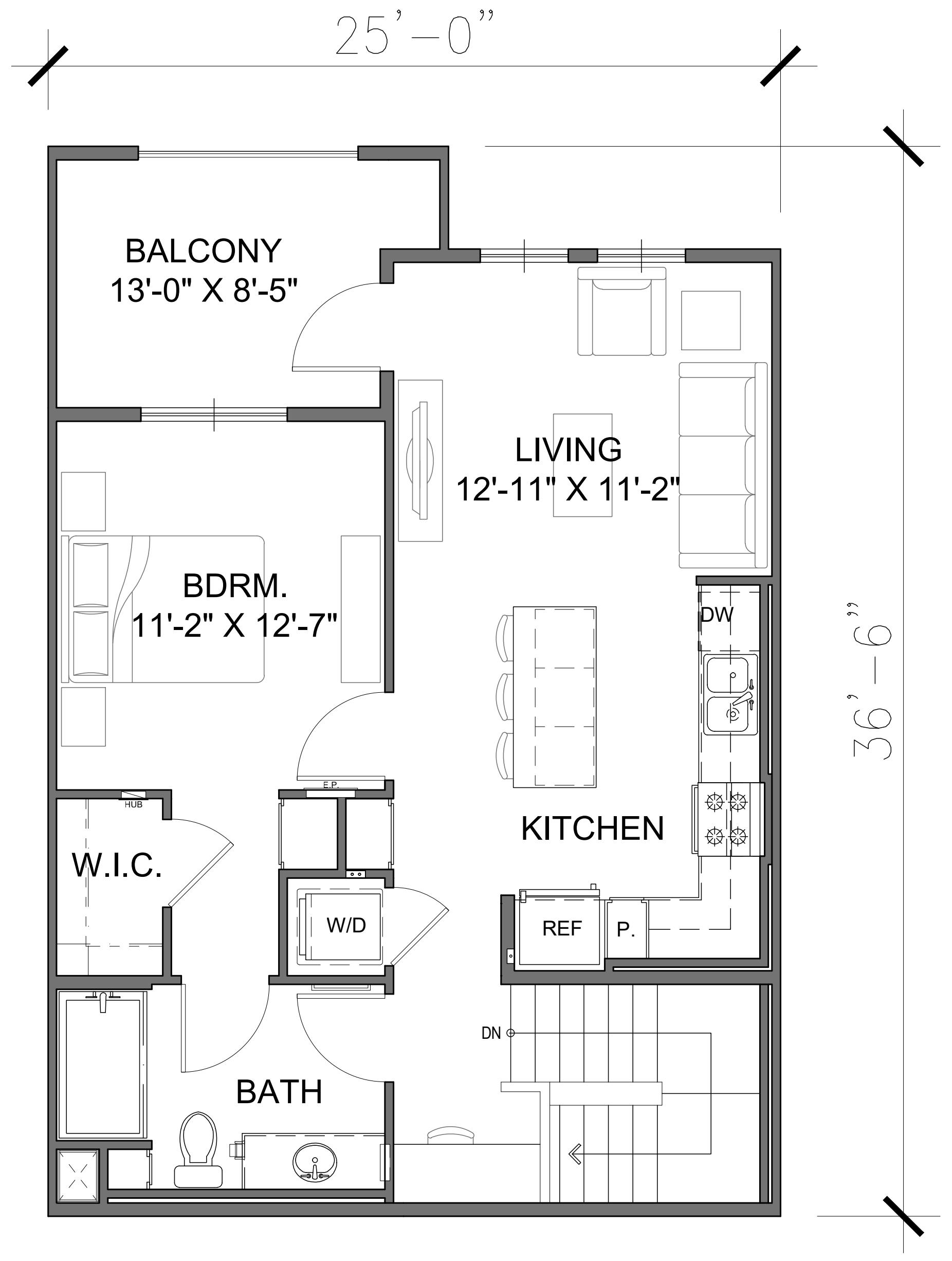


UNIT A1: 1BR/1BA
RENTABLE: 767 SQ.FT.
PATIO/BALCONY: 78 SQ.FT.

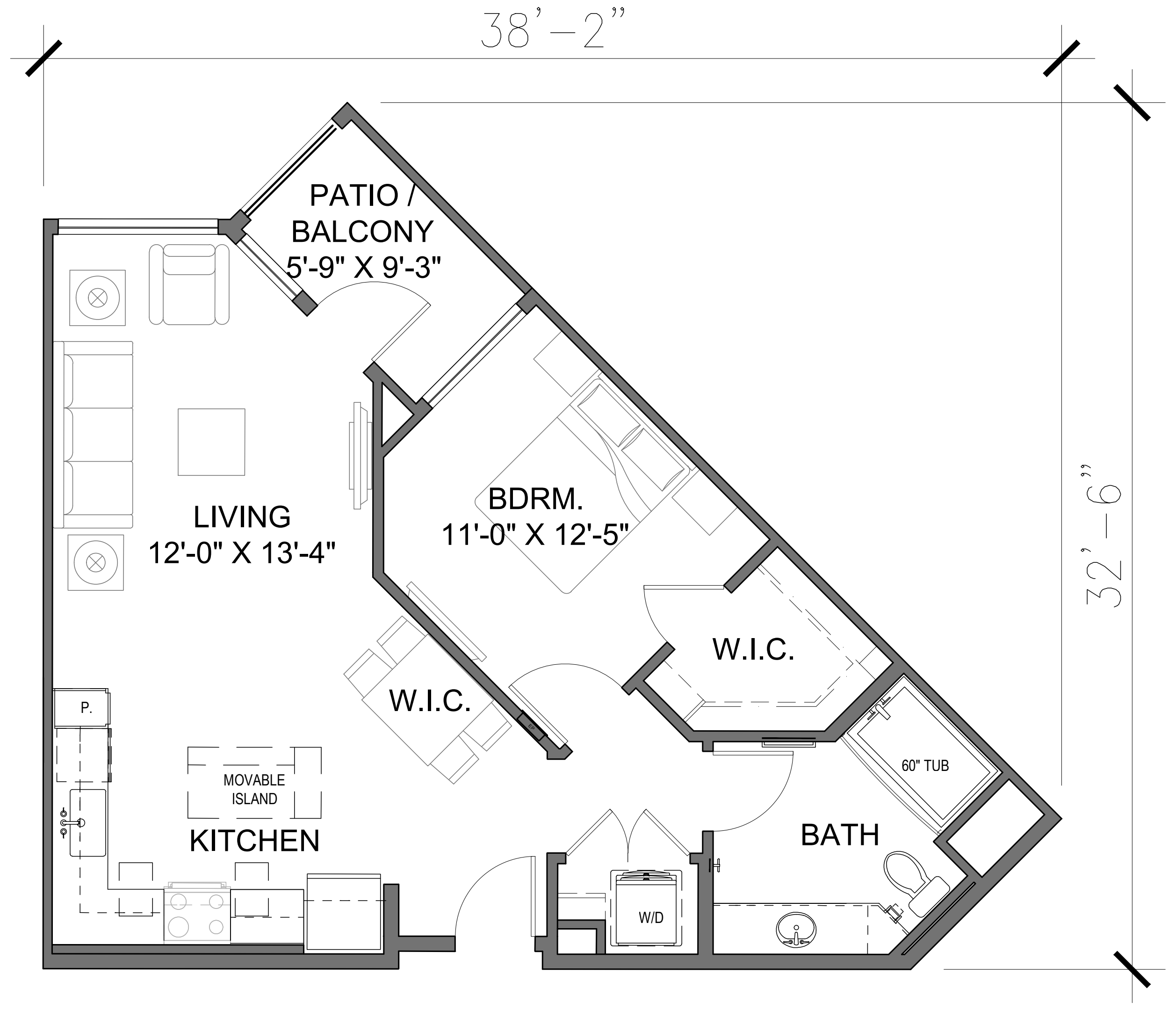


UNIT A3: 1BR/1BA
RENTABLE: 766 SQ.FT.
PATIO/BALCONY: 100 SQ.FT.





UNIT A3 LW: 1BR / 1.5BA/ LW
LEVEL 1 AREA: 764 SQ. FT.
LEVEL 2 AREA: 697 SQ. FT.
TOTAL AREA: 1,461 SQ. FT.
ALCONY + PATIO: 100 SQ. FT. + 100 SQ. FT. = 200 SQ. FT.



UNIT A4: 1BR/1BA
RENTABLE: 765 SQ.FT.
PATIO/BALCONY: 54 SQ.FT.

A-3.1

SCALE : 3/16"= 1'-0"
DATE: 10-10-2023
JOB NO.: 2020-322

TENNESSEE VILLAGE

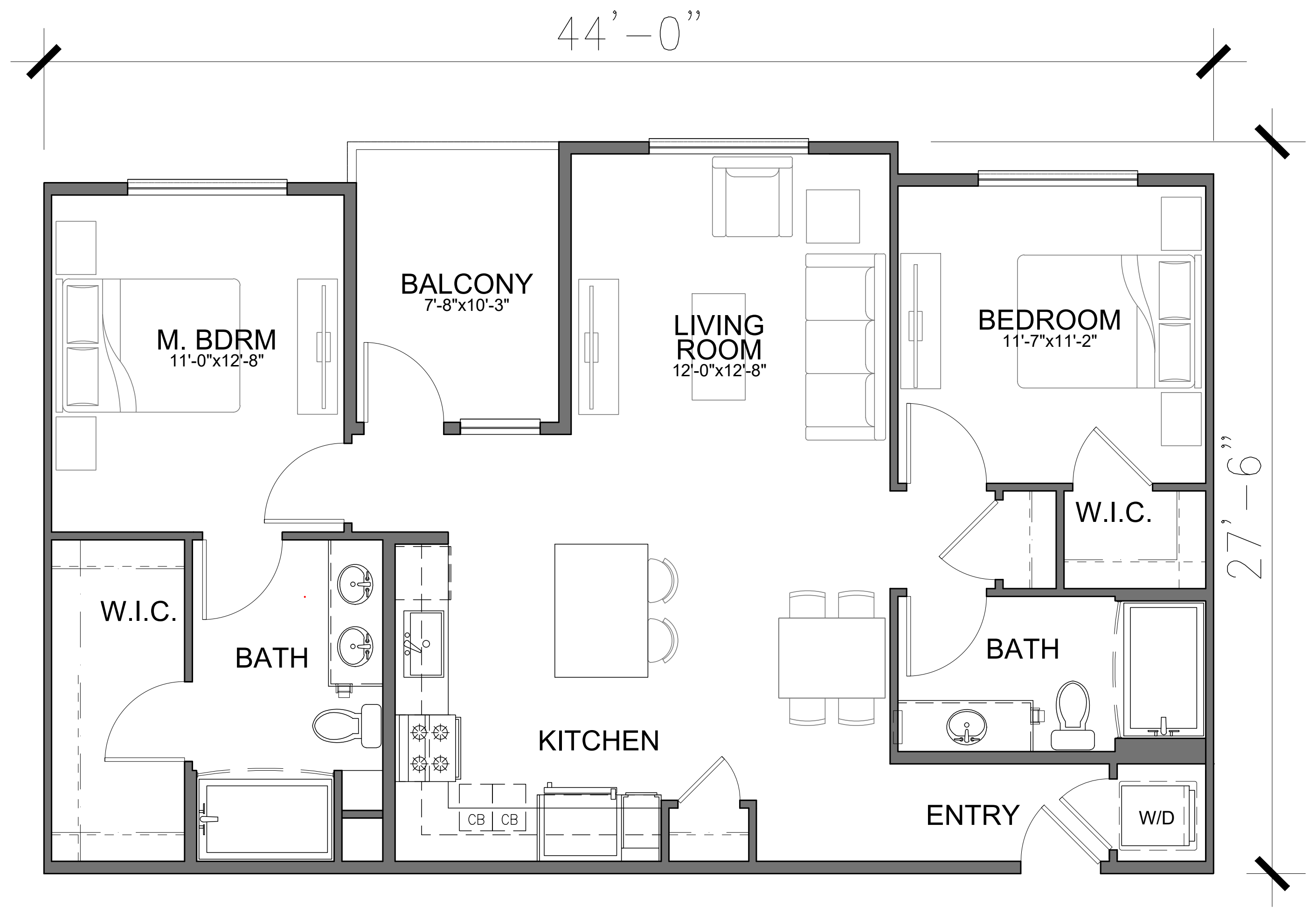
REDLANDS, CA 92374

UNIT PLANS 1

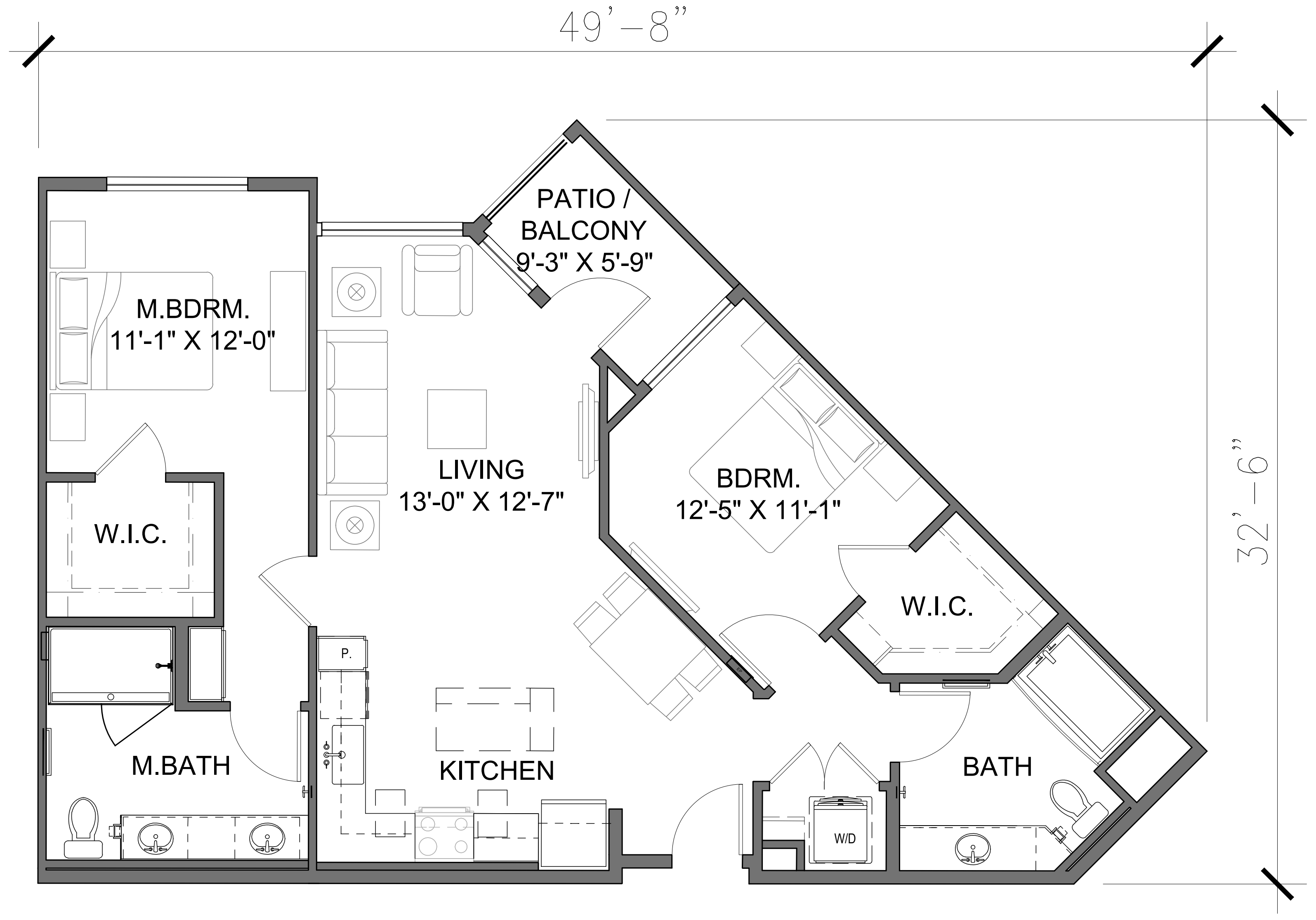
DIVERSIFIED PACIFIC COMMUNITIES
10621 CIVIC CENTER DRIVE, RANCHO CUCAMONGA, CA 91730
(909) 373-2628

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860

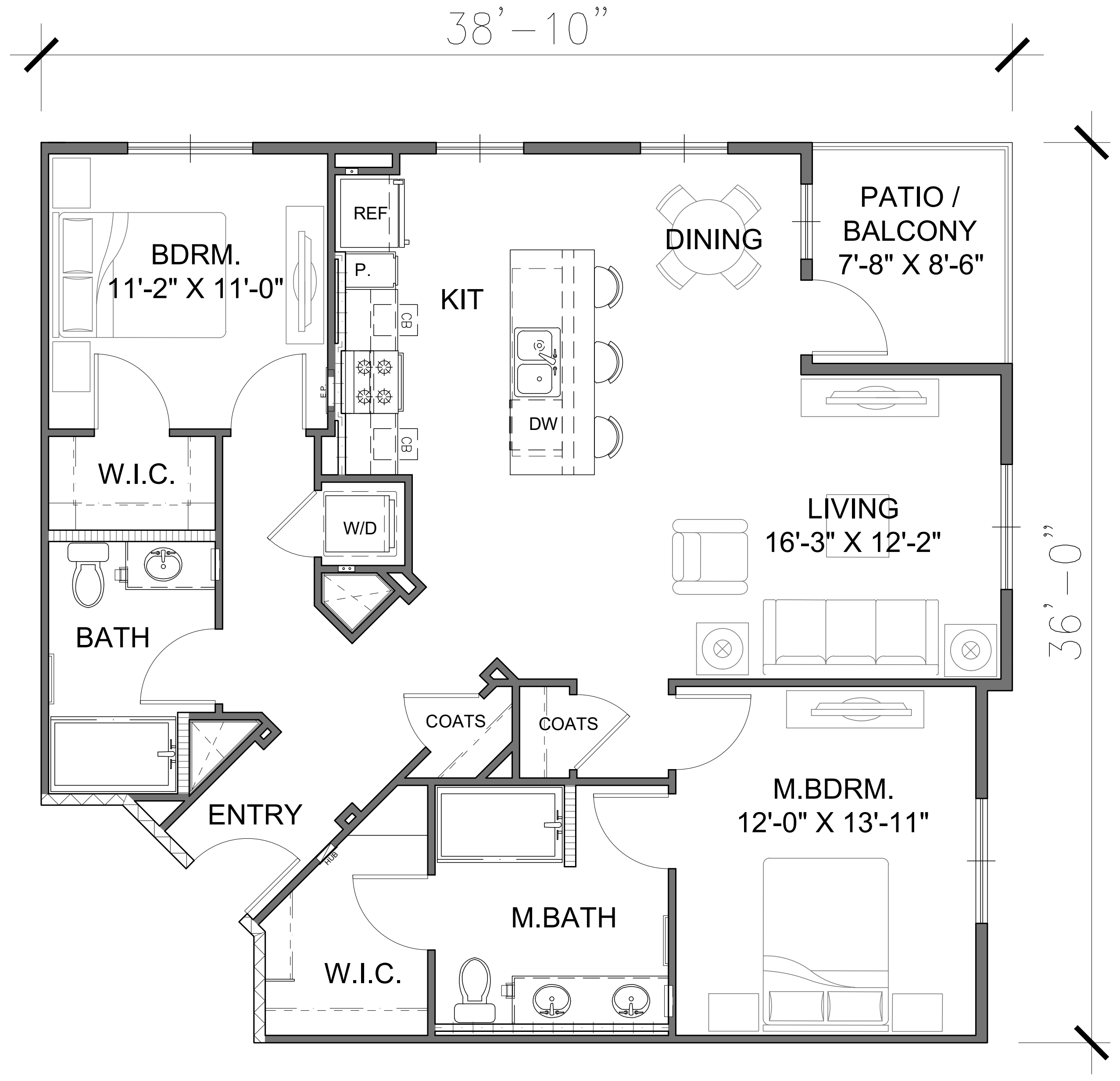
Architecture.
Design.
Relationships.



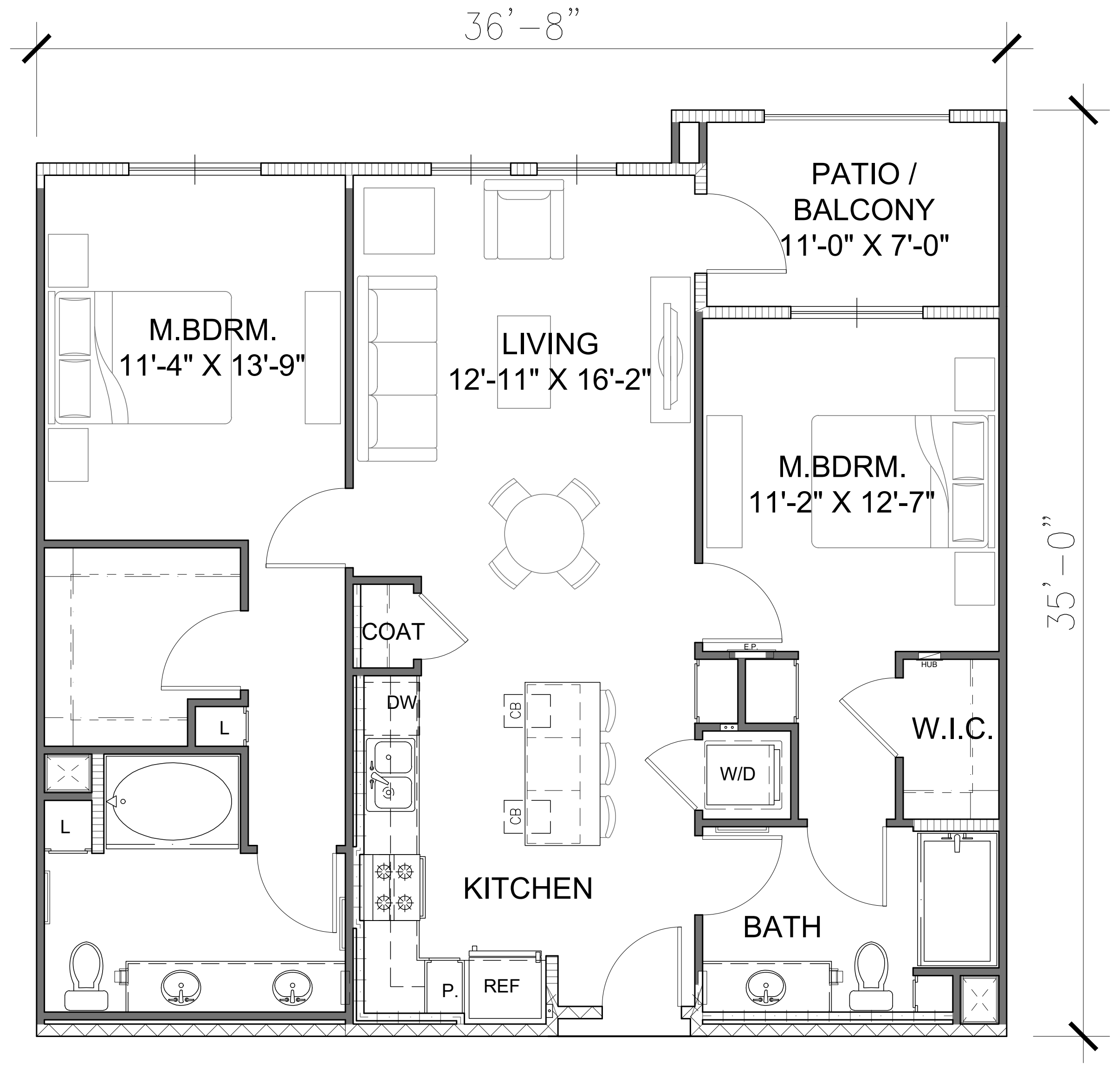
UNIT B1: 2BR/2BA
RENTABLE: 1,097 SQ.FT.
PATIO/BALCONY: 78 SQ.FT.



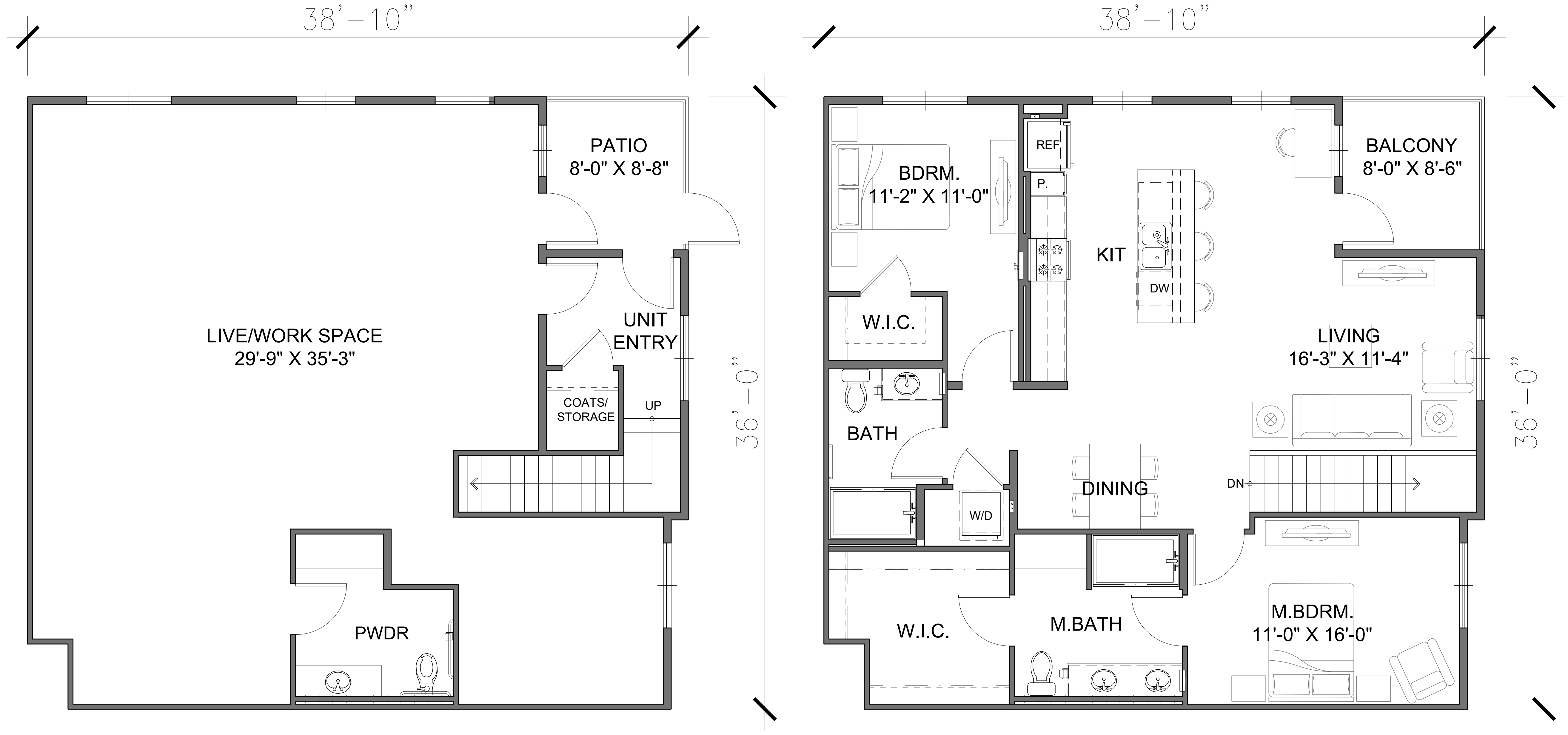
UNIT B3: 2BR/2BA
RENTABLE: 1,111 SQ.FT.
PATIO/BALCONY: 54 SQ.FT.



UNIT B4: 2BR/2BA
RENTABLE: 1,246 SQ.FT.
PATIO/BALCONY: 71 SQ.FT.



UNIT B5: 2BR/2BA
RENTABLE: 1,145 SQ.FT.
PATIO/BALCONY: 77 SQ.FT.



UNIT B4 LW: 2BR / 2.5BA/ LW
LEVEL 1 AREA: 1303 SQ. FT.
LEVEL 2 AREA: 1256 SQ. FT.
TOTAL AREA: 2,559 SQ. FT.
BALCONY + PATIO: 75 SQ. FT. + 75 SQ. FT. = 150 SQ. FT.

UNIT C1: 3BR/2BA
RENTABLE: 1,342 SQ.FT.
PATIO/BALCONY: 84 SQ.FT.

A-3.2

SCALE : 3/16"= 1'-0"
DATE: 10-10-2023
JOB NO.: 2020-322

TENNESSEE VILLAGE

REDLANDS, CA 92374

UNIT PLANS 2

DIVERSIFIED PACIFIC COMMUNITIES
10621 CIVIC CENTER DRIVE, RANCHO CUCAMONGA, CA 91730
(909) 373-2628

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860

Architecture.
Design.
Relationships.

LEASING / CLUBHOUSE =
+/- 21,090 SQ.FT.

A-4.1

Tuesday, October 17, 2023 11:33:55 PM
R:\2020\2020-322 DIVERSIFIED PACIFIC REDLANDS APTS REDLANDS\03 DESIGN\SCHEM\AUTOCAD\A4.1_AMENITY-FLOOR PLANS.DWG

TENNESSEE VILLAGE

REDLANDS, CA 92374

AMENITY FLOOR PLAN

DATE: 10-10-2023
JOB NO.: 2020-322

DIVERSIFIED PACIFIC COMMUNITIES
10621 CIVIC CENTER DRIVE, RANCHO CUCAMONGA, CA 91730
(909) 373-2628

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860

Architecture.
Design.
Relationships.

Fixture	Total Fixture Count	Equivalent DFU	Total Equivalent DFU
Sinks (Kitchen, domestic)	1384	1.5	2076
Toilets (Water Closet, 1.6 GPF Gravity Tank)	729	2.5	1822.5
Tub/Showers (Bathtub or Combination Bath/Shower (fill))	709	4	2836
Dishwasher (Dishwasher, domestic)	461	1.5	691.5
Laundry (Clothes Washer)	460	4	1840
Total	3743		9266

D. TPM 20469 (TRIBUTARY AREA C-1) FIXTURE UNIT MATRIX

TPM 20469

DFU MATRIX
Lugonia Fixture Count

	SINKS	TOILETS	TUB/SHOWERS	DISHWASHER	LAUNDRY	TOTAL UNITS	TOTAL PLANS PLOTTED	TOTAL OVERALL UNITS
PLAN 1	6	3	2	1	1	13	7	91
PLAN 2	6	3	2	1	1	13	42	546
PLAN 3	6	3	2	1	1	13	8	104
PLAN 4	6	3	4	1	1	15	13	195
POOL BLDG	2	2	1	0	0	5	1	5
TOTAL	26	14	11	4	4	59	71	**941**

Fixture	Total Fixture Count	Equivalent DFU	Total Equivalent DFU
Sinks (Kitchen, domestic)	422	1.5	633
Toilets (Water Closet, 1.6 GPF Gravity Tank)	212	2.5	530
Tub/Showers (Bathtub or Combination Bath/Shower (fill))	167	4	668
Dishwasher (Dishwasher, domestic)	70	1.5	105
Laundry (Clothes Washer)	70	4	280
Total	941		2216

E. Table A103.1 AND Chart A103.1(1)

Appendix A Recommended Rules for Sizing the Water Supply System

A101.0 General

A101.1 Applicability

This appendix provides a general procedure for sizing a water supply system. Because of the variable conditions encountered, it is impractical to lay down definite detailed rules of procedure for determining the sizes of water supply pipes in an appendix, which shall necessarily be limited in length. For a more adequate understanding of the problems involved, refer to Water-Distributing Systems for Buildings, Report BMS 79 of the National Bureau of Standards; and Plumbing Manual, Report BMS 66, also published by the National Bureau of Standards.

A102.0 Preliminary Information

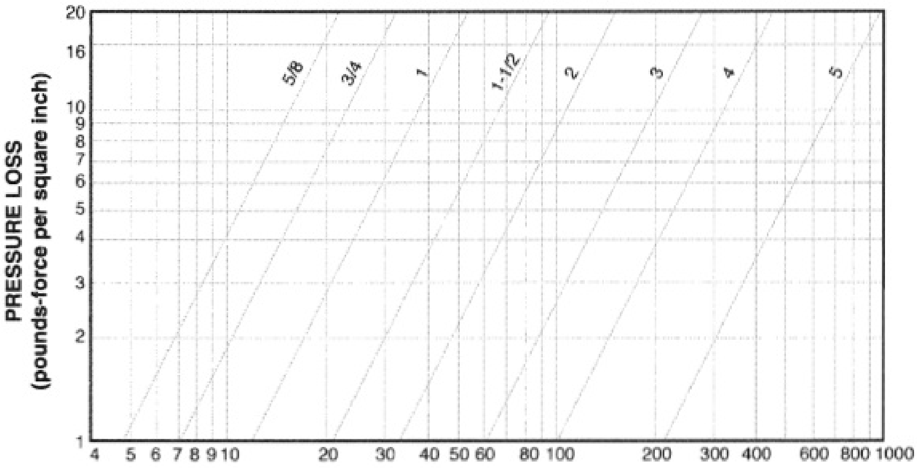
A102.1 Service Pressure

Obtain the necessary information regarding the minimum daily service pressure in the area where the building is to be located.

A102.2 Water Meter

Where the building supply is to be metered, obtain information regarding friction loss relative to the rate of flow for meters in the range of sizes likely to be used. Friction-loss data is capable of being obtained from most manufacturers of water meters. Friction losses for disk-type meters shall be permitted to be obtained from Chart A 102.2.

CHART A 102.2
FRICTION LOSSES FOR DISK-TYPE WATER METERS



For SI units: 1 inch = 25 mm, 1 pound-force per square inch = 6.8947 kPa, 1 gallon per minute = 0.06 L/s

A102.3 Local Information

Obtain available local information regarding the use of different kinds of pipe with respect both to durability and to decrease in capacity with length of service in the particular water supply.

A103.0 Demand Load

A103.1 Supply Demand

Estimate the supply demand for the building main, the principal branches and risers of the system by totaling the fixture units on each, Table A 103.1, and then by reading the corresponding ordinate from Chart A103.1(1) or Chart A 103.1(2), whichever is applicable.

TABLE A 103.1
WATER SUPPLY FIXTURE UNITS (WSFU) AND MINIMUM FIXTURE BRANCH PIPE SIZES[3]

APPLIANCES, APPURTENANCES, OR FIXTURES[2]	MINIMUM FIXTURE BRANCH PIPE SIZE[1,4] (inches)	Private	Public	ASSEMBLY[6]

Bathtub or Combination Bath/Shower (fill)	½	4.0	4.0	-
¾ inch Bathtub Fill Valve	¾	10.0	10.0	-
Bidet	½	1.0	-	-
Clothes Washer	½	4.0	4.0	-
Dental Unit, cuspidor	½	-	1.0	-
Dishwasher, domestic	½	1.5	1.5	-
Drinking Fountain or Water Cooler	½	0.5	0.5	0.75
Hose Bibb	½	2.5	2.5	-
Hose Bibb, each additionat[7]	½	1.0	1.0	-
Lavatory	½	1.0	1.0	1.0
Lawn Sprinkler, each head[5]	-	1.0	1.0	-
Mobile Home, each (minimum)	-	12.0	-	-
Sinks	-	-	-	-
Bar	½	1.0	2.0	-
Clinical Faucet	½	-	3.0	-
Clinical Flushometer Valve with or without faucet	1	-	8.0	-
Kitchen, domestic	½	1.5	1.5	-
Laundry	½	1.5	1.5	-
Service or Mop Basin	½	1.5	3.0	-
Washup, each set of faucets	½	-	2.0	-
Shower per head	½	2.0	2.0	-
Urinal, 1.0 GPF Flushometer Valve	¾	3.0	4.0	5.0
Urinal, greater than 1.0 GPF Flushometer Valve	¾	4.0	5.0	6.0
Urinal, flush tank	½	2.0	2.0	3.0
Wash Fountain, circular spray	¾	-	4.0	-
Water Closet, 1.6 GPF Gravity Tank	½	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	½	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	5.0	5.0	8.0
Water Closet, greater than 1.6 GPF Gravity Tank	½	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	7.0	8.0	10.0

For SI units: 1 inch = 25 mm

Notes:

[1] Size of the cold branch pipe, or both the hot and cold branch pipes.

[2] Appliances, appurtenances, or fixtures not included in this table shall be permitted to be sized by reference to fixtures having a similar flow rate and frequency

of use.

[3] The listed fixture unit values represent their total load on the cold water building supply. The separate cold water and hot water fixture unit value for fixtures having both cold and hot water connections shall be permitted to each be taken as three-quarters of the listed total value of the fixture.

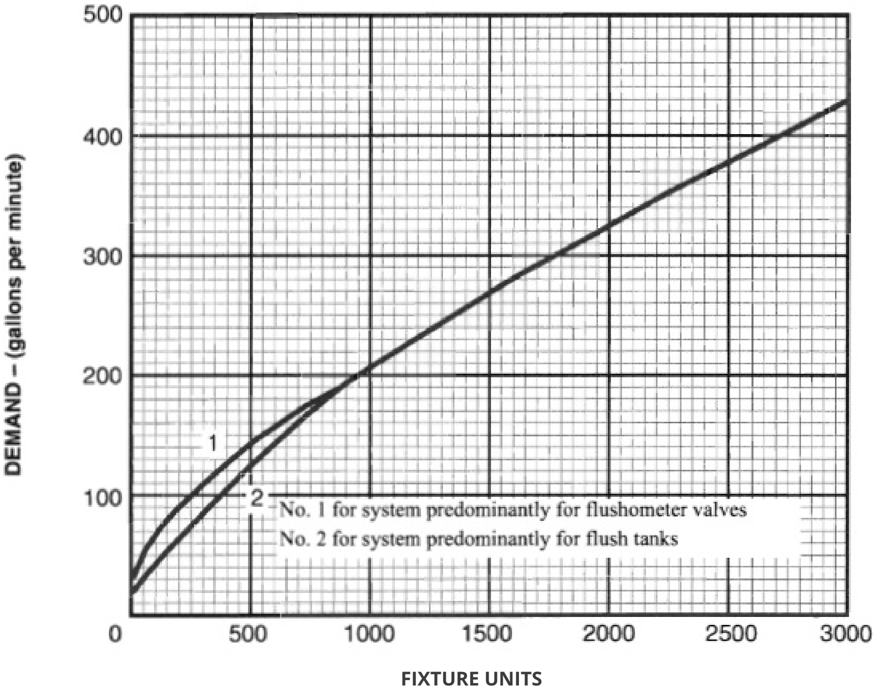
[4] The listed minimum supply branch pipe sizes for individual fixtures are the nominal (I.D.) pipe size.

[5] For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (gpm) (L/s) and add it separately to the demand in gpm (L/s) for the distribution system or portions thereof.

[6] Assembly [Public Use (see Table 422.1)].

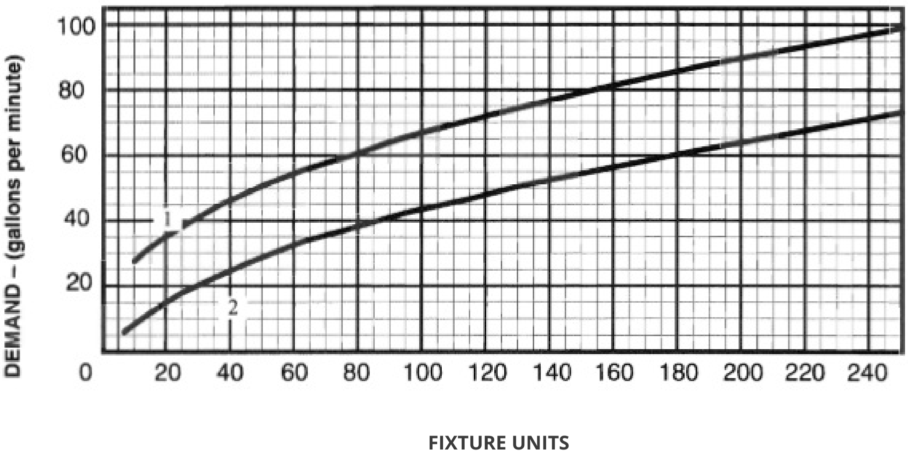
[7] Reduced fixture unit loading for additional hose bibbs is to be used where sizing total building demand and for pipe sizing where more than one hose bibb is supplied by a segment of water distribution pipe. The fixture branch to each hose bibb shall be sized on the basis of 2.5 fixture units.

CHART A 103.1(1)
ESTIMATE CURVES FOR DEMAND LOAD



For SI units: 1 gallon per minute = 0.06 L/s

CHART A 103.1 (2)
ENLARGED SCALE DEMAND LOAD



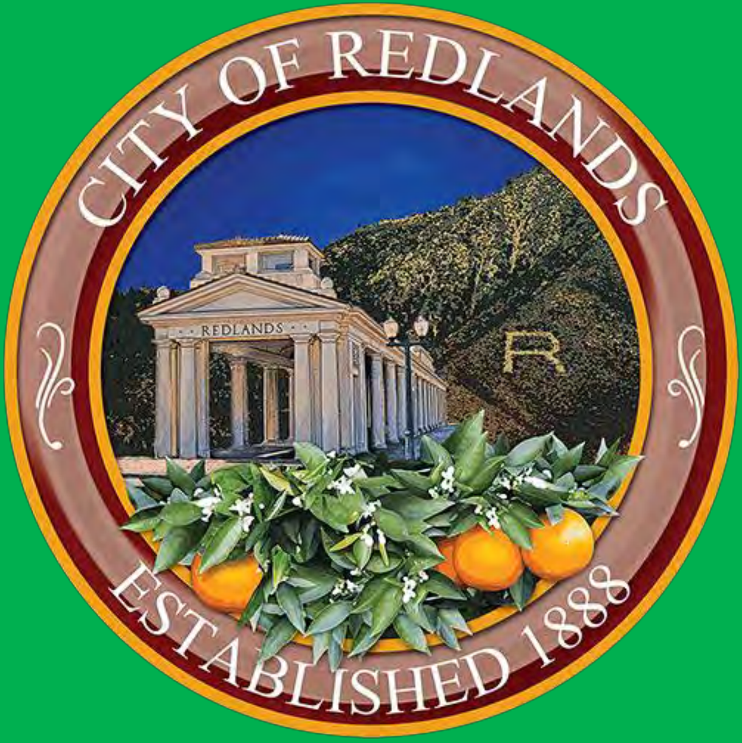
For SI units: 1 gallon per minute = 0.06 L/s

A103.2 Continuous Supply

F. CITY OF REDLANDS SANITARY SEWER SYSTEMS STANDARD SPECIFICATIONS PIPE SIZING CRITERIA

CITY OF REDLANDS

MUNICIPAL UTILITIES & ENGINEERING DEPARTMENT



SANITARY SEWER SYSTEMS STANDARD SPECIFICATIONS

January 2023 Edition

City of Redlands
35 Cajon Street, Ste 15A
P.O. Box 3005
Redlands, CA 92373
WWW.CITYOFREDLANDS.ORG/MUED

Less than 2-1/2’ of cover – Sewer main and/or laterals shall be Class 150 cast iron pipe with approved mechanical joints.

e. Size and Grades

The minimum pipe size shall be 8 inches. Pipe twelve inches (12”) and smaller in diameter shall be designed to flow at ½ full at peak dry weather flow using n = 0.013 in the Manning Formula. Pipe 15 inches (15”) and larger in diameter shall be designed to flow at ¾ full at peak dry weather flow using n = 0.013. Minimum slopes for various sizes of pipe are listed below.

8” Pipe at s = 0.0040 feet per foot
10” Pipe at s = 0.0032 feet per foot
12” Pipe at s = 0.0024 feet per foot
15” Pipe at s = 0.0016 feet per foot
18” Pipe at s = 0.0014 feet per foot
21” Pipe at s = 0.0012 feet per foot
24” Pipe at s = 0.0010 feet per foot
27” Pipe at s = 0.0008 feet per foot
30” Pipe at s = 0.0007 feet per foot

All sewers shall be designed for peak flow and using the above design criteria, however the velocity shall be not less than 2.5 feet per second nor greater than 10 feet per second at peak dry weather flow.

For determining the peak rate of flow in a main line sewer, the following tables shall be used with designated land use or persons per acre producing the greater rate of flow as the governing factor. The peak flow shall equal average flow (**Table 3**) x peak factor (**Table 4**).

TABLE 3

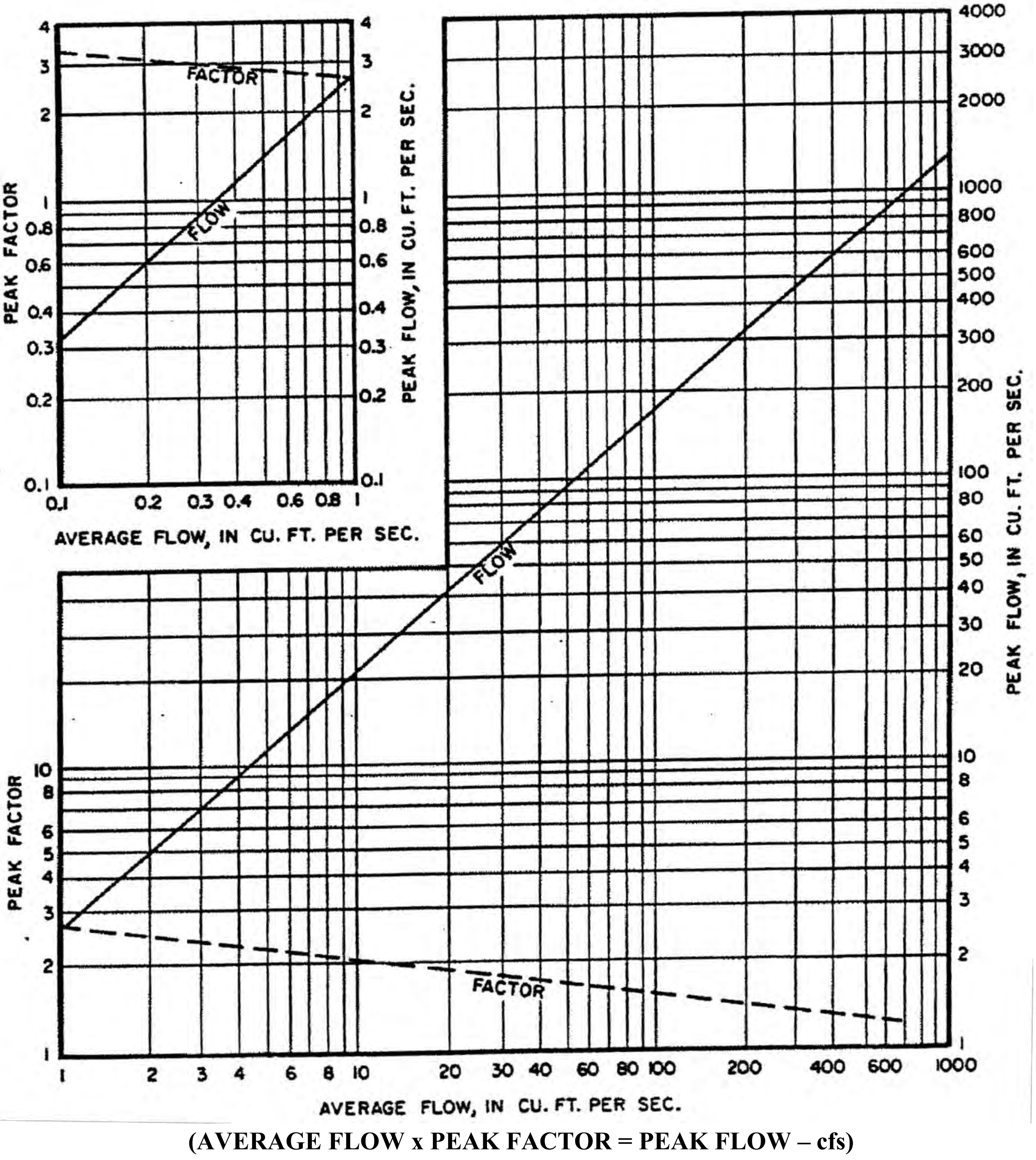
Wastewater Design Flows (Average Flow)

Land Use		Dwelling Units Per Acre	Persons per Dwelling Unit	Average Flows (cfs/acre)
Residential	Hillside	2	3.15	0.00083
	Low Density	4	3.15	0.0017
	Medium Density	10	2.50	0.0033
Commercial	Administrative & Professional			0.0022
	Neighborhood			0.0022
	Freeway Related			0.0022
	General			0.0022
Industrial	Urban Services			0.0022
	Light			0.0022
	General			0.0022
Public Use				0.0022

Those conditions not covered by the above table shall require special study.

TABLE 4

RATIO OF PEAK FLOW TO AVERAGE DAILY FLOW



(AVERAGE FLOW x PEAK FACTOR = PEAK FLOW – cfs)

G. SEWER AS-BUILTS

↓Notes

① CONSTRUCTION NOTES FOR RAILROAD CROSSING

1 Contractor shall install 28' of 10" O.D. Steel casing pipe 14' each side of the centerline of existing tracks of the Pacific Electric Railroad or its successors in intrest.

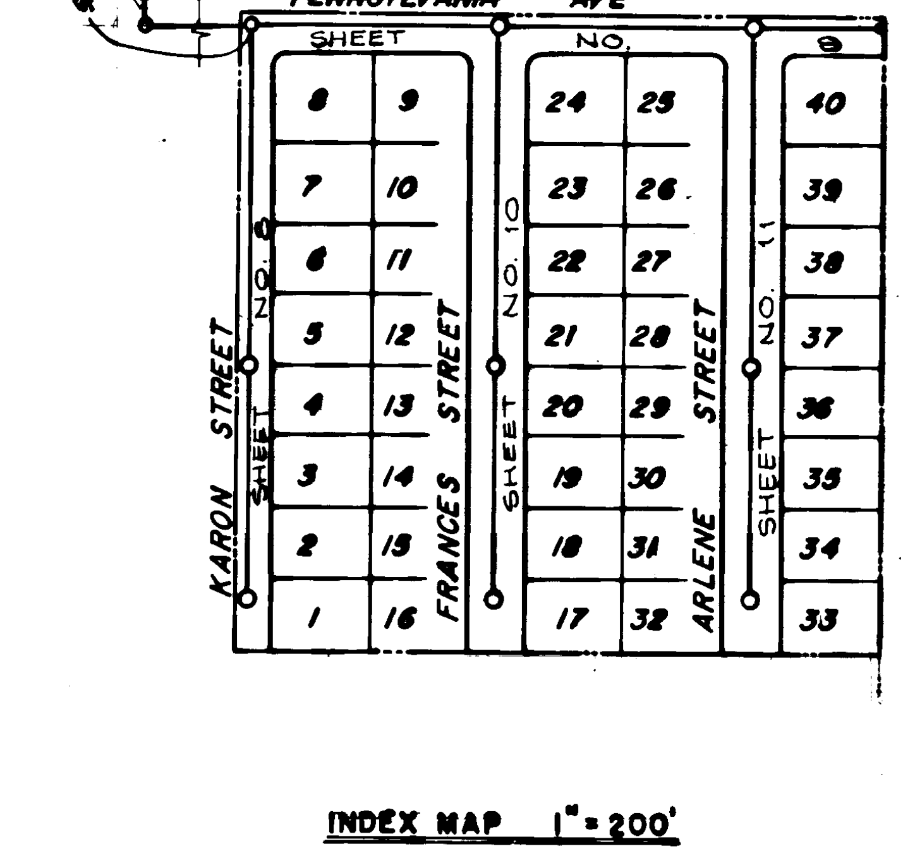
2 Within the Right of Way of the Pacific Electric Railroad, the contractor at his expense shall obtain the necessary permits from said railroads and shall comply with all provisions of said permits. The contractor should note that construction methods (i.e. open trench vs. boring or jacking) shall be specified by the individual railroads.

3 Steel casing shall have a minimum thickness of ¼". It shall be dipped in preservative material and thoroughly coated inside and outside.

4 Within the steel casings, the contractor shall install 8" VCP on Redwood skids banded to the pipe.

5 The contractor shall fill space completely around 8" VCP and steel casings with sand slurry.

6 If the Railroad is abandoned prior to construction no casing shall be required and standard trenching and construction methods shall be allowed.



INDEX MAP 1" = 200'

GENERAL NOTES

1. Sewer installation is to be in accordance with these plans and the Standards and Detail Drawings of the City of Redlands.
2. All sewer pipe elevations given refer to the flowline invert elevations.
3. The approximate locations of existing underground utility lines are shown on sheets 7 thru 11 of these plans. The lines are plotted from a combination of record and field data. The engineer assumes no liability as to the exact location of such lines nor for utility or irrigation lines not shown. The contractor is to notify all utility and irrigation companies prior to work or excavation to determine the exact locations of underground lines.
4. Sand bedding and backfill to a depth of ~~6"~~ 12" above pipe may be required if in the opinion of the City, the native backfill material is deemed unsuitable.
5. Sewer lateral locations shall not be changed more than 3' (Horizontal) without authorization from the City.
6. THE CONTRACTOR SHALL AIR TEST THE SEWER SYSTEM IN ACCORDANCE WITH CITY STANDARDS AFTER ALL OTHER UTILITIES HAVE BEEN INSTALLED AND COMPLETED WITHIN THE TRACT OR DEVELOPMENT. IN ADDITION, AFTER FINAL AIR TEST, THE CONTRACTOR SHALL CONNECT THE SEWER LATERALS TO THE HOUSE LATERALS AT THE PROPERTY LINES.
7. P.V.C. SEWER PIPE IS NOT PERMITTED ON ANY HORIZONTAL OR VERTICAL CURVE.

ESTIMATE OF QUANTITIES		
ITEM	QUANT.	REMARKS
8" V.C.P. Sewer Main	4633 LF	EXCLUDES LENGTH THRU M.H.
4" Sewer Service Laterals	40 ea.	
Standard Manholes 4'	15 ea.	PER STD. A-95
Standard Cleanout	1 ea.	PER STD. A-102
10" O.D. ¼" steel pipe	28 L.F.	Sewer Encasement for RxR.

letter	Description	Date	Initial
△	Realigned Sewer and added Casing	3/23/79	

REVISIONS

CITY OF REDLANDS
DEPARTMENT OF PUBLIC WORKS

TRACT NO. 9877
SEWER IMPROVEMENT PLAN

HICKS & HARTWICK
ENGINEERS-SURVEYORS Date 10/30/78 R.C.E. No. 23362

Designed by: RJS
Date
Checked by:
Date
Drawn by: BWH
Date
Checked by:
Date

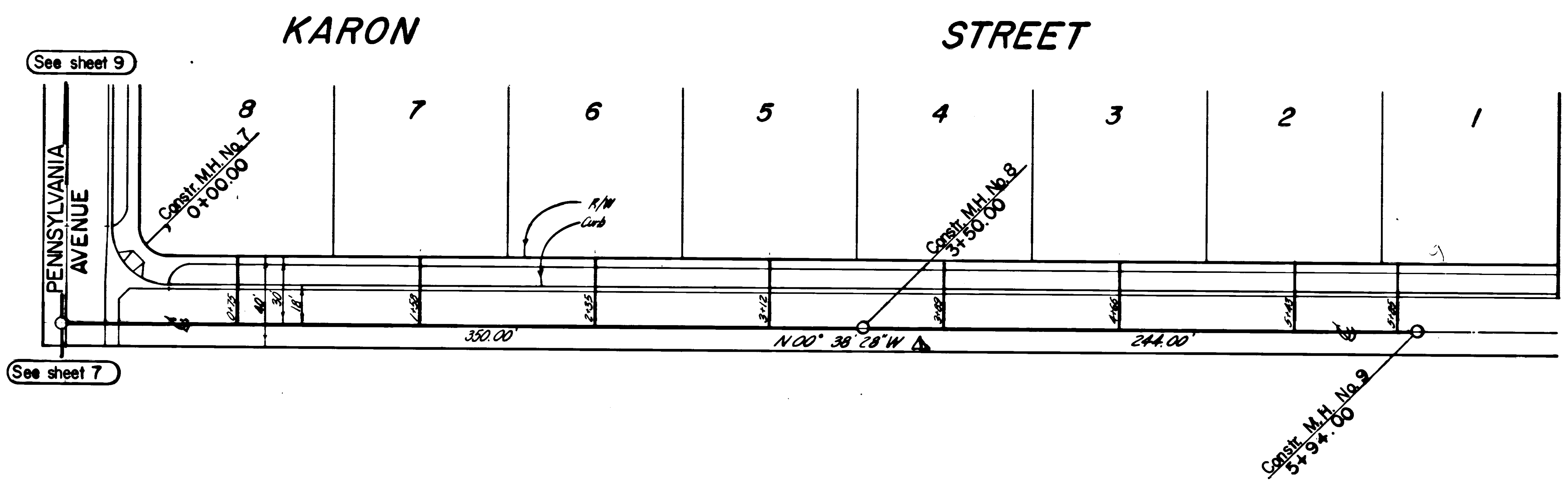
Approved: Date 11-3-78
Director of Public Works R.C.E. No. 13963

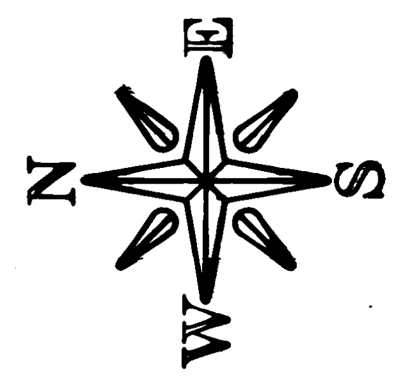
SHEET 7 OF 13 SHEETS
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'
BOOK HH54/50,51 PAGE L-73/34-38

F975-7

7544

11-3





letter	Description	Date	Initial
∆	Bearing Change	3/28/73	

REVISIONS

CITY OF REDLANDS
DEPARTMENT OF PUBLIC WORKS

TRACT NO. 9877
SEWER IMPROVEMENT PLAN
KARON STREET

HICKS & HARTWICK
ENGINEERS-SURVEYORS Date 10/30/78 James W. Hicks R.C.E. No. 23362

Designed by: RJS
Date
Checked by:
Date
Drawn by: BWH
Date
Checked by:
Date

Approved: John D. Shufelt Date 11-3-78
Director of Public Works R.C.E. No. 139
SHEET 8 OF 13 SHEETS
SCALE: HORIZ. 1"=40' VERT. 1"=4'
BOOK HH54/50,51 PAGE L-73/34-38

F975-8

7544

RECORD DRAWING
KRIEGER & STEWART
BY: M.E. Messersmith DATE: 11-27-89

F 1370-6

NOTES

1. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING 15" SEWER AT CONNECTION POINT PRIOR TO STARTING CONSTRUCTION. CONTRACTOR SHALL ADJUST M.H. NO. 2 ELEVATION TO ACCOMMODATE ACTUAL ELEVATION OF EXISTING 15" SEWER.

2. CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING 15" SEWER AT CONNECTION POINT (STA. 3+38.90) PRIOR TO STARTING EXCAVATION OF THE BORING AND JACKING PIT. CONTRACTOR SHALL ADJUST CASING ELEVATION AS DIRECTED BY OWNER TO ACCOMMODATE ACTUAL ELEVATION OF EXISTING 15" SEWER.

BENCH MARK

A chiseled "□" on B.C.R. of the southwest curb return of Orange St. and Pennsylvania Ave.

Elevation 1364.23

APPROVED

10/21/88	
C.E.NO. 30037	DATE
T. Phelps	10-21-88
C.E.NO. 22420	DATE

SYM	REVISIONS	DATE	BY
△1	RECORD DRAWING	9/7/89	MEM

• KRIEGER & STEWART •
INCORPORATED
ENGINEERING CONSULTANTS
RIVERSIDE, CALIFORNIA (714) 684-6900

APPROVED BY Mark E. Messersmith
REGISTERED ENGINEER Nº 22020 DATE 10-18-88

MARK E. MESSERSMITH
No. 22020
Exp. 9-30-89
CIVIL

SCALE HORIZ. 1"=40' VERT. 1"=4'
FIELD BOOK 144/95-97
DESIGNED M.E.M./M.P.T.
DRAWN G.K.B.
CHECKED M.E.M./U.C.R.

CITY OF REDLANDS
MUNICIPAL UTILITIES DEPARTMENT

27" & 21" SAN BERNARDINO AVE. TRUNK SEWER

STA. 3+38.9± TO STA. 15+00

SHEET No. 6
OF 17 SHEETS

F 1276

4-7430
PROJECT No.
497-4

RECORD DRAWING
KRIEGER & STEWART
BY: Mal E Messersmith DATE: 11-27-89

BENCH MARK

A chiseled "□" on B.C.R. of the southwest curb return of Orange St. and Pennsylvania Ave.

Elevation 1364.23

APPROVED

C.E.NO. 30037 DATE 9/21/88

C.E.NO. 22420 DATE 10-21-88

SYM	REVISIONS	DATE	BY
⚠	RECORD DRAWING	9/7/89	MEM

• KRIEGER & STEWART •
INCORPORATED
ENGINEERING CONSULTANTS
RIVERSIDE, CALIFORNIA (714) 684-6900

APPROVED BY Mal E Messersmith
REGISTERED ENGINEER Nº 22020 DATE 10-18-88

MARK E. MESSERSMITH No. 22020 Exp 9-30-89

SCALE HORIZ. 1"=40' VERT. 1"=4'
FIELD BOOK 144/95-97
DESIGNED M.E.M./M.P.T.
DRAWN G.K.B.
CHECKED M.E.M./U.C.R.

CITY OF REDLANDS
MUNICIPAL UTILITIES DEPARTMENT

21" SAN BERNARDINO AVE. TRUNK SEWER

STA. 15+00 TO STA. 27+00

SHEET 7 OF 17 SHEETS

F 1276

4-7430
PROJECT No.
497-4

F 1370

H. BENTLEY FLOWMASTER CALCULATIONS

Worksheet for POC 1 to POC 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.014	ft/ft
Diameter	8.0	in
Discharge	26.30	gpm

Results

Normal Depth	1.1	in
Flow Area	0.0	ft²
Wetted Perimeter	0.5	ft
Hydraulic Radius	0.7	in
Top Width	0.46	ft
Critical Depth	1.3	in
Percent Full	13.8	%
Critical Slope	0.007	ft/ft
Velocity	2.01	ft/s
Velocity Head	0.06	ft
Specific Energy	0.15	ft
Froude Number	1.405	
Maximum Discharge	690.29	gpm
Discharge Full	641.71	gpm
Slope Full	0.000	ft/ft
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	13.8	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.1	in
Critical Depth	1.3	in
Channel Slope	0.014	ft/ft
Critical Slope	0.007	ft/ft

Worksheet for POC 2 to POC 3

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.014	ft/ft
Diameter	8.0	in
Discharge	78.40	gpm

Results

Normal Depth	1.9	in
Flow Area	0.1	ft²
Wetted Perimeter	0.7	ft
Hydraulic Radius	1.1	in
Top Width	0.57	ft
Critical Depth	2.3	in
Percent Full	23.6	%
Critical Slope	0.006	ft/ft
Velocity	2.78	ft/s
Velocity Head	0.12	ft
Specific Energy	0.28	ft
Froude Number	1.470	
Maximum Discharge	690.29	gpm
Discharge Full	641.71	gpm
Slope Full	0.000	ft/ft
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	23.6	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.9	in
Critical Depth	2.3	in
Channel Slope	0.014	ft/ft
Critical Slope	0.006	ft/ft

Worksheet for POC 3 to POC 4

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.014 ft/ft
Diameter	15.0 in
Discharge	1,868.00 gpm

Results

Normal Depth	7.9 in
Flow Area	0.7 ft²
Wetted Perimeter	2.0 ft
Hydraulic Radius	3.9 in
Top Width	1.25 ft
Critical Depth	9.9 in
Percent Full	52.6 %
Critical Slope	0.007 ft/ft
Velocity	6.36 ft/s
Velocity Head	0.63 ft
Specific Energy	1.29 ft
Froude Number	1.549
Maximum Discharge	3,690.08 gpm
Discharge Full	3,430.38 gpm
Slope Full	0.004 ft/ft
Flow Type	Supercritical

GVF Input Data

Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	52.6 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	7.9 in
Critical Depth	9.9 in
Channel Slope	0.014 ft/ft
Critical Slope	0.007 ft/ft

This Page Intentionally Left Blank.

1650 SPRUCE STREET, STE 106
RIVERSIDE, CA 92507
951.787.9222
WWW.MIGCOM.COM

Memo

To: Sean Reilly, Principal Planner, City of Redlands

CC: Cameron Hile and Bob Prasse, MIG

From: Kasey Kitowski and Chris Dugan

Date: February 2, 2024

SUBJECT: Noise and Vibration Analysis for Tennessee Village Project, Redlands, CA

MIG, Inc. (MIG) has prepared this memorandum at the request of the city of Redlands. This memorandum evaluates the potential noise and vibration impacts resulting from the implementation of the proposed Tennessee Village Project (proposed project). As explained in this memorandum, the proposed project would not exceed applicable noise and vibration standards with mitigation, would not otherwise result in a substantial increase in ambient noise levels in the vicinity of the project, and would not be subjected to excessive airport-related noise levels. The proposed project, therefore, would not have the potential to result in significant noise or vibration impacts with the mitigation.

PROJECT DESCRIPTION

The proposed project involves the construction of a mixed-use development of 11 buildings on two parcels of undeveloped land in the northern part of Redlands, California.

The approximately 13.48-acre project site is located near the northeast corner of Tennessee Street and Lugonia Avenue. The proposed project would include 646,089 square feet of gross building space, 203,873 square feet of landscaped space for private yards and for a central common area, and 255,373 square feet of impervious surfaces such as walkways, drive aisles, driveways, and parking spaces. The project would include 460 apartment units. Each dwelling unit would range from approximately 758 to 1,599 square feet. The site would contain 670 parking spaces consisting of open stalls, EV charging spaces, garages, carports, and subterranean stalls. The site would be connected to Tennessee Street via two entries, one along the south portion of the site and another along the western portion, and by Pennsylvania Avenue via one entry in the northeastern corner of the site. Refer to Attachment 01 for the proposed project site plan.

The project site is bound on the north by the Pennsylvania Avenue right-of way, on the west by Tennessee Street and Interstate 210 (I-210), on the south and east by vacant land. Existing residential and commercial uses are located approximately 880 feet east of the site (across Karon Street) and 600 feet south of the project site (across Lugonia Avenue), respectively; however, the vacant lands to the east and south of the site are planned for residential (Lugonia Village project) and commercial (Tennessee and Lugonia Shopping Center project) development. The project site is located adjacent to the I-210 and approximately 0.4 miles north of I-10. The nearest airport, San Bernardino International Airport, is approximately 2.1 miles northwest of the project site and the nearest school, Citrus Valley High School, is located approximately 0.5 miles north of the project site. The nearest park, Texonia Park, is located approximately 0.3 miles east of the project site, along Texas Street.

The proposed project would involve site preparation, grading, new building construction, paving, and architectural coating. Construction activities are assumed to begin as early as 2024 and last approximately 18 months. The proposed project's construction schedule and anticipated equipment usage is listed in Table 1.

Table 1: Tennessee Village Project Construction Activities

Construction Phase	Duration (Days)	Typical Equipment Used
Site Preparation	10	Dozer, Tractor
Grading	30	Excavator, Grader, Dozer, Scraper, Tractor
Building Construction	261	Crane, Forklift, Backhoe, Generator, Welder
Paving	20	Paver, Roller, Paving Equipment
Architectural Coating	45	Air Compressor

The project is expected to be operational in 2026. Once operational, the proposed project would operate as a mixed-use residential and commercial land use. These uses would be similar to the area's existing land uses, such as residential uses to the east and northeast of the project site and commercial uses to the south and west of the project site.

The following sections describe the ambient noise environment near the proposed project and evaluate the proposed project's potential to impact the existing noise environment near the project. Please refer to Attachment 02 for background information on environmental noise and vibration, including commonly used terminology.

EXISTING NOISE ENVIRONMENT

The proposed project is located in northern Redlands, in an area classified and designated as Special Development District and as Commercial by the city's Zoning Code and General Plan, respectively. The city's General Plan identifies transportation corridors as noise sources that are of particular attention to the city and states that future residential development will need to meet land use compatibility and noise standards (city of Redlands, 2017).

Existing ambient noise levels in the project area were monitored on December 12, 2023 (MIG, 2023; see Attachment 03). Noise levels were measured with two Larson Davis Model LxT, Type 1, sound level meters and one Piccolo II, Type 2 sound level meter. The meters' receiving microphones were set at a high of roughly five feet above ground level to approximate a human receptor. Noise monitoring was conducted in one-minute intervals. Conditions during the monitoring were partly cloudy with temperatures ranging from the high 50s to the low 70s, with light, approximately five (5) mile per hour (mph) winds.

Three (3) short-term measurements were conducted to determine typical ambient noise levels in the vicinity of the project area, provide direct observations of existing noise sources at and in the vicinity of the project area, and evaluate project noise levels at nearby sensitive receptors. The three monitoring locations are described below and shown in Figure 1.

- Location ST-1 was at the central eastern portion of the project site, approximately 62 feet east of the centerline of Tennessee Street and approximately 930 feet north of the centerline of Lugonia Avenue.
- Location ST-2 was at the south central portion of the project site, approximately 435 feet east of the centerline of Tennessee Street and approximately 800 feet north of the centerline of Lugonia Avenue.

- Location ST-3 was at the central eastern of the project site, approximately 695 feet east of the centerline of Tennessee Street and approximately 980 feet north of the centerline of Lugonia Avenue.

Figure 1: Ambient Noise Monitoring Locations

Based on observations made during the ambient noise monitoring, the existing noise environment in the project vicinity consists primarily of vehicles on Tennessee Street and I-210. Table 2 summarizes the results of the ambient noise monitoring. Refer to Attachment 03 for detailed ambient noise monitoring results.

Table 2: Measured Short-Term Ambient Noise Levels (dBA)

Monitor	Duration	Measured Noise Level		
		L_{eq}	L_{min}	L_{max}
ST-1	4 hours	70.3	61.7	96.2
ST-2	3.5 hours	62.2	57.1	72.4
ST-3	3.75 hours	60.3	54.8	75.0

Source: MIG, 2023 (See Attachment 03)

As shown in Table 2, measured ambient noise levels were highest along Tennessee Street (ST-1) while noise levels on the interior of the site (ST-2 and ST-3) were much lower. These noise levels indicate traffic noise levels at the site attenuate at rate of approximately 3 decibel per doubling of distance from the roadway centerline.

Noise monitoring was also recently (December 2022) conducted for the Neighborhoods at Lugonia Village Project, which borders the proposed project site to the east (at the southeast corner of the intersection of Karon Street and Pennsylvania Avenue). The results of this recent noise monitoring provide 24-hour data at the existing residential area on Karon Street to the east of the project site, approximately 1,690 feet from the centerline of Tennessee Avenue (LSA, 2023). As shown in Table 3, the measured noise levels at the Lugonia Village project are approximately 10.4 dBA L_{eq} lower than the noise level measured at ST-1. The 24-hour noise level at Karon Street and Pennsylvania Avenue was 62.8 CNEL. Using the difference between the ST-1 site and the LT-1 site, it is expected that the 24-hour noise level along Tennessee Street would be up to 73.2 CNEL.

Table 3 Measured Noise Levels (dBA) and Calculated CNEL

Time	**Duration**	**Measured Noise Level (L_{eq})**		
		ST-1	**Lugonia Village LT-1**	**Difference**
3 PM	1 hour	70.4	60.0	10.4
4 PM	1 hour	69.7	61.3	8.4
5 PM	1 hour	71.0	59.5	11.5
6 PM	1 hour	70.0	58.9	11.1
			Average	10.4

Source: MIG, 2023 (see Attachment 03) and LSA, 2023

NOISE AND VIBRATION ANALYSIS

The proposed project would generate noise during construction and operation of the proposed facilities. The following analysis evaluates if the project would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of the standards established in:
  - Redlands Municipal Code Section 8.06.070 (Exterior Noise Limits), Section 8.06.080 (Interior Noise Standards), Section 8.06.100 (Residential Air Conditioning Or Air Handling Equipment), or Section 8.06.120 (Exemptions); or
  - The Redlands General Plan Healthy Community Chapter;
- Generate excessive groundborne vibration or groundborne noise levels; or
- Expose people residing or working in the project area to excessive airport-related noise levels.

With regard to item a), the city's Municipal Code and General Plan establish the following standards and policies that would apply to the proposed project's construction and operational noise sources:

- Construction Noise (Redlands Municipal Code Title 8, Health and Safety, Chapter 8.06, Community Noise Control):
  - Section 8.06.090(E) prohibits loading and unloading activities between the hours of 10 PM and 6 AM in such a manner as to cause a noise disturbance across a residential property line or at any time in violation of the Municipal Code's general noise regulation (Section 8.060.030), which prohibits noise that disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to a reasonable person of normal sensitivity.

  - Section 8.06.090(F) prohibits the operation of tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday house of 6 PM and 7 AM, including Saturdays, or at anytime on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial property line, and requires all mobile or stationary internal combustion engine powered equipment or machinery to be equipped with exhaust and air intake silencers in proper working order, or suitable to meet applicable Municipal Code standards.
  - Section 8.06.120(G) exempts construction activity from noise regulations between the hours of 7 AM and 6 PM on Monday through Saturday. Construction shall not occur on Sundays and federal holidays. All motorized equipment used in such activities is required to be equipped with functioning mufflers.
- Construction Noise (Redlands General Plan Healthy Communities Chapter):
  - Policy 9.0w requires limiting hours for all construction or demolition work where site-related noise is audible beyond the site boundary.
- Operational Noise (Redlands Municipal Code Title 8, Health and Safety, Chapter 8.06, Community Noise Control):
  - Section 8.060.070 (Exterior Noise Limits) sets forth the maximum permissible sound level that may be generated by a project at single-family and multi-family residential districts is 60 dBA L_{eq} during the daytime (7 AM to 10 PM) and 50 dBA L_{eq} during the nighttime (10 PM to 7 AM). The maximum permissible sound level that may be generated by a project at commercial district is 66 dBA L_{eq} during the daytime (7 AM to 10 PM) and 60 dBA L_{eq} during the nighttime (10 PM to 7 AM). The Municipal Code also establishes:
    - The noise standard is not to be exceeded for a cumulative period of more than 30 minutes any hour.
    - The exterior noise standard plus five (5) dBA is not to be exceeded for a cumulative period of more than 15 minutes in any hour.
    - The exterior noise standard plus 10 dBA is not to be exceeded for a cumulative period of more than 5 minutes in any hour.
    - The exterior noise standard plus 15 dBA is not to be exceeded for a cumulative period of more than one (1) minute in any hour.
    - The exterior noise standard plus 20 dBA, or the maximum measured ambient noise level, is not to be exceed at any period of time.
  - Section 8.060.080 (Interior Noise Limits) sets forth the maximum permissible sound level that may be generated by a project at single-family and multi-family residential districts is 45 dBA L_{eq} at any time. The Municipal Code also establishes:
    - The interior noise standard is not to be exceed for a cumulative period of more than five (5) minutes any hour.
    - The interior noise standard plus five (5) dBA is not to be exceeded for a cumulative period of more than one (1) minute in any hour.
    - The interior noise standard plus 10 dBA or the maximum measured ambient noise level, is not to be exceeded at any time.
  - Section 8.060.100 (Residential Air Conditioning or Air Handling Equipment) specifically identifies that it is unlawful to operate or permit the operation of any air

conditioning or air handling equipment in such a manner as to exceed the exterior noise standards set forth in Municipal Code Section 8.06.070 (see above).

- Operational Noise (Redlands General Plan Healthy Communities Chapter):
  - Policy 9.0s requires mitigation to ensure that indoor noise levels for residential living spaces do not exceed 45 dBA CNEL due to the combined effect of all exterior noise sources.
  - Policy 9.0v considers the following increases in noise levels to be possibly significant:
    - An increase in exposure of four (4) dB or more if the resulting noise level would exceed that described as clearly compatible for the affected land use as established in General Plan Table 7-10 and Table 7-11.
    - Any increase of six (6) dB or more due to the potential for adverse community response.

With regard to item b), the city's Municipal Code establishes the following standards that would apply to the proposed project's potential vibration sources:

- Groundborne Vibration and Noise (Redlands Municipal Code):
  - Section 8.06.090(G) prohibits the operating or permitting the operation of device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty feet (150') from the source if on a public space or public right of way. Municipal Code Section 8.06.020 defines the vibration perception threshold of 0.01 inches/second peak particle velocity (PPV).

Increases in Ambient Noise Levels in Excess of Applicable Standards

Project Construction

The proposed project involves construction activities including site preparation, grading, building construction, paving and architectural coating on an undeveloped parcel in an existing residential area of the city. Construction activities are anticipated to begin in 2024 and may last approximately 18 months in total.

In general, construction activities would involve the use of worker vehicles, delivery trucks, dump trucks, and heavy-duty construction equipment such as (but not limited to) dozers, backhoes, tractors, loaders, graders, excavators, scrapers, welders, rollers, cranes, material lifts, generators, pavers, paving equipment, and air compressors. These types of construction activities would generate noise and vibration from the following sources:

- Heavy equipment operations at different work areas. Some heavy equipment would consist of mobile equipment such as a loader and excavator that would move around work areas; other equipment would consist of stationary equipment (e.g., cranes or material hoists/lifts) that would generally operate in a fixed location until work activities are complete. Heavy equipment generates noise from engine operation, mechanical systems, and components (e.g., fans, gears, propulsion of wheels or tracks), and other sources such as back-up alarms. Mobile equipment generally operates at different loads, or power outputs, and produces higher or lower noise levels depending on the operating load. Stationary equipment generally operates at a steady power output that produces a constant noise level.
- Vehicle trips, including worker, vendor, and haul truck trips. These trips are likely to primarily occur on Lugonia Avenue and Tennessee Street.

Typical construction equipment noise levels at different distances are shown in Table 4.

Table 4: Potential Project Construction Equipment Noise Levels

Typical Equipment	Noise Level at 50 feet (L_{max})(A)	Percent Usage Factor(B)	Predicted Equipment Noise Levels (L_{eq})(C)						
			25 Feet	50 Feet	100 Feet	200 Feet	300 Feet	425 Feet	850 Feet
Air Compressor	80	40	82	76	70	64	56	57	44
Bulldozer	85	40	87	81	75	69	65	62	56
Backhoe	80	40	82	76	70	64	56	57	51
Compact Roller	80	20	79	73	67	61	57	54	48
Concrete Mixer	85	40	87	81	75	69	65	57	56
Crane	85	16	83	77	71	65	61	58	52
Delivery Truck	85	40	87	81	75	69	65	57	56
Excavator	85	40	87	81	75	69	65	57	56
Grader	85	40	87	81	75	69	65	57	56
Generator	82	50	85	79	73	67	66	60	54
Paver	85	50	88	82	76	70	66	63	57
Pneumatic Tools	85	50	88	82	76	70	66	63	57
Tractor	84	40	86	80	74	68	64	61	55
Scraper	85	40	87	81	75	69	65	62	56
Welder	73	40	75	69	63	57	53	50	44

Sources: Caltrans, 2013 and FTA, 2010.

(A) L_{max} noise levels based on manufacturer's specifications.

(B) Usage factor refers to the amount (percent) of time the equipment produces noise over the time period.

(C) Estimate does not account for any atmospheric or ground attenuation factors. Calculated noise levels based on Caltrans, 2013: L_{eq} (hourly) = L_{max} at 50 feet – 20log (D/50) + 10log (UF), where: L_{max} = reference L_{max} from manufacturer or other source; D = distance of interest; UF = usage fraction or fraction of time period of interest equipment is in use.

With regard to construction noise, site preparation and grading phases typically result in the highest temporary noise levels due to the use of heavy-duty equipment such as dozers, excavators, graders, tractors, scrapers, and trucks. Construction noise impacts generally occur when construction activities occur in areas immediately adjoining noise sensitive land uses, during noise sensitive times of the day, or when construction durations last over extended periods of time.

The proposed project would have a limited potential to result in construction noise impacts at existing sensitive receptor locations because the closest residential properties are located approximately 880 feet north of the project boundary. As shown in Table 4, typical construction noise levels would not exceed 57 dBA L_{eq} at a distance of approximately 850 feet. Thus, the proposed project's potential construction noise levels would be less than the measured ambient levels along Karon Avenue in December 2022 (see Table 3) and would not result in a significant impact at existing sensitive receptor locations on Karon Avenue. In addition, the proposed project would be required to comply with all applicable Municipal Code requirements pertaining to the control of construction noise, including Section 8.06.090(F) and 8.06.120(G), which limits construction activities to the hours of 7 AM to 6 PM, Monday through Saturday, with no activities taking place on Sunday or holidays and requires all equipment to include air intake silencers and exhaust mufflers in good work order. These mandatory requirements would further reduce the project's less than significant construction noise levels.

As explained above, the vacant land that borders the proposed project to the east (between the proposed project's eastern boundary and Karon Avenue) is the site of the planned Lugonia Village residential project and subdivision, which would consist of 451 apartment units, 72 townhomes, and 18 single-family detached homes on approximately 24.4 acres of land. The Lugonia Village project is anticipated to begin construction by June 2025 and complete construction by January 2028 (LSA, 2023, Table B). Based on this published schedule, the Lugonia Village project would result in adjacent sensitive residential receptors no sooner than January 2028. In contrast, the proposed project is anticipated to be constructed over an 18-month period beginning in 2024 and concluding, at latest (i.e., assuming construction begins in December 2024), by May 2026. Thus, the proposed project's construction activities would be complete before the Lugonia Village project is occupied. The proposed project, therefore, would not have the potential to impact future receptors at the Lugonia Village project.

It is noted that, based on their respective schedules, the proposed project's construction activities would combine with the Lugonia Village project's construction activities to result in a cumulative noise impact to existing sensitive receptors on Karon Avenue. Specifically, it could be possible for the proposed project's building construction, paving, and architectural coating phases to overlap with grading and other activities associated with the Lugonia Village project. If this were to occur, the proposed project would not result in a cumulatively considerable contribution to total construction noise levels on Karon Avenue because the proposed project's work activities would be located more than 850 feet from Karon Avenue and result in substantially lower noise levels than heavy equipment operations in the Lugonia Village project area that would be occurring much closer to Karon Avenue receptors.

Finally, based on their respective schedules, the proposed project may be occupied by sensitive residential receptors prior to the completion of Lugonia Village construction activities. Specifically, Lugonia Village building construction, paving, and architectural coating activities may still be occurring after May 2026, when the proposed project would be occupied. The Initial Study / Mitigated Negative Declaration (IS/MND) prepared for the Lugonia Village project included standard conditions requiring Lugonia Village construction activities to occur in accordance with the Municipal Code's allowable time periods and all construction equipment to be equipped with exhaust and air intake silencers in good working order. With implementation of these conditions, the IS/MND concluded Lugonia Village noise impacts on adjacent sensitive receptors would be less than significant.

In conclusion, the proposed project's construction activities would occur more than 850 feet away from existing sensitive receptors and would not result in significant construction noise levels at existing sensitive receptor locations. The proposed project also would not have the potential to impact future receptors in the Lugonia Village project because the Lugonia Village project is anticipated to be occupied after the proposed project is constructed. Regardless of the timing of the Lugonia Village project, the proposed project's construction activities would occur in compliance with Municipal Code limits on allowable work hours and requirements for intake and exhaust mufflers. The proposed project's construction noise levels, therefore, would be less than significant.

Project Operation (On-Site Noise Sources)

The proposed project would generate noise from human activity (e.g., use of open space areas), vehicle parking activities, garbage collection activities, landscaping activities, stationary heating, ventilation, and air conditioning (HVAC) equipment, and other residential and commercial activities (e.g., building maintenance). These new sources of noise could be audible at adjacent properties; however, the project would have a limited potential to generate significant on-site noise levels or substantially change overall noise levels in the vicinity of the project for the following reasons:

- Residential uses: Residential land uses, including high density and mixed-use residential development, are a not a substantial source of noise because:
  - Buildings and equipment are setback from front, side, and rear property lines;
  - Mechanical equipment associated with elevators, amenities (e.g., pools,) are typically enclosed within closets, sheds, or equipment rooms;
  - Heating, ventilation, and air conditioning (HVAC) equipment is typically roof mounted behind a parapet wall or screened from public view by landscaping, fences, or walls and, therefore, shielded from adjacent property lines; and
  - Residential activities are subject to the Municipal Code requirements that control and abate unnecessary, excessive, or annoying noise, including . . . .
  - Pursuant to Assembly Bill 1307, for residential projects, the effects of noise generated by project occupants and their guests on human beings is not a significant effect on the environment for the purposes of CEQA.
- Commercial uses: Ground level commercial uses would be located in the southwest corner of the project (in Building 8 and Building 10). The commercial space is intended to create a walkable environment for residents to have easy access to goods and services, as well as access to the potential commercial development to the south of the project area (between the proposed project's southern boundary and Lugonia Avenue). The commercial area would, at closest, be more than 1,300 feet away from existing sensitive receptors on Karon Avenue, and more than 450 feet away from future sensitive receptors associated with the Lugonia Village project to the east (between the proposed project's eastern boundary and Karon Avenue). In addition, residential buildings 3, 6, 7, and 9 would serve to partially or fully shield ground-level potential commercial noise from sensitive, off-site receptors to the east. Finally, the proposed project's commercial uses do not include intensive operations or features that could generate elevated exterior noise levels, such as drive-throughs with speaker boxes. The commercial area would include a gated loading dock that would be located at least 75 feet from any residential building façade and the loading dock would operate in accordance with Municipal Code Section 8.06.090(E), which prohibits loading and unloading activities between the hours of 10 PM and 6 AM or at any time in violation of the Municipal Code's general noise regulation contained in Section 8.06.030.
- Project layout: The proposed project layout generally places the housing units around the perimeter of the site, which would shield adjacent properties from noise originating on-site. For example, the courtyards would be shielded from existing and future residences to the east by the proposed project's residential buildings. Indoor common space such as the fitness center and club room would also be shielded from receptors by the project's residential buildings. The roof deck, which is located near the center of the site, would be located over 400 feet from the nearest sensitive receptors and would not generate substantial noise levels at shared property lines.

Once constructed, the proposed project's primary on-site stationary noise source would be HVAC equipment, which would be located on the roof of the project's three- and four-story buildings, at least 30 or 40 feet above the ground, respectively. HVAC units would be located on a platform in the center of each building (or building wing), with approximately one unit per tenant. Although the exact make and model of the HVAC units are unknown at this time, the type of HVAC unit anticipated to be installed is a small fan-type residential unit capable of generating noise levels between 70 and 76 dBA at a distance of three (3) feet, depending on the type of model installed (Carrier, 2021). A parapet wall would shield the HVAC units from adjacent property lines and increase the effective distance equipment noise must travel to reach the property line. Each building's parapet wall would provide a different level of HVAC noise attenuation due to differences in distance between the HVAC platform and the parapet wall and the parapet wall and the adjacent property line, as well as differences in receiver, source (i.e., HVAC), and top of wall elevations. For the purposes of this analysis, only HVAC equipment noise associated with perimeter buildings adjacent to shared property lines was estimated. The proposed project's estimated HVAC unit noise levels with distance and barrier attenuation are provided in Table 5 (residential property lines) and Table 6 (commercial property lines). Refer to Attachment 04 for detailed HVAC noise level estimates.

Table 5: Potential HVAC System Noise Levels at Residential Property Lines

HVAC System Variable	**Building 2**	**Building 3**	**Building 7**
Reference HVAC Noise Level at 3 Feet	76.0 dBA L_{eq}	76.0 dBA	76.0 dBA
Distance to Residential Property Line$^{(A)}$	200 Feet	90 Feet	240 Feet
Number of HVAC Units Operating	42	32	20
Estimated Total Noise Level	42.8	50.0	43.6
Residential Daytime Standard (7 AM – 10 PM)	60 dBA L_{eq}	60 dBA L_{eq}	60 dBA L_{eq}
Residential Nighttime Standard (10 PM – 7 AM)	50 dBA L_{eq}	50 dBA L_{eq}	50 dBA L_{eq}
Standards Exceeded?	No	No	No

Source: MIG (see Attachment 04)

(A) Distance is as measured from the center of the HVAC platform to the closest point on the property line.
(B) Total noise level includes attenuation with distance and shielding by parapet wall.

Table 6: Potential HVAC System Noise Levels at Commercial Property Lines

HVAC System Variable	**Building 7**	**Building 8**	**Building 10**
Reference HVAC Noise Level at 3 Feet	76.0 dBA L_{eq}	76.0 dBA	76.0 dBA
Distance to Residential Property Line$^{(A)}$	45 Feet	30 Feet	50Feet
Number of HVAC Units Operating	20	16	24
Estimated Total Noise Level	51.3	52.5	46.9
Residential Daytime Standard (7 AM – 10 PM)	65 dBA L_{eq}	65 dBA L_{eq}	65 dBA L_{eq}
Residential Nighttime Standard (10 PM – 7 AM)	60 dBA L_{eq}	60 dBA L_{eq}	60 dBA L_{eq}
Standards Exceeded?	No	No	No

Source: MIG (see Attachment 04)

(A) Distance is as measured from the center of the HVAC platform to the closest point on the property line.
(B) Total noise level includes attenuation with distance and shielding by parapet wall.

As shown in Table 5 and Table 6, the proposed project's potential HVAC noise levels would not exceed the city's daytime or nighttime noise standards for residential or commercial districts. The HVAC estimates provided in Table 5 and Table 6 are considered conservative (i.e., likely to overestimate potential noise levels) because the estimated noise levels assume all HVAC units in a given area are operating at the same time, for a full 30 minutes. In actuality, this condition is unlikely to occur. Although estimated HVAC noise levels would not exceed a city standard, Building 3 HVAC noise levels would be equal to the Municipal Code's residential nighttime standard of 50 dBA L_{eq}. To allow for potential small differences in assumed and final setback distances and building elevations, MIG recommends Mitigation Measure NOI-1 be incorporated into the project to ensure Building 3 HVAC noise levels do not exceed the city's nighttime noise standard of 50 dBA L_{eq}.

Mitigation Measure NOI-1: Reduce Potential Building 3 HVAC Noise Levels

To reduce potential noise levels from Building 3 heating, ventilation, and air conditioning (HVAC) equipment, the city shall:

1) Prohibit the installation of HVAC units or systems that generate a noise level greater than 75 dBA (at 3 feet) for units located within 90 lateral feet of the project's eastern property line; or
2) Require the project design the parapet wall for any building with an HVAC unit or system within 90 feet of the project's eastern property line to be at least 1 foot taller than the top of the tallest installed HVAC unit.

The implementation of Mitigation Measure NOI-1 would provide a minimum of 1 dBA of additional HVAC noise attenuation along the shared eastern property line and ensure that HVAC noise levels would not exceed the city's 50 dBA L_{eq} exterior nighttime noise standard, nor any other exterior noise standard (e.g., the city's 60 dBA L_{eq} daytime standard for residential properties).

The project also would not have the potential to result in noise levels that exceed the city's maximum permissible interior noise limit of 45 dBA L_{eq} for residential properties. Noise levels inside existing residential buildings would be approximately 12 dBA to 30 dBA lower than estimated exterior noise levels, depending on whether windows and doors were open or closed. Thus, potential HVAC-related interior noise levels at existing residential receptors adjacent to the project would be less than 40 dBA L_{eq} even with windows open, which is less than the city's 45 dBA L_{eq} interior noise standard.

Finally, it is noted that HVAC equipment does not operate continuously and would not affect ambient noise levels when the equipment is not in use. For these reasons, potential HVAC equipment would not generate noise levels that have the potential to exceed the 45 dBA CNEL interior noise standard established by General Plan Policy 9.0s. Furthermore, with Mitigation Measure NOI-1, potential HVAC noise is estimated to be less than 50.0 dBA L_{eq} when in operation, which is approximately 10 dBA less than the CNEL measured on Karon Avenue for the Lugonia Village project (see Table 3 and related discussion of existing ambient noise levels above). The proposed project, therefore, would not substantially change noise levels in the vicinity of the project, result in incompatible noise levels at sensitive receptor locations, or otherwise result in a substantial permanent increase in ambient noise levels in the vicinity of the project (considered by General Plan Policy 9.0v to be 4 dBA if a land use compatibility threshold is exceeded or 6 dBA in any situation).

As described above, the proposed project would not result in a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of city standards with the incorporation of Mitigation Measure NOI-1. This impact would be less than significant with mitigation.

Project Operation (Off-Site Vehicle Trip Noise)

The Transportation Study Screening Analysis prepared for the proposed project indicates the project would result in a net increase of 2,704 daily vehicle trips (Translutions, 2023). Currently, there are approximately 5,058 passenger car equivalent (PCE) trips per day at the intersection of SR-210 West Bound Ramps and Tennessee Street, 4,828 PCE per day at the intersection of

SR-210 East Bound Ramps and San Bernardino Avenue, 6,186 PCE trips per day at the intersection of Tennessee Street and Lugonia Avenue, and 4,162 PCE trips per day at the intersection of Tennessee Street and I-10 West Bound ramps, and 5,174 PCE trips per day at the intersection of Tennessee Street and I-10 East Bound ramps (Translutions, 2023). In general, it takes a doubling of traffic to increase traffic noise volumes by 3 dBA, which is considered an audible increase for exterior noise environments by the city's General Plan (Caltrans, 2013 and city of Redlands, 2017). The addition of 2,704 passenger cars to the roadway system would not result in a doubling of traffic on any roadway segment at or in the vicinity of the project site and, therefore, would result in a less than 3 dBA increase in noise levels on local roads used to access the project site. The proposed project would not result in a substantial, permanent increase in noise levels along the roadways used to access the proposed project as compared to existing or future conditions. This impact would be less than significant.

Groundborne Vibration

Construction vibration impacts generally occur when construction activities occur in close proximity to buildings and vibration-sensitive areas, during evening or nighttime hours, or when construction activities last extended periods of time. The potential for groundborne vibration is typically greatest when vibratory or large equipment such as rollers or bulldozers are operated adjacent to or in proximity of occupied buildings and structures. For the proposed project, large equipment would primarily operate during the site preparation, grading, and paving phases; however, the proposed project is currently bordered by vacant land on the east and south, with the closest existing structures being residences located 880 feet east of the project. The proposed project, therefore, does not have the potential to result in excessive groundborne vibrations at existing structures. In addition, as described above, the planned Lugonia Village residential project and subdivision is anticipated to begin construction by June 2025 and complete construction by January 2028 (LSA, 2023, Table B). In contrast, the proposed project is anticipated to be constructed over an 18-month period beginning in 2024 and concluding, at latest (i.e., assuming construction begins in December 2024), by May 2026. Thus, the proposed project's site preparation, grading, and paving activities would be complete before the Lugonia Village project is constructed and occupied. The proposed project, therefore, would not have the potential to result in ground-borne vibrations during construction that could impact existing or future off-site receptors or structures. This impact would be less than significant impact.

Once operational, the proposed project would consist of a mix of residential and commercial uses that would not involve any large equipment or other operations that would generate excessive groundborne vibration levels. This impact would be less than significant.

Airport-Related Noise

The proposed project is located approximately 2.3 miles southeast of the San Bernardino International Airport. The project site is located outside of the 65 CNEL noise contour for the San Bernardino International Airport and is not located within any other airport planning boundary (SBIAA, 2019; city of Redlands, 2003). The proposed project, therefore, would not expose people living or working at the site to excessive airport-related noise levels.

Other Planning Considerations (Noise / Land Use Compatibility)

The California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) ruled that CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." Per this ruling, a Lead Agency is not required to analyze how existing conditions might impact a project's existing or future population except where specifically required by CEQA; however, a Lead Agency may elect to disclose information relevant to a project even if it not is considered an impact under CEQA. Furthermore, the city's General Plan sets noise standards for receiving land uses which require evaluation for consistency and compliance even if such evaluation is not required by CEQA to be identified as a physical impact of the project. Specifically, General Plan Table 7-10 establishes that the clearly compatible and normally incompatible noise levels for commercial mixed uses with residential units are 75 CNEL and 85 CNEL, respectively, while General Plan Table 7-11 establishes 60 CNEL and 45 CNEL as the exterior and interior noise standard for multi-family residential uses, respectively, with the 60 CNEL exterior standard only applicable to private patios and balconies that are served by a means of exit from inside (i.e., provide egress from the dwelling unit to areas outside the dwelling unit balcony).

<u>Exterior Noise Exposure</u>

As described above, traffic noise modeling conducted for the city's General Plan indicates existing exterior ambient noise levels along the segments of Tennessee Street and the I-210 adjacent to the proposed project site are 67.0 and 82.5 CNEL (at a distance of 50 feet from the centerline of the outermost travel lane), respectively, and will increase to 70.2 CNEL and 83.7 CNEL by 2035. The ambient noise monitoring conducted at the project site approximately 200 feet from the outermost lane of the I-210 recorded noise levels (73.2 CNEL) is consistent with the General Plan's existing traffic noise level estimate of 82.5 CNEL at 50 feet (which attenuates to 73.5 CNEL at 200 feet, assuming 4.5 dBA of attenuation per doubling of distance), but higher than Tennessee Street noise levels. This indicates the I-210 is the predominant contributor to the ambient noise environment at the project site, and that future noise levels at the project site may change as I-210 traffic noise changes (i.e., may increase by approximately 1.2 CNEL by 2035).

The proposed project property line is approximately 52 feet and 200 feet from the centerline of the outermost lane of Tennessee Street and I-210, respectively. At these distances, the total combined exterior noise levels at the project property line fronting Tennessee Street could be up to approximately 74.3 CNEL under existing conditions and 75.9 CNEL in 2035, respectively. The proposed project includes an approximately 25- to 35-foot landscaped area adjacent to Tennessee Street that is not considered private or common open space that would not be occupied or used by project residents. Therefore, existing and future noise levels in this area are considered compatible for the proposed project.

The nearest building façade (associated with exterior walls of Buildings 10 and 11) would be at least approximately 85 feet from the centerline of Tennessee Street and 225 feet from the centerline of the outermost lane of I-210. This building façade would include windows, Juliet balconies (not accessible private open space), and private ground floor patios and upper-level balconies in unit types A3 (100 square foot patio/balcony), B4 (71 square foot patio/balcony), and B5 (77 square foot patio/balcony). The balconies would be accessible from individual units but would not provide a means of egress from the unit itself. Based on the above distances, the exterior noise levels at the exterior building façade (and private patio/balcony areas) on Tennessee Street could be up to approximately 73.3 CNEL under existing conditions and 74.7 CNEL in 2035, respectively. These values do not exceed the city's clearly compatible 75 CNEL noise level for commercial mixed-uses with residential units. In addition, since individual balconies would not provide a means of exit from dwelling units to areas outside the property, the city's 60 CNEL exterior standard for residential uses does not apply to the project. Therefore, existing and future noise levels at private patios and balconies are considered compatible for the proposed project.

The proposed project also includes other private and common outdoor open space areas, such as courtyards, pool areas, private patios and balconies, and small roof decks. These open space areas would be on the interior of the site, at least 210 feet and 350 feet or more from the centerline of the outermost lane of Tennessee Street and the I-210. These areas would also be located behind one or more of the project's three- and four-story buildings, and thus either partially or fully shielded from traffic noise emanating from Tennessee Street and the I-210. With distance and shielding, exterior noise levels in the center and eastern part of the project area are estimated to be less than 60 CNEL, which is below the city's clearly compatible 75 CNEL noise level for commercial mixed uses with residential units and 60 CNEL standard for residential uses.

As described above, the proposed project would be compatible with the city General Plan guidelines and standards. Exterior noise exposure is an effect of the environment on the project. In *California Building Industry Association v. Bay Area Air Quality Management District* 62 Cal.4th 369 (2015), the Supreme Court ruled that the environment's impact on a project is not an impact under CEQA, and the proposed project would not result in on- or off-site noise levels that would substantially exacerbate noise exposure conditions.

Interior Noise Compatibility

The California Building Standards Code establishes that interior noise levels attributable to exterior noise sources shall not exceed 45 DNL or CNEL (as established by the local General Plan) for residential developments. As described above, daily noise exposure levels at the exterior façade and patio/balcony areas of Building 10 and Building 11 could be exposed to noise levels up to 74.7 CNEL by 2035. These units would require enhanced noise attenuation features to ensure interior noise levels do not exceed 45 CNEL. In general, any unit with an exterior wall located less than 300 feet from the center of the outermost lane of Tennessee Street (equal to 438 feet from the outermost lane of the I-210) could be exposed to façade noise levels above 70 CNEL and would require enhanced interior noise attenuation measures.

Typical building construction provides an exterior-to-interior noise reduction of approximately 12 dBA with windows open and approximately 25 dBA with windows closed. [1] For this study, typical standard construction techniques include a basic framed wall with an STC rating of 39, consisting of 5/8" siding, ½" insulation board sheathing, 2"x4" studs spaced every 16", standard fiberglass insulation, and ½" drywall; windows and doors are rated STC 27 and occupy no more than 50% of the exterior wall area. Exterior stucco walls, such as that included in the proposed project, provide greater exterior to noise attenuation (approximately 27 to 30 dBA with windows closed) provided window and door coverings also do not exceed 50% of the exterior wall surface (which is the case for the proposed project). Cracks and openings in window and door assemblies can reduce exterior to interior noise attenuation. Mechanical ventilation must also be provided to allow for use of residential areas with windows closed.

The CALGreen Code establishes additional standards for interior noise levels that may apply to residential developments if a building is located within a 65 CNEL noise contour of an airport, freeway, railroad, industrial source, etc. or otherwise exposed to a noise level of 65 dBA on an

---

[1] The U.S. Department of Housing and Urban Development (HUD) Noise Guidebook and supplement (2009a, 2009b) includes information on noise attenuation provided by building materials and different construction techniques. As a reference, a standard exterior wall consisting of 5/8-inch siding, wall sheathing, fiberglass insulation, two by four wall studs on 16-inch centers, and 1/2-inch gypsum wall board with single strength windows provides approximately 35 dBs of attenuation between exterior and interior noise levels. Increasing window space may also decrease attenuation, with a reduction of 10 dBs possible if windows occupy 30% of the exterior wall façade.

hourly L_{eq} basis. As summarized above, the noise exposure levels at the exterior façade of Building 10 and Building 11 could be exposed to noise levels up to 74.7 CNEL by 2035. The proposed project, therefore, would be subject to the prescriptive or performance standard requirements of the CALGreen Code, which requires that exterior wall and roof-ceiling assemblies exposed to the noise source meet specific sound transmission class (STC) or outdoor-indoor transmission class (OITC) ratings. The STC and OITC exterior wall and roof assembly requirements set forth by the CALGreen Code generally require the assembly to have an STC of 40 or an OITC of 30, which would be sufficient to meet the interior noise standard of 45 CNEL; however, the final exterior assemblies would need to be reviewed and confirmed.

MIG recommends the project implement the following BMPs to reduce interior noise levels in residential dwelling units:

Interior Noise Control BMPs

To reduce residential unit interior noise levels to 45 CNEL or less, the project shall incorporate the following interior noise control measures into the project design:

1) **Provide mechanical ventilation.** All units shall include forced air mechanical ventilation to permit occupancy of units with windows closed.
2) **Window and sliding door sound transmission class (STC) ratings.** To ensure exterior wall assemblies provide adequate exterior to interior noise reduction:
    a. All windows and doors (including sliding doors) included in exterior residential wall assemblies directly facing Tennessee Street and the I-210 shall have a minimum STC rating of 40.
    b. All other windows and doors (including sliding doors) included in exterior residential wall assemblies with a line of sight to and within 300 feet of the center of the outermost lane of Tennessee Street shall have a minimum STC rating of 30.
    c. Window and door treatments for all units within 300 feet of the center of the outermost lane of Tennessee Street shall not exceed 50% of the wall surface area.
3) **Window and door assemblies.** Solid core doors shall be used in all non-sliding exterior door designs. All window and door assemblies (including sliding doors) shall be well-fitted, sealed, and weather-stripped. Window and door assemblies (perimeter of assembly, any gaps during assembly installation) shall be sealed with an acoustical caulk/sealant to reduce noise transmission.
4) **Prepare final acoustical analysis.** The project shall prepare a final acoustical analysis demonstrating the final exterior wall assembly for all residential units within 300 feet of the centerline of the outermost lane of Tennessee Street provides exterior-to-interior noise reduction that achieves an interior noise level of 45 CNEL and complies with CALGreen Code requirements for residential units exposed to noise levels above 65 CNEL.

The implementation of the interior noise control BMPs above would require the project to verify the final design of exterior residential wall assemblies reduces interior noise to levels 45 CNEL or less and meets CALGreen Code noise standards.

CONCLUSION

As described in this memo, the proposed project would not generate temporary or permanent noise levels that would exceed the city's standards or otherwise result in a substantial increase in ambient noise levels, would not generate excessive groundborne vibration or groundborne noise levels, and would not expose people residing or working in the project area to excessive aircraft noise levels. The proposed project, therefore, would not result in a substantial, adverse noise-related effect on the environment. It is noted the proposed project may be subjected to incompatible exterior and interior noise levels, which is not a CEQA impact. Accordingly, MIG recommends the proposed project prepare and submit to the city a final acoustical analysis that documents, based on the final project design, compliance with the city's interior noise limits.

REFERENCES

The following references were used to prepare this memorandum:

AO Architects, 2023. Tennessee Village Design Review Submittal. October 10, 2023.

California Department of Transportation (Caltrans) 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. Sacramento, California. September 2013.

_______2020. Transportation and Construction Vibration Guidance Manual. Sacramento, California. April 2020.

City of Redlands, 2003. Redlands Municipal Airport Land Use Compatibility Plan. May 6, 2003. https://raacp.org/wp-content/uploads/2016/07/Redlands-Airport-Land-Use-Compatibility-Plan.pdf

______2017. General Plan 2035. Adopted December 5, 2017. Available online at: https://www.cityofredlands.org/post/planning-division-general-plan

LSA, 2023. The Neighborhoods at Lugonia Village Project. Appendix G-1 Noise Survey Sheets. December 6, 2023. https://ceqanet.opr.ca.gov/2023120124

San Bernardino International Airport Authority (SBIAA). 2019. Final Environmental Assessment Eastgate Air Cargo Facility. December 2019.

Translutions 2023. Tennessee Street and Lugonia Avenue Mixed-Use Measure U Growth Management Analysis. October 12, 2023.

U.S. Federal Transit Administration (FTA) 2018. *Transit Noise and Vibration Impact Assessment Manual*. FTA Report No. 0123. Prepared by John A. Volpe National Transportation Systems Center. Washington, DC. September 2018.

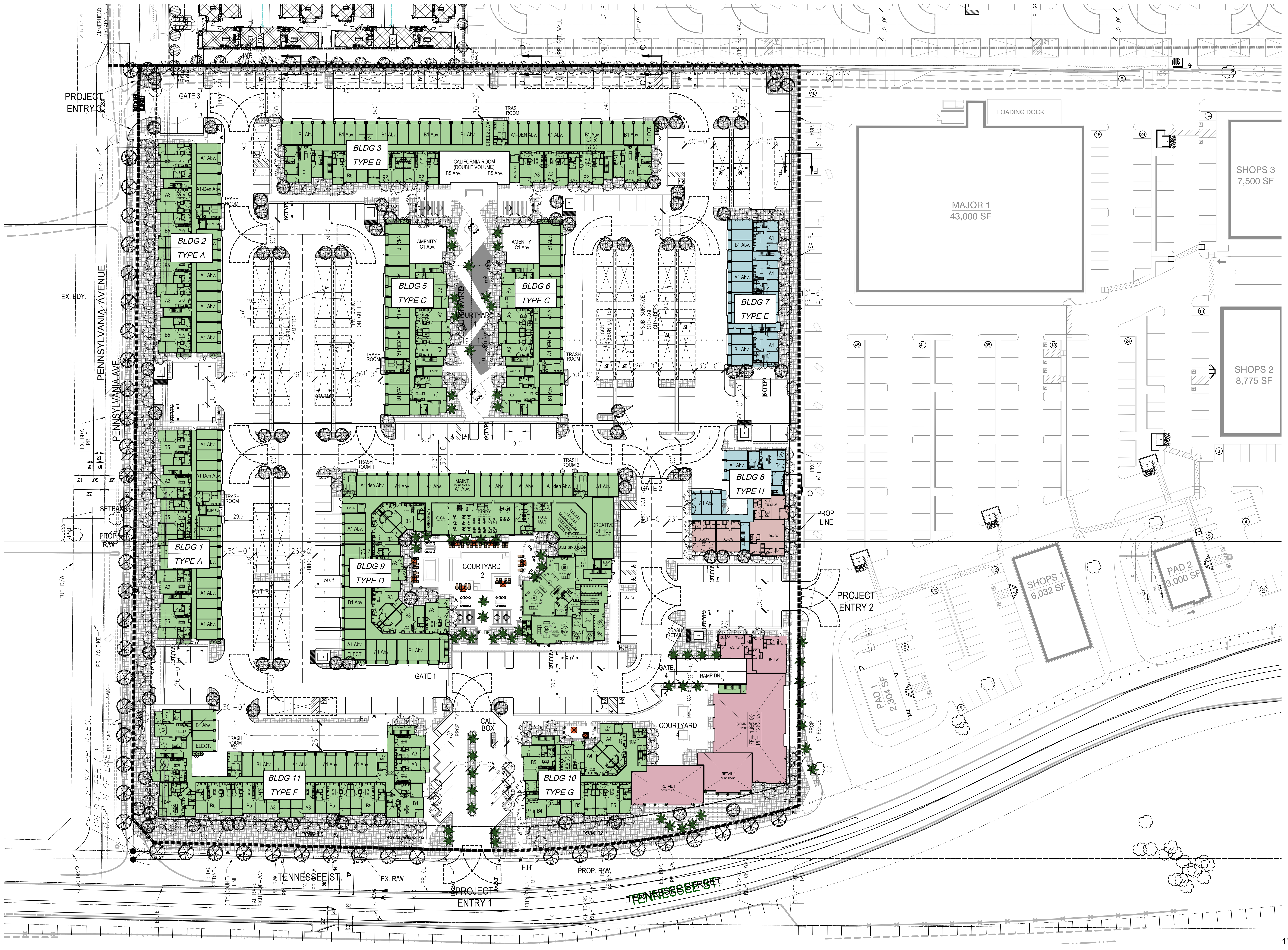
U.S. HUD. 2009a.HUD Noise Guidebook. Prepared by the Environmental Planning Division, Office of Environment and Energy. March 2009.

_______2009b. HUD Noise Guidebook, Chapter 4 Supplement: Sound Transmission Class Guidance. Prepared by the Environmental Planning Division, Office of Environment and Energy. March 2009.

Attachment 01

Project Site Plan

This page was intentionally left blank,



🟥 RETAIL/ COMMERICIAL

🟦 3 STORY

🟩 4 STORY

APN: 0167-171-07
0167-171-14

NORTH

1"=40'-0" 0 20' 40' 80' 120'

A-1.0

TENNESSEE VILLAGE

REDLANDS, CA 92374

CONCEPTUAL SITE PLAN

DATE: 10-10-2023
JOB NO.: 2020-322

DIVERSIFIED PACIFIC
10621 CIVIC CENTER DRIVE, RANCHO CUCAMONGA, CA 91730
(909) 373-2628

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860

Architecture.
Design.
Relationships.

This page was intentionally left blank.

Attachment 02
Environmental Noise Background

This page was intentionally left blank.

ENVIRONMENTAL NOISE BACKGROUND

Noise may be defined as loud, unpleasant, or unwanted sound. The frequency (pitch), amplitude (intensity or loudness), and duration of noise all contribute to the effect on a listener, or receptor, and whether the receptor perceives the noise as objectionable, disturbing, or annoying.

The Decibel Scale (dB)

The decibel scale (dB) is a unit of measurement that indicates the relative amplitude of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, while 20 dBs is 100 times more intense, 30 dBs is 1,000 more intense, and so on. In general, there is a relationship between the subjective noisiness, or loudness of a sound, and its amplitude, or intensity, with each 10 dB increase in sound level perceived as approximately a doubling of loudness. Due to the logarithmic basis, decibels cannot be directly added or subtracted together using common arithmetic operations:

$$50\ decibels + 50\ decibels\ \neq 100\ decibels$$

Instead, the combined sound level from two or more sources must be combined logarithmically. For example, if one noise source produces a sound power level of 50 dBA, two of the same sources would combine to produce 53 dB as shown below.

$$10 *\ 10\,log\left(10^{\left(\frac{50}{10}\right)} + 10^{\left(\frac{50}{10}\right)}\right) = 53\ decibels$$

In general, when one source is 10 dB higher than another source, the quieter source does not add to the sound levels produced by the louder source because the louder source contains ten times more sound energy than the quieter source.

Sound Characterization

There are several methods of characterizing sound. The most common method is the “A-weighted sound level,” or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is typically most sensitive. Thus, most environmental measurements are reported in dBA, meaning decibels on the A-scale.

Human hearing matches the logarithmic A-weighted scale, so that a sound of 60 dBA is perceived as twice as loud as a sound of 50 dBA. In a quiet environment, an increase of 3 dB is usually perceptible, however, in a complex noise environment such as along a busy street, a noise increase of less than 3 dB is usually not perceptible, and an increase of 5 dB is usually perceptible. Normal human speech is in the range from 50 to 65 dBA. Generally, as environmental noise exceeds 50 dBA, it becomes intrusive and above 65 dBA noise becomes excessive. Nighttime activities, including sleep, are more sensitive to noise and are considered affected over a range of 40 to 55 dBA.

Sound levels are typically not steady and can vary over a short time period. The equivalent noise level (L_{eq}) is used to represent the average character of the sound over a period of time. The L_{eq} represents the level of steady noise that would have the same acoustical energy as the sum of the time-varying noise measured over a given time period. L_{eq} is useful for evaluating shorter time periods over the course of a day. The most common L_{eq} averaging period is hourly, but L_{eq} can describe any series of noise events over a given time period.

Variable noise levels are values that are exceeded for a portion of the measured time period. Thus, L_{01} is the level exceeded one percent of the time and L90 is the level exceeded 90 percent of the time. The L_{90} value usually corresponds to the background sound level at the measurement location.

Noise exposure over the course of an entire day is described by the day/night average sound level, or DNL (also referred to as L_{dn}), and the community noise equivalent level, or CNEL. Both descriptors represent the 24-hour noise impact on a community. For DNL, the 24-hour day is divided into a 15-hour daytime period (7 AM to 10 PM) and a nine-hour nighttime period (10 PM to 7 AM) and a 10 dB "penalty" is added to measure nighttime noise levels when calculating the 24-hour average noise level. For example, a 45-dBA nighttime sound level would contribute as much to the overall day-night average as a 55-dBA daytime sound level. The CNEL descriptor is similar to DNL, except that it includes an additional 5 dBA penalty beyond the 10 dBA for sound events that occur during the evening time period (7 PM to 10 PM). The artificial penalties imposed during DNL and CNEL calculations are intended to account for a receptor's increased sensitivity to sound levels during quieter nighttime periods.

Sound Propagation

The energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out and travels away from the noise generating source. Theoretically, the sound level of a point source attenuates, or decreases, by 6 dB with each doubling of distance from a point source. Sound levels are also affected by certain environmental factors, such as ground cover (asphalt vs. grass or trees), atmospheric absorption, and attenuation by barriers. Outdoor noise is also attenuated by the building envelope so that sound levels inside a residence are from 10 to 20 dB less than outside, depending mainly on whether windows are open for ventilation or not.

For an ideal "point" source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a spherical pattern and travels away from the point source. Theoretically, the sound level attenuates, or decreases, by 6 dB with each doubling of distance from the point source. The change in noise levels between two distances can be calculated according to Equation 1 (California Department of Transportation [Caltrans], 2013) as follows:

Equation 1

$$dBA2 = dBA1 + 20\log(D1/D2)$$

Where:

dBA1 = Known noise level, such as a reference noise level
D1 = Distance associated with dBA1
dBA2 = Noise level at distance 2
D2 = Distance associated with dBA2

For an ideal line source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a cylindrical pattern from the source. Theoretically, the sound level attenuates, or decreases, by 3 dB with each doubling of distance from the line source. The change in noise levels between two distances can be calculated according to Equation 2 as follows:

Equation 2

$$dBA2 = dBA1 + 10\log(D1/D2)$$

Where:

dBA1 = Known noise level, such as a reference noise level
D1 = Distance associated with dBA1
dBA2 = Noise level at distance 2
D2 = Distance associated with dBA2

Noise Effects on Humans

Noise effects on human beings are generally categorized as:

- Subjective effects of annoyance, nuisance, and/or dissatisfaction
- Interference with activities such as speech, sleep, learning, or relaxing
- Physiological effects such as startling and hearing loss

Most environmental noise levels produce subjective or interference effects; physiological effects are usually limited to high noise environments such as industrial manufacturing facilities or airports.

Predicting the subjective and interference effects of noise is difficult due to the wide variation in individual thresholds of annoyance and past experiences with noise; however, an accepted method to determine a person's subjective reaction to a new noise source is to compare it the existing environment without the noise source, or the "ambient" noise environment. In general, the more a new noise source exceeds the ambient noise level, the more likely it is to be considered annoying and to disturb normal activities.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness that would almost certainly cause an adverse response from community noise receptors.

When exposed to high noise levels, humans may suffer hearing damage. Sustained exposure to high noise levels (e.g., 90 dBs for hours at a time) can cause gradual hearing loss, which is usually temporary, whereas sudden exposure to a very high noise level (e.g., 130 to 140 dBs) can cause sudden and permanent hearing loss. In addition to hearing loss, noise can cause stress in humans and may contribute to stress-related diseases, such as hypertension, anxiety, and heart disease (Caltrans, 2013).

Vibration

Vibration is the movement of particles within a medium or object such as the ground or a building. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared, in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Human response to groundborne vibration is subjective and varies from person to person

This page was intentionally left blank.

Attachment 03

Ambient Noise Monitoring Data

This page was intentionally left blank.

Tennessee Village Project

Tennessee Avenue, Redlands, CA

Attachment 03: Ambient Noise Monitoring Summary

TABLE 1: SUMMARY OF SHORT-TERM NOISE MONITORING DATA

Site	Date	Time	Duration	Leq	Lmin	Lmax	L1.7	L8.3	L16.7	L25.0	L50.0	L90.0
ST-01	12/12/2023	3:00 PM	4 hours	70.3	61.7	96.2	76.3	72.9	71.7	71.0	69.4	66.6
ST-02	12/12/2023	3:04 PM	3.5 hours	62.2	57.1	72.4	63.1	63.4	--	62.9	62.3	61.5
ST-03	12/12/2023	3:10 PM	3.75 hours	60.3	54.8	75.0	62.5	61.6	61.1	60.8	60.1	59.1

Note: Detailed ambient noise monitoring records are available upon request.

This page was intentionally left blank.

Attachment 04

HVAC Noise Level Estimates

This page was intentionally left blank.

Tennessee Village Project
Tennessee Avenue, Redlands, CA

Attachment 04: On-site HVAC Noise and Barrier Attenuation Estimates
Prepared by: MIG, Inc.
February 2024

Contents:

Tennessee Village Project
Tennessee Avenue, Redlands, CA
Attachment 04: On-site HVAC Noise and Barrier Attenuation Estimates

Sheet 1: Project HVAC Noise Level Estimates (dBA Leq)

Table 1: Estimated HVAC Noise Levels at Building Roof Line (No Parapet)

Building / Receptor	Reference Noise Data		Roof Line (one source)		Roof Line (all sources)	
	Distance	Hourly Leq dBA	Distance	Hourly Leq dBA	No. Sources	Hourly Leq dBA
Bldg 2 - East Residential	3	76.0	115	44.3	42	60.6
Bldg 3 - East Residential	3	76.0	35	54.7	32	69.7
Bldg 7 - East Residential	3	76.0	80	47.5	20	60.5
Bldg 7 - South Commercial	3	76.0	25	57.6	20	70.6
Bldg 8 - South Commercial	3	76.0	20	59.5	16	71.6
Bldg 10 - South Commercial	3	76.0	40	53.5	24	67.3

Table 2: Estimated HVAC Noise Levels at Elevated Property Line Plane (No Parapet)

On-Site Noise Source	Reference Noise Data		Property Line (one source)		Property Line (all sources)	
	Distance	Hourly Leq dBA	Distance	Hourly Leq dBA	No. Sources	Hourly Leq dBA
Bldg 2 - East Residential	3	76.0	200	39.5	42	55.8
Bldg 3 - East Residential	3	76.0	90	46.5	32	61.5
Bldg 7 - East Residential	3	76.0	240	37.9	20	50.9
Bldg 7 - South Commercial	3	76.0	45	52.5	20	65.5
Bldg 8 - South Commercial	3	76.0	30	56.0	16	68.0
Bldg 10 - South Commercial	3	76.0	50	51.6	24	65.4

Table 3: Estimated HVAC Noise Levels at Elevated Property Line (With Building Elevations and Parapet Wall)

On-Site Noise Source	Reference Noise Data		Property Line (all sources, with Parapet))		
	Distance	Hourly Leq dBA	Distance	No. Sources	Hourly Leq dBA
Bldg 2 - East Residential	3	76.0	200	42	42.8
Bldg 3 - East Residential	3	76.0	90	32	50.0
Bldg 7 - East Residential	3	76.0	240	20	43.6
Bldg 7 - South Commercial	3	76.0	45	20	51.3
Bldg 8 - South Commercial	3	76.0	30	16	52.5
Bldg 10 - South Commercial	3	76.0	50	24	46.9

Tennessee Village Project
Tennessee Avenue, Redlands, CA
Attachment 04: On-site HVAC Noise and Barrier Attenuation Estimates

Sheet 2: Elevation and Parapet Wall Attenuation Estimates

Table 1: Source/ Property Line Receiver Information

Noise Source:	Residential Fan-type HVAC Unit (Low)								
Source Noise Level:	PL=	55.8	61.5	50.9	65.5	68.0	65.4		
Receptor Noise Level:	PL=	50.0	50.0	50.0	60.0	60.0	60.0		
Noise Reduction Level:	PL=	5.8	11.5	0.9	5.5	8.0	5.4		
Source Frequency:	125	Hertz							

Note: "PL" = Property Line

Table 2: Source, Receptor, and Barrier Elevation Data

Receptor	Elevation Above Mean Sea Level					
	Receiver Grade	Receiver Height	Source Grade	Effective Source Height	Barrier Grade	Top of Barrier
Bldg 2 - East Residential	0.0	5.0	41.0	44.0	40.0	43.0
Bldg 3 - East Residential	0.0	5.0	41.0	44.0	40.0	43.0
Bldg 7 - East Residential	0.0	5.0	31.0	34.0	30.0	33.0
Bldg 7 - South Commercial	0.0	5.0	31.0	34.0	30.0	33.0
Bldg 8 - South Commercial	0.0	5.0	31.0	34.0	30.0	33.0
Bldg 10 - South Commercial	0.0	5.0	41.0	44.0	40.0	43.0

Table 3: Barrier Insertion Loss Summary

Property Line	Preliminary Barrier Insertion Loss Estimate		
	Predicted Noise Level	Barrier Attenuation	Noise Level with Barrier
Bldg 2 - East Residential	55.8	13.0	42.8
Bldg 3 - East Residential	61.5	11.5	50.0
Bldg 7 - East Residential	50.9	7.3	43.6
Bldg 7 - South Commercial	65.5	14.2	51.3
Bldg 8 - South Commercial	68.0	15.5	52.5
Bldg 10 - South Commercial	65.4	18.5	46.9

Table 4: Building 2 Barrier Attenuation 3-Foot High Wall (East Residential)

Receptor	A	B	C	D	D1	D2	H1	H2
Property Line	115.00	93.11	203.77	200	115	85	39.0	38.0

Table 5: Fresnel Number (N_0) and Barrier Insertion Loss Estimate (West - South)

Receptor	δ (Feet)	λ (Feet)	N_0	Insertion Loss (dB)
Property Line	4.34	9.00	0.9655	13.0

Table 6: Building 3 Barrier Attenuation 3-Foot High Wall (East Residential)

Receptor	A	B	C	D	D1	D2	H1	H2
Property Line	35.01	75.29	107.34	100	35	65	39.0	38.0

Table 7: Fresnel Number (N_0) and Barrier Insertion Loss Estimate (West - Mid)

Receptor	δ (Feet)	λ (Feet)	N_0	Insertion Loss (dB)
Property Line	2.97	9.00	0.6602	11.5

Table 8: Building 7 Barrier Attenuation 3-Foot High Wall (East Residential)

Receptor	A	B	C	D	D1	D2	H1	H2
Property Line	80.01	162.43	241.75	240	80	160	29.0	28.0

Table 9: Fresnel Number (N_0) and Barrier Insertion Loss Estimate (North - West)

Receptor	δ (Feet)	λ (Feet)	N_0	Insertion Loss (dB)
Property Line	0.69	9.00	0.1538	7.3

Table 10: Building 7 Barrier Attenuation 3-Foot High Wall (South Commercial)

Receptor	A	B	C	D	D1	D2	H1	H2
Property Line	25.02	34.41	53.54	45	25	20	29.0	28.0

Table 11: Fresnel Number (N_0) and Barrier Insertion Loss Estimate (North - Mid)

Receptor	δ (Feet)	λ (Feet)	N_0	Insertion Loss (dB)
Property Line	5.89	9.00	1.3098	14.2

Table 12: Building 8 Barrier Attenuation 3-Foot High Wall (South Commercial)

Receptor	A	B	C	D	D1	D2	H1	H2
Property Line	20.02	29.73	41.73	30	20	10	29.0	28.0

Table 13: Fresnel Number (N_0) and Barrier Insertion Loss Estimate (North - Mid)

Receptor	δ (Feet)	λ (Feet)	N_0	Insertion Loss (dB)
Property Line	8.03	9.00	1.7849	15.5

Table 14: Building 10 Barrier Attenuation 3-Foot High Wall (South Commercial)

Receptor	A	B	C	D	D1	D2	H1	H2
Property Line	40.01	39.29	63.41	50	40	10	39.0	38.0

Table 15: Fresnel Number (N_0) and Barrier Insertion Loss Estimate (North - Mid)

Receptor	δ (Feet)	λ (Feet)	N_0	Insertion Loss (dB)
Property Line	15.89	9.00	3.5322	18.5

Tennessee Village Project
Tennessee Avenue, Redlands, CA
Attachment 04: On-site HVAC Noise and Barrier Attenuation Estimates

Sheet 3: Traffic Noise Compatibility Estimates

Table 1: Existing and Future Traffic Noise Levels at Project Property Line

Road	General Plan Traffic Noise Level 50 Feet from Outermost Lane (CNEL)	Distance to Property Line	Estimated Traffic Noise Level at Property Line (CNEL)
Tennessee (Existing)	67.0	52.0	66.7
I-210 (Existing)	82.5	200.0	73.5
Total (Existing)	--	--	74.3
Tennessee (Future)	70.2	52.0	69.9
I-210 (Future)	83.7	200.0	74.7
Total (Future)	--	--	75.9

Table 2: Existing and Future Traffic Noise Levels at Building 10 and 11 Façades

Road	General Plan Traffic Noise Level 50 Feet from Outermost Lane (CNEL)	Distance to Building Façade	Estimated Traffic Noise Level at Building Facade (CNEL)
Tennessee (Existing)	67.0	85.0	63.5
I-210 (Existing)	82.5	225.0	72.7
Total (Existing)	--	--	73.2
Tennessee (Future)	70.2	85.0	66.7
I-210 (Future)	83.7	225.0	73.9
Total (Future)	--	--	74.7

This page was intentionally left blank.

This Page Intentionally Left Blank.

TENNESSEE STREET AND LUGONIA AVENUE MIXED-USE

MEASURE U GROWTH MANAGEMENT ANALYSIS

OCTOBER 12, 2023

PREPARED FOR:
Diversified Pacific Communities
10624 Civic Center Drive
Rancho Cucamonga, California
91730

PREPARED BY:

translutions, inc.
17632 Irvine Boulevard, Suite 200
Tustin, California 92780
(949) 656-3131

TABLE OF CONTENTS

APPENDICES

FIGURES AND TABLES

FIGURES

TABLES

1.0 INTRODUCTION

This report presents the methodology, findings and conclusions of the Measure U Growth Management analysis prepared for the proposed Tennessee Street and Lugonia Avenue mixed-use development project. The project includes the construction of 460 multi-family residences and 17,764 square feet of retail space. The project site is located on the northeast corner of Tennessee Street and Lugonia Avenue in the City of Redlands (City), San Bernardino County.

1.1 Purpose of the Traffic Study and Study Objectives

This report is intended to satisfy the requirements for a traffic analysis established by the City of Redland's Growth Management Measure U. Measure U is a local growth management initiative adopted by Redlands and contains policies for traffic levels of service. Furthermore, level of service is no longer evaluated under the California Environmental Quality Act (CEQA) and is no longer included in CEQA environmental documents. CEQA now uses Vehicle Miles Traveled (VMT) as the metric for environmental traffic impacts. The City continues to use level of service analysis for purposes of evaluating a proposed project's compliance with the General Plan and Measure U. Therefore, this analysis includes a level of service analysis. A separate report will be submitted that contains the VMT analysis for the project. The study area, analysis scenarios, and analysis methodologies are based on the Measure U guidelines and in discussion with City staff.

1.2 Project Location & Study Area

The project is located on the northeast corner of Tennessee Street and Lugonia Avenue. The project proposes the construction of 460 multi-family dwelling units and 17,764 square feet of retail space.

Figure 1 shows the regional location of the project. The project opening year is 2024. Figure 2 illustrates the site plan of the proposed project. Based on the trip generation and trip distribution of the proposed project, and based on discussion with City staff, this report analyzes the following intersections for traffic operations:

<u>Study Intersections</u>

1. State Route 210 Eastbound Ramps and San Bernardino Avenue.
2. State Route 210 Westbound Ramps-Tennessee Street and San Bernardino Avenue.
3. Tennessee Street and Pennsylvania Avenue.
4. Tennessee Street and Driveway 1.
5. Tennessee Street and Lugonia Avenue.
6. Tennessee Street and Interstate 10 Westbound Ramps.
7. Tennessee Street and Interstate 10 Eastbound Ramps.
8. Tennessee Street and Colton Avenue.
9. Tennessee Street and Redlands Avenue.

The study area intersections are shown in Figure 3.

This report analyzes weekday daily, a.m. and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 a.m. and 9:00 a.m. The p.m. peak hour is defined as the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

1.3 Analysis Scenarios

This report analyzes traffic operations for the following scenarios:

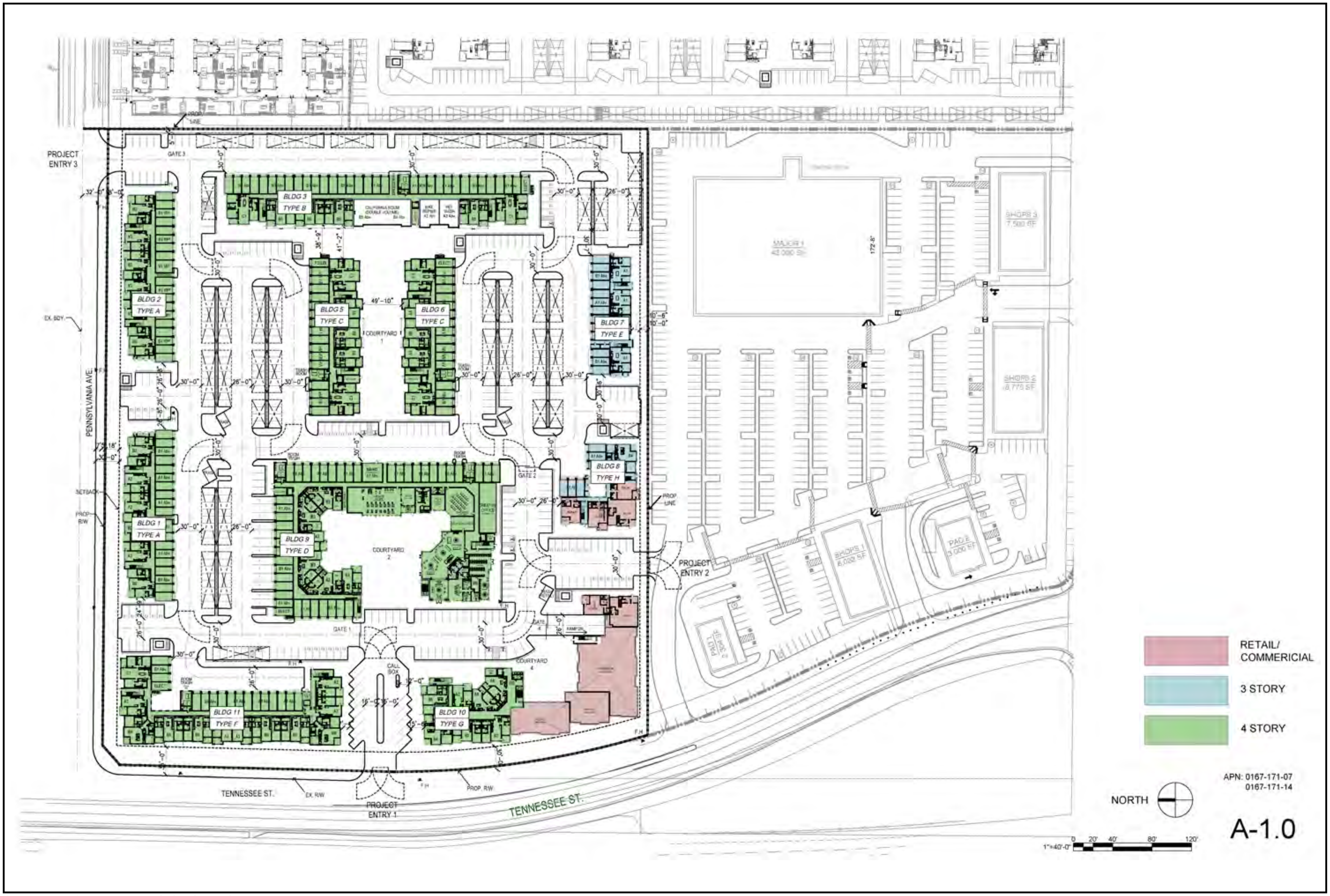
1. Existing Without Project Conditions.
2. Existing With Project Conditions.

FIGURE 1

Tennessee St. and Lugonia Ave. Mixed-Use
Regional Project Location

translutions
the transportation solutions company...

D:\GIS\DP - Redlands Multifamily\Reports\Regional Project Location3.qgz (09-21-2022)



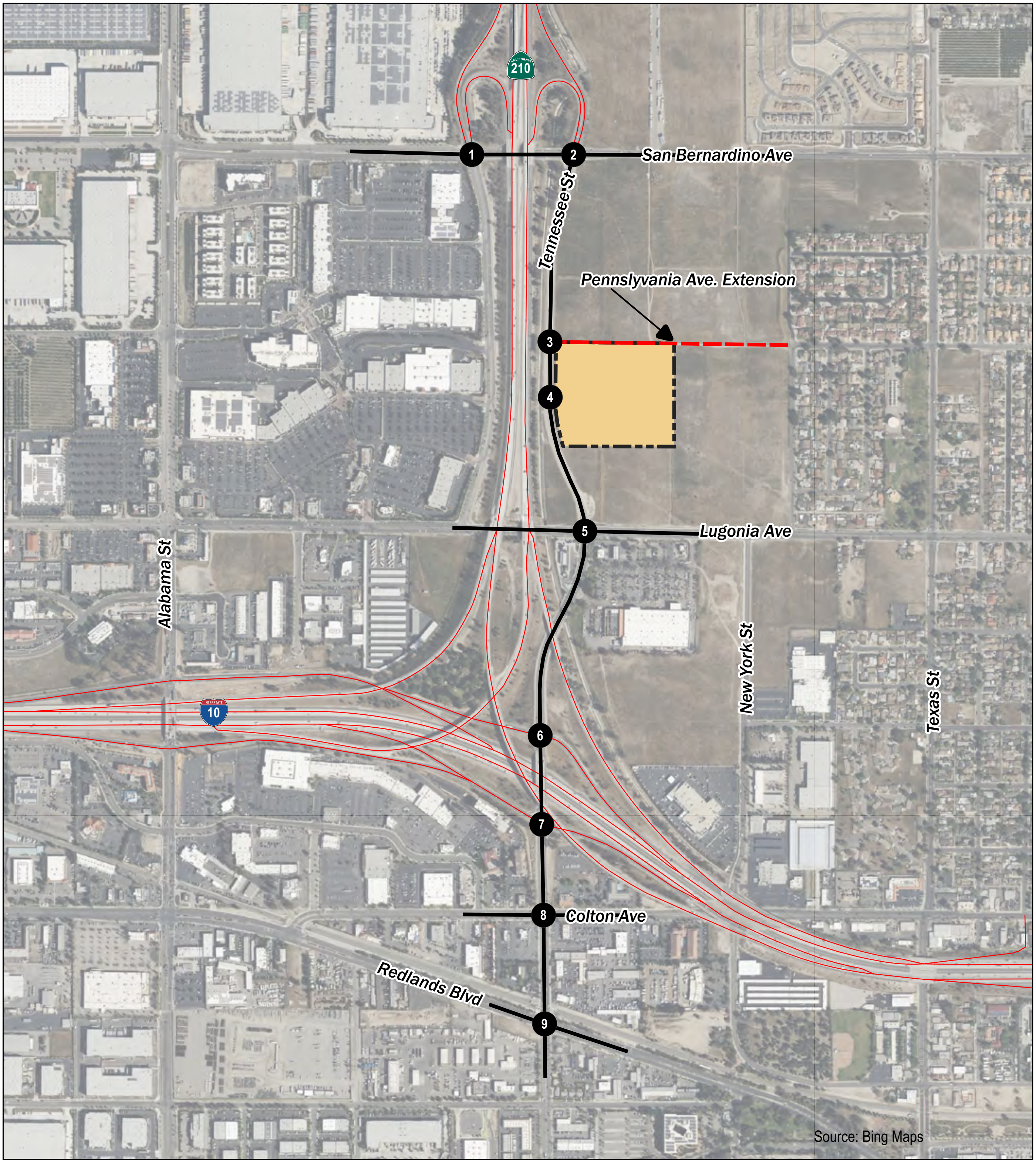
Source: A O Architects (6/24/2023)

FIGURE 2

Tennessee Street and Lugonia Avenue Mixed-Use Site Plan

translutions
the transportation solutions company...

[D:\Projects\DP - Redlands Multifamily\Scope\Site Plan Landscape.svg]



Legend

▨ Project Site

● Study Area Intersections

🟥 Pennslyvania Ave Extension

FIGURE 3

Tennessee St. and Lugonia Ave. Mixed-Use Study Area Intersections

2.0 PROJECT DESCRIPTION

The project proposes the construction of 460 multi-family dwelling units and 17,764 square feet of retail space. Access to the project will be provided by the Pennsylvania Avenue extension and one full-access driveway on Tennessee Street.

2.1 Project Trip Generation

Trip generation for the project is based on trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition) for Land Use 220 “Multifamily Housing (Low-Rise)”, Land Use 221 “Multifamily Housing (Mid-Rise), and Land Use 822 “Strip Retail Plaza (<40k). The project includes a mix of retail and residential uses and therefore, will have trips that are internal to the project (e.g., a trip from the residential use to the retail use). Internal trips were calculated using the ITE internal capture methodologies. In addition, retail uses typically draw some of its trips from the adjacent street traffic. Such trips are not actually “new” trips from the project on the adjacent circulation system. These trips are referred to as “pass-by” trips. By definition, pass-by trips are trips that are on the roadway immediately adjacent to the project which make intermediate stops on the way from an origin to a primary trip destination without route diversion. Table A shows a summary of the project trip generation. As shown in Table A, after accounting for internal and pass-by trips, the project is anticipated to generate 195 net external trips during the a.m. peak hour, 245 net external trips during the p.m. peak hour, and 2,704 net external daily trips.

2.2 Project Trip Distribution & Assignment

Project trip distribution patterns for the proposed project were developed based on location of local/regional destinations and in consultation with City staff. Trip distributions were developed separately for residential and retail uses. Figures 4 and 5 illustrate the project trip distribution and the resulting project trips at the proposed study intersections for the residential uses. Figures 6 and 7 illustrate the project trip distribution and the resulting project trips at the proposed study intersections for the retail uses. The total net external trips are shown in Figure 8. The pass-by trip distribution and assignment are shown in Figures 9 and 10. The total net external with pass-by trips are shown in Figure 11.

3.0 LOS DEFINITIONS, PROCEDURES, AND THRESHOLDS

Level of service (LOS) is a measure of the quality of operational conditions within a traffic stream, and is generally expressed in terms of such measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. Consistent with City guidelines, the Highway Capacity Manual (HCM) procedures have been used to evaluate levels of service. This section discusses the LOS definitions, procedures, and thresholds used in this report.

3.1 Intersection Levels of Service

The analysis of traffic operations at intersections was conducted according to the Highway Capacity Manual 6th Edition (HCM) delay methodologies using Synchro 11 software, which is described in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., November 2016). Under the HCM methodology, LOS for signalized intersections is based on the average delay experienced by vehicles traveling through an intersection, whereas for un-signalized intersections, the LOS is based on the worst approach where the minor leg has a shared lane and on the worst movement where the minor leg has dedicated turn lanes. Table B presents a brief description of each level of service letter grade, as well as the range of delays associated with each grade.

3.2 Intersection Measure U Policy Requirements

The City’s Measure U policy has established minimum target Levels of Services for study area intersections and roadways. The City LOS standards include the following:

- Maintain LOS C or better as the standard at all intersections presently at LOS C or better.

Table A - Project Trip Generation

		A.M. Peak Hour			P.M. Peak Hour			
Land Use	Units	In	Out	Total	In	Out	Total	Daily
Residential								
Trip Generation Rates [1]		0.10	0.30	0.40	0.32	0.19	0.51	6.74
Trip Generation	135 DU	13	41	54	43	26	69	910
Internal Trips		(1)	(1)	(2)	(3)	(2)	(5)	(80)
Net Trip Generation		12	40	52	40	24	64	830
Residential								
Trip Generation Rates [2]		0.09	0.28	0.37	0.24	0.15	0.39	4.54
Trip Generation	325 DU	28	92	120	77	50	127	1,476
Internal Trips		(1)	(1)	(2)	(6)	(5)	(11)	(131)
Net Trip Generation		27	91	118	71	45	116	1,345
Retail								
Trip Generation Rates [3]		1.42	0.94	2.36	3.30	3.30	6.59	54.45
Trip Generation	17.764 TSF	25	17	42	59	59	118	967
Internal Trips		0	0	0	(4)	(6)	(10)	(86)
Net Trip Generation		25	17	42	55	53	108	881
Pass By Rate [A]				40%			40%	40%
Pass By Trips		(8)	(9)	(17)	(21)	(22)	(43)	(352)
Net After Pass-By		17	8	25	34	31	65	529
Total Net Trip Generation		56	139	195	145	100	245	2,704

[1] Trip generation based on rates for Land Use 220 - "Multifamily Housing (Low-Rise)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[2] Trip generation based on rates for Land Use 221 - "Multifamily Housing (Mid-Rise)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[3] Trip generation based on rates for Land Use 822 - "Strip Retail Plaza(<40k)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[A] Daily Pass-by rates for Land Use 822 (Strip Retail Plaza) are based on pass-by rates for Land Use 821 (Shopping Plaza) from ITE Trip Generation (11th Edition). Rates for a.m.peak hour and daily are assumed to be same as p.m. peak hour rate.

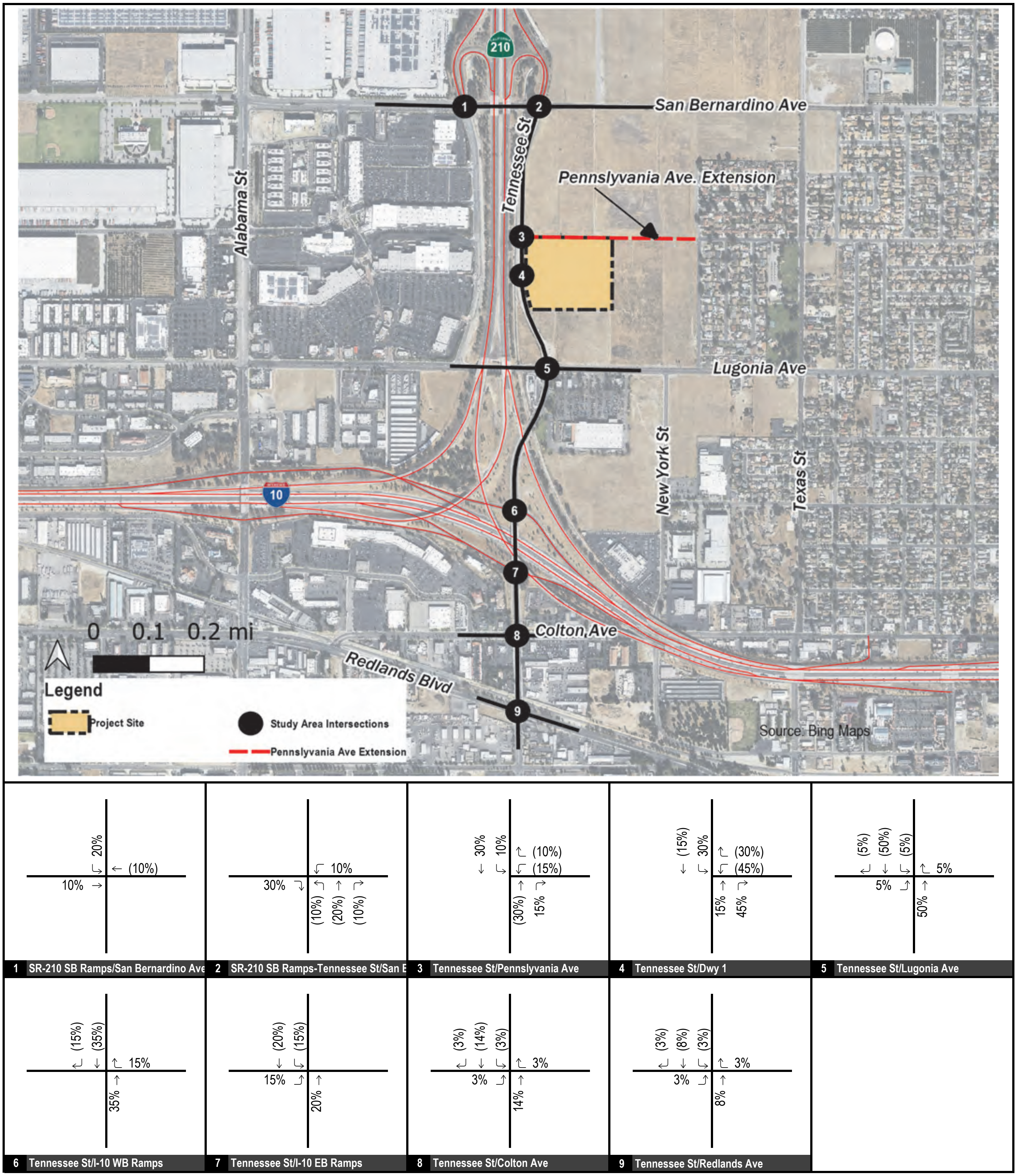


FIGURE 4

XX%(YY%) Inbound%(Outbound%) Distribution

Tennessee Street and Lugonia Avenue Mixed-Use Project Trip Distribution (Residential)

translutions
the transportation solutions company...

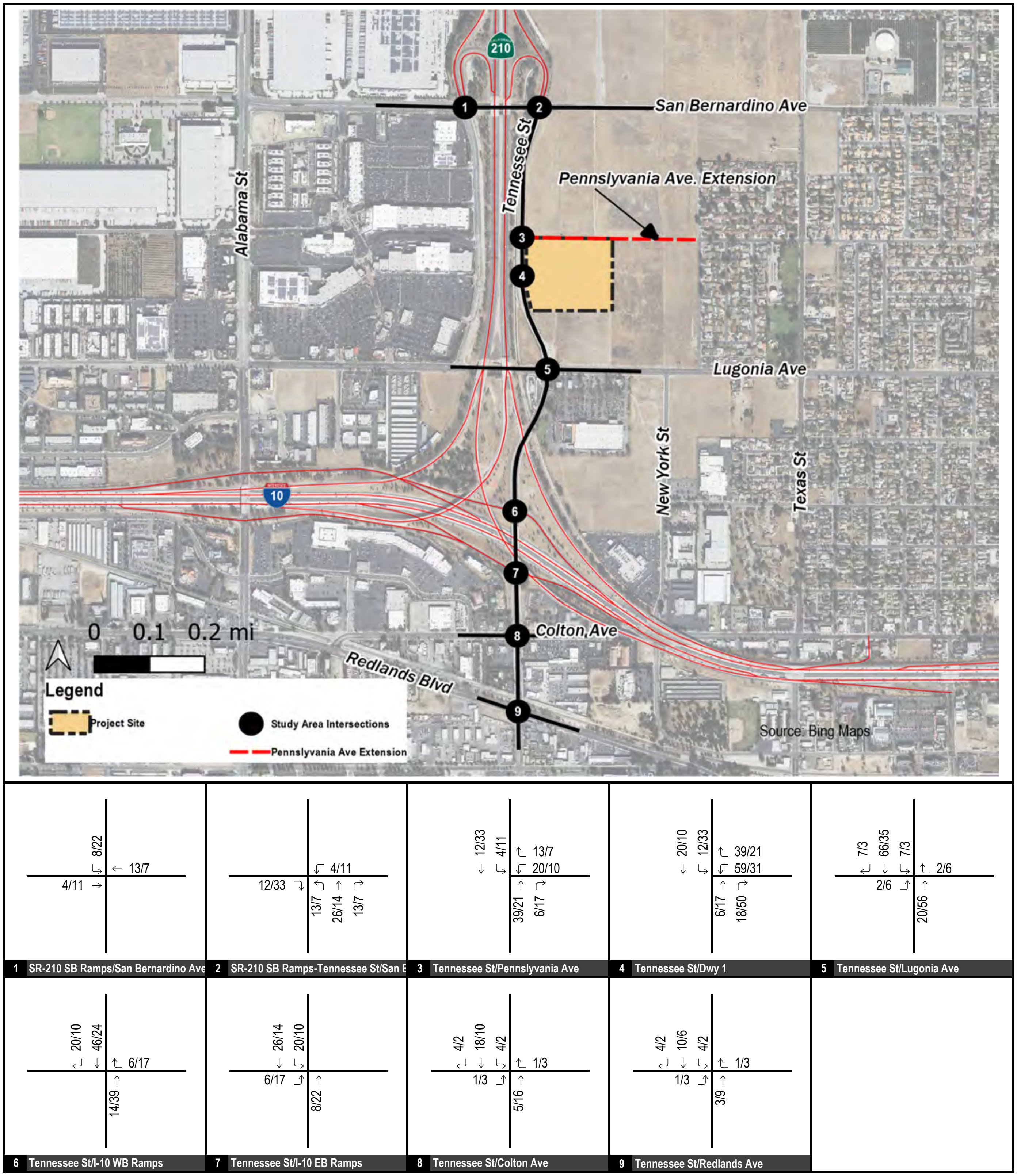


FIGURE 5

XX/YY AM/PM Peak Hour Project Trips

Tennessee Street and Lugonia Avenue Mixed-Use Project Trip Assignment (Residential)

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Project Trips Res (9/21/2022)

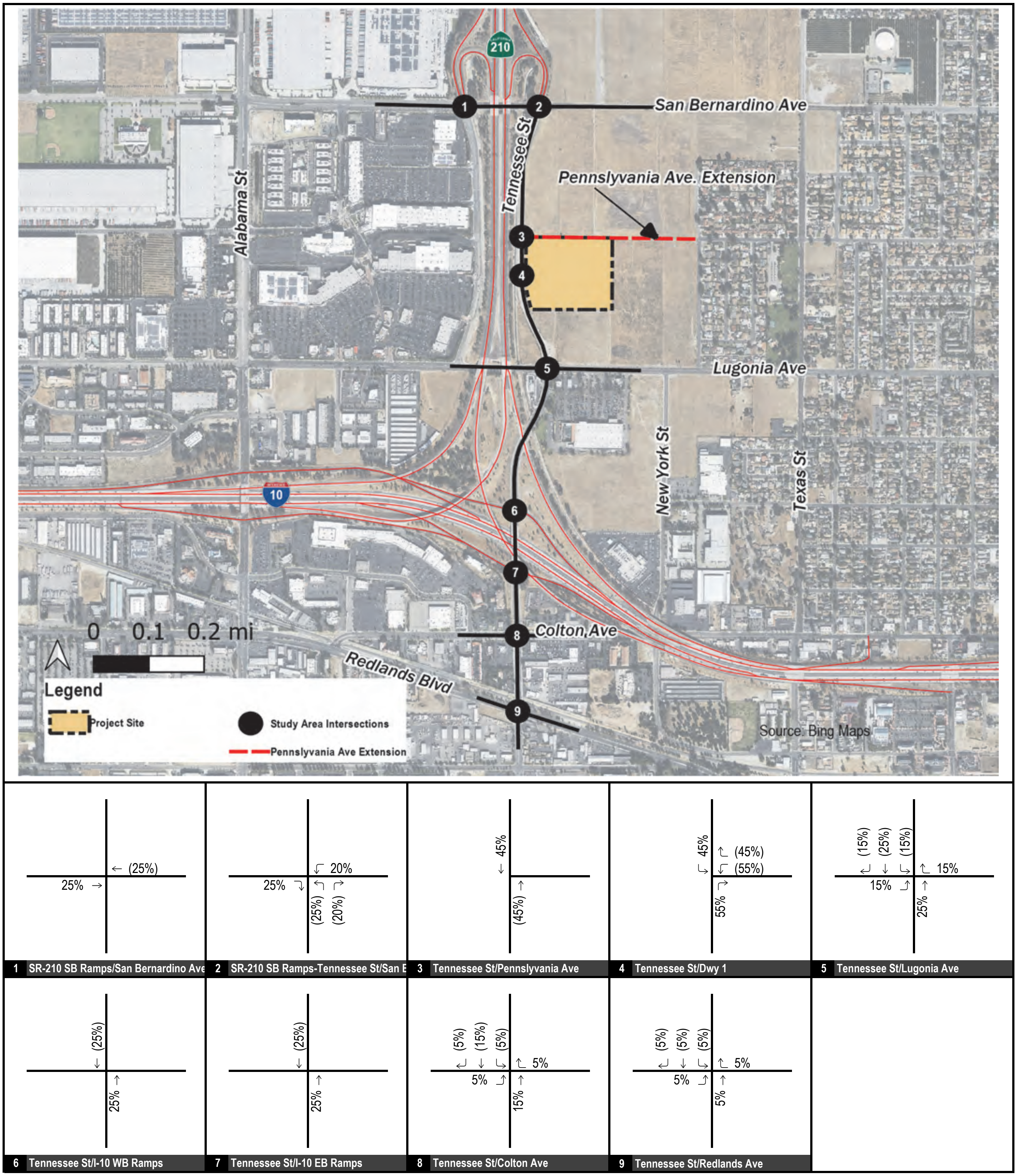


FIGURE 6

XX%(YY%) Inbound%(Outbound%) Distribution

Tennessee Street and Lugonia Avenue Mixed-Use Project Trip Distribution (Retail)

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Project Dist Ret (9/21/2022)

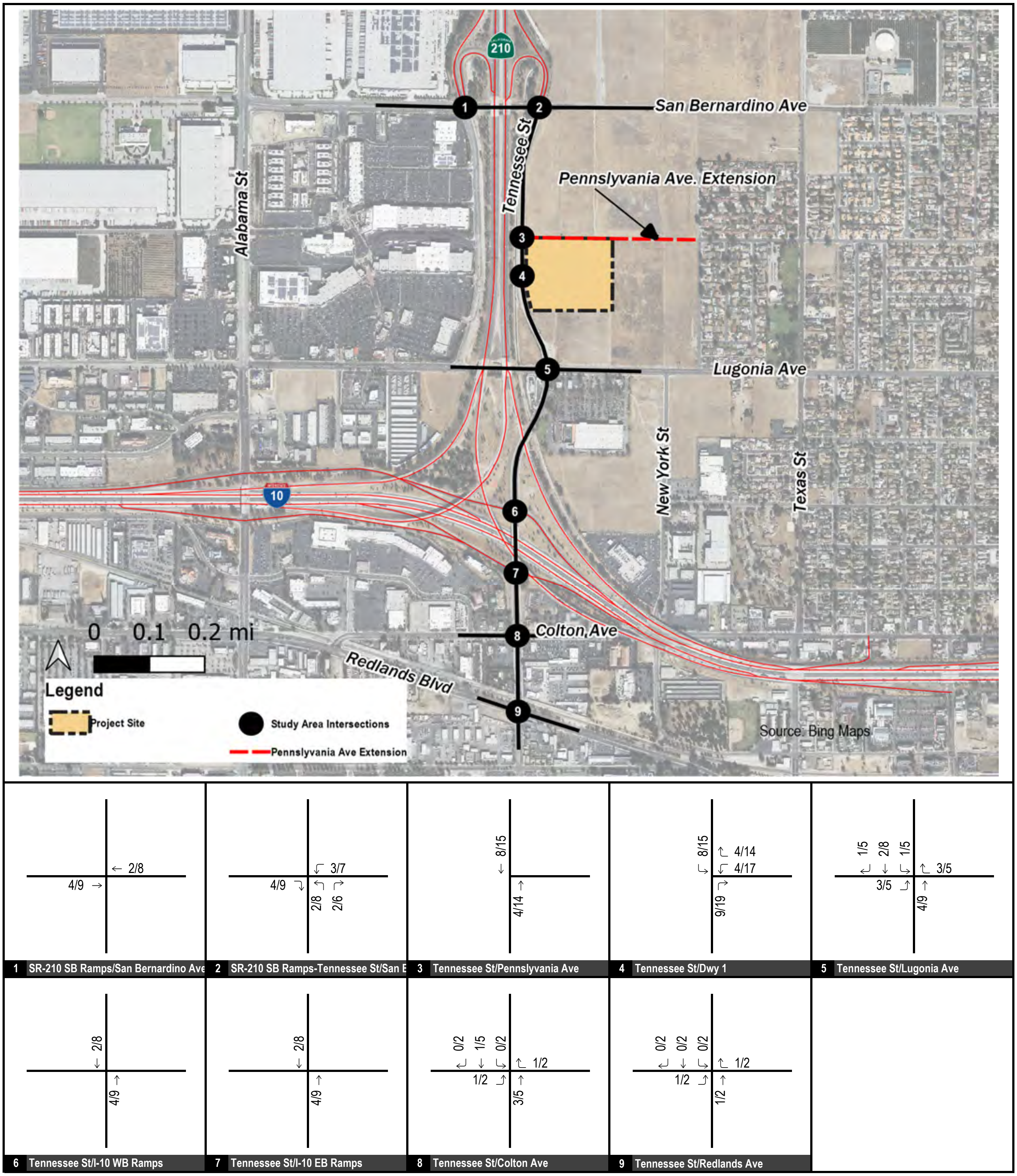


FIGURE 7

XX/YY AM/PM Peak Hour Project Trips

Tennessee Street and Lugonia Avenue Mixed-Use Project Trip Assignment (Retail)

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Project Trips Ret (9/21/2022)

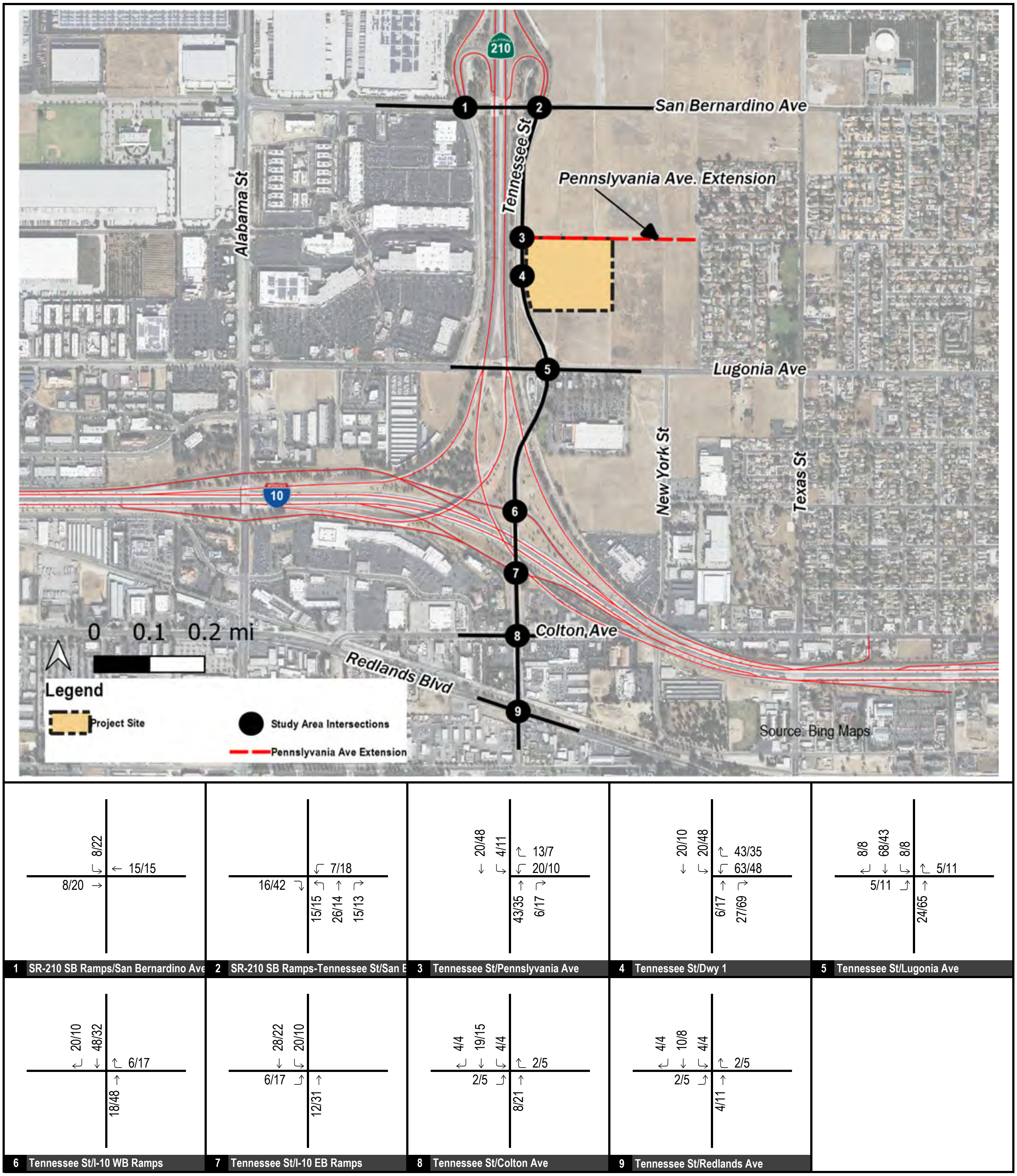


FIGURE 8

XX/YY AM/PM Peak Hour Project Trips

Tennessee Street and Lugonia Avenue Mixed-Use
Total Net External Trip Assignment

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Total Net External (9/21/2022)

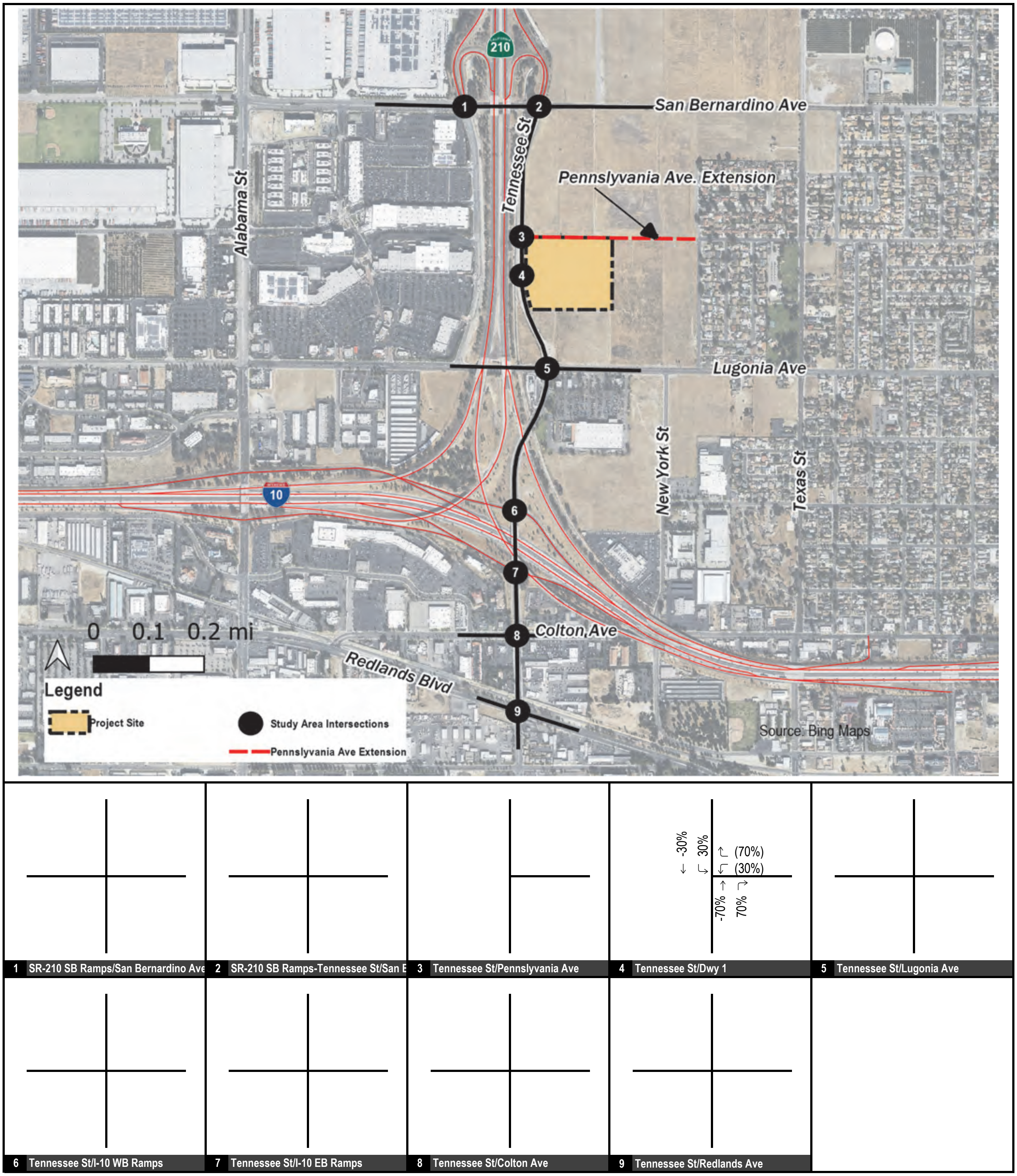


FIGURE 9

XX%(YY%) Inbound%(Outbound%) Distribution

Tennessee Street and Lugonia Avenue Mixed-Use Pass-by Trip Distribution

translutions
the transportation solutions company...

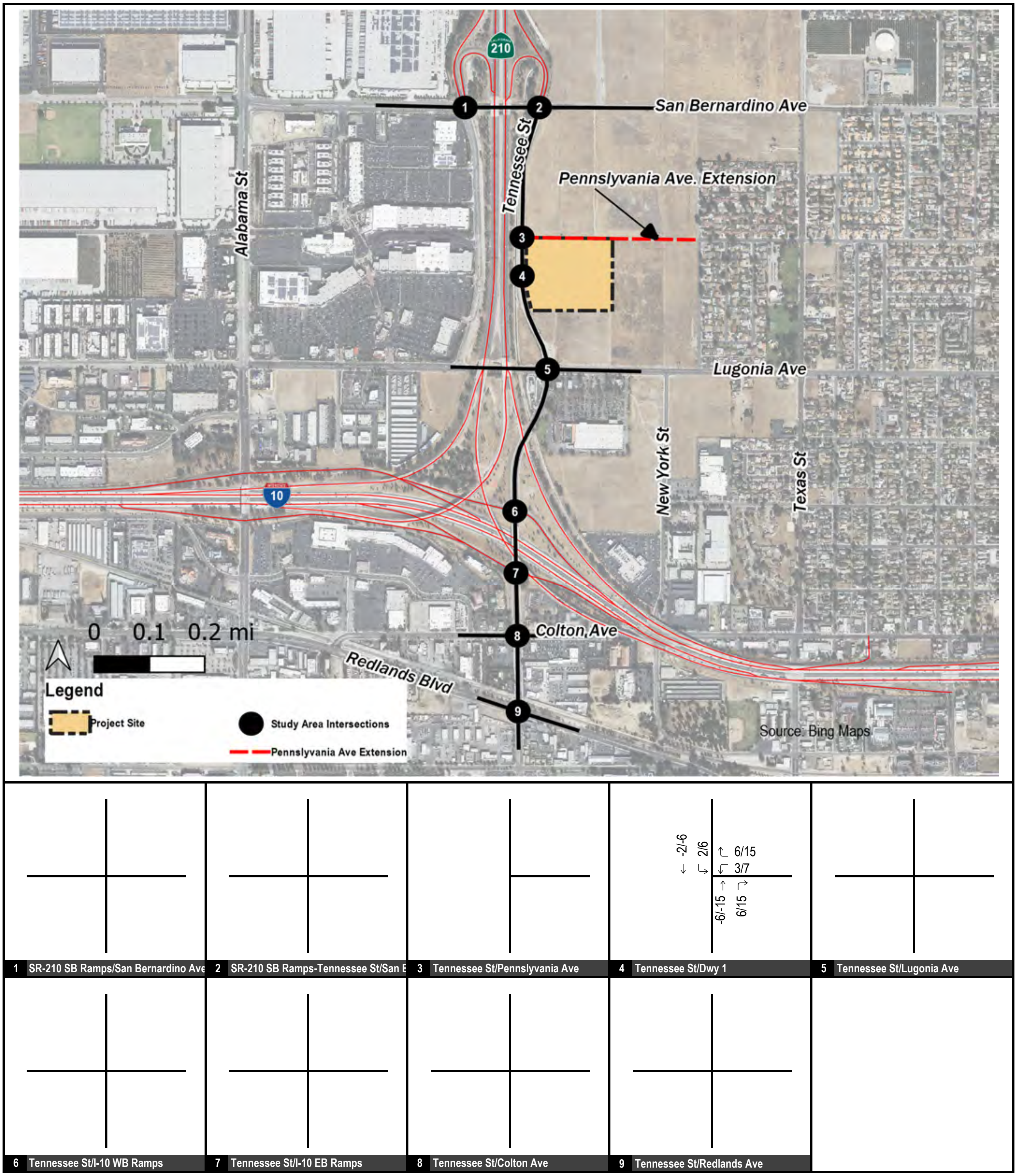


FIGURE 10

XX/YY AM/PM Peak Hour Project Trips

Tennessee Street and Lugonia Avenue Mixed-Use
Pass-by Trip Assignment

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Passby Trips (9/21/2022)

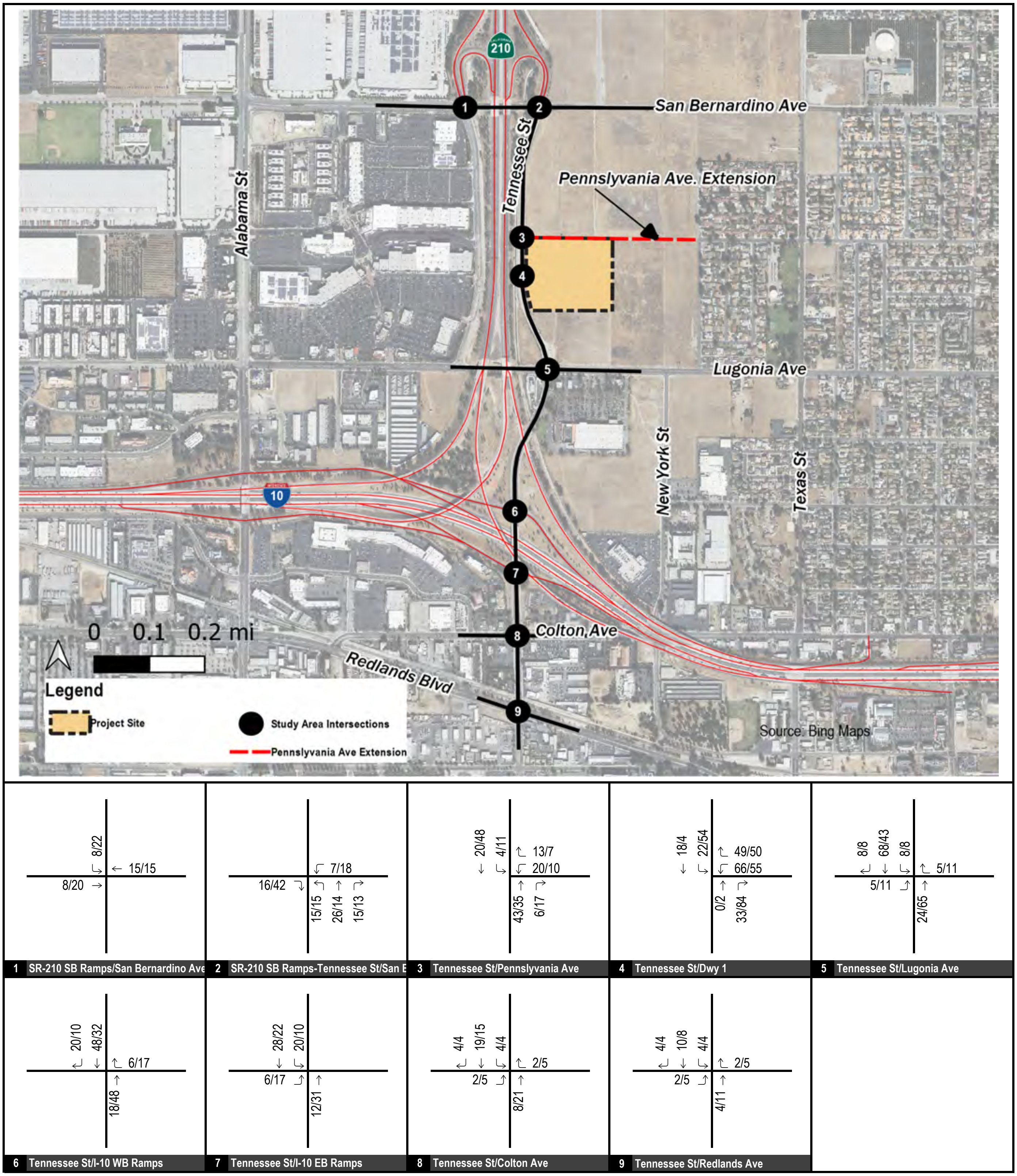


FIGURE 11

XX/YY AM/PM Peak Hour Project Trips

Tennessee Street and Lugonia Avenue Mixed-Use
Total Net External Trip Assignment With Pass-by Trips

translutions
the transportation solutions company...

Table B: Intersection Level of Service Criteria

LOS	Description of Drivers' Perception and Traffic Operation	Intersection Delay in Seconds	
		Unsignalized	Signalized
A	This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10	≤ 10
B	This level is assigned when the volume-to-capacity ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.	> 10 and ≤ 15	> 10 and ≤ 20
C	This level is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 15 and ≤ 25	> 20 and ≤ 35
D	This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 25 and ≤ 35	> 35 and ≤ 55
E	This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 35 and ≤ 50	> 55 and ≤ 80
F	This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 50	> 80

- Where the current LOS at a location within the City is below the LOS standard C, no development project shall be approved that cannot be mitigated so that it does not reduce the existing LOS at that location.

Caltrans maintains LOS D as the minimum level of service for state facilities. Therefore, a deficiency at an intersection occurs when the LOS falls below LOS C for the City and LOS D for Caltrans.

4.0 VOLUME DEVELOPMENT METHODOLOGY

Forecast traffic volumes at study intersections were developed consistent with the City's guidelines. This section discusses the volume development methodology used to forecast future traffic volumes.

4.1 Existing Conditions Traffic Volumes

Existing traffic volumes for intersections and roadway segments are based on peak hour intersection turn movement counts and daily counts collected by Counts Unlimited in May 2022. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at all study area intersections. Consistent with City guidelines, PCE volumes at these intersections were computed using a PCE factor of 1.5 for 2-axle, 2.0 for 3-axle, and 4.0 for 4-axle trucks. Count sheets are contained in Appendix A. Detailed volume development worksheets are included in Appendix B.

4.2 Existing With Project Traffic Volumes

Traffic volumes for existing with project conditions were developed by adding the trip assignment to the existing without project peak hour traffic volumes.

5.0 EXISTING CONDITIONS

This section discusses the existing transportation conditions in the study area.

5.1 Existing Roadway Conditions

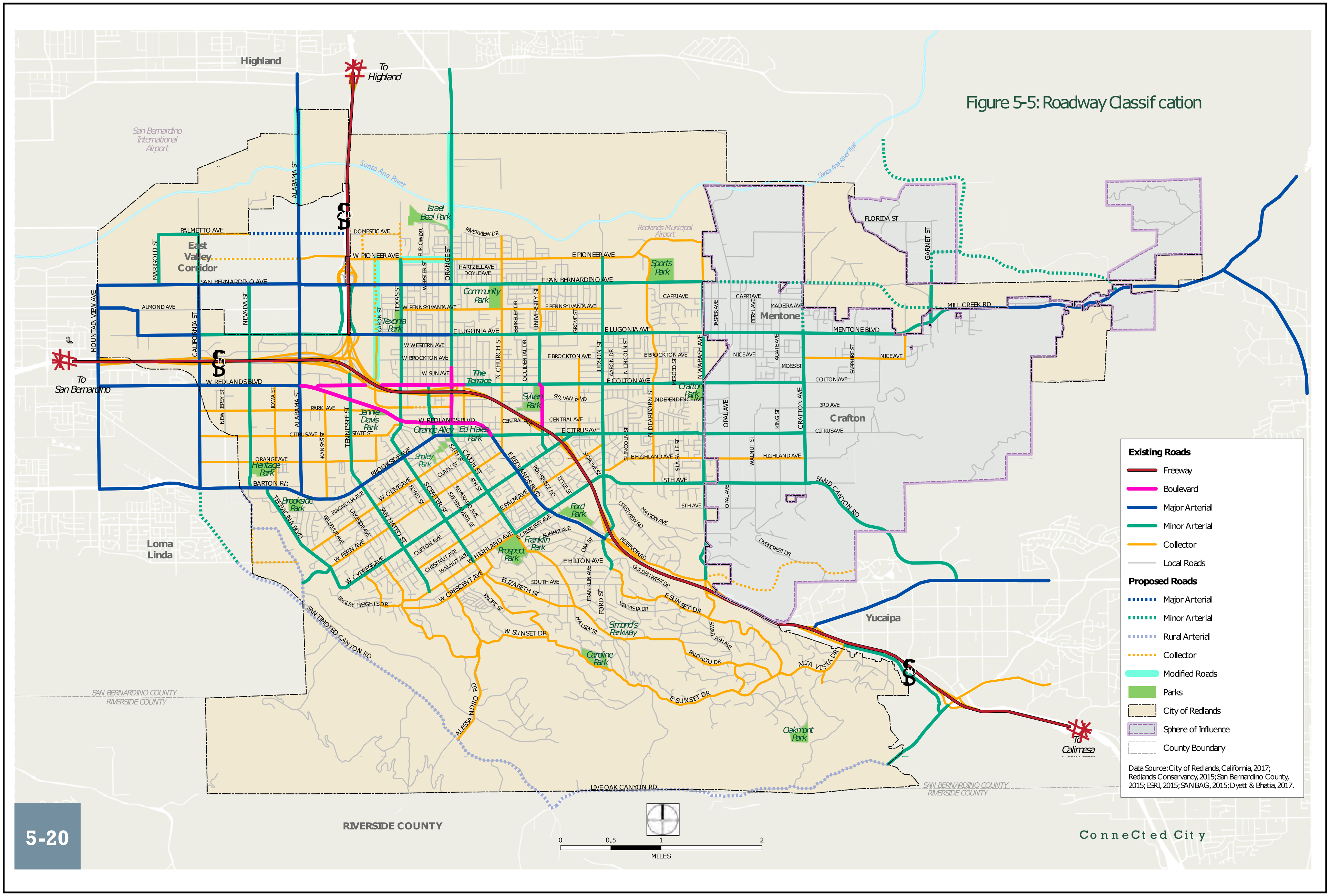
Regional access to the project site is provided by SR-60 to the north. Local access to the project will be provided by the following roadways:

- San Bernardino Avenue is oriented in the east-west direction and is a 5-lane roadway from east of Alabama Street to State Route 210 Eastbound Ramps. The City's circulation element designates San Bernardino Avenue as a "Major Arterial". The speed limit on San Bernardino Avenue is 45 miles per hour. On-street parking is prohibited.
- Tennessee Street is oriented in the north-south direction and is a 2-lane roadway from San Bernardino Avenue and Lugonia Avenue. The City's circulation element designates Tennessee Street as a "Minor Arterial" roadway. The speed limit on Tennessee Street is 40 miles per hour. On-street parking is prohibited.
- Lugonia Avenue is oriented in the east-west direction and is a 3 to 4-lane roadway within the project study area. The City's circulation element designates Lugonia Avenue as a "Major Arterial" roadway. The speed limit on Lugonia Avenue is 35 miles per hour. On-street parking is prohibited.
- Colton Avenue is oriented in the east-west direction and is a 4-lane roadway within the project study area. The City's circulation element designates Colton Avenue as a "Boulevard" roadway. The speed limit on Colton Avenue is 35 miles per hour. On-street parking is prohibited.
- Redlands Boulevard is oriented in the south-east direction and is a 4-lane roadway within the project study area. The City's circulation element designates Redlands Boulevard as a "Boulevard" roadway. The speed limit on Redlands Boulevard is 40 miles per hour. On-street parking is prohibited.

The City's roadway classification system of roadways, including freeways and arterial streets are shown in Figure 12.

5.2 Existing Transit Service

Public transportation services within the project area includes bus transit service provided by the Omnitrans. This service is further described below.



Source: Redlands General Plan

FIGURE 12

Tennessee Street and Lugonia Avenue Mixed-Use
City of Redlands' Roadway Classifications

translutions
the transportation solutions company...

[D:\GIS\DP - Redlands Multifamily\Reports\Circulation.svg

Bus Service. Public transportation within the project area is provided by Omnitrans, which is the regional transit operator in San Bernardino County.

- Route 15 provides transit service on Lugonia Avenue, Alabama Street, and San Bernardino Avenue within the project area. Route 15 has a major stop at San Bernardino Avenue and Orchard Way. Route 15 operates at 60-minute headways on weekdays.

Figure 13 illustrates the existing transit services. As shown in Figure 13, the closest transit route to the project is located on Lugonia Avenue and San Bernardino Avenue via Route 15.

5.3 Existing Pedestrian & Bicycle Facilities

The City uses several types of bike path classifications and are discussed below:

- Class I Bikeways (Bike Paths): Class I bikeways are completely separate facilities designated for the exclusive use of bicyclists and pedestrians with minimal vehicle crossings.
- Class II Bikeways (Bike Lanes): Class II bikeways are striped lanes designated for the use of bicycles on a street or highway. Vehicle parking and vehicle/pedestrian crossflow are permitted at designated locations.
- Class III Bikeways (Bike Routes): Class III bikeways are routes designated by signs or pavement markings such as sharrows for bicyclists within the vehicular travel lane (i.e., share use) of a roadway.
- Class IV Bikeways (Cycletracks): Class IV Bikeways are protected bike lanes, which provide a right-of-way designated exclusively for bicycle travel within a roadway, protected from vehicular traffic with devices such as curbs, flexible prost, inflexible physical barriers, or on-street parking.
- Bicycle Boulevards: Bicycle Boulevards are low-volume and low-speed streets that prioritize bicycles. Bicycle travel on these boulevards is optimized through traffic calming devices such as speed humps and high visibility crosswalks.

Figure 14 illustrates the existing bikeways within the City. As shown in Figure 14, there are no existing bike lanes on Tennessee Street, Lugonia Avenue, or San Bernardino Avenue. Pedestrian circulation within the City is primarily provided via sidewalks. The existing pedestrian sidewalks adjacent to the project are illustrated in Figure 15. As illustrated in Figure 15, there are no existing sidewalks on Tennessee Street or on the northern leg of Tennessee Street and Lugonia Avenue adjacent to the project site.

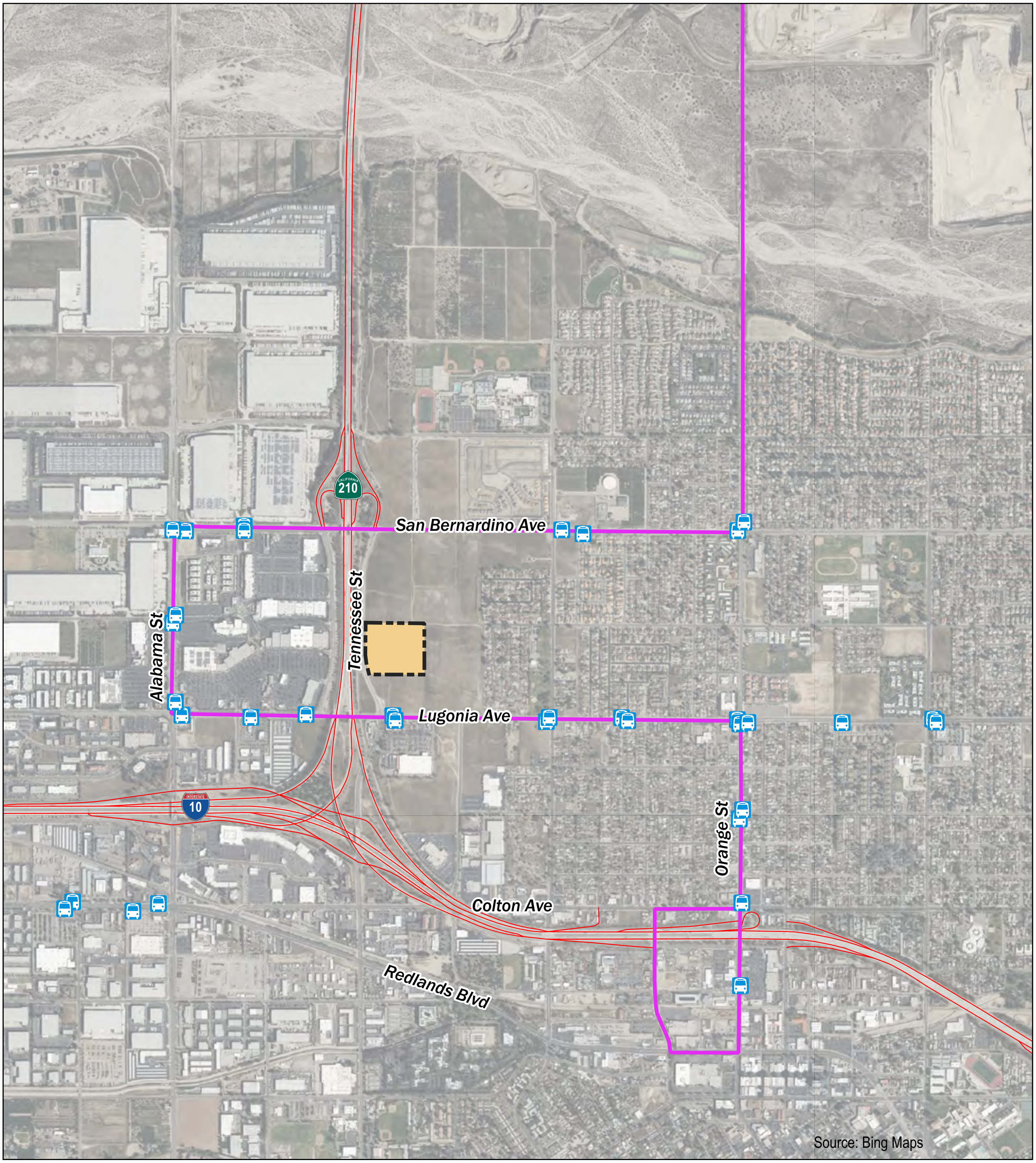
5.4 Existing Without Project Intersections Levels of Service

An intersection level of service analysis was conducted for existing without project conditions to determine current circulation system performance. Figure 16 shows the existing without project lane geometrics and stop controls at the study intersections. The existing without project traffic volumes at study intersections are illustrated in Figure 17. Detailed volume development worksheets are included in Appendix B. The existing without project levels of service for the study area intersections are summarized in Table C. Level of service calculation worksheets are contained in Appendix C. As shown in Table C, all study area intersections are currently operating at satisfactory levels of service with the exception of the following:

- Tennessee Street and Lugonia (a.m. and p.m. peak hours).
- Tennessee Street and Redlands Boulevard (a.m. and p.m. peak hours).

5.5 Existing With Project Intersections Levels of Service

An intersection level of service analysis was conducted for existing with project conditions to determine the forecast circulation system performance. The existing with project traffic volumes at study intersections are illustrated in Figure 18. Detailed volume development worksheets are included in Appendix B. The existing with project levels of service for the study area intersections are summarized in Table C. Level of service calculation worksheets are contained in Appendix C. As shown in Table C, all study area intersections are forecast to operate at satisfactory levels of service with the exception of the following:



Legend

▨ Project Site

🚌 Bus Stops

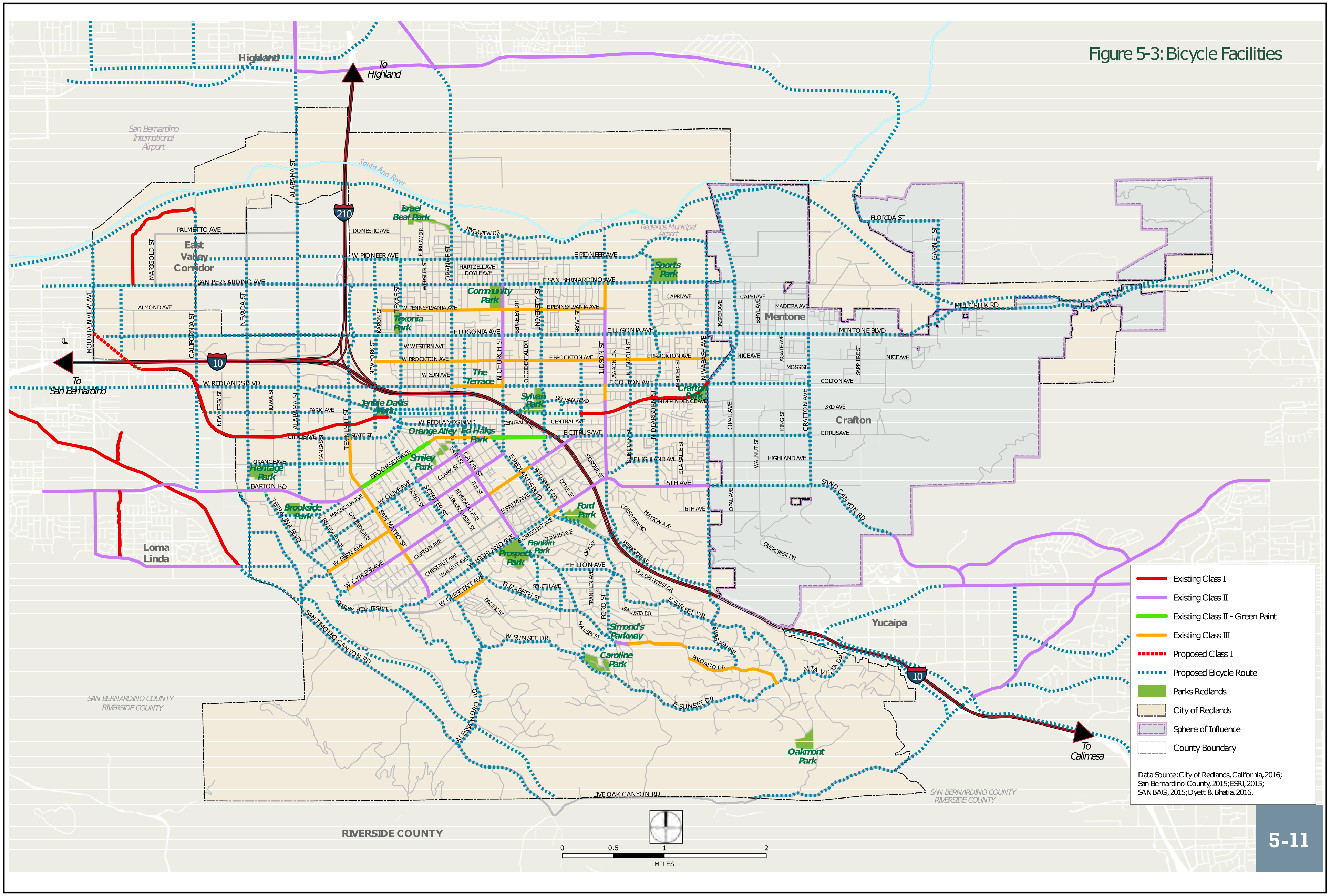
— Transit Route 15

FIGURE 13

Tennessee St. and Lugonia Ave. Mixed-Use Transit

translutions
the transportation solutions company...

D:\GIS\DP - Redlands Multifamily\Reports\Transit Routes.qgz (09-21-2022)



Source: Redlands General Plan

FIGURE 14

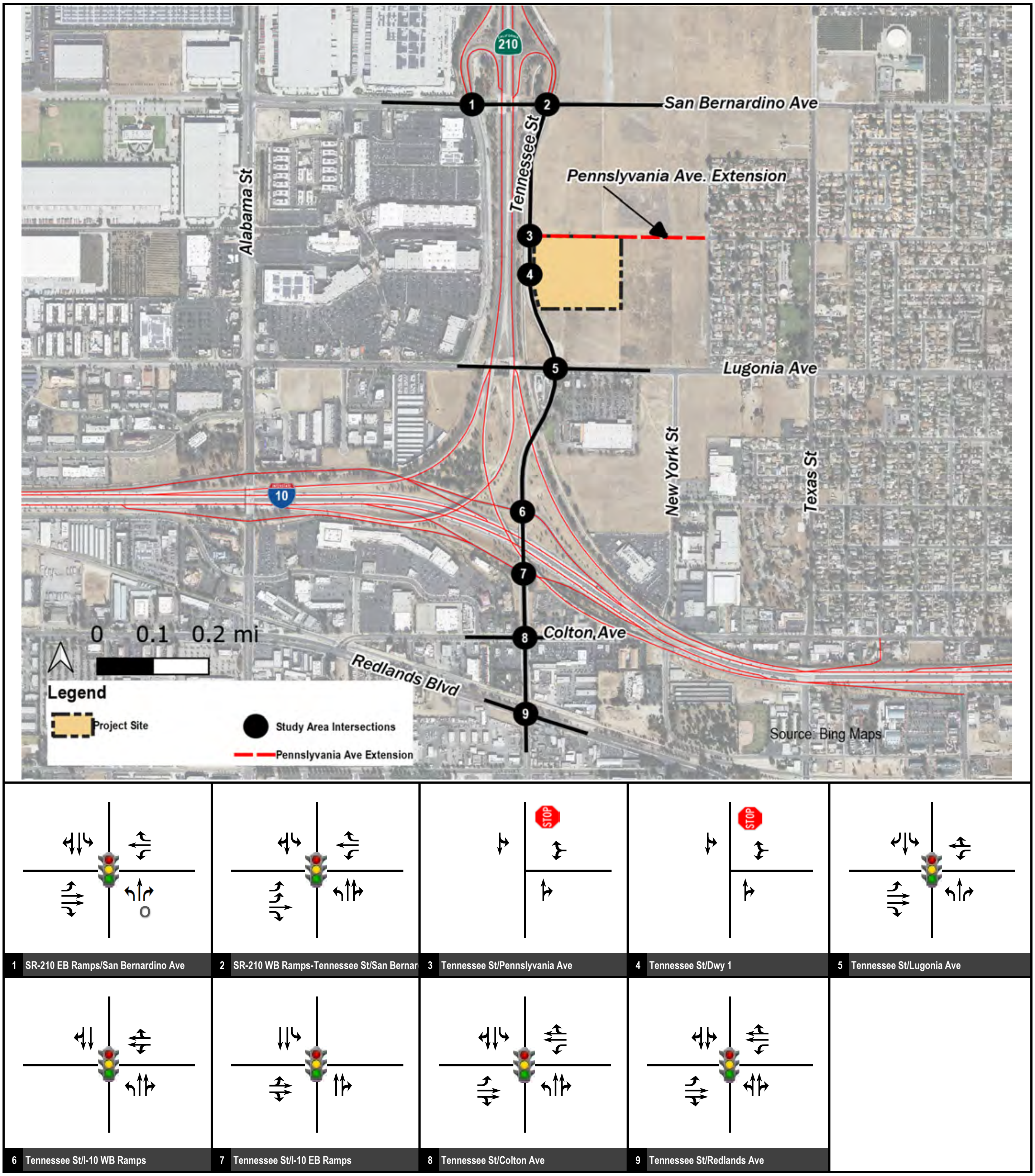
Tennessee Street and Lugonia Avenue Mixed-Use
City of Redlands' Bicycle Lanes

translutions
the transportation solutions company...

[D:\GIS\DP - Redlands Multifamily\Reports\Bicycle Facilities.svg

FIGURE 15

Tennessee St. and Lugonia Ave. Mixed-Use
Pedestrian Facilities



1 SR-210 EB Ramps/San Bernardino Ave

2 SR-210 WB Ramps-Tennessee St/San Bernar

3 Tennessee St/Pennslyvania Ave

4 Tennessee St/Dwy 1

5 Tennessee St/Lugonia Ave

6 Tennessee St/I-10 WB Ramps

7 Tennessee St/I-10 EB Ramps

8 Tennessee St/Colton Ave

9 Tennessee St/Redlands Ave

FIGURE 16

Legend

🚦 Signal
o RT Overlap
STOP Stop Sign
d Defacto right turn

Tennessee Street and Lugonia Avenue Mixed-Use
Existing With Project Geometrics and Stop Control With Improvements

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Geo 9/21/2022

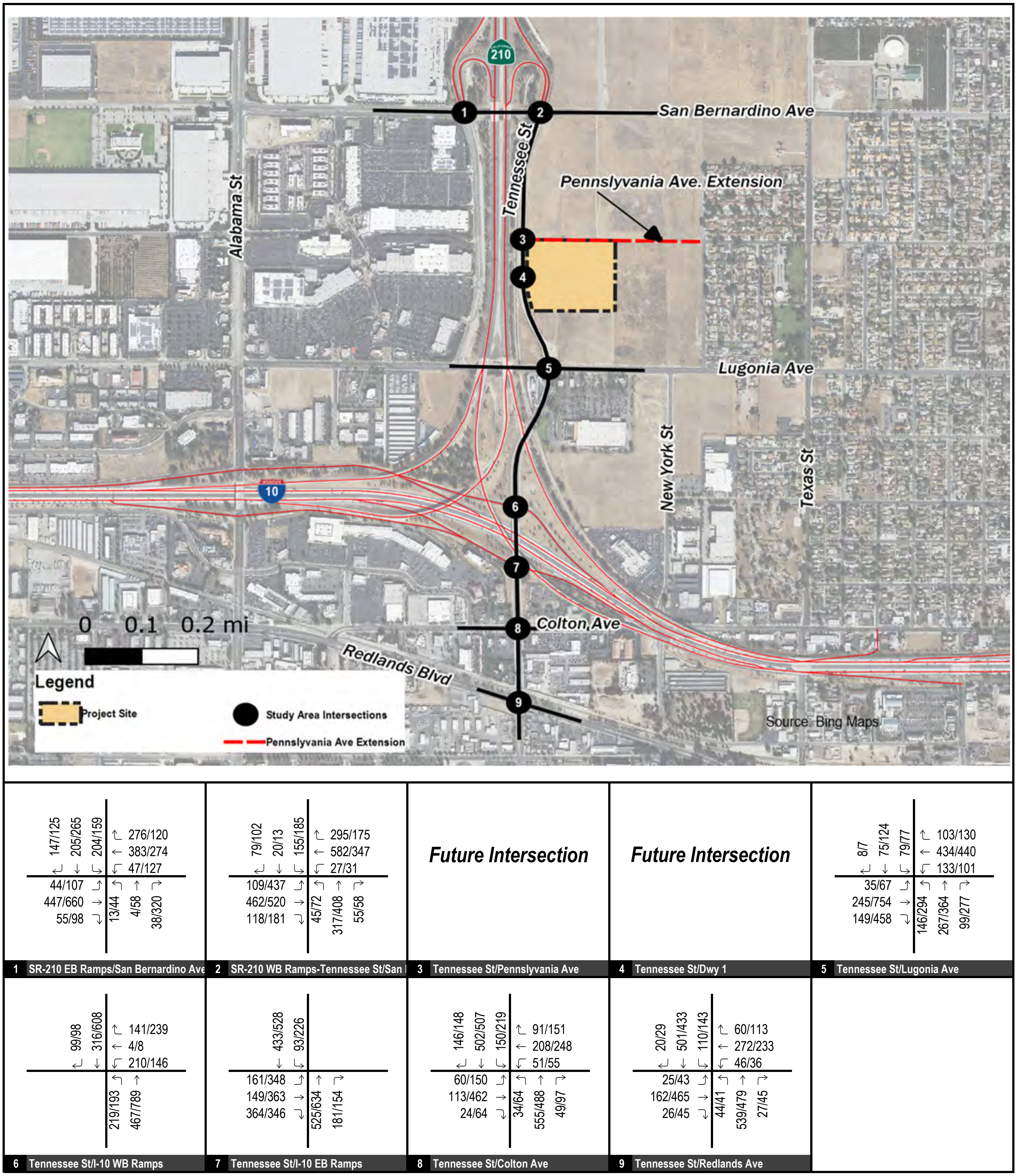


FIGURE 17

XXX / YYY AM / PM Peak Hour Volume (In PCEs)

Tennessee Street and Lugonia Avenue Mixed-Use
Existing Without Project Peak Hour Traffic Volumes (PCEs)

translutions
the transportation solutions company...

Table C: Existing Without and With Project Levels of Service

Intersection	Jurisdiction	LOS Standard	Control	Without Project				With Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 . SR-210 EB Ramps/San Bernardino Ave	Caltrans	D	Signal	38.6	D	39.4	D	39.9	D	40.3	D
2 . SR-210 WB Ramps-Tennessee St/San Ber	Caltrans	D	Signal	42.7	D	49.6	D	43	D	49.8	D
3 . Tennessee St/Pennslyvania Ave	Redlands	C	TWSC	*Future Intersection*				13.6	B	16.1	C
4 . Tennessee St/Dwy 1	Redlands	C	TWSC	*Future Intersection*				15.8	C	21.9	C
5 . Tennessee St/Lugonia Ave	Redlands	C	Signal	42.9	D *	52.7	D *	43.5	D *	53.7	D *
6 . Tennessee St/I-10 WB Ramps	Caltrans	D	Signal	17.4	B	19.4	B	16.6	B	22.2	C
7 . Tennessee St/I-10 EB Ramps	Caltrans	D	Signal	30.3	C	37.0	D	30.1	C	38.3	D
8 . Tennessee St/Colton Ave	Redlands	C	Signal	22.5	C	34.6	C	22.5	C	34.6	C
9 . Tennessee St/Redlands Ave	Redlands	C	Signal	48	D *	50.1	D *	48	D *	50.1	D *

Notes:

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

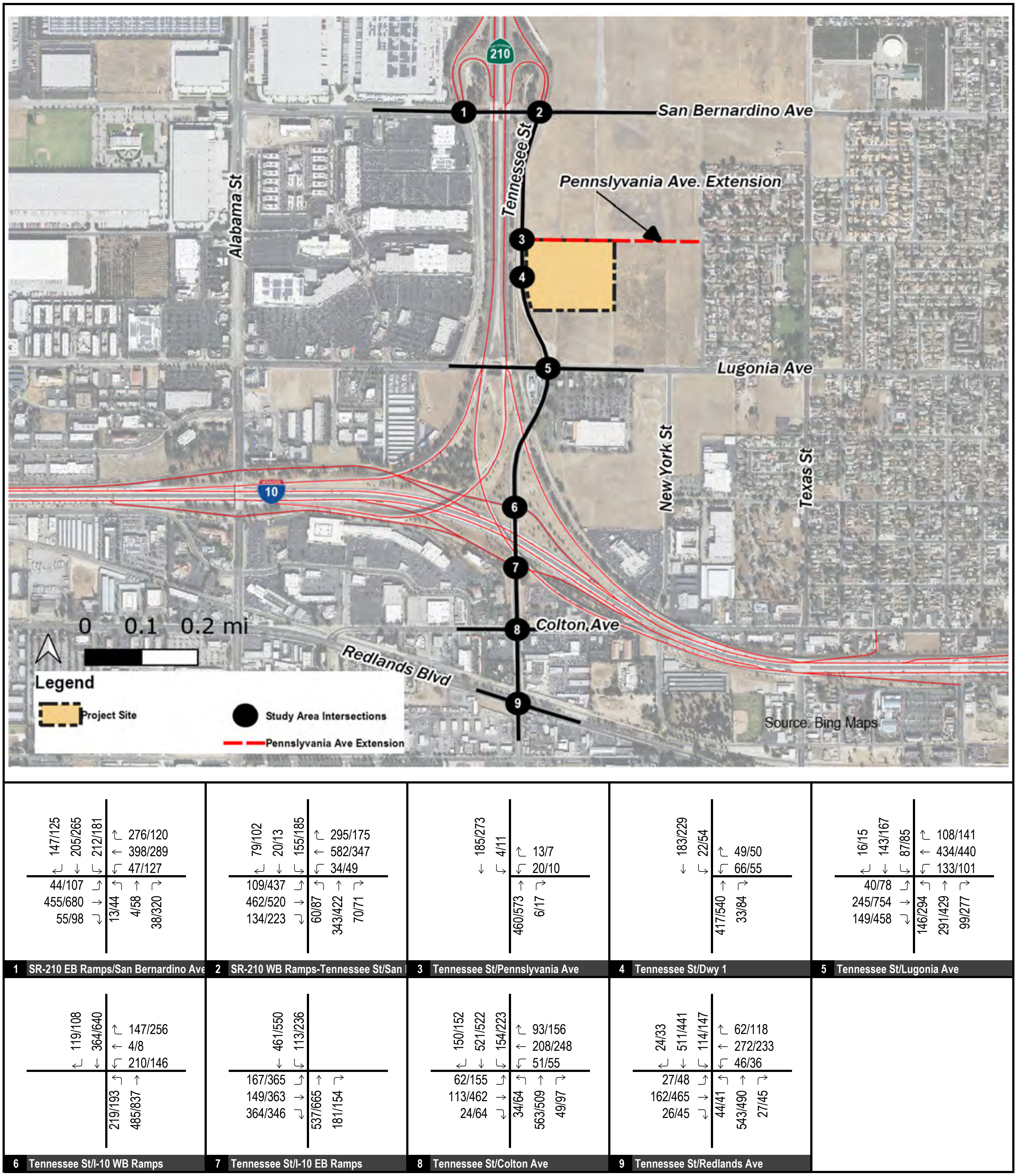


FIGURE 18

XXX / YYY AM / PM Peak Hour Volume (In PCEs)

Tennessee Street and Lugonia Avenue Mixed-Use Existing With Project Peak Hour Traffic Volumes (PCEs)

translutions
the transportation solutions company...

D:\Projects\DP - Redlands Multifamily\Revised Analysis\Z30 Vol Exist P (9/21/2022)

- Tennessee Street and Lugonia Avenue (a.m. and p.m. peak hours).
- Tennessee Street and Redlands Boulevard (a.m. and p.m. peak hours).

Based on Measure U guidelines, where the current LOS at a location within the City is below the LOS standard C, no development project shall be approved that cannot be mitigated so that it does not reduce the existing LOS at that location. Table C shows that the intersection of Tennessee Street and Redlands Boulevard operates at unsatisfactory LOS D under without and with project conditions. The project does not increase the intersection delay under the a.m. or p.m. peak hours. Therefore, no improvements have been recommended at this location.

6.0 CIRCULATION IMPROVEMENTS

The City requires that circulation improvements be recommended if the study area intersections don't meet the City's Measure U guidelines. Under existing with project conditions, the following circulation improvements are recommended as follows:

- Tennessee Street and Lugonia Avenue: Optimize the signal cycle length.

The resulting levels of service for existing with project with improvements conditions are included in Table D. As shown in Table D, with the addition of the improvements, the intersection delay for Tennessee Street and Lugonia Avenue is reduced to pre-project conditions.

7.0 INGRESS/EGRESS ANALYSIS

An ingress/egress analysis was conducted at the new intersection of Pennsylvania Avenue Extension and Tennessee Street and the project driveway to determine if inbound/outbound traffic would cause significant queues to back-up on Tennessee Street or Pennsylvania Avenue. Table E shows the existing with project queues at the intersections of Tennessee Street and Pennsylvania Avenue extension and Tennessee Street and Driveway 1. As shown in Table E, the southbound through-left-turn inbound movement at Tennessee Street and Pennsylvania Avenue and Tennessee Street and Driveway 1 does not exceed more than one vehicle. It is not anticipated that queues would back-up on Tennessee Street and cause significant delays on Tennessee Street. In addition, the westbound left-right turn lane on Pennsylvania Avenue would not exceed more than one vehicle. It is not anticipated that queues on Pennsylvania Avenue Extension would back-up and cause significant delays.

8.0 SUMMARY & CONCLUSIONS

The proposed project is forecast to generate 195 net external trips during the a.m. peak hour, 245 net external trips during the p.m. peak hour, and 2,704 net external daily trips. Based on the LOS analysis, all study area intersections are forecast to operate at satisfactory levels of service with the exception of Tennessee Street and Lugonia Avneue and Tennessee Street and Redlands Avenue in the a.m. and p.m. peak hours under existing without and with project conditions. With the addition of the circulation improvements, the intersection delay for Tennessee Street and Lugonia Avenue is reduced to pre-project conditions.

An ingress/egress analysis at the intersections of Tennessee Street and Pennsylvania Avenue extension and the project driveway on Tennessee Street shows that the southbound through-left-turn inbound movement at Tennessee Street and Pennsylvania Avenue and Tennessee Street and Driveway 1 does not exceed more than one vehicle. It is not anticipated that queues would back-up on Tennessee Street and cause significant delays on Tennessee Street. In addition, the westbound left-right turn lane on Pennsylvania Avenue would not exceed more than one vehicle. It is not anticipated that queues on Pennsylvania Avenue Extension would back-up and cause significant delays.

Table D: Existing With Project With Improvements Levels of Service

Intersection	Jurisdiction	LOS Standard	Control	Without Project				With Project With Improvement			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
5 . Tennessee St/Lugonia Ave	Redlands	C	Signal	43.5	D *	53.7	D *	39.8	D *	50.6	D *

Notes:

LOS = Level of Service

Table E: Existing With Project Queuing Analysis

Intersection	Movement	Storage Length (In Feet)	Existing With Project AM Peak Hour Queue Length[1]	Existing With Project PM Peak Hour Queue Length[1]
3 . Tennessee St/Pennslyvania Ave				
	SBTL	1200	0	0
	WBLR	775	25	25
4 . Tennessee St/Dwy 1				
	SBTL	365	25	25
	WBLR	175	50	50

Notes:

[1] Queues reported are 95th Percentile queue lengths per movement in feet. 25 Feet per vehicle is assumed.

APPENDIX A:
TRAFFIC COUNTS

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

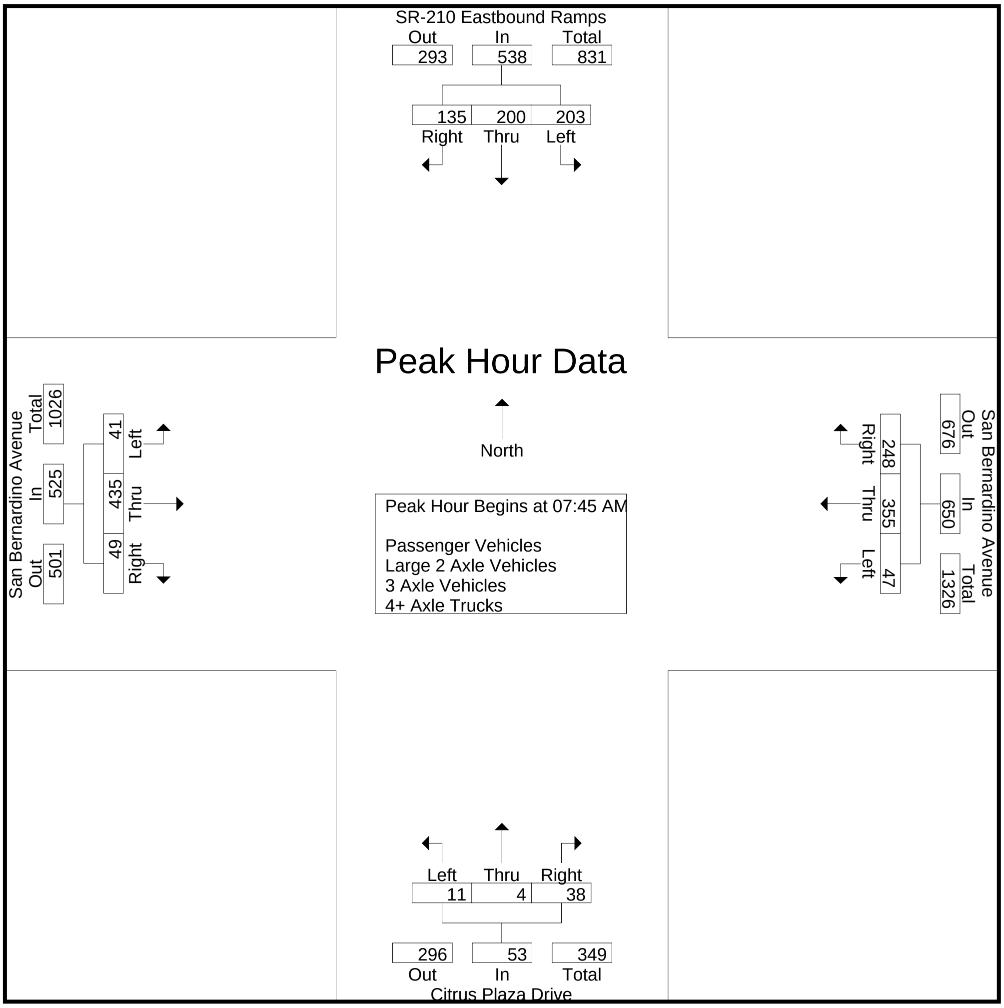
	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	31	38	47	116	4	77	74	155	6	0	6	12	14	58	8	80	363
07:15 AM	40	39	47	126	5	84	93	182	3	0	6	9	10	60	9	79	396
07:30 AM	31	38	38	107	2	90	77	169	2	0	2	4	16	70	5	91	371
07:45 AM	34	63	36	133	9	81	83	173	3	0	5	8	5	94	13	112	426
Total	136	178	168	482	20	332	327	679	14	0	19	33	45	282	35	362	1556
08:00 AM	60	33	36	129	11	91	60	162	4	1	7	12	15	134	8	157	460
08:15 AM	64	50	25	139	14	88	53	155	3	1	13	17	14	122	18	154	465
08:30 AM	45	54	38	137	13	95	52	160	1	2	13	16	7	85	10	102	415
08:45 AM	17	49	33	99	25	83	64	172	1	1	9	11	7	60	4	71	353
Total	186	186	132	504	63	357	229	649	9	5	42	56	43	401	40	484	1693
Grand Total	322	364	300	986	83	689	556	1328	23	5	61	89	88	683	75	846	3249
Apprch %	32.7	36.9	30.4		6.2	51.9	41.9		25.8	5.6	68.5		10.4	80.7	8.9		
Total %	9.9	11.2	9.2	30.3	2.6	21.2	17.1	40.9	0.7	0.2	1.9	2.7	2.7	21	2.3	26	
Passenger Vehicles	318	359	287	964	81	659	529	1269	21	5	59	85	84	654	69	807	3125
% Passenger Vehicles	98.8	98.6	95.7	97.8	97.6	95.6	95.1	95.6	91.3	100	96.7	95.5	95.5	95.8	92	95.4	96.2
Large 2 Axle Vehicles	2	2	4	8	0	10	5	15	0	0	2	2	1	17	2	20	45
% Large 2 Axle Vehicles	0.6	0.5	1.3	0.8	0	1.5	0.9	1.1	0	0	3.3	2.2	1.1	2.5	2.7	2.4	1.4
3 Axle Vehicles	0	1	2	3	1	4	3	8	1	0	0	1	1	6	2	9	21
% 3 Axle Vehicles	0	0.3	0.7	0.3	1.2	0.6	0.5	0.6	4.3	0	0	1.1	1.1	0.9	2.7	1.1	0.6
4+ Axle Trucks	2	2	7	11	1	16	19	36	1	0	0	1	2	6	2	10	58
% 4+ Axle Trucks	0.6	0.5	2.3	1.1	1.2	2.3	3.4	2.7	4.3	0	0	1.1	2.3	0.9	2.7	1.2	1.8

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	34	**63**	36	133	9	81	**83**	**173**	3	0	5	8	5	94	13	112	426
08:00 AM	60	33	36	129	11	91	60	162	**4**	1	7	12	**15**	**134**	8	**157**	460
08:15 AM	**64**	50	25	**139**	**14**	88	53	155	3	1	**13**	**17**	14	122	**18**	154	**465**
08:30 AM	45	54	**38**	137	13	**95**	52	160	1	**2**	13	16	7	85	10	102	415
Total Volume	203	200	135	538	47	355	248	650	11	4	38	53	41	435	49	525	1766
% App. Total	37.7	37.2	25.1		7.2	54.6	38.2		20.8	7.5	71.7		7.8	82.9	9.3		
PHF	.793	.794	.888	.968	.839	.934	.747	.939	.688	.500	.731	.779	.683	.812	.681	.836	.949

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:15 AM				08:00 AM				07:45 AM			
+0 mins.	34	**63**	36	133	5	84	**93**	**182**	**4**	1	7	12	5	94	13	112
+15 mins.	60	33	36	129	2	90	77	169	3	1	**13**	**17**	**15**	**134**	8	**157**
+30 mins.	**64**	50	25	**139**	9	81	83	173	1	**2**	13	16	14	122	**18**	154
+45 mins.	45	54	**38**	137	**11**	**91**	60	162	1	1	9	11	7	85	10	102
Total Volume	203	200	135	538	27	346	313	686	9	5	42	56	41	435	49	525
% App. Total	37.7	37.2	25.1		3.9	50.4	45.6		16.1	8.9	75		7.8	82.9	9.3	
PHF	.793	.794	.888	.968	.614	.951	.841	.942	.563	.625	.808	.824	.683	.812	.681	.836

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

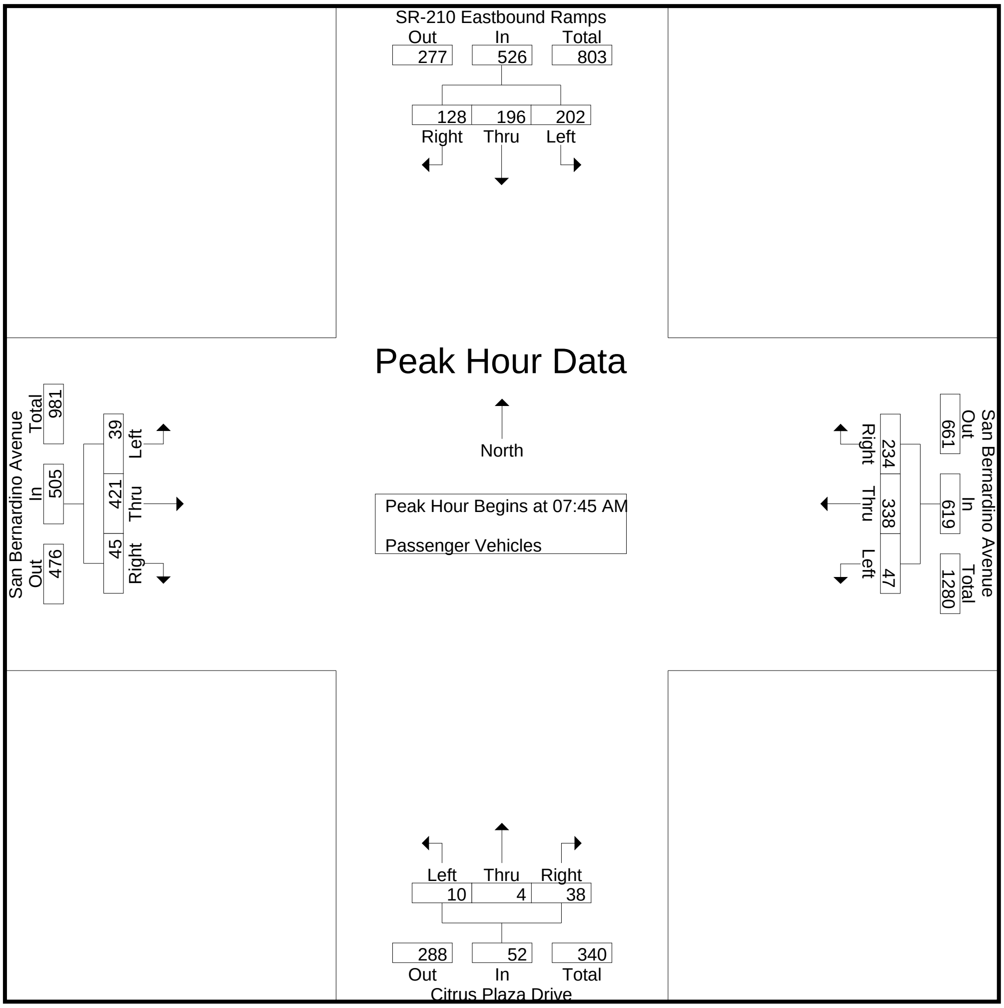
Groups Printed- Passenger Vehicles

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	30	37	46	113	4	74	72	150	6	0	5	11	14	55	7	76	350
07:15 AM	40	39	46	125	5	81	92	178	3	0	6	9	9	53	9	71	383
07:30 AM	29	38	35	102	2	89	74	165	1	0	2	3	16	65	5	86	356
07:45 AM	34	62	32	128	9	76	79	164	2	0	5	7	5	91	11	107	406
Total	133	176	159	468	20	320	317	657	12	0	18	30	44	264	32	340	1495
08:00 AM	60	32	35	127	11	89	55	155	4	1	7	12	15	131	7	153	447
08:15 AM	64	49	24	137	14	83	49	146	3	1	13	17	12	117	18	147	447
08:30 AM	44	53	37	134	13	90	51	154	1	2	13	16	7	82	9	98	402
08:45 AM	17	49	32	98	23	77	57	157	1	1	8	10	6	60	3	69	334
Total	185	183	128	496	61	339	212	612	9	5	41	55	40	390	37	467	1630
Grand Total	318	359	287	964	81	659	529	1269	21	5	59	85	84	654	69	807	3125
Apprch %	33	37.2	29.8		6.4	51.9	41.7		24.7	5.9	69.4		10.4	81	8.6		
Total %	10.2	11.5	9.2	30.8	2.6	21.1	16.9	40.6	0.7	0.2	1.9	2.7	2.7	20.9	2.2	25.8	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	34	**62**	32	128	9	76	**79**	**164**	2	0	5	7	5	91	11	107	406
08:00 AM	60	32	35	127	11	89	55	155	**4**	1	7	12	**15**	**131**	7	**153**	**447**
08:15 AM	**64**	49	24	**137**	**14**	83	49	146	3	1	**13**	**17**	12	117	**18**	147	447
08:30 AM	44	53	**37**	134	13	**90**	51	154	1	**2**	13	16	7	82	9	98	402
Total Volume	202	196	128	526	47	338	234	619	10	4	38	52	39	421	45	505	1702
% App. Total	38.4	37.3	24.3		7.6	54.6	37.8		19.2	7.7	73.1		7.7	83.4	8.9		
PHF	.789	.790	.865	.960	.839	.939	.741	.944	.625	.500	.731	.765	.650	.803	.625	.825	.952

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	34	**62**	32	128	9	76	**79**	**164**	2	0	5	7	5	91	11	107
+15 mins.	60	32	35	127	11	89	55	155	**4**	1	7	12	**15**	**131**	7	**153**
+30 mins.	**64**	49	24	**137**	**14**	83	49	146	3	1	**13**	**17**	12	117	**18**	147
+45 mins.	44	53	**37**	134	13	**90**	51	154	1	**2**	13	16	7	82	9	98
Total Volume	202	196	128	526	47	338	234	619	10	4	38	52	39	421	45	505
% App. Total	38.4	37.3	24.3		7.6	54.6	37.8		19.2	7.7	73.1		7.7	83.4	8.9	
PHF	.789	.790	.865	.960	.839	.939	.741	.944	.625	.500	.731	.765	.650	.803	.625	.825

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

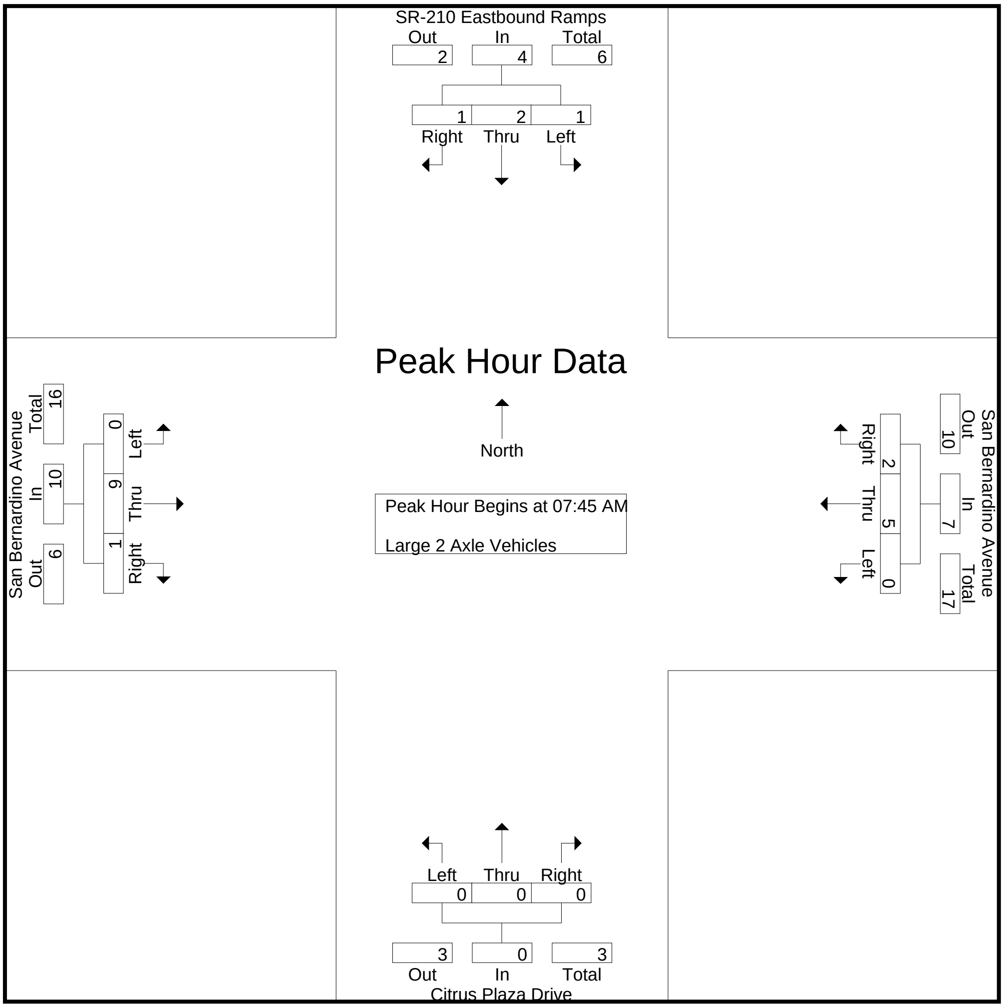
	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	0	1	0	1	1	2	0	0	1	1	0	1	1	2	6
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	4	0	5	6
07:30 AM	0	0	2	2	0	1	0	1	0	0	0	0	0	3	0	3	6
07:45 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	1	0	1	4
Total	1	0	3	4	0	5	1	6	0	0	1	1	1	9	1	11	22
08:00 AM	0	1	0	1	0	0	1	1	0	0	0	0	0	3	1	4	6
08:15 AM	0	1	0	1	0	2	1	3	0	0	0	0	0	4	0	4	8
08:30 AM	1	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
08:45 AM	0	0	1	1	0	2	2	4	0	0	1	1	0	0	0	0	6
Total	1	2	1	4	0	5	4	9	0	0	1	1	0	8	1	9	23
Grand Total	2	2	4	8	0	10	5	15	0	0	2	2	1	17	2	20	45
Apprch %	25	25	50		0	66.7	33.3		0	0	100		5	85	10		
Total %	4.4	4.4	8.9	17.8	0	22.2	11.1	33.3	0	0	4.4	4.4	2.2	37.8	4.4	44.4	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	**1**	**1**	0	**2**	0	2	0	0	0	0	0	1	0	1	4
08:00 AM	0	**1**	0	1	0	0	**1**	1	0	0	0	0	0	3	**1**	**4**	6
08:15 AM	0	1	0	1	0	2	1	**3**	0	0	0	0	0	**4**	0	4	**8**
08:30 AM	**1**	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
Total Volume	1	2	1	4	0	5	2	7	0	0	0	0	0	9	1	10	21
% App. Total	25	50	25		0	71.4	28.6		0	0	0		0	90	10		
PHF	.250	.500	.250	1.00	.000	.625	.500	.583	.000	.000	.000	.000	.000	.563	.250	.625	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	**1**	**1**	0	**2**	0	2	0	0	0	0	0	1	0	1
+15 mins.	0	**1**	0	1	0	0	**1**	1	0	0	0	0	0	3	**1**	**4**
+30 mins.	0	1	0	1	0	2	1	**3**	0	0	0	0	0	**4**	0	4
+45 mins.	**1**	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	1	2	1	4	0	5	2	7	0	0	0	0	0	9	1	10
% App. Total	25	50	25		0	71.4	28.6		0	0	0		0	90	10	
PHF	.250	.500	.250	1.000	.000	.625	.500	.583	.000	.000	.000	.000	.000	.563	.250	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

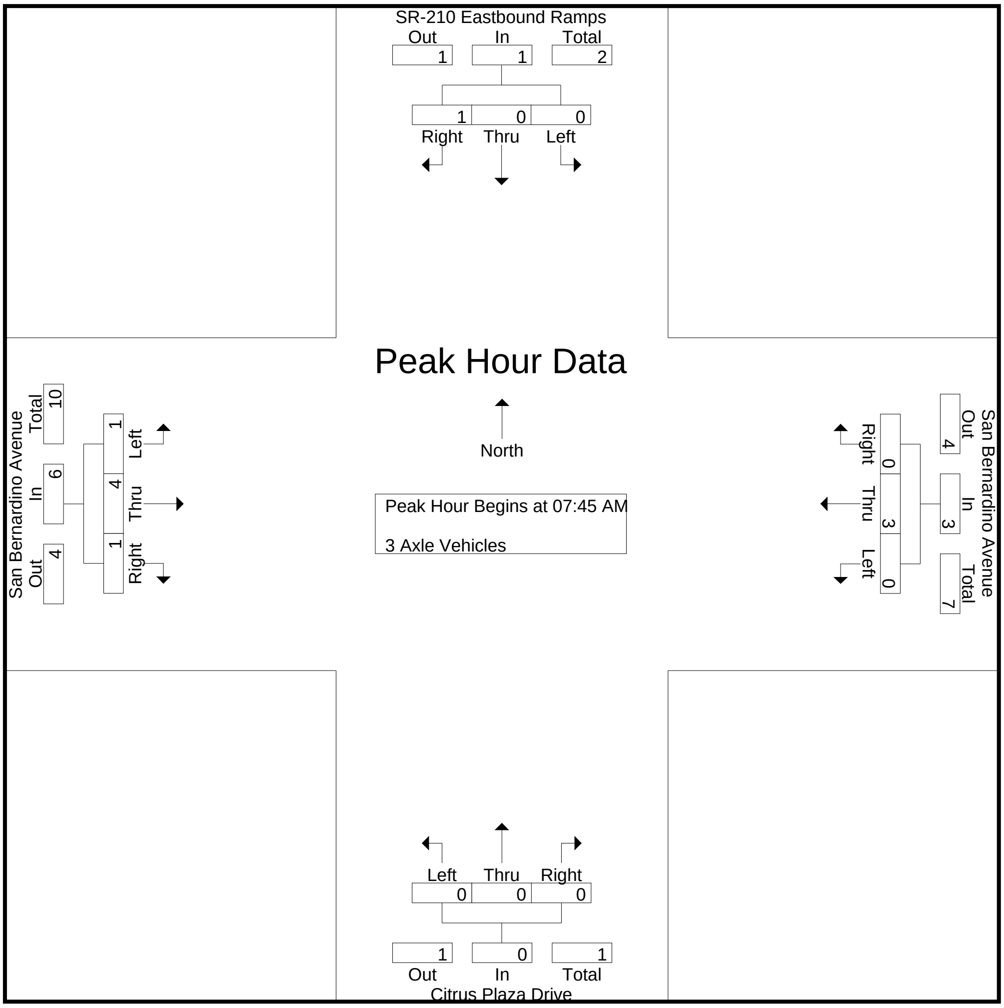
	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	2	0	0	1	1	0	0	0	0	0	1	0	1	4
07:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0	1	3
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	1	2	3	0	0	3	3	1	0	0	1	0	3	0	3	10
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	3
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1	3	4
08:45 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	1	3
Total	0	0	0	0	1	4	0	5	0	0	0	0	1	3	2	6	11
Grand Total	0	1	2	3	1	4	3	8	1	0	0	1	1	6	2	9	21
Apprch %	0	33.3	66.7		12.5	50	37.5		100	0	0		11.1	66.7	22.2		
Total %	0	4.8	9.5	14.3	4.8	19	14.3	38.1	4.8	0	0	4.8	4.8	28.6	9.5	42.9	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	1	0	1	2
08:00 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	**1**	1	0	2	3
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	**1**	**3**	**4**
Total Volume	0	0	1	1	0	3	0	3	0	0	0	0	1	4	1	6	10
% App. Total	0	0	100		0	100	0		0	0	0		16.7	66.7	16.7		
PHF	.000	.000	.250	.250	.000	.750	.000	.750	.000	.000	.000	.000	.250	.500	.250	.500	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	**1**	1	0	2
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	**1**	**3**
Total Volume	0	0	1	1	0	3	0	3	0	0	0	0	1	4	1	6
% App. Total	0	0	100		0	100	0		0	0	0		16.7	66.7	16.7	
PHF	.000	.000	.250	.250	.000	.750	.000	.750	.000	.000	.000	.000	.250	.500	.250	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

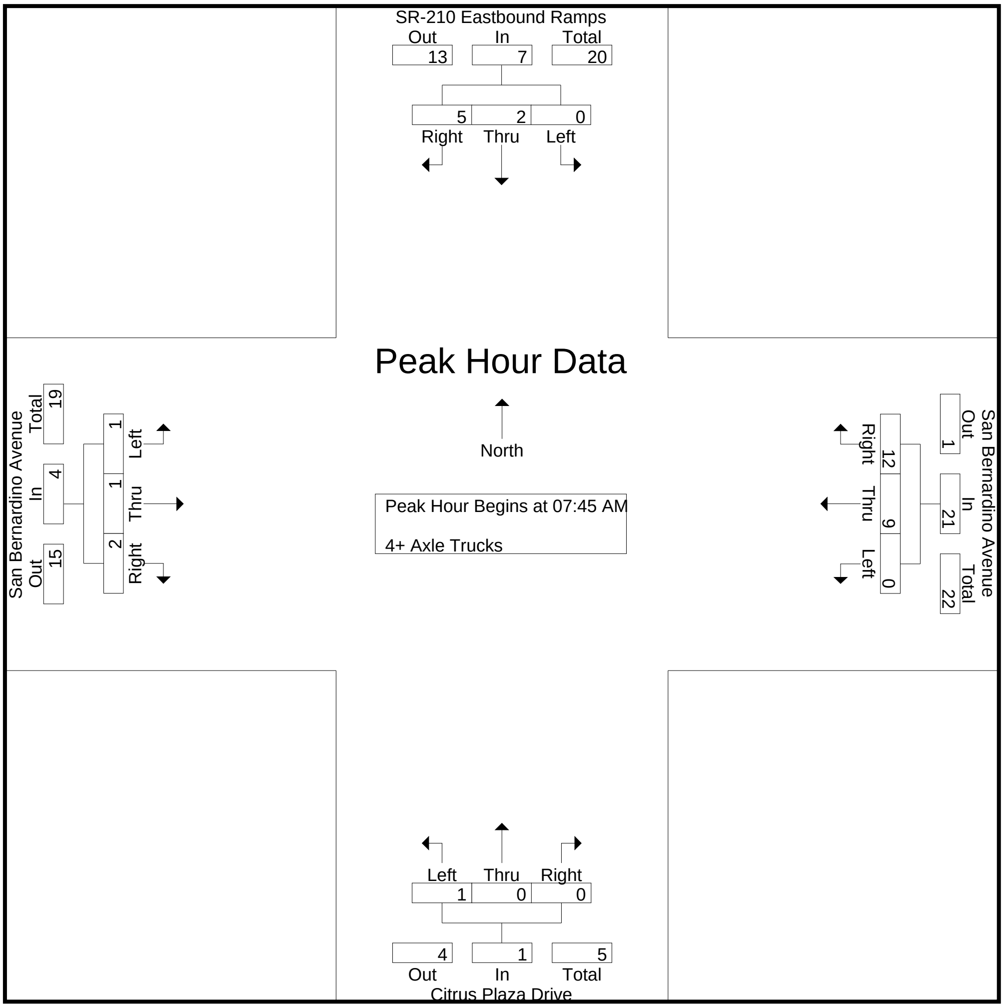
	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:15 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	3	0	3	6
07:30 AM	2	0	1	3	0	0	2	2	0	0	0	0	0	1	0	1	6
07:45 AM	0	1	2	3	0	3	4	7	1	0	0	1	0	1	2	3	14
Total	2	1	4	7	0	7	6	13	1	0	0	1	0	6	2	8	29
08:00 AM	0	0	1	1	0	1	4	5	0	0	0	0	0	0	0	0	6
08:15 AM	0	0	1	1	0	2	3	5	0	0	0	0	1	0	0	1	7
08:30 AM	0	1	1	2	0	3	1	4	0	0	0	0	0	0	0	0	6
08:45 AM	0	0	0	0	1	3	5	9	0	0	0	0	1	0	0	1	10
Total	0	1	3	4	1	9	13	23	0	0	0	0	2	0	0	2	29
Grand Total	2	2	7	11	1	16	19	36	1	0	0	1	2	6	2	10	58
Apprch %	18.2	18.2	63.6		2.8	44.4	52.8		100	0	0		20	60	20		
Total %	3.4	3.4	12.1	19	1.7	27.6	32.8	62.1	1.7	0	0	1.7	3.4	10.3	3.4	17.2	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**1**	**2**	**3**	0	**3**	**4**	**7**	**1**	0	0	**1**	0	**1**	**2**	**3**	**14**
08:00 AM	0	0	1	1	0	1	4	5	0	0	0	0	0	0	0	0	6
08:15 AM	0	0	1	1	0	2	3	5	0	0	0	0	**1**	0	0	1	7
08:30 AM	0	1	1	2	0	3	1	4	0	0	0	0	0	0	0	0	6
Total Volume	0	2	5	7	0	9	12	21	1	0	0	1	1	1	2	4	33
% App. Total	0	28.6	71.4		0	42.9	57.1		100	0	0		25	25	50		
PHF	.000	.500	.625	.583	.000	.750	.750	.750	.250	.000	.000	.250	.250	.250	.250	.333	.589

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	**1**	**2**	**3**	0	**3**	**4**	**7**	**1**	0	0	**1**	0	**1**	**2**	**3**
+15 mins.	0	0	1	1	0	1	4	5	0	0	0	0	0	0	0	0
+30 mins.	0	0	1	1	0	2	3	5	0	0	0	0	**1**	0	0	1
+45 mins.	0	1	1	2	0	3	1	4	0	0	0	0	0	0	0	0
Total Volume	0	2	5	7	0	9	12	21	1	0	0	1	1	1	2	4
% App. Total	0	28.6	71.4		0	42.9	57.1		100	0	0		25	25	50	
PHF	.000	.500	.625	.583	.000	.750	.750	.750	.250	.000	.000	.250	.250	.250	.250	.333

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

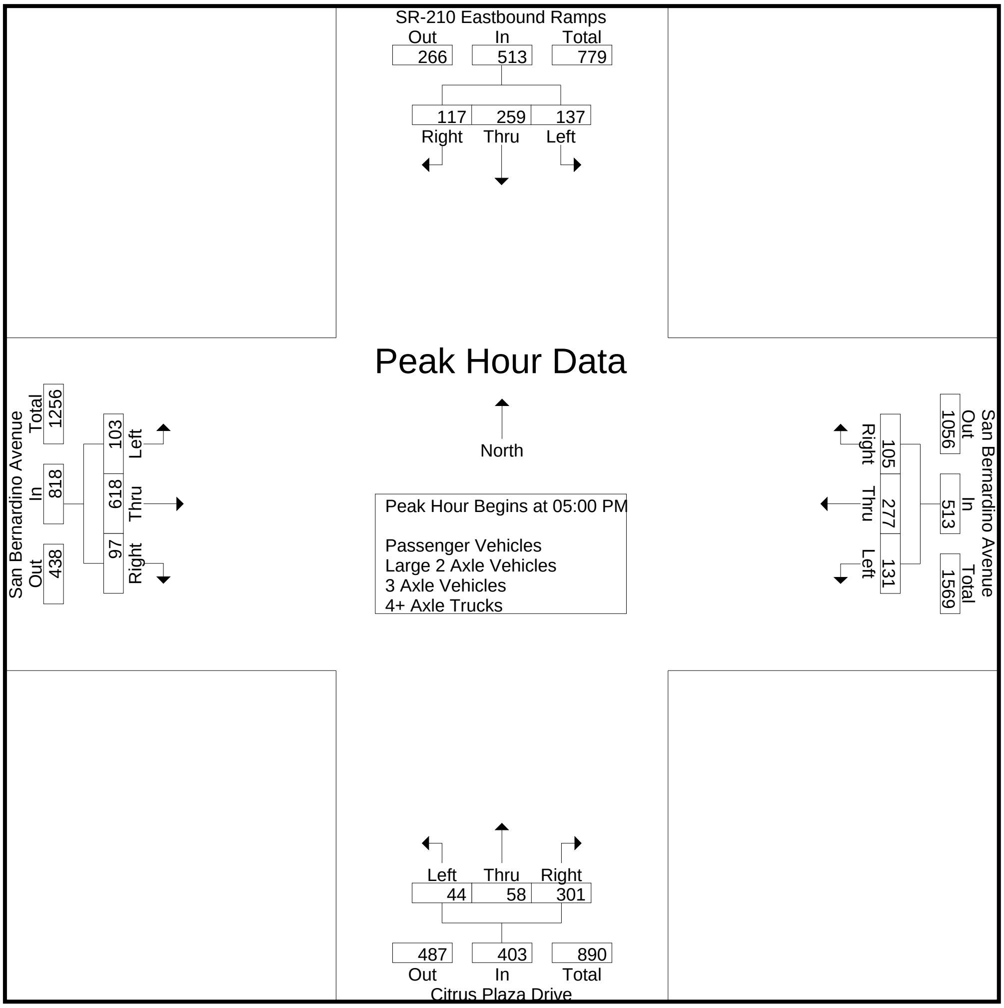
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	38	71	31	140	38	52	39	129	6	10	67	83	19	133	21	173	525
04:15 PM	32	66	20	118	31	66	35	132	8	13	73	94	18	135	22	175	519
04:30 PM	32	71	32	135	30	59	36	125	7	13	64	84	24	156	25	205	549
04:45 PM	33	56	16	105	35	56	22	113	5	13	75	93	17	175	19	211	522
Total	135	264	99	498	134	233	132	499	26	49	279	354	78	599	87	764	2115
05:00 PM	33	46	30	109	29	63	26	118	10	10	80	100	22	150	26	198	525
05:15 PM	42	54	29	125	32	91	24	147	11	15	73	99	37	193	24	254	625
05:30 PM	34	79	24	137	36	59	27	122	15	16	81	112	19	147	26	192	563
05:45 PM	28	80	34	142	34	64	28	126	8	17	67	92	25	128	21	174	534
Total	137	259	117	513	131	277	105	513	44	58	301	403	103	618	97	818	2247
Grand Total	272	523	216	1011	265	510	237	1012	70	107	580	757	181	1217	184	1582	4362
Apprch %	26.9	51.7	21.4		26.2	50.4	23.4		9.2	14.1	76.6		11.4	76.9	11.6		
Total %	6.2	12	5	23.2	6.1	11.7	5.4	23.2	1.6	2.5	13.3	17.4	4.1	27.9	4.2	36.3	
Passenger Vehicles	261	516	210	987	265	489	224	978	70	106	579	755	179	1204	183	1566	4286
% Passenger Vehicles	96	98.7	97.2	97.6	100	95.9	94.5	96.6	100	99.1	99.8	99.7	98.9	98.9	99.5	99	98.3
Large 2 Axle Vehicles	5	5	2	12	0	11	1	12	0	1	1	2	0	8	1	9	35
% Large 2 Axle Vehicles	1.8	1	0.9	1.2	0	2.2	0.4	1.2	0	0.9	0.2	0.3	0	0.7	0.5	0.6	0.8
3 Axle Vehicles	1	0	1	2	0	3	0	3	0	0	0	0	0	1	0	1	6
% 3 Axle Vehicles	0.4	0	0.5	0.2	0	0.6	0	0.3	0	0	0	0	0	0.1	0	0.1	0.1
4+ Axle Trucks	5	2	3	10	0	7	12	19	0	0	0	0	2	4	0	6	35
% 4+ Axle Trucks	1.8	0.4	1.4	1	0	1.4	5.1	1.9	0	0	0	0	1.1	0.3	0	0.4	0.8

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	33	46	30	109	29	63	26	118	10	10	80	100	22	150	**26**	198	525
05:15 PM	**42**	54	29	125	32	**91**	24	**147**	11	15	73	99	**37**	**193**	24	**254**	**625**
05:30 PM	34	79	24	137	**36**	59	27	122	**15**	16	**81**	**112**	19	147	26	192	563
05:45 PM	28	**80**	**34**	**142**	34	64	**28**	126	8	**17**	67	92	25	128	21	174	534
Total Volume	137	259	117	513	131	277	105	513	44	58	301	403	103	618	97	818	2247
% App. Total	26.7	50.5	22.8		25.5	54	20.5		10.9	14.4	74.7		12.6	75.6	11.9		
PHF	.815	.809	.860	.903	.910	.761	.938	.872	.733	.853	.929	.900	.696	.801	.933	.805	.899

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:45 PM				04:30 PM			
+0 mins.	33	46	30	109	29	63	26	118	5	13	75	93	24	156	25	205
+15 mins.	**42**	54	29	125	32	**91**	24	**147**	10	10	80	100	17	175	19	211
+30 mins.	34	79	24	137	**36**	59	27	122	11	15	73	99	22	150	**26**	198
+45 mins.	28	**80**	**34**	**142**	34	64	**28**	126	**15**	**16**	**81**	**112**	**37**	**193**	24	**254**
Total Volume	137	259	117	513	131	277	105	513	41	54	309	404	100	674	94	868
% App. Total	26.7	50.5	22.8		25.5	54	20.5		10.1	13.4	76.5		11.5	77.6	10.8	
PHF	.815	.809	.860	.903	.910	.761	.938	.872	.683	.844	.954	.902	.676	.873	.904	.854

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles

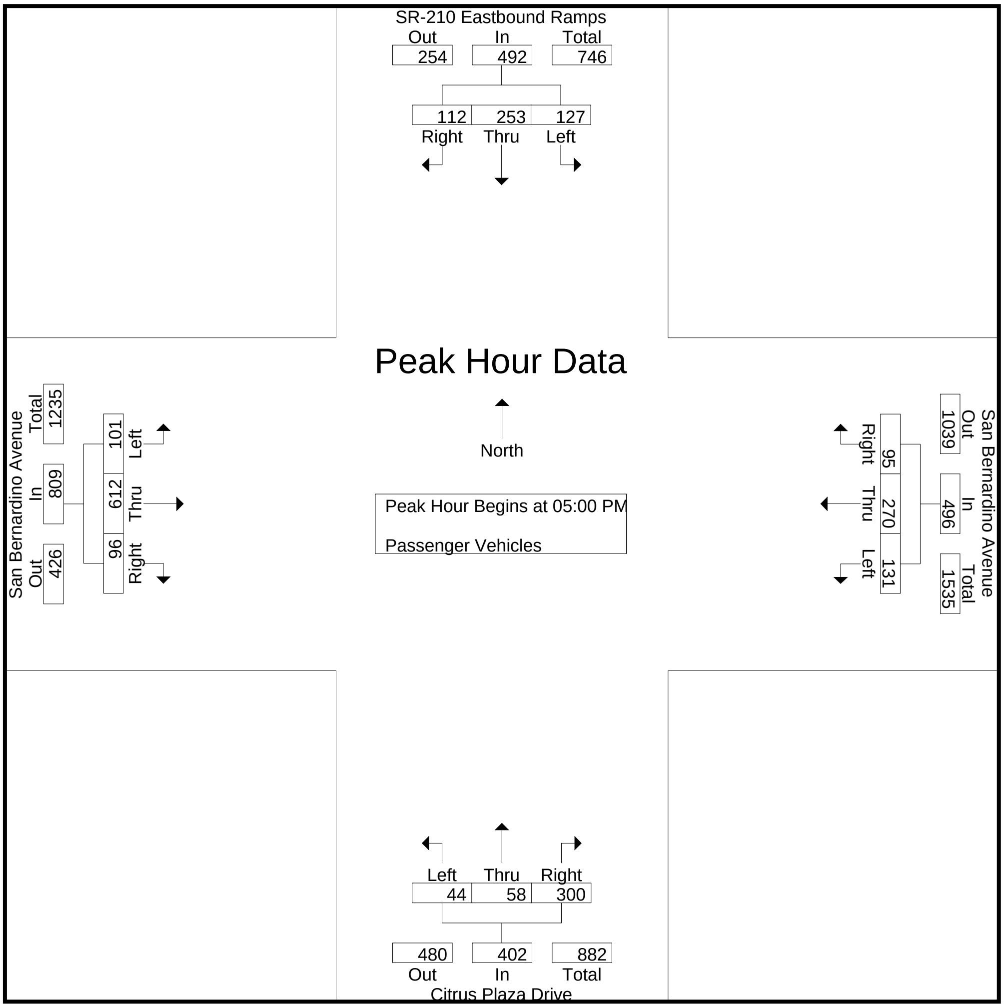
	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	37	71	31	139	38	49	38	125	6	9	67	82	19	131	21	171	517
04:15 PM	32	66	20	118	31	62	34	127	8	13	73	94	18	132	22	172	511
04:30 PM	32	71	31	134	30	56	35	121	7	13	64	84	24	154	25	203	542
04:45 PM	33	55	16	104	35	52	22	109	5	13	75	93	17	175	19	211	517
Total	134	263	98	495	134	219	129	482	26	48	279	353	78	592	87	757	2087
05:00 PM	28	46	30	104	29	62	24	115	10	10	80	100	21	149	26	196	515
05:15 PM	40	52	26	118	32	89	21	142	11	15	72	98	37	190	23	250	608
05:30 PM	33	78	24	135	36	57	24	117	15	16	81	112	18	146	26	190	554
05:45 PM	26	77	32	135	34	62	26	122	8	17	67	92	25	127	21	173	522
Total	127	253	112	492	131	270	95	496	44	58	300	402	101	612	96	809	2199
Grand Total	261	516	210	987	265	489	224	978	70	106	579	755	179	1204	183	1566	4286
Apprch %	26.4	52.3	21.3		27.1	50	22.9		9.3	14	76.7		11.4	76.9	11.7		
Total %	6.1	12	4.9	23	6.2	11.4	5.2	22.8	1.6	2.5	13.5	17.6	4.2	28.1	4.3	36.5	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	28	46	30	104	29	62	24	115	10	10	80	100	21	149	**26**	196	515
05:15 PM	**40**	52	26	118	32	**89**	21	**142**	11	15	72	98	**37**	**190**	23	**250**	**608**
05:30 PM	33	**78**	24	**135**	**36**	57	24	117	**15**	16	**81**	**112**	18	146	26	190	554
05:45 PM	26	77	**32**	135	34	62	**26**	122	8	**17**	67	92	25	127	21	173	522
Total Volume	127	253	112	492	131	270	95	496	44	58	300	402	101	612	96	809	2199
% App. Total	25.8	51.4	22.8		26.4	54.4	19.2		10.9	14.4	74.6		12.5	75.6	11.9		
PHF	.794	.811	.875	.911	.910	.758	.913	.873	.733	.853	.926	.897	.682	.805	.923	.809	.904

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	28	46	30	104	29	62	24	115	10	10	80	100	21	149	**26**	196
+15 mins.	**40**	52	26	118	32	**89**	21	**142**	11	15	72	98	**37**	**190**	23	**250**
+30 mins.	33	**78**	24	**135**	**36**	57	24	117	**15**	16	**81**	**112**	18	146	26	190
+45 mins.	26	77	**32**	135	34	62	**26**	122	8	**17**	67	92	25	127	21	173
Total Volume	127	253	112	492	131	270	95	496	44	58	300	402	101	612	96	809
% App. Total	25.8	51.4	22.8		26.4	54.4	19.2		10.9	14.4	74.6		12.5	75.6	11.9	
PHF	.794	.811	.875	.911	.910	.758	.913	.873	.733	.853	.926	.897	.682	.805	.923	.809

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

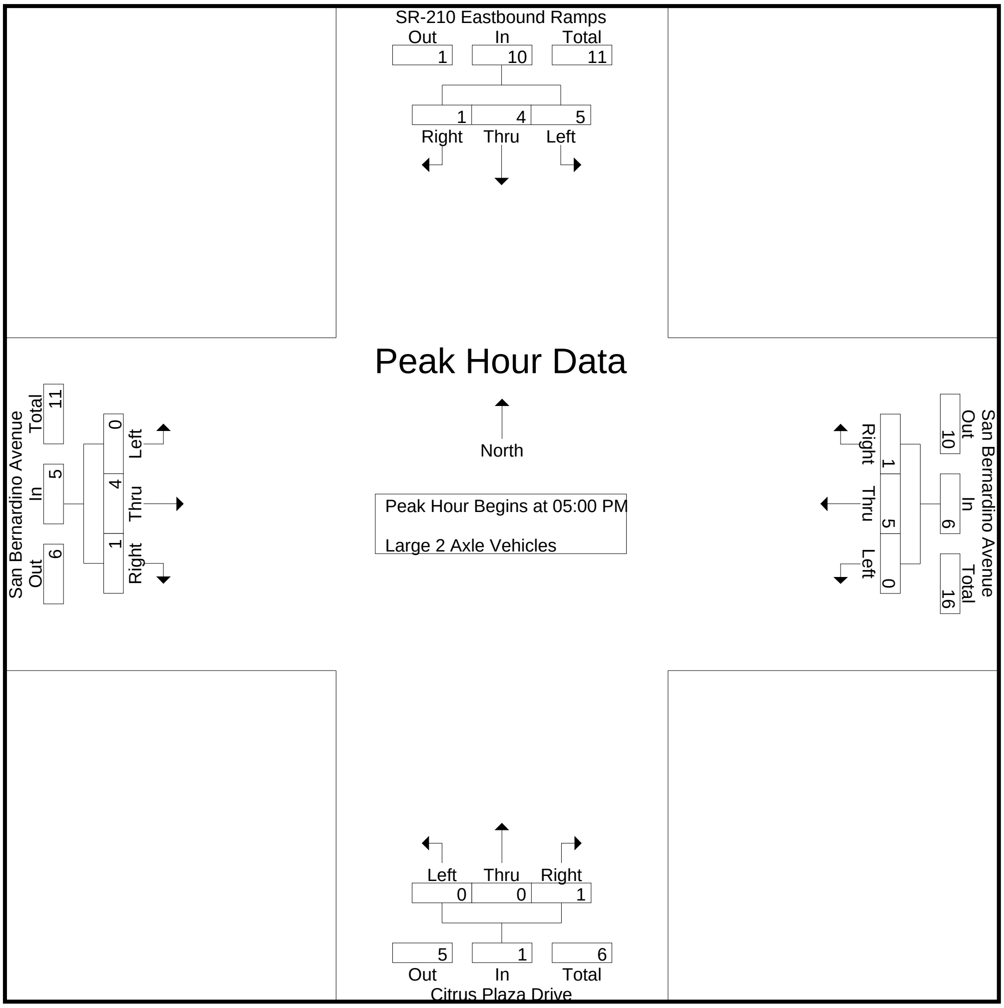
Groups Printed- Large 2 Axle Vehicles

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
04:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
04:45 PM	0	1	0	1	0	4	0	4	0	0	0	0	0	0	0	0	5
Total	0	1	1	2	0	6	0	6	0	1	0	1	0	4	0	4	13
05:00 PM	2	0	0	2	0	1	1	2	0	0	0	0	0	0	0	0	4
05:15 PM	1	1	0	2	0	0	0	0	0	0	1	1	0	2	1	3	6
05:30 PM	1	1	0	2	0	2	0	2	0	0	0	0	0	1	0	1	5
05:45 PM	1	2	1	4	0	2	0	2	0	0	0	0	0	1	0	1	7
Total	5	4	1	10	0	5	1	6	0	0	1	1	0	4	1	5	22
Grand Total	5	5	2	12	0	11	1	12	0	1	1	2	0	8	1	9	35
Apprch %	41.7	41.7	16.7		0	91.7	8.3		0	50	50		0	88.9	11.1		
Total %	14.3	14.3	5.7	34.3	0	31.4	2.9	34.3	0	2.9	2.9	5.7	0	22.9	2.9	25.7	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**2**	0	0	2	0	1	**1**	**2**	0	0	0	0	0	0	0	0	4
05:15 PM	1	1	0	2	0	0	0	0	0	0	**1**	**1**	0	**2**	**1**	**3**	6
05:30 PM	1	1	0	2	0	**2**	0	2	0	0	0	0	0	1	0	1	5
05:45 PM	1	**2**	**1**	**4**	0	2	0	2	0	0	0	0	0	1	0	1	**7**
Total Volume	5	4	1	10	0	5	1	6	0	0	1	1	0	4	1	5	22
% App. Total	50	40	10		0	83.3	16.7		0	0	100		0	80	20		
PHF	.625	.500	.250	.625	.000	.625	.250	.750	.000	.000	.250	.250	.000	.500	.250	.417	.786

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	**2**	0	0	2	0	1	**1**	**2**	0	0	0	0	0	0	0	0
+15 mins.	1	1	0	2	0	0	0	0	0	0	**1**	**1**	0	**2**	**1**	**3**
+30 mins.	1	1	0	2	0	**2**	0	2	0	0	0	0	0	1	0	1
+45 mins.	1	**2**	**1**	**4**	0	2	0	2	0	0	0	0	0	1	0	1
Total Volume	5	4	1	10	0	5	1	6	0	0	1	1	0	4	1	5
% App. Total	50	40	10		0	83.3	16.7		0	0	100		0	80	20	
PHF	.625	.500	.250	.625	.000	.625	.250	.750	.000	.000	.250	.250	.000	.500	.250	.417

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

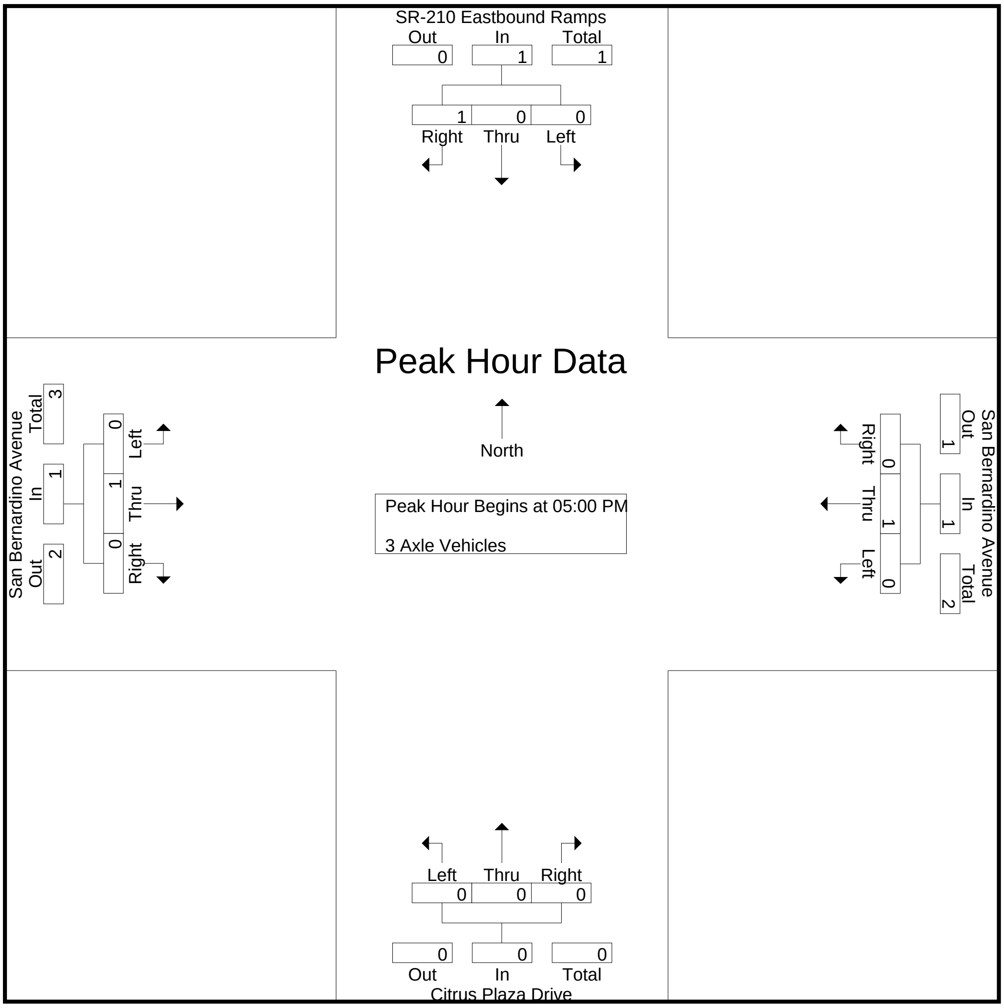
Groups Printed- 3 Axle Vehicles

	SR-210 Eastbound Ramps				San Bernardino Avenue				Citrus Plaza Drive				San Bernardino Avenue				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
Grand Total	1	0	1	2	0	3	0	3	0	0	0	0	0	1	0	1	6
Apprch %	50	0	50		0	100	0		0	0	0		0	100	0		
Total %	16.7	0	16.7	33.3	0	50	0	50	0	0	0	0	0	16.7	0	16.7	

	SR-210 Eastbound Ramps				San Bernardino Avenue				Citrus Plaza Drive				San Bernardino Avenue				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	**1**	**1**	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	**3**
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
% App. Total	0	0	100		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.250

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	**1**	**1**	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1
% App. Total	0	0	100		0	100	0		0	0	0		0	100	0	
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

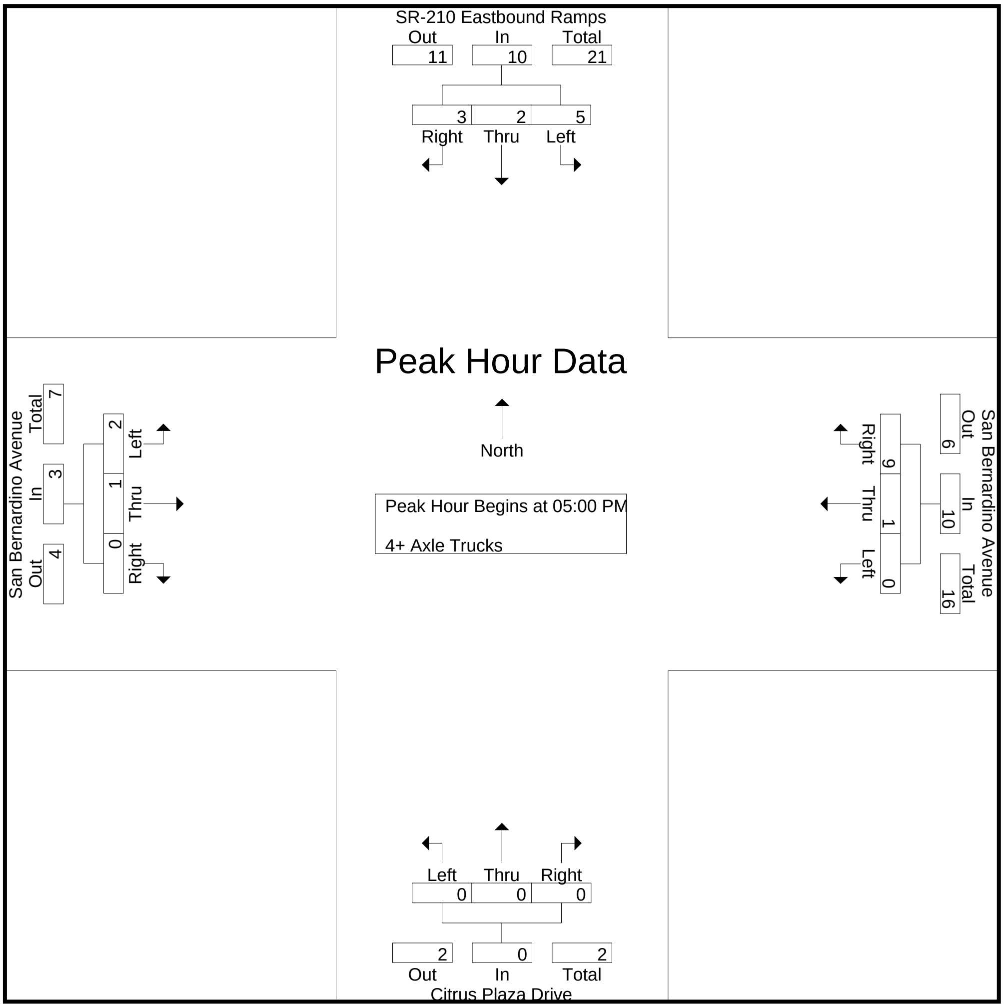
	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	4
04:15 PM	0	0	0	0	0	2	1	3	0	0	0	0	0	2	0	2	5
04:30 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	6	3	9	0	0	0	0	0	3	0	3	12
05:00 PM	3	0	0	3	0	0	1	1	0	0	0	0	1	1	0	2	6
05:15 PM	1	1	2	4	0	1	3	4	0	0	0	0	0	0	0	0	8
05:30 PM	0	0	0	0	0	0	3	3	0	0	0	0	1	0	0	1	4
05:45 PM	1	1	1	3	0	0	2	2	0	0	0	0	0	0	0	0	5
Total	5	2	3	10	0	1	9	10	0	0	0	0	2	1	0	3	23
Grand Total	5	2	3	10	0	7	12	19	0	0	0	0	2	4	0	6	35
Apprch %	50	20	30		0	36.8	63.2		0	0	0		33.3	66.7	0		
Total %	14.3	5.7	8.6	28.6	0	20	34.3	54.3	0	0	0	0	5.7	11.4	0	17.1	

	SR-210 Eastbound Ramps Southbound				San Bernardino Avenue Westbound				Citrus Plaza Drive Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**3**	0	0	3	0	0	1	1	0	0	0	0	**1**	**1**	0	**2**	6
05:15 PM	1	**1**	**2**	**4**	0	**1**	**3**	**4**	0	0	0	0	0	0	0	0	**8**
05:30 PM	0	0	0	0	0	0	3	3	0	0	0	0	1	0	0	1	4
05:45 PM	1	1	1	3	0	0	2	2	0	0	0	0	0	0	0	0	5
Total Volume	5	2	3	10	0	1	9	10	0	0	0	0	2	1	0	3	23
% App. Total	50	20	30		0	10	90		0	0	0		66.7	33.3	0		
PHF	.417	.500	.375	.625	.000	.250	.750	.625	.000	.000	.000	.000	.500	.250	.000	.375	.719

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 EB Ramps/Citrus Plaza Drive
E/W: San Bernardino Avenue
Weather: Clear

File Name : 06_RED_210E_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	**3**	0	0	3	0	0	1	1	0	0	0	0	**1**	**1**	0	**2**
+15 mins.	1	**1**	**2**	**4**	0	**1**	**3**	**4**	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	3	3	0	0	0	0	1	0	0	1
+45 mins.	1	1	1	3	0	0	2	2	0	0	0	0	0	0	0	0
Total Volume	5	2	3	10	0	1	9	10	0	0	0	0	2	1	0	3
% App. Total	50	20	30		0	10	90		0	0	0		66.7	33.3	0	
PHF	.417	.500	.375	.625	.000	.250	.750	.625	.000	.000	.000	.000	.500	.250	.000	.375

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

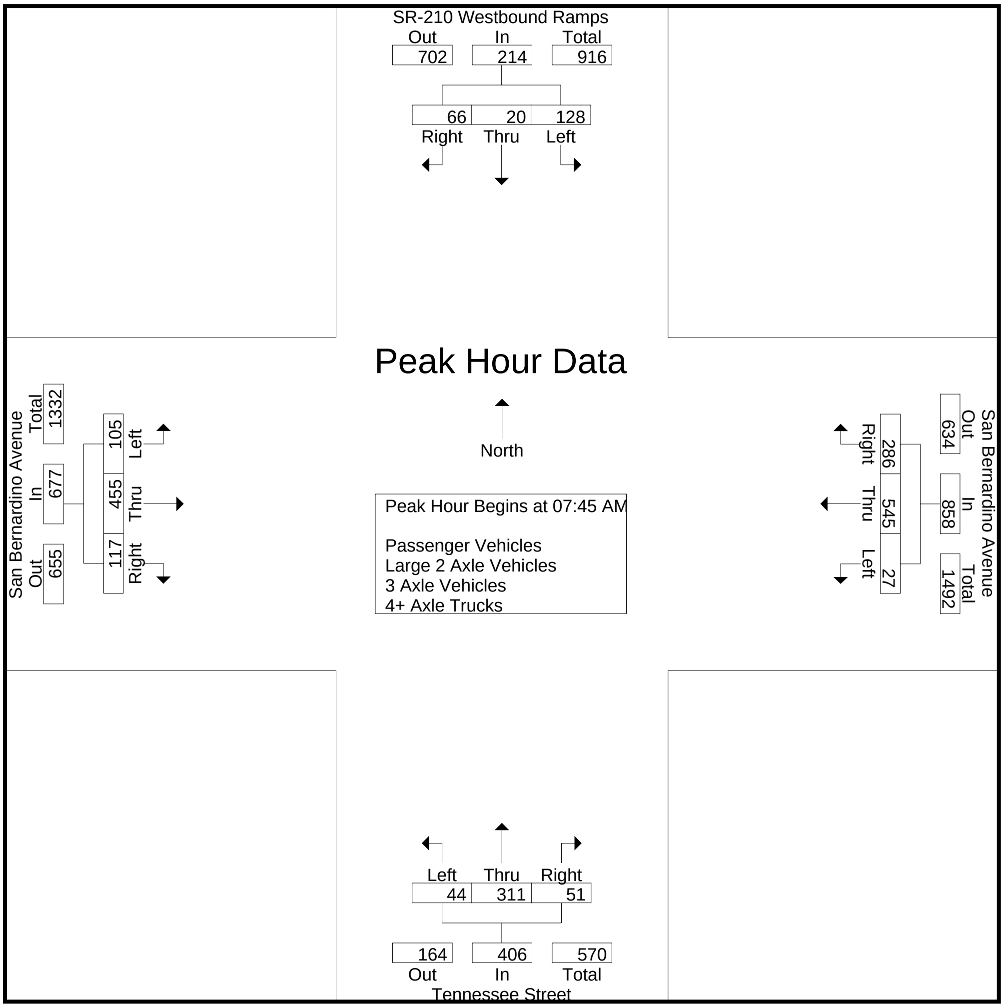
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	24	0	17	41	2	131	51	184	3	45	5	53	23	56	23	102	380
07:15 AM	28	2	27	57	3	148	66	217	3	75	6	84	17	63	24	104	462
07:30 AM	24	2	16	42	6	145	96	247	7	79	6	92	20	54	26	100	481
07:45 AM	32	2	23	57	2	147	73	222	8	50	8	66	30	67	30	127	472
Total	108	6	83	197	13	571	286	870	21	249	25	295	90	240	103	433	1795
08:00 AM	33	0	11	44	7	142	52	201	13	99	16	128	29	144	22	195	568
08:15 AM	31	15	23	69	12	111	85	208	13	92	23	128	21	147	31	199	604
08:30 AM	32	3	9	44	6	145	76	227	10	70	4	84	25	97	34	156	511
08:45 AM	18	4	18	40	8	142	60	210	7	51	2	60	21	56	16	93	403
Total	114	22	61	197	33	540	273	846	43	312	45	400	96	444	103	643	2086
Grand Total	222	28	144	394	46	1111	559	1716	64	561	70	695	186	684	206	1076	3881
Apprch %	56.3	7.1	36.5		2.7	64.7	32.6		9.2	80.7	10.1		17.3	63.6	19.1		
Total %	5.7	0.7	3.7	10.2	1.2	28.6	14.4	44.2	1.6	14.5	1.8	17.9	4.8	17.6	5.3	27.7	
Passenger Vehicles	193	28	127	348	46	1069	543	1658	63	546	66	675	177	662	198	1037	3718
% Passenger Vehicles	86.9	100	88.2	88.3	100	96.2	97.1	96.6	98.4	97.3	94.3	97.1	95.2	96.8	96.1	96.4	95.8
Large 2 Axle Vehicles	6	0	1	7	0	13	10	23	1	9	2	12	7	13	4	24	66
% Large 2 Axle Vehicles	2.7	0	0.7	1.8	0	1.2	1.8	1.3	1.6	1.6	2.9	1.7	3.8	1.9	1.9	2.2	1.7
3 Axle Vehicles	4	0	3	7	0	5	1	6	0	3	1	4	2	4	0	6	23
% 3 Axle Vehicles	1.8	0	2.1	1.8	0	0.5	0.2	0.3	0	0.5	1.4	0.6	1.1	0.6	0	0.6	0.6
4+ Axle Trucks	19	0	13	32	0	24	5	29	0	3	1	4	0	5	4	9	74
% 4+ Axle Trucks	8.6	0	9	8.1	0	2.2	0.9	1.7	0	0.5	1.4	0.6	0	0.7	1.9	0.8	1.9

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	32	2	**23**	57	2	**147**	73	222	8	50	8	66	**30**	67	30	127	472
08:00 AM	**33**	0	11	44	7	142	52	201	**13**	**99**	16	**128**	29	144	22	195	568
08:15 AM	31	**15**	23	**69**	**12**	111	**85**	208	13	92	**23**	128	21	**147**	31	**199**	**604**
08:30 AM	32	3	9	44	6	145	76	**227**	10	70	4	84	25	97	**34**	156	511
Total Volume	128	20	66	214	27	545	286	858	44	311	51	406	105	455	117	677	2155
% App. Total	59.8	9.3	30.8		3.1	63.5	33.3		10.8	76.6	12.6		15.5	67.2	17.3		
PHF	.970	.333	.717	.775	.563	.927	.841	.945	.846	.785	.554	.793	.875	.774	.860	.851	.892

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	32	2	**23**	57	3	**148**	66	217	7	79	6	92	**30**	67	30	127
+15 mins.	**33**	0	11	44	6	145	**96**	**247**	8	50	8	66	29	144	22	195
+30 mins.	31	**15**	23	**69**	2	147	73	222	**13**	**99**	16	**128**	21	**147**	31	**199**
+45 mins.	32	3	9	44	**7**	142	52	201	13	92	**23**	128	25	97	**34**	156
Total Volume	128	20	66	214	18	582	287	887	41	320	53	414	105	455	117	677
% App. Total	59.8	9.3	30.8		2	65.6	32.4		9.9	77.3	12.8		15.5	67.2	17.3	
PHF	.970	.333	.717	.775	.643	.983	.747	.898	.788	.808	.576	.809	.875	.774	.860	.851

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

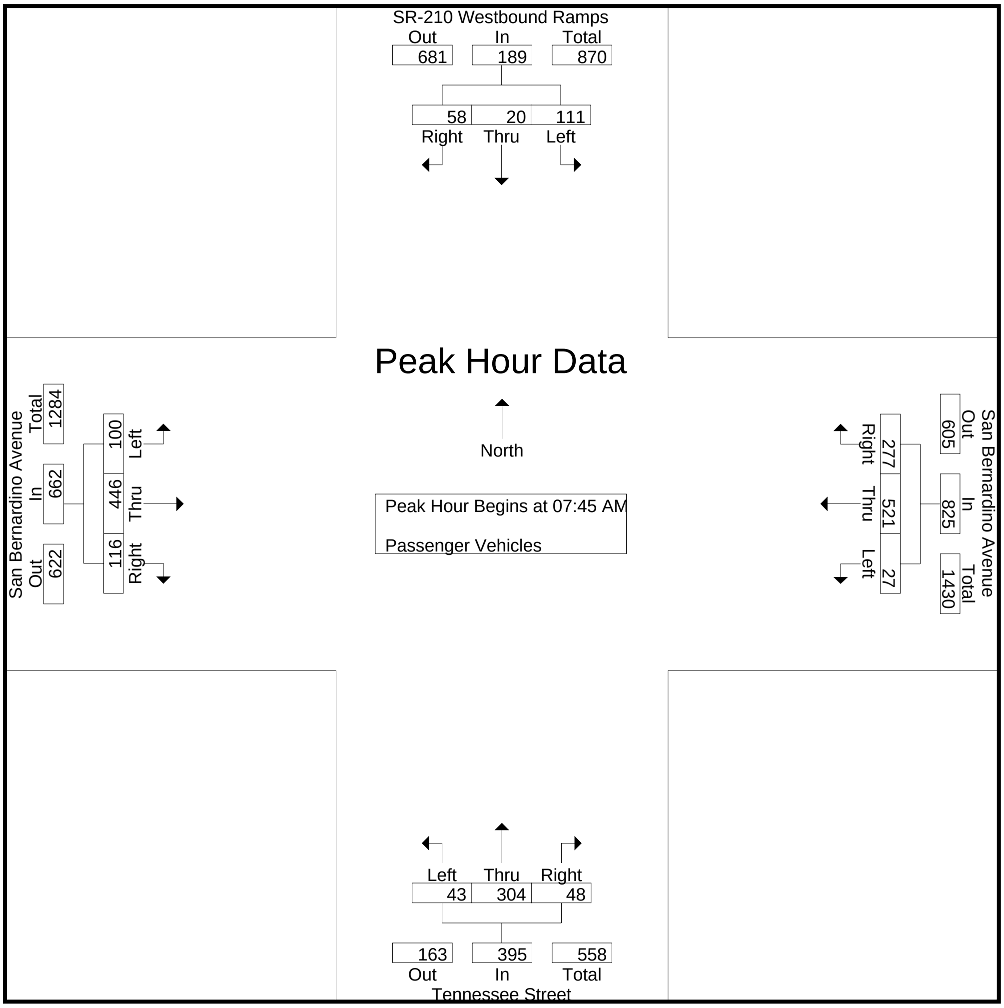
Groups Printed- Passenger Vehicles

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	20	0	15	35	2	129	49	180	3	42	4	49	22	52	22	96	360
07:15 AM	27	2	26	55	3	145	65	213	3	71	6	80	15	58	23	96	444
07:30 AM	22	2	16	40	6	141	94	241	7	79	6	92	19	51	22	92	465
07:45 AM	27	2	21	50	2	140	71	213	8	50	8	66	30	65	30	125	454
Total	96	6	78	180	13	555	279	847	21	242	24	287	86	226	97	409	1723
08:00 AM	30	0	11	41	7	135	48	190	13	94	14	121	29	143	22	194	546
08:15 AM	27	15	20	62	12	105	84	201	13	90	22	125	17	146	30	193	581
08:30 AM	27	3	6	36	6	141	74	221	9	70	4	83	24	92	34	150	490
08:45 AM	13	4	12	29	8	133	58	199	7	50	2	59	21	55	15	91	378
Total	97	22	49	168	33	514	264	811	42	304	42	388	91	436	101	628	1995
Grand Total	193	28	127	348	46	1069	543	1658	63	546	66	675	177	662	198	1037	3718
Apprch %	55.5	8	36.5		2.8	64.5	32.8		9.3	80.9	9.8		17.1	63.8	19.1		
Total %	5.2	0.8	3.4	9.4	1.2	28.8	14.6	44.6	1.7	14.7	1.8	18.2	4.8	17.8	5.3	27.9	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	27	2	**21**	50	2	140	71	213	8	50	8	66	**30**	65	30	125	454
08:00 AM	**30**	0	11	41	7	135	48	190	**13**	**94**	14	121	29	143	22	**194**	546
08:15 AM	27	**15**	20	**62**	**12**	105	**84**	201	13	90	**22**	**125**	17	**146**	30	193	**581**
08:30 AM	27	3	6	36	6	**141**	74	**221**	9	70	4	83	24	92	**34**	150	490
Total Volume	111	20	58	189	27	521	277	825	43	304	48	395	100	446	116	662	2071
% App. Total	58.7	10.6	30.7		3.3	63.2	33.6		10.9	77	12.2		15.1	67.4	17.5		
PHF	.925	.333	.690	.762	.563	.924	.824	.933	.827	.809	.545	.790	.833	.764	.853	.853	.891

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	27	2	**21**	50	2	140	71	213	8	50	8	66	**30**	65	30	125
+15 mins.	**30**	0	11	41	7	135	48	190	**13**	**94**	14	121	29	143	22	**194**
+30 mins.	27	**15**	20	**62**	**12**	105	**84**	201	13	90	**22**	**125**	17	**146**	30	193
+45 mins.	27	3	6	36	6	**141**	74	**221**	9	70	4	83	24	92	**34**	150
Total Volume	111	20	58	189	27	521	277	825	43	304	48	395	100	446	116	662
% App. Total	58.7	10.6	30.7		3.3	63.2	33.6		10.9	77	12.2		15.1	67.4	17.5	
PHF	.925	.333	.690	.762	.563	.924	.824	.933	.827	.809	.545	.790	.833	.764	.853	.853

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

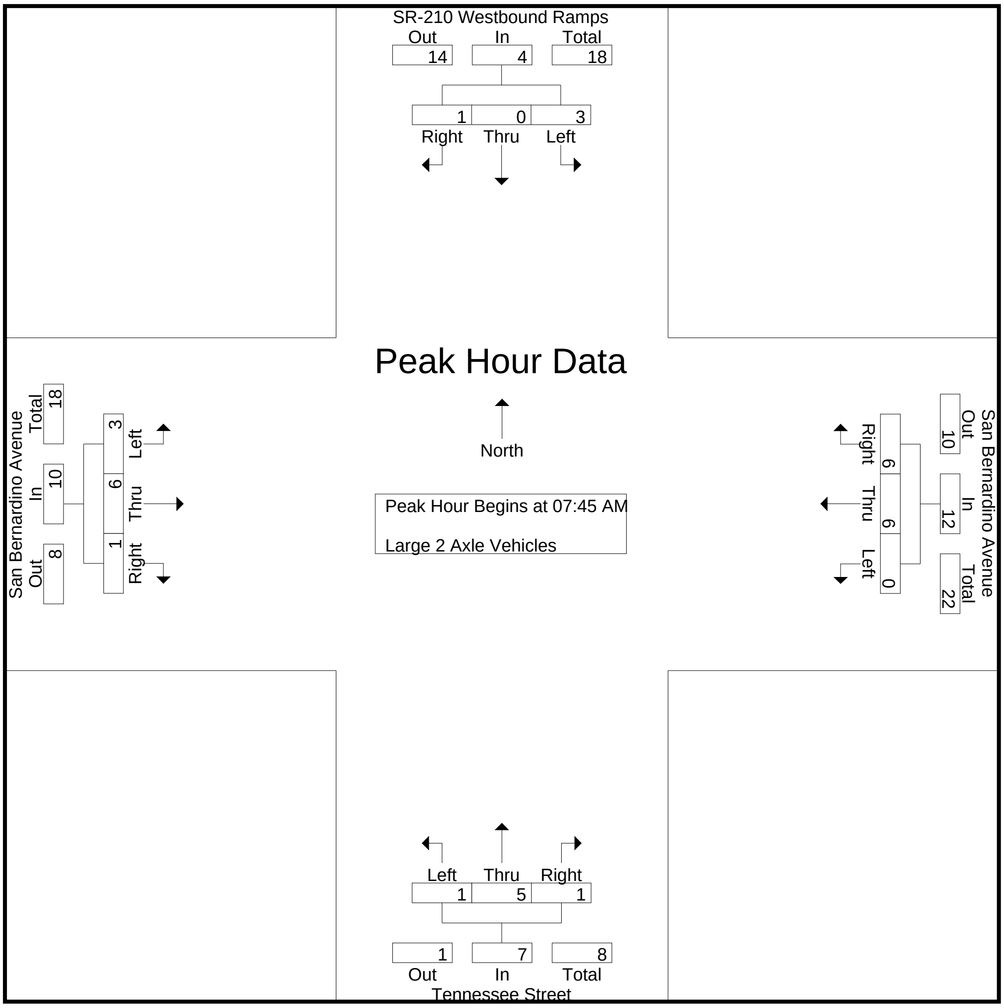
Groups Printed- Large 2 Axle Vehicles

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	0	2	0	1	1	2	0	2	1	3	1	1	1	3	10
07:15 AM	1	0	0	1	0	1	1	2	0	2	0	2	2	3	0	5	10
07:30 AM	0	0	0	0	0	1	2	3	0	0	0	0	1	2	1	4	7
07:45 AM	1	0	0	1	0	2	2	4	0	0	0	0	0	0	0	0	5
Total	4	0	0	4	0	5	6	11	0	4	1	5	4	6	2	12	32
08:00 AM	0	0	0	0	0	1	3	4	0	3	0	3	0	1	0	1	8
08:15 AM	0	0	0	0	0	3	0	3	0	2	1	3	3	1	1	5	11
08:30 AM	2	0	1	3	0	0	1	1	1	0	0	1	0	4	0	4	9
08:45 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	1	2	6
Total	2	0	1	3	0	8	4	12	1	5	1	7	3	7	2	12	34
Grand Total	6	0	1	7	0	13	10	23	1	9	2	12	7	13	4	24	66
Apprch %	85.7	0	14.3		0	56.5	43.5		8.3	75	16.7		29.2	54.2	16.7		
Total %	9.1	0	1.5	10.6	0	19.7	15.2	34.8	1.5	13.6	3	18.2	10.6	19.7	6.1	36.4	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	1	0	0	1	0	2	2	**4**	0	0	0	0	0	0	0	0	5
08:00 AM	0	0	0	0	0	1	**3**	4	0	**3**	0	**3**	0	1	0	1	8
08:15 AM	0	0	0	0	0	**3**	0	3	0	2	**1**	3	**3**	1	**1**	**5**	**11**
08:30 AM	**2**	0	**1**	**3**	0	0	1	1	**1**	0	0	1	0	**4**	0	4	9
Total Volume	3	0	1	4	0	6	6	12	1	5	1	7	3	6	1	10	33
% App. Total	75	0	25		0	50	50		14.3	71.4	14.3		30	60	10		
PHF	.375	.000	.250	.333	.000	.500	.500	.750	.250	.417	.250	.583	.250	.375	.250	.500	.750

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	1	0	0	1	0	2	2	**4**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	**3**	4	0	**3**	0	**3**	0	1	0	1
+30 mins.	0	0	0	0	0	**3**	0	3	0	2	**1**	3	**3**	1	**1**	**5**
+45 mins.	**2**	0	**1**	**3**	0	0	1	1	**1**	0	0	1	0	**4**	0	4
Total Volume	3	0	1	4	0	6	6	12	1	5	1	7	3	6	1	10
% App. Total	75	0	25		0	50	50		14.3	71.4	14.3		30	60	10	
PHF	.375	.000	.250	.333	.000	.500	.500	.750	.250	.417	.250	.583	.250	.375	.250	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

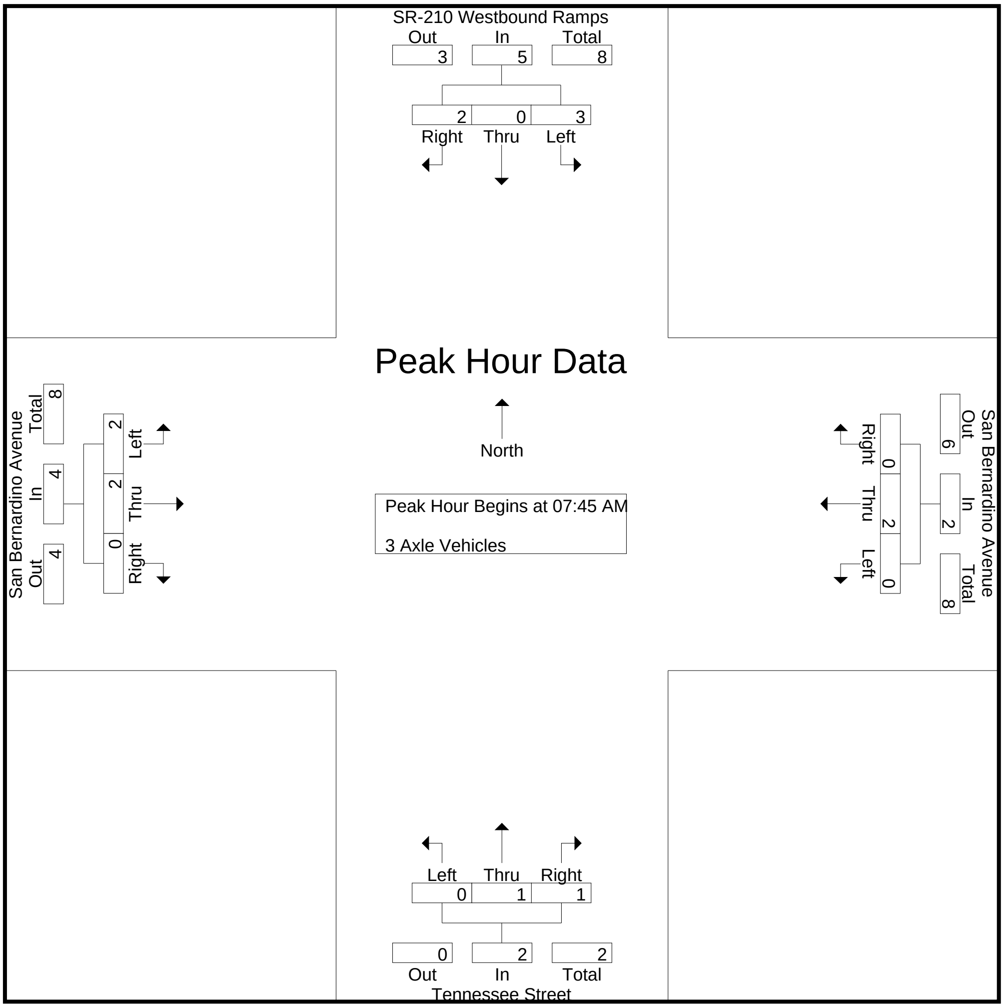
	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	1	0	1	0	2	0	2	0	0	0	0	3
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
Total	2	0	0	2	0	3	0	3	0	2	0	2	0	3	0	3	10
08:00 AM	1	0	0	1	0	1	0	1	0	1	1	2	0	0	0	0	4
08:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
08:30 AM	0	0	1	1	0	1	0	1	0	0	0	0	1	1	0	2	4
08:45 AM	1	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	3
Total	2	0	3	5	0	2	1	3	0	1	1	2	2	1	0	3	13
Grand Total	4	0	3	7	0	5	1	6	0	3	1	4	2	4	0	6	23
Apprch %	57.1	0	42.9		0	83.3	16.7		0	75	25		33.3	66.7	0		
Total %	17.4	0	13	30.4	0	21.7	4.3	26.1	0	13	4.3	17.4	8.7	17.4	0	26.1	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	**1**	0	1	3
08:00 AM	1	0	0	1	0	**1**	0	**1**	0	**1**	**1**	**2**	0	0	0	0	**4**
08:15 AM	0	0	**1**	1	0	0	0	0	0	0	0	0	**1**	0	0	1	2
08:30 AM	0	0	1	1	0	1	0	1	0	0	0	0	1	1	0	**2**	4
Total Volume	3	0	2	5	0	2	0	2	0	1	1	2	2	2	0	4	13
% App. Total	60	0	40		0	100	0		0	50	50		50	50	0		
PHF	.375	.000	.500	.625	.000	.500	.000	.500	.000	.250	.250	.250	.500	.500	.000	.500	.813

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	**1**	0	1
+15 mins.	1	0	0	1	0	**1**	0	**1**	0	**1**	**1**	**2**	0	0	0	0
+30 mins.	0	0	**1**	1	0	0	0	0	0	0	0	0	**1**	0	0	1
+45 mins.	0	0	1	1	0	1	0	1	0	0	0	0	1	1	0	**2**
Total Volume	3	0	2	5	0	2	0	2	0	1	1	2	2	2	0	4
% App. Total	60	0	40		0	100	0		0	50	50		50	50	0	
PHF	.375	.000	.500	.625	.000	.500	.000	.500	.000	.250	.250	.250	.500	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

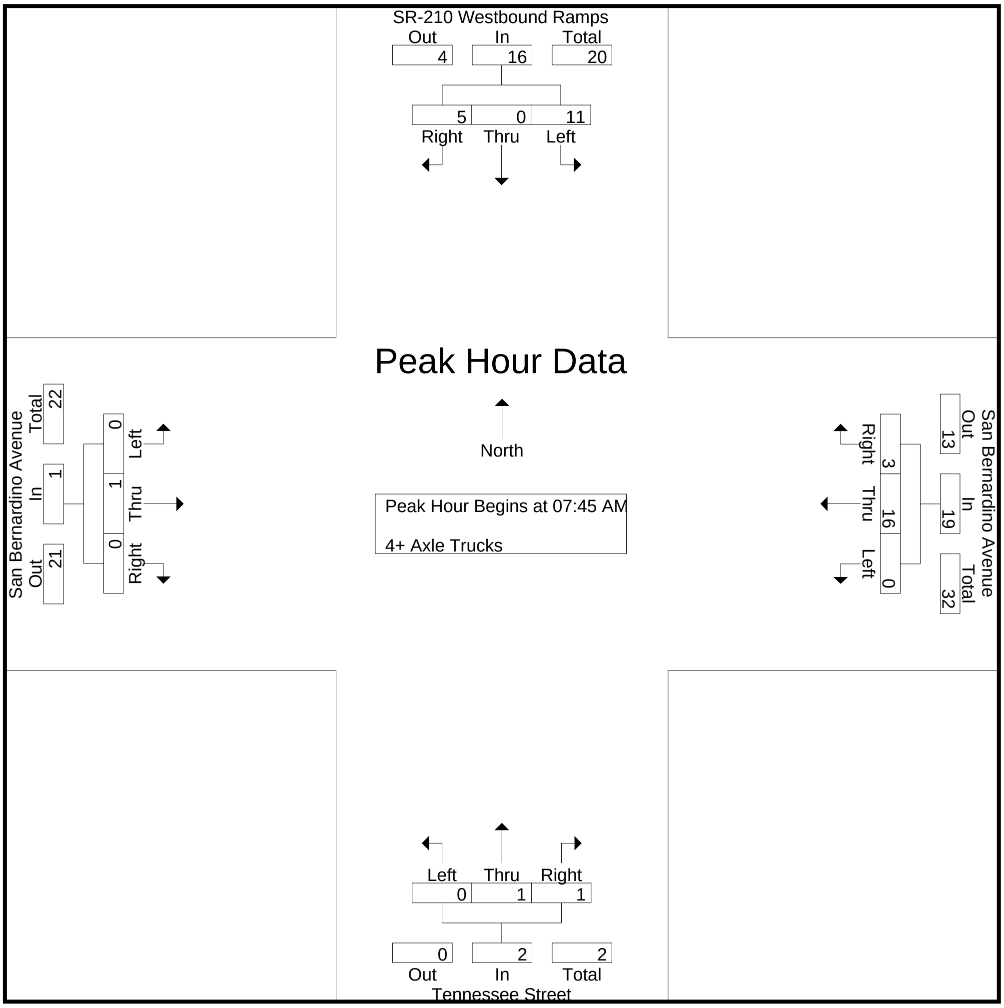
	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	2	4	0	0	1	1	0	1	0	1	0	2	0	2	8
07:15 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	2	1	3	5
07:30 AM	2	0	0	2	0	2	0	2	0	0	0	0	0	0	3	3	7
07:45 AM	2	0	2	4	0	5	0	5	0	0	0	0	0	1	0	1	10
Total	6	0	5	11	0	8	1	9	0	1	0	1	0	5	4	9	30
08:00 AM	2	0	0	2	0	5	1	6	0	1	1	2	0	0	0	0	10
08:15 AM	4	0	2	6	0	3	1	4	0	0	0	0	0	0	0	0	10
08:30 AM	3	0	1	4	0	3	1	4	0	0	0	0	0	0	0	0	8
08:45 AM	4	0	5	9	0	5	1	6	0	1	0	1	0	0	0	0	16
Total	13	0	8	21	0	16	4	20	0	2	1	3	0	0	0	0	44
Grand Total	19	0	13	32	0	24	5	29	0	3	1	4	0	5	4	9	74
Apprch %	59.4	0	40.6		0	82.8	17.2		0	75	25		0	55.6	44.4		
Total %	25.7	0	17.6	43.2	0	32.4	6.8	39.2	0	4.1	1.4	5.4	0	6.8	5.4	12.2	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	2	0	**2**	4	0	**5**	0	5	0	0	0	0	0	**1**	0	**1**	**10**
08:00 AM	2	0	0	2	0	5	**1**	**6**	0	**1**	**1**	**2**	0	0	0	0	10
08:15 AM	**4**	0	2	**6**	0	3	1	4	0	0	0	0	0	0	0	0	10
08:30 AM	3	0	1	4	0	3	1	4	0	0	0	0	0	0	0	0	8
Total Volume	11	0	5	16	0	16	3	19	0	1	1	2	0	1	0	1	38
% App. Total	68.8	0	31.2		0	84.2	15.8		0	50	50		0	100	0		
PHF	.688	.000	.625	.667	.000	.800	.750	.792	.000	.250	.250	.250	.000	.250	.000	.250	.950

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	2	0	**2**	4	0	**5**	0	5	0	0	0	0	0	**1**	0	**1**
+15 mins.	2	0	0	2	0	5	**1**	**6**	0	**1**	**1**	**2**	0	0	0	0
+30 mins.	**4**	0	2	**6**	0	3	1	4	0	0	0	0	0	0	0	0
+45 mins.	3	0	1	4	0	3	1	4	0	0	0	0	0	0	0	0
Total Volume	11	0	5	16	0	16	3	19	0	1	1	2	0	1	0	1
% App. Total	68.8	0	31.2		0	84.2	15.8		0	50	50		0	100	0	
PHF	.688	.000	.625	.667	.000	.800	.750	.792	.000	.250	.250	.250	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

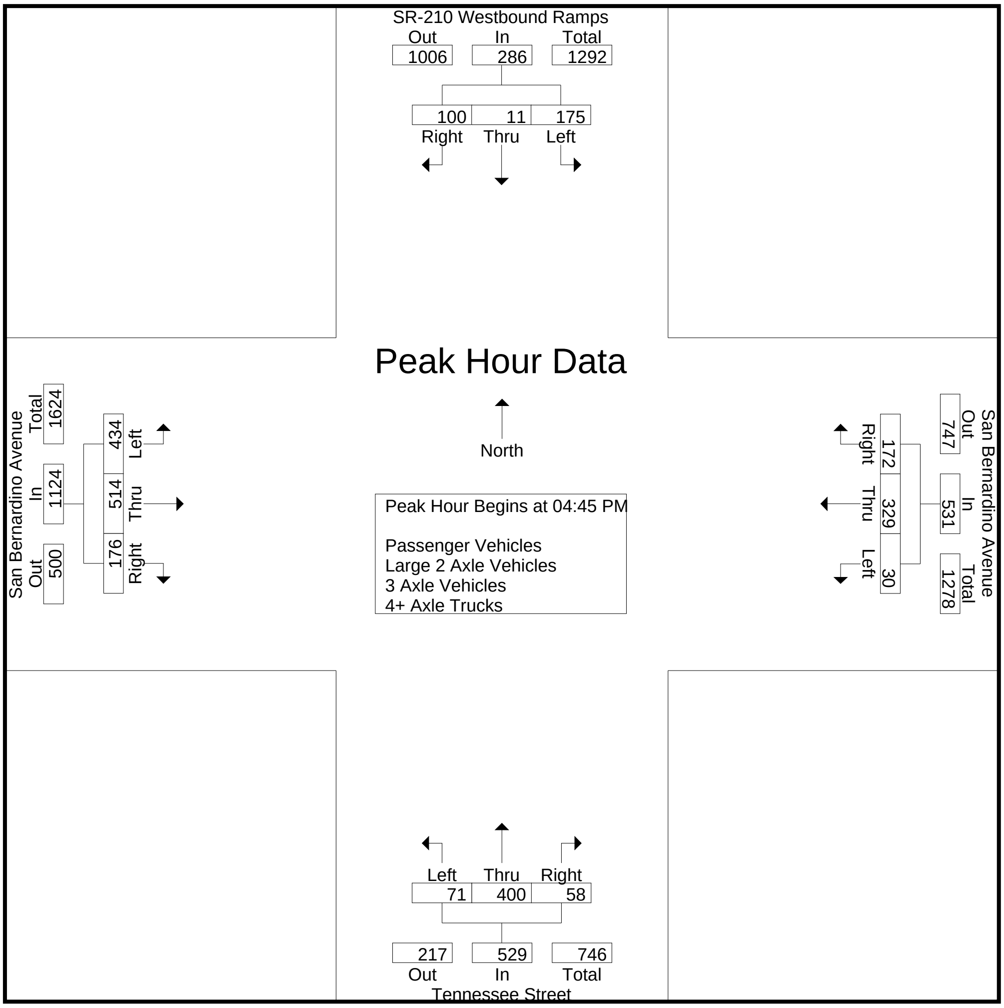
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	32	4	28	64	8	87	46	141	8	93	9	110	105	112	30	247	562
04:15 PM	51	3	27	81	8	108	38	154	8	93	11	112	91	129	30	250	597
04:30 PM	38	6	24	68	2	85	47	134	8	105	10	123	97	113	28	238	563
04:45 PM	40	3	20	63	4	77	48	129	12	82	13	107	109	134	46	289	588
Total	161	16	99	276	22	357	179	558	36	373	43	452	402	488	134	1024	2310
05:00 PM	41	1	22	64	10	85	39	134	16	120	11	147	123	104	42	269	614
05:15 PM	37	2	33	72	10	97	50	157	20	89	18	127	85	160	59	304	660
05:30 PM	57	5	25	87	6	70	35	111	23	109	16	148	117	116	29	262	608
05:45 PM	50	5	25	80	3	101	32	136	12	103	17	132	67	120	31	218	566
Total	185	13	105	303	29	353	156	538	71	421	62	554	392	500	161	1053	2448
Grand Total	346	29	204	579	51	710	335	1096	107	794	105	1006	794	988	295	2077	4758
Apprch %	59.8	5	35.2		4.7	64.8	30.6		10.6	78.9	10.4		38.2	47.6	14.2		
Total %	7.3	0.6	4.3	12.2	1.1	14.9	7	23	2.2	16.7	2.2	21.1	16.7	20.8	6.2	43.7	
Passenger Vehicles	336	28	197	561	49	689	326	1064	104	787	103	994	788	979	285	2052	4671
% Passenger Vehicles	97.1	96.6	96.6	96.9	96.1	97	97.3	97.1	97.2	99.1	98.1	98.8	99.2	99.1	96.6	98.8	98.2
Large 2 Axle Vehicles	1	0	0	1	1	7	2	10	3	1	2	6	1	7	4	12	29
% Large 2 Axle Vehicles	0.3	0	0	0.2	2	1	0.6	0.9	2.8	0.1	1.9	0.6	0.1	0.7	1.4	0.6	0.6
3 Axle Vehicles	2	0	1	3	1	2	4	7	0	3	0	3	1	0	4	5	18
% 3 Axle Vehicles	0.6	0	0.5	0.5	2	0.3	1.2	0.6	0	0.4	0	0.3	0.1	0	1.4	0.2	0.4
4+ Axle Trucks	7	1	6	14	0	12	3	15	0	3	0	3	4	2	2	8	40
% 4+ Axle Trucks	2	3.4	2.9	2.4	0	1.7	0.9	1.4	0	0.4	0	0.3	0.5	0.2	0.7	0.4	0.8

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	40	3	20	63	4	77	48	129	12	82	13	107	109	134	46	289	588
05:00 PM	41	1	22	64	**10**	85	39	134	16	**120**	11	147	**123**	104	42	269	614
05:15 PM	37	2	**33**	72	10	**97**	**50**	**157**	20	89	**18**	127	85	**160**	**59**	**304**	**660**
05:30 PM	**57**	**5**	25	**87**	6	70	35	111	**23**	109	16	**148**	117	116	29	262	608
Total Volume	175	11	100	286	30	329	172	531	71	400	58	529	434	514	176	1124	2470
% App. Total	61.2	3.8	35		5.6	62	32.4		13.4	75.6	11		38.6	45.7	15.7		
PHF	.768	.550	.758	.822	.750	.848	.860	.846	.772	.833	.806	.894	.882	.803	.746	.924	.936

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				05:00 PM				04:45 PM			
+0 mins.	41	1	22	64	**8**	87	46	141	16	**120**	11	147	109	134	46	289
+15 mins.	37	2	**33**	72	8	**108**	38	**154**	20	89	**18**	127	**123**	104	42	269
+30 mins.	**57**	**5**	25	**87**	2	85	47	134	**23**	109	16	**148**	85	**160**	**59**	**304**
+45 mins.	50	5	25	80	4	77	**48**	129	12	103	17	132	117	116	29	262
Total Volume	185	13	105	303	22	357	179	558	71	421	62	554	434	514	176	1124
% App. Total	61.1	4.3	34.7		3.9	64	32.1		12.8	76	11.2		38.6	45.7	15.7	
PHF	.811	.650	.795	.871	.688	.826	.932	.906	.772	.877	.861	.936	.882	.803	.746	.924

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

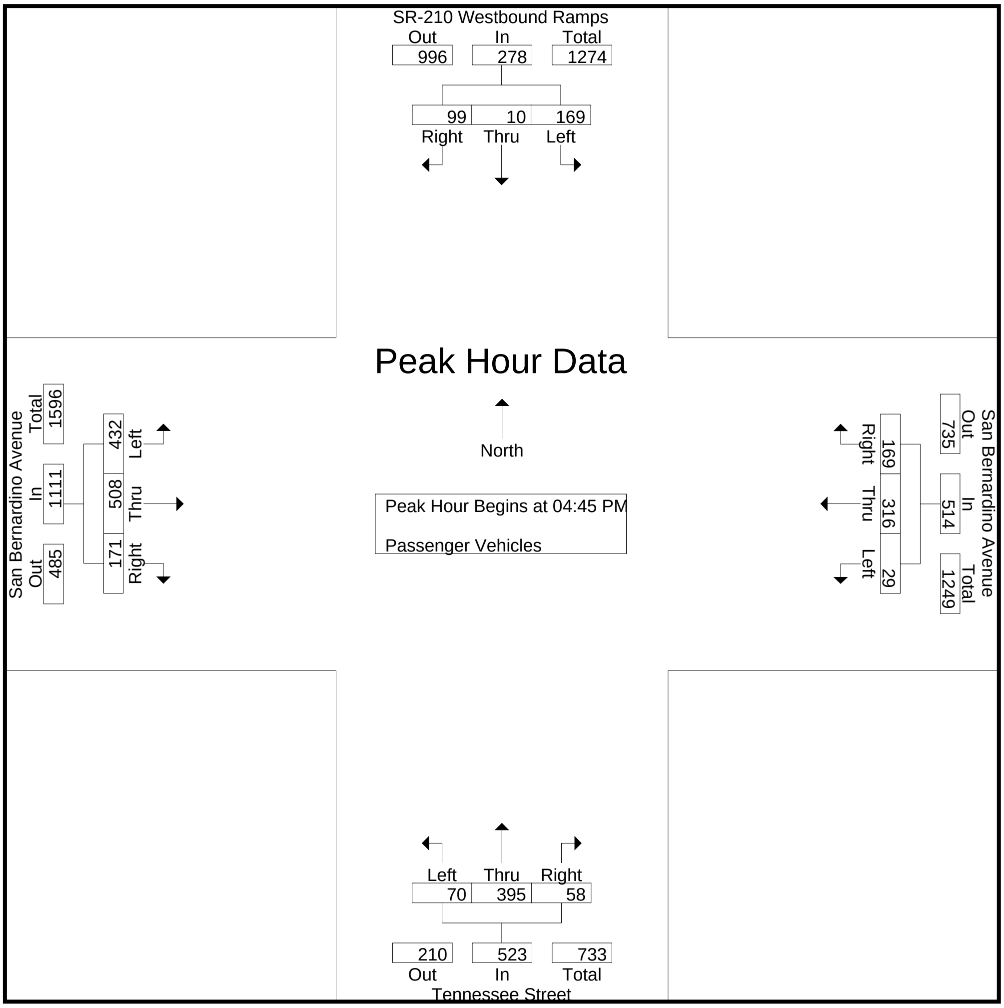
Groups Printed- Passenger Vehicles

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	32	4	26	62	7	86	42	135	8	93	9	110	105	110	28	243	550
04:15 PM	51	3	25	79	8	106	37	151	7	93	10	110	88	129	30	247	587
04:30 PM	38	6	22	66	2	83	47	132	8	103	10	121	96	112	28	236	555
04:45 PM	38	3	20	61	3	75	46	124	12	80	13	105	109	134	46	289	579
Total	159	16	93	268	20	350	172	542	35	369	42	446	398	485	132	1015	2271
05:00 PM	40	1	22	63	10	82	39	131	16	118	11	145	122	102	39	263	602
05:15 PM	37	2	32	71	10	93	50	153	20	89	18	127	85	157	57	299	650
05:30 PM	54	4	25	83	6	66	34	106	22	108	16	146	116	115	29	260	595
05:45 PM	46	5	25	76	3	98	31	132	11	103	16	130	67	120	28	215	553
Total	177	12	104	293	29	339	154	522	69	418	61	548	390	494	153	1037	2400
Grand Total	336	28	197	561	49	689	326	1064	104	787	103	994	788	979	285	2052	4671
Apprch %	59.9	5	35.1		4.6	64.8	30.6		10.5	79.2	10.4		38.4	47.7	13.9		
Total %	7.2	0.6	4.2	12	1	14.8	7	22.8	2.2	16.8	2.2	21.3	16.9	21	6.1	43.9	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	38	3	20	61	3	75	46	124	12	80	13	105	109	134	46	289	579
05:00 PM	40	1	22	63	**10**	82	39	131	16	**118**	11	145	**122**	102	39	263	602
05:15 PM	37	2	**32**	71	10	**93**	**50**	**153**	20	89	**18**	127	85	**157**	**57**	**299**	**650**
05:30 PM	**54**	**4**	25	**83**	6	66	34	106	**22**	108	16	**146**	116	115	29	260	595
Total Volume	169	10	99	278	29	316	169	514	70	395	58	523	432	508	171	1111	2426
% App. Total	60.8	3.6	35.6		5.6	61.5	32.9		13.4	75.5	11.1		38.9	45.7	15.4		
PHF	.782	.625	.773	.837	.725	.849	.845	.840	.795	.837	.806	.896	.885	.809	.750	.929	.933

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	38	3	20	61	3	75	46	124	12	80	13	105	109	134	46	289
+15 mins.	40	1	22	63	**10**	82	39	131	16	**118**	11	145	**122**	102	39	263
+30 mins.	37	2	**32**	71	10	**93**	**50**	**153**	20	89	**18**	127	85	**157**	**57**	**299**
+45 mins.	**54**	**4**	25	**83**	6	66	34	106	**22**	108	16	**146**	116	115	29	260
Total Volume	169	10	99	278	29	316	169	514	70	395	58	523	432	508	171	1111
% App. Total	60.8	3.6	35.6		5.6	61.5	32.9		13.4	75.5	11.1		38.9	45.7	15.4	
PHF	.782	.625	.773	.837	.725	.849	.845	.840	.795	.837	.806	.896	.885	.809	.750	.929

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

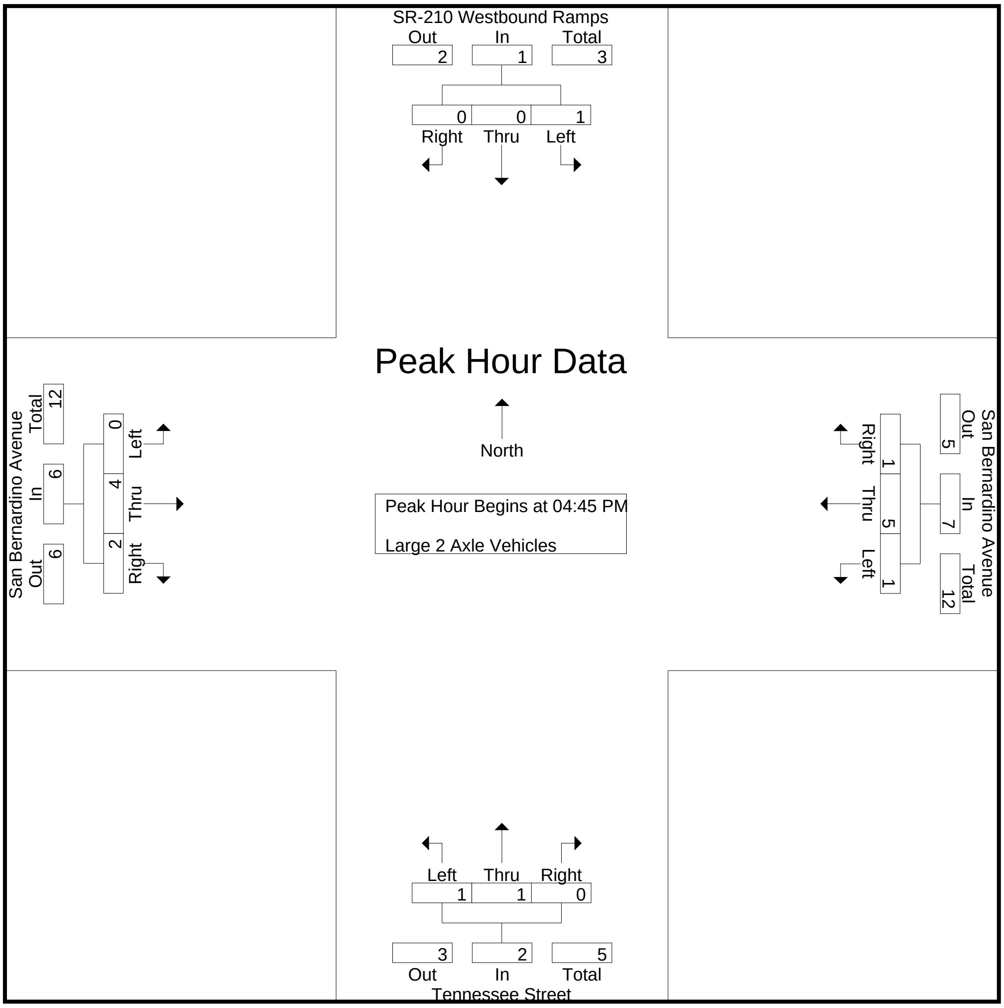
Groups Printed- Large 2 Axle Vehicles

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	0	1	0	1	1	0	1	2	1	0	0	1	4
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	1	2	1	4	0	1	0	1	0	0	0	0	5
Total	0	0	0	0	1	3	2	6	1	1	1	3	1	3	0	4	13
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	1	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4
05:30 PM	1	0	0	1	0	1	0	1	1	0	0	1	0	1	0	1	4
05:45 PM	0	0	0	0	0	1	0	1	1	0	1	2	0	0	2	2	5
Total	1	0	0	1	0	4	0	4	2	0	1	3	0	4	4	8	16
Grand Total	1	0	0	1	1	7	2	10	3	1	2	6	1	7	4	12	29
Apprch %	100	0	0		10	70	20		50	16.7	33.3		8.3	58.3	33.3		
Total %	3.4	0	0	3.4	3.4	24.1	6.9	34.5	10.3	3.4	6.9	20.7	3.4	24.1	13.8	41.4	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	**1**	**2**	**1**	**4**	0	**1**	0	**1**	0	0	0	0	**5**
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	**1**	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**	1	**4**	4
05:30 PM	**1**	0	0	**1**	0	1	0	1	**1**	0	0	1	0	1	0	1	4
Total Volume	1	0	0	1	1	5	1	7	1	1	0	2	0	4	2	6	16
% App. Total	100	0	0		14.3	71.4	14.3		50	50	0		0	66.7	33.3		
PHF	.250	.000	.000	.250	.250	.625	.250	.438	.250	.250	.000	.500	.000	.333	.500	.375	.800

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	**1**	**2**	**1**	**4**	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	**1**	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**	1	**4**
+45 mins.	**1**	0	0	**1**	0	1	0	1	**1**	0	0	1	0	1	0	1
Total Volume	1	0	0	1	1	5	1	7	1	1	0	2	0	4	2	6
% App. Total	100	0	0		14.3	71.4	14.3		50	50	0		0	66.7	33.3	
PHF	.250	.000	.000	.250	.250	.625	.250	.438	.250	.250	.000	.500	.000	.333	.500	.375

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

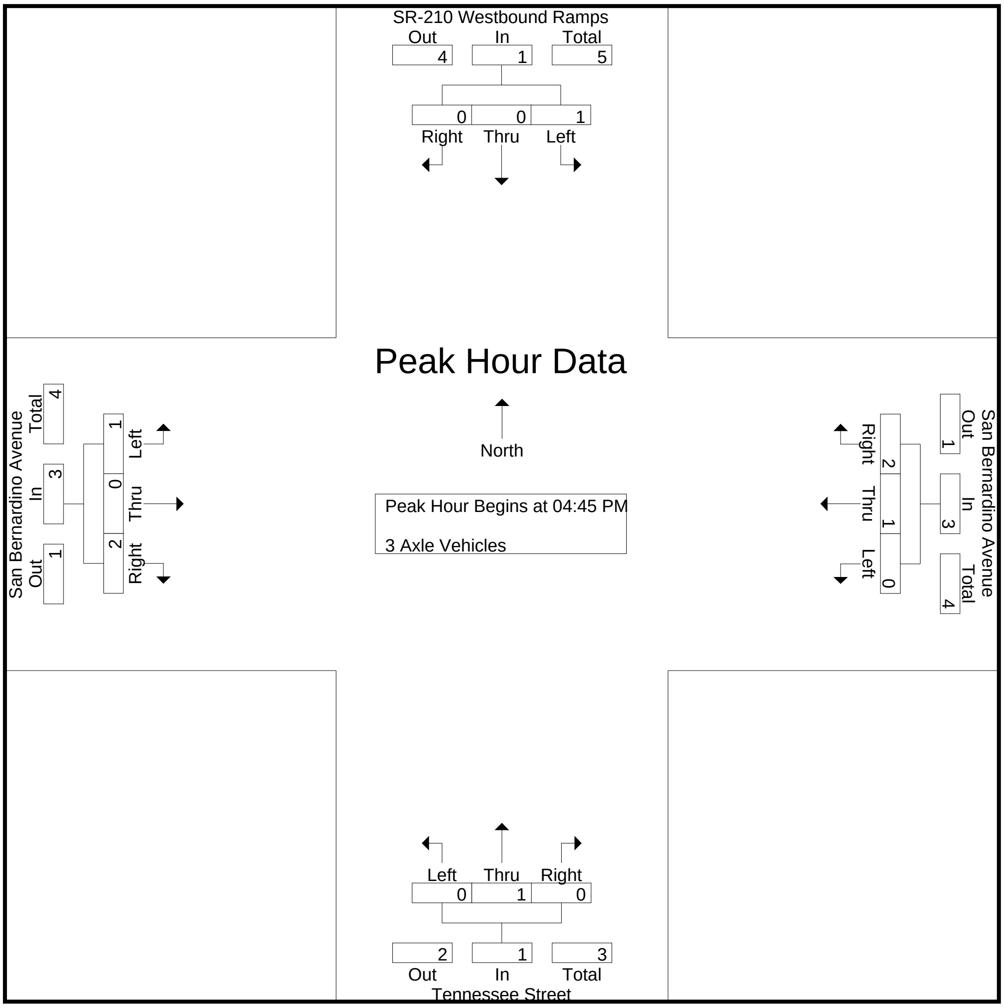
	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	1	2	0	0	0	0	0	0	2	2	4
04:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	1	1	0	1	0	1	0	2	0	2	0	0	0	0	4
04:45 PM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
Total	1	0	1	2	1	1	3	5	0	2	0	2	0	0	2	2	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
05:30 PM	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	3
05:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	1	1	2	0	1	0	1	1	0	2	3	7
Grand Total	2	0	1	3	1	2	4	7	0	3	0	3	1	0	4	5	18
Apprch %	66.7	0	33.3		14.3	28.6	57.1		0	100	0		20	0	80		
Total %	11.1	0	5.6	16.7	5.6	11.1	22.2	38.9	0	16.7	0	16.7	5.6	0	22.2	27.8	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**1**	0	0	**1**	0	0	**1**	**1**	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
05:15 PM	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	1	1	2
05:30 PM	0	0	0	0	0	0	1	1	0	**1**	0	**1**	**1**	0	0	1	**3**
Total Volume	1	0	0	1	0	1	2	3	0	1	0	1	1	0	2	3	8
% App. Total	100	0	0		0	33.3	66.7		0	100	0		33.3	0	66.7		
PHF	.250	.000	.000	.250	.000	.250	.500	.750	.000	.250	.000	.250	.250	.000	.500	.750	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	**1**	0	0	**1**	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+30 mins.	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	1	1
+45 mins.	0	0	0	0	0	0	1	1	0	**1**	0	**1**	**1**	0	0	1
Total Volume	1	0	0	1	0	1	2	3	0	1	0	1	1	0	2	3
% App. Total	100	0	0		0	33.3	66.7		0	100	0		33.3	0	66.7	
PHF	.250	.000	.000	.250	.000	.250	.500	.750	.000	.250	.000	.250	.250	.000	.500	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

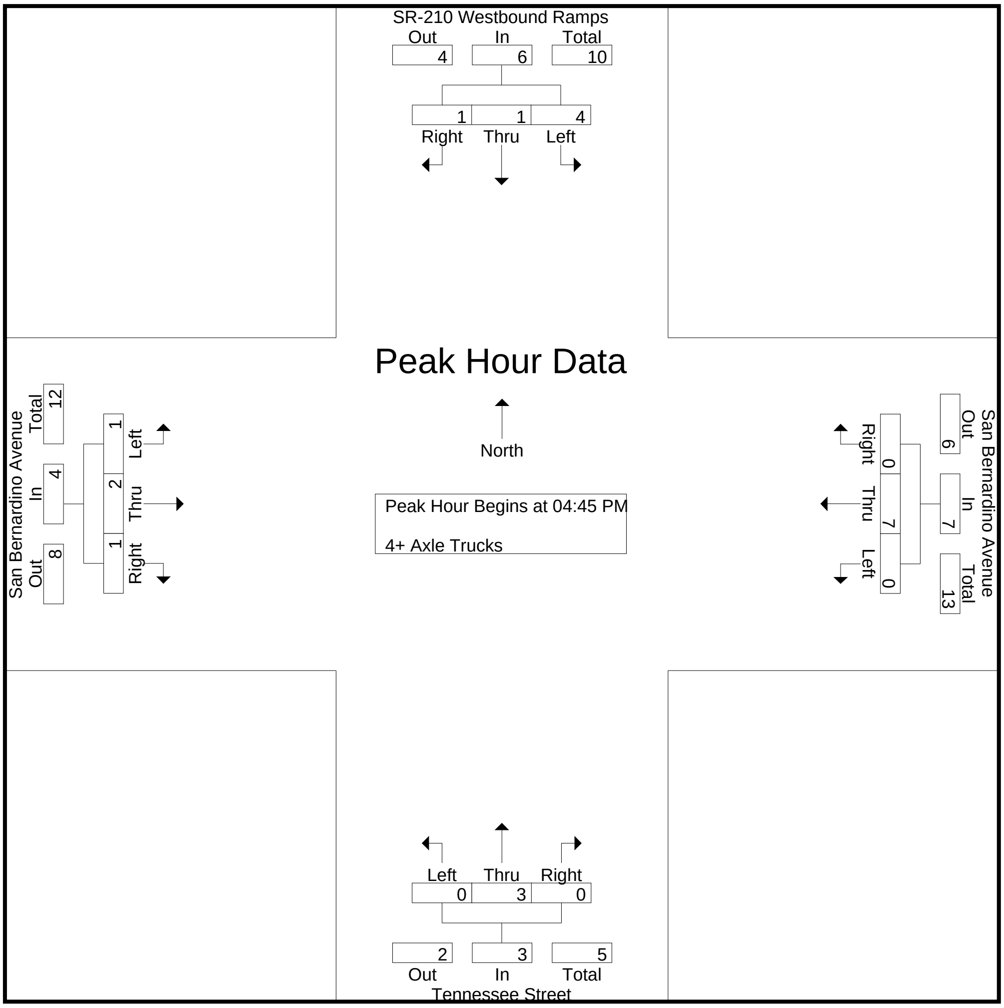
Groups Printed- 4+ Axle Trucks

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	2	2	0	1	2	3	0	0	0	0	0	0	0	0	5
04:15 PM	0	0	2	2	0	1	0	1	0	0	0	0	2	0	0	2	5
04:30 PM	0	0	1	1	0	1	0	1	0	0	0	0	1	0	0	1	3
04:45 PM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	1	0	5	6	0	3	2	5	0	1	0	1	3	0	0	3	15
05:00 PM	1	0	0	1	0	1	0	1	0	2	0	2	1	2	1	4	8
05:15 PM	0	0	1	1	0	3	0	3	0	0	0	0	0	0	0	0	4
05:30 PM	2	1	0	3	0	3	0	3	0	0	0	0	0	0	0	0	6
05:45 PM	3	0	0	3	0	2	1	3	0	0	0	0	0	0	1	1	7
Total	6	1	1	8	0	9	1	10	0	2	0	2	1	2	2	5	25
Grand Total	7	1	6	14	0	12	3	15	0	3	0	3	4	2	2	8	40
Apprch %	50	7.1	42.9		0	80	20		0	100	0		50	25	25		
Total %	17.5	2.5	15	35	0	30	7.5	37.5	0	7.5	0	7.5	10	5	5	20	

	SR-210 Westbound Ramps Southbound				San Bernardino Avenue Westbound				Tennessee Street Northbound				San Bernardino Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00 PM	1	0	0	1	0	1	0	1	0	**2**	0	**2**	**1**	**2**	**1**	**4**	**8**
05:15 PM	0	0	**1**	1	0	**3**	0	**3**	0	0	0	0	0	0	0	0	4
05:30 PM	**2**	**1**	0	**3**	0	3	0	3	0	0	0	0	0	0	0	0	6
Total Volume	4	1	1	6	0	7	0	7	0	3	0	3	1	2	1	4	20
% App. Total	66.7	16.7	16.7		0	100	0		0	100	0		25	50	25		
PHF	.500	.250	.250	.500	.000	.583	.000	.583	.000	.375	.000	.375	.250	.250	.250	.250	.625

City of Redlands
N/S: SR-210 WB Ramps/Tennessee Street
E/W: San Bernardino Avenue
Weather: Clear

File Name : 07_RED_210W_San B PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	1	0	0	1	0	1	0	1	0	**2**	0	**2**	**1**	**2**	**1**	**4**
+30 mins.	0	0	**1**	1	0	**3**	0	**3**	0	0	0	0	0	0	0	0
+45 mins.	**2**	**1**	0	**3**	0	3	0	3	0	0	0	0	0	0	0	0
Total Volume	4	1	1	6	0	7	0	7	0	3	0	3	1	2	1	4
% App. Total	66.7	16.7	16.7		0	100	0		0	100	0		25	50	25	
PHF	.500	.250	.250	.500	.000	.583	.000	.583	.000	.375	.000	.375	.250	.250	.250	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

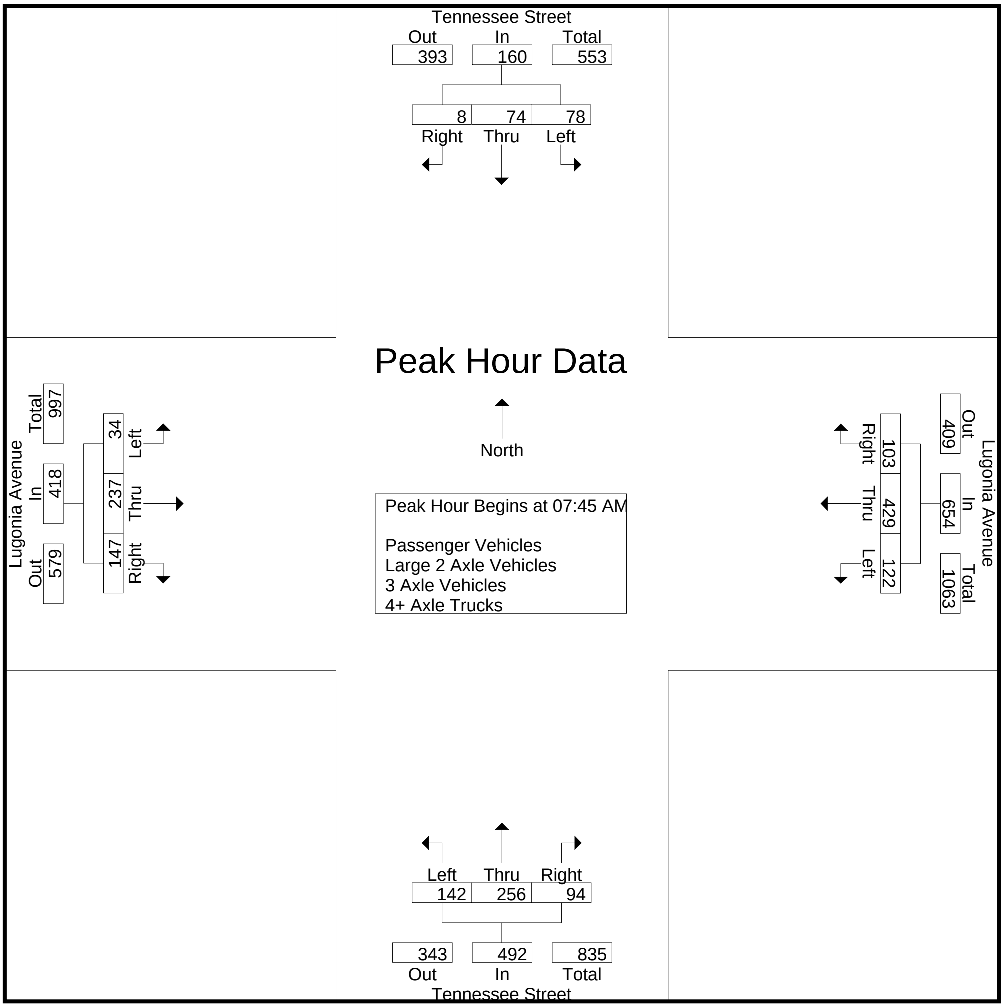
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	14	1	24	25	50	14	89	14	35	22	71	3	43	22	68	252
07:15 AM	8	19	0	27	46	66	27	139	21	49	23	93	3	30	28	61	320
07:30 AM	9	20	1	30	37	82	25	144	28	61	16	105	7	23	28	58	337
07:45 AM	12	19	2	33	32	119	22	173	35	48	30	113	6	58	46	110	429
Total	38	72	4	114	140	317	88	545	98	193	91	382	19	154	124	297	1338
08:00 AM	12	16	1	29	42	95	34	171	28	80	20	128	11	46	27	84	412
08:15 AM	31	19	3	53	20	107	30	157	36	71	22	129	12	69	38	119	458
08:30 AM	23	20	2	45	28	108	17	153	43	57	22	122	5	64	36	105	425
08:45 AM	7	16	2	25	32	109	22	163	52	32	17	101	8	69	35	112	401
Total	73	71	8	152	122	419	103	644	159	240	81	480	36	248	136	420	1696
Grand Total	111	143	12	266	262	736	191	1189	257	433	172	862	55	402	260	717	3034
Apprch %	41.7	53.8	4.5		22	61.9	16.1		29.8	50.2	20		7.7	56.1	36.3		
Total %	3.7	4.7	0.4	8.8	8.6	24.3	6.3	39.2	8.5	14.3	5.7	28.4	1.8	13.2	8.6	23.6	
Passenger Vehicles	110	138	12	260	247	726	190	1163	253	415	167	835	54	383	252	689	2947
% Passenger Vehicles	99.1	96.5	100	97.7	94.3	98.6	99.5	97.8	98.4	95.8	97.1	96.9	98.2	95.3	96.9	96.1	97.1
Large 2 Axle Vehicles	1	2	0	3	7	7	0	14	2	13	2	17	1	13	6	20	54
% Large 2 Axle Vehicles	0.9	1.4	0	1.1	2.7	1	0	1.2	0.8	3	1.2	2	1.8	3.2	2.3	2.8	1.8
3 Axle Vehicles	0	0	0	0	3	2	1	6	1	2	0	3	0	3	2	5	14
% 3 Axle Vehicles	0	0	0	0	1.1	0.3	0.5	0.5	0.4	0.5	0	0.3	0	0.7	0.8	0.7	0.5
4+ Axle Trucks	0	3	0	3	5	1	0	6	1	3	3	7	0	3	0	3	19
% 4+ Axle Trucks	0	2.1	0	1.1	1.9	0.1	0	0.5	0.4	0.7	1.7	0.8	0	0.7	0	0.4	0.6

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	12	19	2	33	32	**119**	22	**173**	35	48	**30**	113	6	58	**46**	110	429
08:00 AM	12	16	1	29	**42**	95	**34**	171	28	**80**	20	128	11	46	27	84	412
08:15 AM	**31**	19	**3**	**53**	20	107	30	157	36	71	22	**129**	**12**	**69**	38	**119**	**458**
08:30 AM	23	**20**	2	45	28	108	17	153	**43**	57	22	122	5	64	36	105	425
Total Volume	78	74	8	160	122	429	103	654	142	256	94	492	34	237	147	418	1724
% App. Total	48.8	46.2	5		18.7	65.6	15.7		28.9	52	19.1		8.1	56.7	35.2		
PHF	.629	.925	.667	.755	.726	.901	.757	.945	.826	.800	.783	.953	.708	.859	.799	.878	.941

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				08:00 AM			
+0 mins.	12	19	2	33	32	**119**	22	**173**	35	48	**30**	113	11	46	27	84
+15 mins.	12	16	1	29	**42**	95	**34**	171	28	**80**	20	128	**12**	**69**	**38**	**119**
+30 mins.	**31**	19	**3**	**53**	20	107	30	157	36	71	22	**129**	5	64	36	105
+45 mins.	23	**20**	2	45	28	108	17	153	**43**	57	22	122	8	69	35	112
Total Volume	78	74	8	160	122	429	103	654	142	256	94	492	36	248	136	420
% App. Total	48.8	46.2	5		18.7	65.6	15.7		28.9	52	19.1		8.6	59	32.4	
PHF	.629	.925	.667	.755	.726	.901	.757	.945	.826	.800	.783	.953	.750	.899	.895	.882

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles

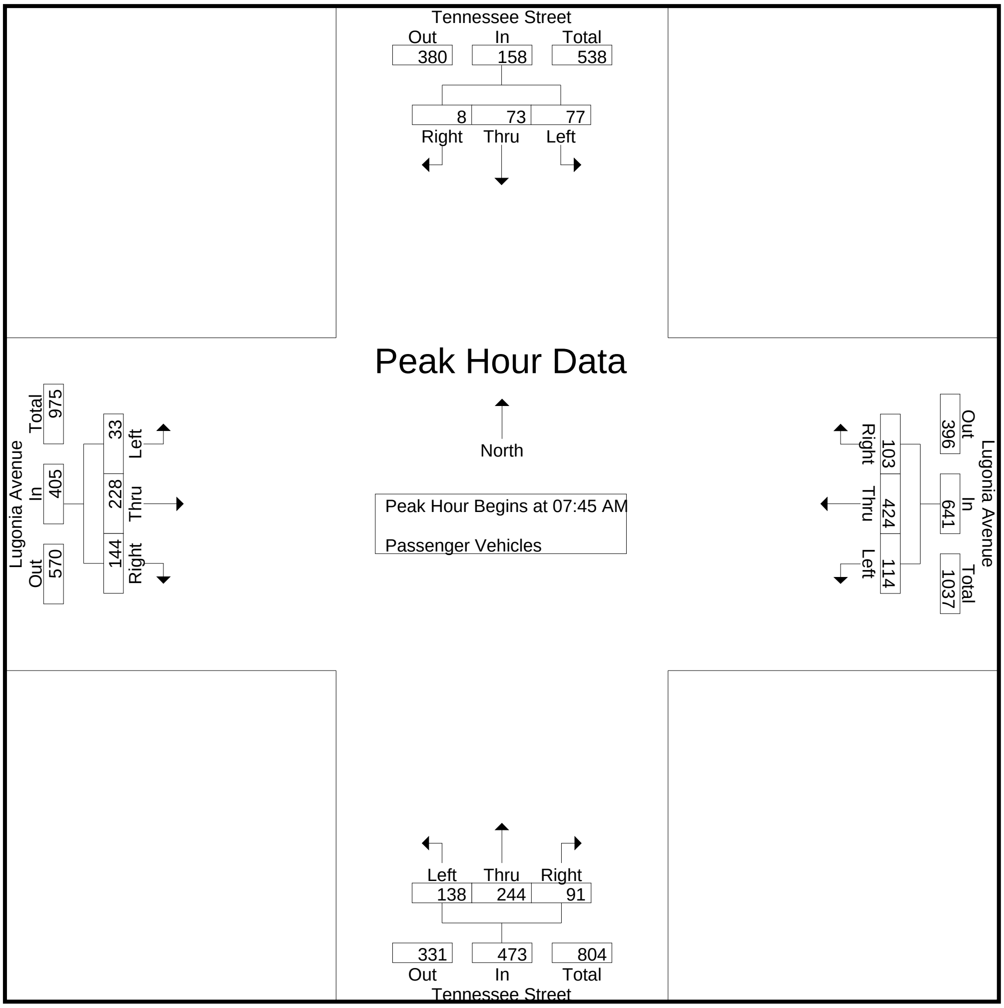
	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	14	1	24	23	49	14	86	14	34	22	70	3	36	21	60	240
07:15 AM	8	19	0	27	44	65	26	135	21	46	22	89	3	29	26	58	309
07:30 AM	9	17	1	27	36	81	25	142	28	61	15	104	7	22	27	56	329
07:45 AM	12	18	2	32	31	118	22	171	34	47	30	111	6	56	46	108	422
Total	38	68	4	110	134	313	87	534	97	188	89	374	19	143	120	282	1300
08:00 AM	12	16	1	29	37	93	34	164	26	74	18	118	10	45	27	82	393
08:15 AM	30	19	3	52	20	106	30	156	36	67	22	125	12	66	35	113	446
08:30 AM	23	20	2	45	26	107	17	150	42	56	21	119	5	61	36	102	416
08:45 AM	7	15	2	24	30	107	22	159	52	30	17	99	8	68	34	110	392
Total	72	70	8	150	113	413	103	629	156	227	78	461	35	240	132	407	1647
Grand Total	110	138	12	260	247	726	190	1163	253	415	167	835	54	383	252	689	2947
Apprch %	42.3	53.1	4.6		21.2	62.4	16.3		30.3	49.7	20		7.8	55.6	36.6		
Total %	3.7	4.7	0.4	8.8	8.4	24.6	6.4	39.5	8.6	14.1	5.7	28.3	1.8	13	8.6	23.4	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	12	18	2	32	31	**118**	22	**171**	34	47	**30**	111	6	56	**46**	108	422
08:00 AM	12	16	1	29	**37**	93	**34**	164	26	**74**	18	118	10	45	27	82	393
08:15 AM	**30**	19	**3**	**52**	20	106	30	156	36	67	22	**125**	**12**	**66**	35	**113**	**446**
08:30 AM	23	**20**	2	45	26	107	17	150	**42**	56	21	119	5	61	36	102	416
Total Volume	77	73	8	158	114	424	103	641	138	244	91	473	33	228	144	405	1677
% App. Total	48.7	46.2	5.1		17.8	66.1	16.1		29.2	51.6	19.2		8.1	56.3	35.6		
PHF	.642	.913	.667	.760	.770	.898	.757	.937	.821	.824	.758	.946	.688	.864	.783	.896	.940

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	12	18	2	32	31	**118**	22	**171**	34	47	**30**	111	6	56	**46**	108
+15 mins.	12	16	1	29	**37**	93	**34**	164	26	**74**	18	118	10	45	27	82
+30 mins.	**30**	19	**3**	**52**	20	106	30	156	36	67	22	**125**	**12**	**66**	35	**113**
+45 mins.	23	**20**	2	45	26	107	17	150	**42**	56	21	119	5	61	36	102
Total Volume	77	73	8	158	114	424	103	641	138	244	91	473	33	228	144	405
% App. Total	48.7	46.2	5.1		17.8	66.1	16.1		29.2	51.6	19.2		8.1	56.3	35.6	
PHF	.642	.913	.667	.760	.770	.898	.757	.937	.821	.824	.758	.946	.688	.864	.783	.896

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

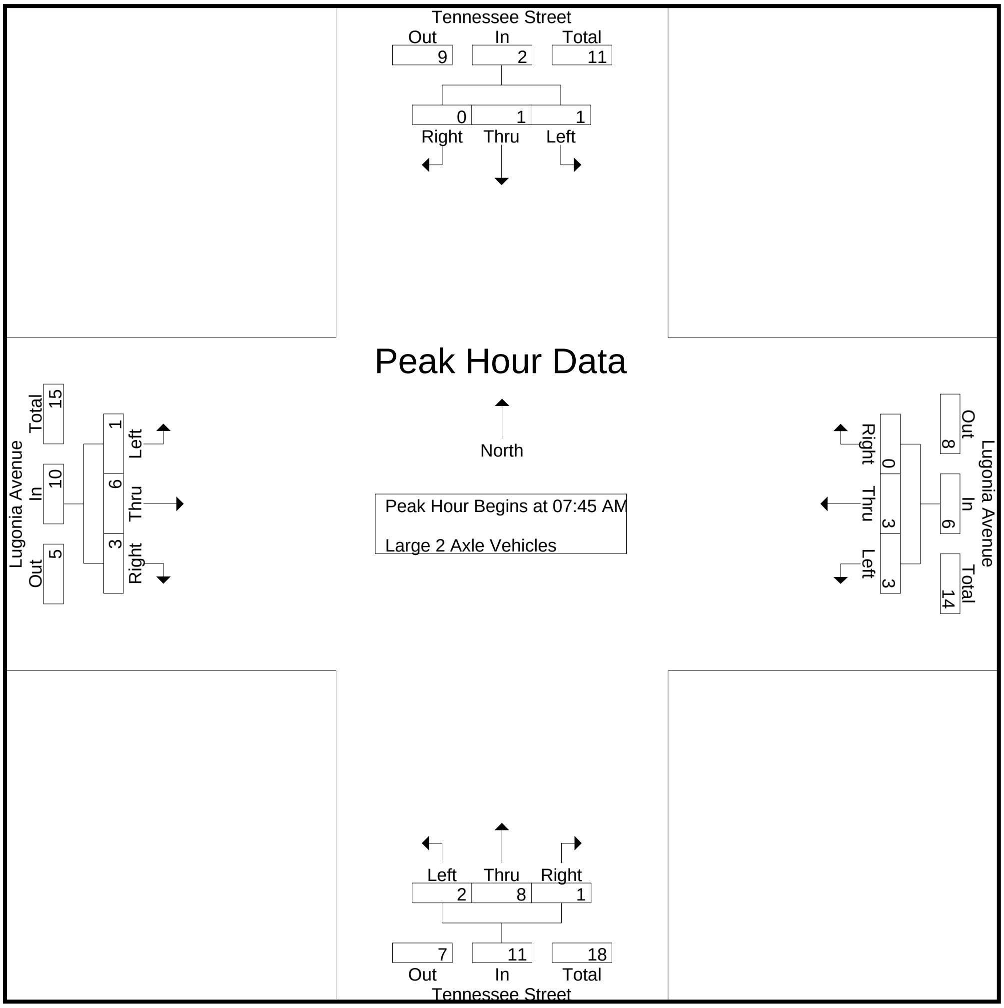
	Tennessee Street				Lugonia Avenue				Tennessee Street				Lugonia Avenue				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	0	2	0	1	0	1	0	5	0	5	8
07:15 AM	0	0	0	0	2	1	0	3	0	2	0	2	0	0	2	2	7
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2
07:45 AM	0	1	0	1	1	1	0	2	0	1	0	1	0	2	0	2	6
Total	0	1	0	1	4	3	0	7	0	4	1	5	0	8	2	10	23
08:00 AM	0	0	0	0	1	1	0	2	1	3	1	5	1	1	0	2	9
08:15 AM	1	0	0	1	0	0	0	0	0	4	0	4	0	2	3	5	10
08:30 AM	0	0	0	0	1	1	0	2	1	0	0	1	0	1	0	1	4
08:45 AM	0	1	0	1	1	2	0	3	0	2	0	2	0	1	1	2	8
Total	1	1	0	2	3	4	0	7	2	9	1	12	1	5	4	10	31
Grand Total	1	2	0	3	7	7	0	14	2	13	2	17	1	13	6	20	54
Apprch %	33.3	66.7	0		50	50	0		11.8	76.5	11.8		5	65	30		
Total %	1.9	3.7	0	5.6	13	13	0	25.9	3.7	24.1	3.7	31.5	1.9	24.1	11.1	37	

	Tennessee Street				Lugonia Avenue				Tennessee Street				Lugonia Avenue				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**1**	0	**1**	**1**	**1**	0	**2**	0	1	0	1	0	**2**	0	2	6
08:00 AM	0	0	0	0	1	1	0	2	**1**	3	**1**	**5**	**1**	1	0	2	9
08:15 AM	**1**	0	0	1	0	0	0	0	0	**4**	0	4	0	2	**3**	**5**	**10**
08:30 AM	0	0	0	0	1	1	0	2	1	0	0	1	0	1	0	1	4
Total Volume	1	1	0	2	3	3	0	6	2	8	1	11	1	6	3	10	29
% App. Total	50	50	0		50	50	0		18.2	72.7	9.1		10	60	30		
PHF	.250	.250	.000	.500	.750	.750	.000	.750	.500	.500	.250	.550	.250	.750	.250	.500	.725

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	**1**	0	**1**	**1**	**1**	0	**2**	0	1	0	1	0	**2**	0	2
+15 mins.	0	0	0	0	1	1	0	2	**1**	3	**1**	**5**	**1**	1	0	2
+30 mins.	**1**	0	0	1	0	0	0	0	0	**4**	0	4	0	2	**3**	**5**
+45 mins.	0	0	0	0	1	1	0	2	1	0	0	1	0	1	0	1
Total Volume	1	1	0	2	3	3	0	6	2	8	1	11	1	6	3	10
% App. Total	50	50	0		50	50	0		18.2	72.7	9.1		10	60	30	
PHF	.250	.250	.000	.500	.750	.750	.000	.750	.500	.500	.250	.550	.250	.750	.250	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

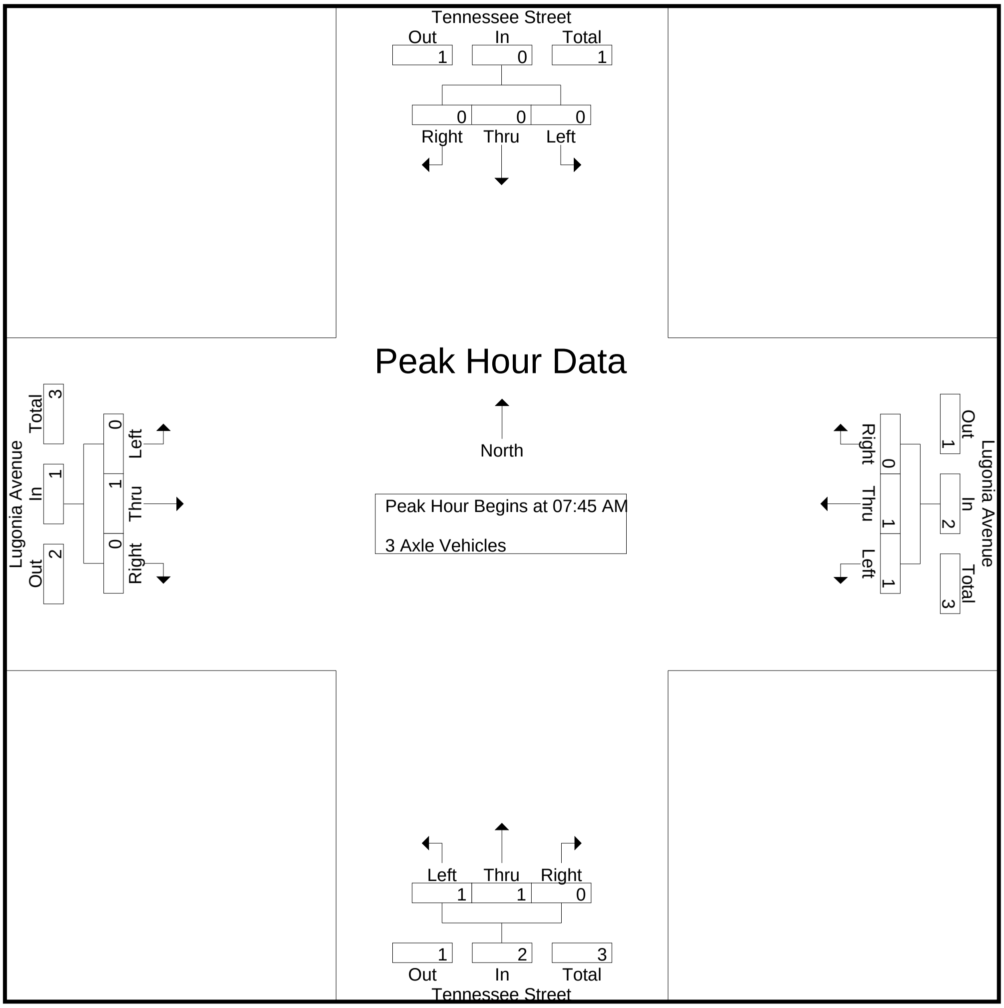
Groups Printed- 3 Axle Vehicles

	Tennessee Street				Lugonia Avenue				Tennessee Street				Lugonia Avenue				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
07:15 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
07:30 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	1	3
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	0	0	0	1	1	1	3	1	1	0	2	0	2	2	4	9
08:00 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	1	0	3	0	1	0	1	0	1	0	1	5
Grand Total	0	0	0	0	3	2	1	6	1	2	0	3	0	3	2	5	14
Apprch %	0	0	0		50	33.3	16.7		33.3	66.7	0		0	60	40		
Total %	0	0	0	0	21.4	14.3	7.1	42.9	7.1	14.3	0	21.4	0	21.4	14.3	35.7	

	Tennessee Street				Lugonia Avenue				Tennessee Street				Lugonia Avenue				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	1
08:00 AM	0	0	0	0	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0	**2**
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
08:30 AM	0	0	0	0	**1**	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	1	1	0	2	1	1	0	2	0	1	0	1	5
% App. Total	0	0	0		50	50	0		50	50	0		0	100	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.500	.250	.250	.000	.500	.000	.250	.000	.250	.625

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
+45 mins.	0	0	0	0	**1**	0	0	1	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	2	1	1	0	2	0	1	0	1
% App. Total	0	0	0		50	50	0		50	50	0		0	100	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.500	.250	.250	.000	.500	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

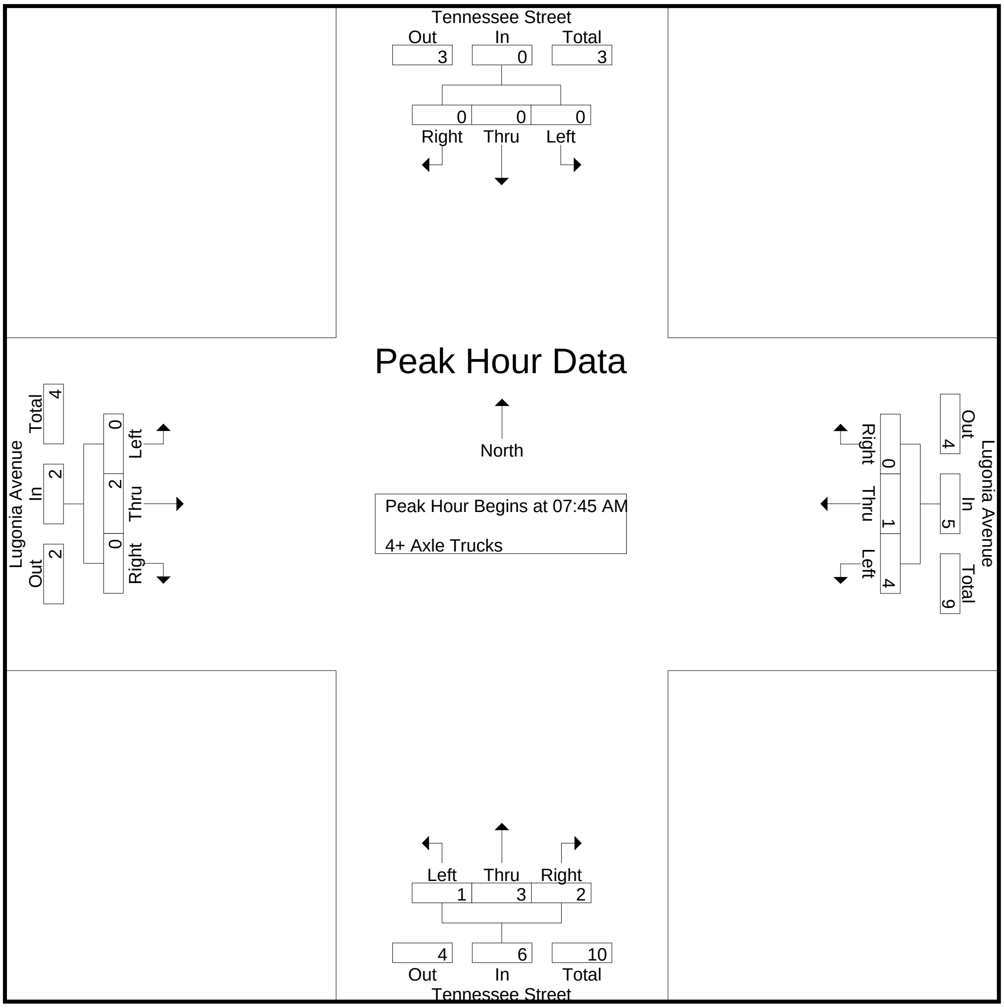
Groups Printed- 4+ Axle Trucks

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2
07:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	3	1	0	0	1	0	0	1	1	0	1	0	1	6
08:00 AM	0	0	0	0	4	0	0	4	1	2	1	4	0	0	0	0	8
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	2	0	2	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	4	1	0	5	1	3	2	6	0	2	0	2	13
Grand Total	0	3	0	3	5	1	0	6	1	3	3	7	0	3	0	3	19
Apprch %	0	100	0		83.3	16.7	0		14.3	42.9	42.9		0	100	0		
Total %	0	15.8	0	15.8	26.3	5.3	0	31.6	5.3	15.8	15.8	36.8	0	15.8	0	15.8	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	**4**	0	0	**4**	**1**	**2**	**1**	**4**	0	0	0	0	**8**
08:15 AM	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	**2**	0	**2**	4
Total Volume	0	0	0	0	4	1	0	5	1	3	2	6	0	2	0	2	13
% App. Total	0	0	0		80	20	0		16.7	50	33.3		0	100	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.313	.250	.375	.500	.375	.000	.250	.000	.250	.406

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	**4**	0	0	**4**	**1**	**2**	**1**	**4**	0	0	0	0
+30 mins.	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	1	2	0	**2**	0	**2**
Total Volume	0	0	0	0	4	1	0	5	1	3	2	6	0	2	0	2
% App. Total	0	0	0		80	20	0		16.7	50	33.3		0	100	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.313	.250	.375	.500	.375	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

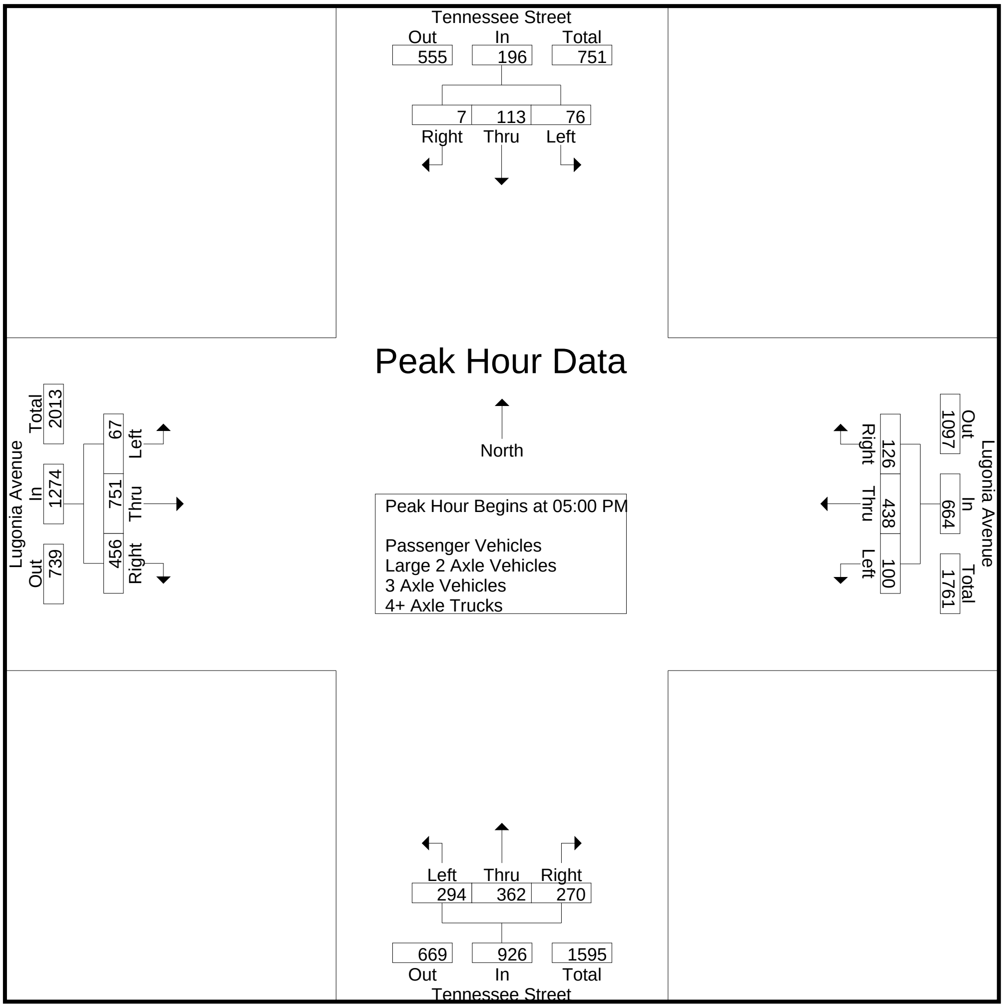
	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	23	16	2	41	26	133	21	180	74	73	35	182	16	163	112	291	694
04:15 PM	26	17	6	49	20	114	30	164	82	58	55	195	18	144	102	264	672
04:30 PM	13	18	3	34	23	129	31	183	70	73	65	208	18	187	94	299	724
04:45 PM	28	26	1	55	30	103	39	172	76	73	59	208	9	180	106	295	730
Total	90	77	12	179	99	479	121	699	302	277	214	793	61	674	414	1149	2820
05:00 PM	12	30	3	45	28	90	34	152	66	81	66	213	22	201	101	324	734
05:15 PM	29	40	1	70	29	128	23	180	66	100	77	243	12	169	118	299	792
05:30 PM	19	23	2	44	21	125	32	178	94	93	70	257	17	165	109	291	770
05:45 PM	16	20	1	37	22	95	37	154	68	88	57	213	16	216	128	360	764
Total	76	113	7	196	100	438	126	664	294	362	270	926	67	751	456	1274	3060
Grand Total	166	190	19	375	199	917	247	1363	596	639	484	1719	128	1425	870	2423	5880
Apprch %	44.3	50.7	5.1		14.6	67.3	18.1		34.7	37.2	28.2		5.3	58.8	35.9		
Total %	2.8	3.2	0.3	6.4	3.4	15.6	4.2	23.2	10.1	10.9	8.2	29.2	2.2	24.2	14.8	41.2	
Passenger Vehicles	162	179	19	360	196	910	243	1349	595	631	473	1699	128	1416	867	2411	5819
% Passenger Vehicles	97.6	94.2	100	96	98.5	99.2	98.4	99	99.8	98.7	97.7	98.8	100	99.4	99.7	99.5	99
Large 2 Axle Vehicles	2	6	0	8	1	6	1	8	1	5	4	10	0	8	3	11	37
% Large 2 Axle Vehicles	1.2	3.2	0	2.1	0.5	0.7	0.4	0.6	0.2	0.8	0.8	0.6	0	0.6	0.3	0.5	0.6
3 Axle Vehicles	2	1	0	3	1	1	1	3	0	3	0	3	0	0	0	0	9
% 3 Axle Vehicles	1.2	0.5	0	0.8	0.5	0.1	0.4	0.2	0	0.5	0	0.2	0	0	0	0	0.2
4+ Axle Trucks	0	4	0	4	1	0	2	3	0	0	7	7	0	1	0	1	15
% 4+ Axle Trucks	0	2.1	0	1.1	0.5	0	0.8	0.2	0	0	1.4	0.4	0	0.1	0	0	0.3

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	12	30	**3**	45	28	90	34	152	66	81	66	213	**22**	201	101	324	734
05:15 PM	**29**	**40**	1	**70**	**29**	**128**	23	**180**	66	**100**	**77**	243	12	169	118	299	**792**
05:30 PM	19	23	2	44	21	125	32	178	**94**	93	70	**257**	17	165	109	291	770
05:45 PM	16	20	1	37	22	95	**37**	154	68	88	57	213	16	**216**	**128**	**360**	764
Total Volume	76	113	7	196	100	438	126	664	294	362	270	926	67	751	456	1274	3060
% App. Total	38.8	57.7	3.6		15.1	66	19		31.7	39.1	29.2		5.3	58.9	35.8		
PHF	.655	.706	.583	.700	.862	.855	.851	.922	.782	.905	.877	.901	.761	.869	.891	.885	.966

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				05:00 PM				05:00 PM			
+0 mins.	28	26	1	55	26	**133**	21	180	66	81	66	213	**22**	201	101	324
+15 mins.	12	30	**3**	45	20	114	30	164	66	**100**	**77**	243	12	169	118	299
+30 mins.	**29**	**40**	1	**70**	23	129	31	**183**	**94**	93	70	**257**	17	165	109	291
+45 mins.	19	23	2	44	**30**	103	**39**	172	68	88	57	213	16	**216**	**128**	**360**
Total Volume	88	119	7	214	99	479	121	699	294	362	270	926	67	751	456	1274
% App. Total	41.1	55.6	3.3		14.2	68.5	17.3		31.7	39.1	29.2		5.3	58.9	35.8	
PHF	.759	.744	.583	.764	.825	.900	.776	.955	.782	.905	.877	.901	.761	.869	.891	.885

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

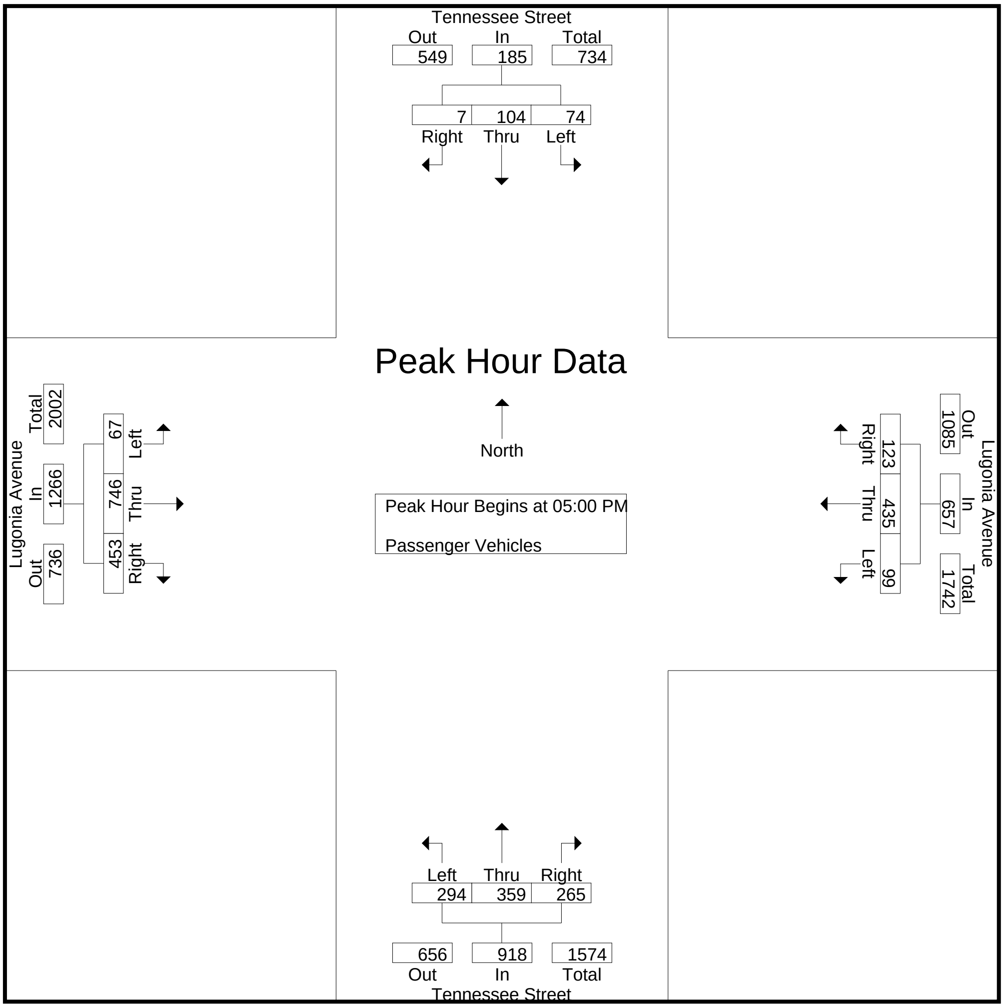
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	21	15	2	38	25	133	21	179	74	73	34	181	16	163	112	291	689
04:15 PM	26	17	6	49	19	113	30	162	81	56	55	192	18	140	102	260	663
04:30 PM	13	18	3	34	23	128	31	182	70	71	63	204	18	187	94	299	719
04:45 PM	28	25	1	54	30	101	38	169	76	72	56	204	9	180	106	295	722
Total	88	75	12	175	97	475	120	692	301	272	208	781	61	670	414	1145	2793
05:00 PM	12	27	3	42	28	89	32	149	66	81	65	212	22	200	100	322	725
05:15 PM	29	38	1	68	29	128	23	180	66	100	74	240	12	169	117	298	786
05:30 PM	18	22	2	42	21	123	31	175	94	92	69	255	17	163	109	289	761
05:45 PM	15	17	1	33	21	95	37	153	68	86	57	211	16	214	127	357	754
Total	74	104	7	185	99	435	123	657	294	359	265	918	67	746	453	1266	3026
Grand Total	162	179	19	360	196	910	243	1349	595	631	473	1699	128	1416	867	2411	5819
Apprch %	45	49.7	5.3		14.5	67.5	18		35	37.1	27.8		5.3	58.7	36		
Total %	2.8	3.1	0.3	6.2	3.4	15.6	4.2	23.2	10.2	10.8	8.1	29.2	2.2	24.3	14.9	41.4	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	12	27	**3**	42	28	89	32	149	66	81	65	212	**22**	200	100	322	725
05:15 PM	**29**	**38**	1	**68**	**29**	**128**	23	**180**	66	**100**	**74**	240	12	169	117	298	**786**
05:30 PM	18	22	2	42	21	123	31	175	**94**	92	69	**255**	17	163	109	289	761
05:45 PM	15	17	1	33	21	95	**37**	153	68	86	57	211	16	**214**	**127**	**357**	754
Total Volume	74	104	7	185	99	435	123	657	294	359	265	918	67	746	453	1266	3026
% App. Total	40	56.2	3.8		15.1	66.2	18.7		32	39.1	28.9		5.3	58.9	35.8		
PHF	.638	.684	.583	.680	.853	.850	.831	.913	.782	.898	.895	.900	.761	.871	.892	.887	.962

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	12	27	**3**	42	28	89	32	149	66	81	65	212	**22**	200	100	322
+15 mins.	**29**	**38**	1	**68**	**29**	**128**	23	**180**	66	**100**	**74**	240	12	169	117	298
+30 mins.	18	22	2	42	21	123	31	175	**94**	92	69	**255**	17	163	109	289
+45 mins.	15	17	1	33	21	95	**37**	153	68	86	57	211	16	**214**	**127**	**357**
Total Volume	74	104	7	185	99	435	123	657	294	359	265	918	67	746	453	1266
% App. Total	40	56.2	3.8		15.1	66.2	18.7		32	39.1	28.9		5.3	58.9	35.8	
PHF	.638	.684	.583	.680	.853	.850	.831	.913	.782	.898	.895	.900	.761	.871	.892	.887

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

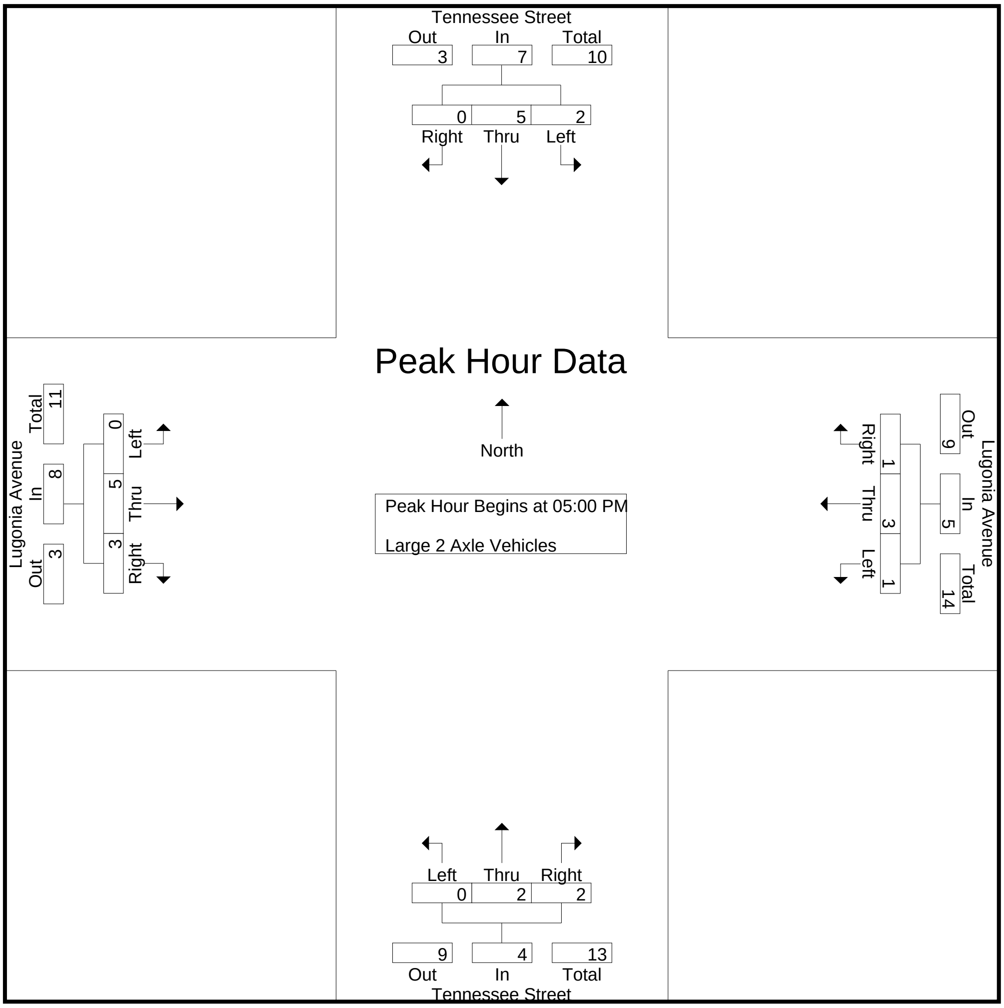
	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	1	2	0	3	0	3	0	3	6
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	1	0	2	0	2	0	1	1	2	0	0	0	0	5
Total	0	1	0	1	0	3	0	3	1	3	2	6	0	3	0	3	13
05:00 PM	0	2	0	2	0	1	0	1	0	0	1	1	0	1	1	2	6
05:15 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	1	3
05:30 PM	1	1	0	2	0	2	1	3	0	0	0	0	0	2	0	2	7
05:45 PM	1	1	0	2	1	0	0	1	0	2	0	2	0	2	1	3	8
Total	2	5	0	7	1	3	1	5	0	2	2	4	0	5	3	8	24
Grand Total	2	6	0	8	1	6	1	8	1	5	4	10	0	8	3	11	37
Apprch %	25	75	0		12.5	75	12.5		10	50	40		0	72.7	27.3		
Total %	5.4	16.2	0	21.6	2.7	16.2	2.7	21.6	2.7	13.5	10.8	27	0	21.6	8.1	29.7	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**2**	0	**2**	0	1	0	1	0	0	**1**	1	0	1	**1**	2	6
05:15 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	1	3
05:30 PM	**1**	1	0	2	0	**2**	**1**	**3**	0	0	0	0	0	**2**	0	2	7
05:45 PM	1	1	0	2	**1**	0	0	1	0	**2**	0	**2**	0	2	1	**3**	**8**
Total Volume	2	5	0	7	1	3	1	5	0	2	2	4	0	5	3	8	24
% App. Total	28.6	71.4	0		20	60	20		0	50	50		0	62.5	37.5		
PHF	.500	.625	.000	.875	.250	.375	.250	.417	.000	.250	.500	.500	.000	.625	.750	.667	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**2**	0	**2**	0	1	0	1	0	0	**1**	1	0	1	**1**	2
+15 mins.	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	1
+30 mins.	**1**	1	0	2	0	**2**	**1**	**3**	0	0	0	0	0	**2**	0	2
+45 mins.	1	1	0	2	**1**	0	0	1	0	**2**	0	**2**	0	2	1	**3**
Total Volume	2	5	0	7	1	3	1	5	0	2	2	4	0	5	3	8
% App. Total	28.6	71.4	0		20	60	20		0	50	50		0	62.5	37.5	
PHF	.500	.625	.000	.875	.250	.375	.250	.417	.000	.250	.500	.500	.000	.625	.750	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

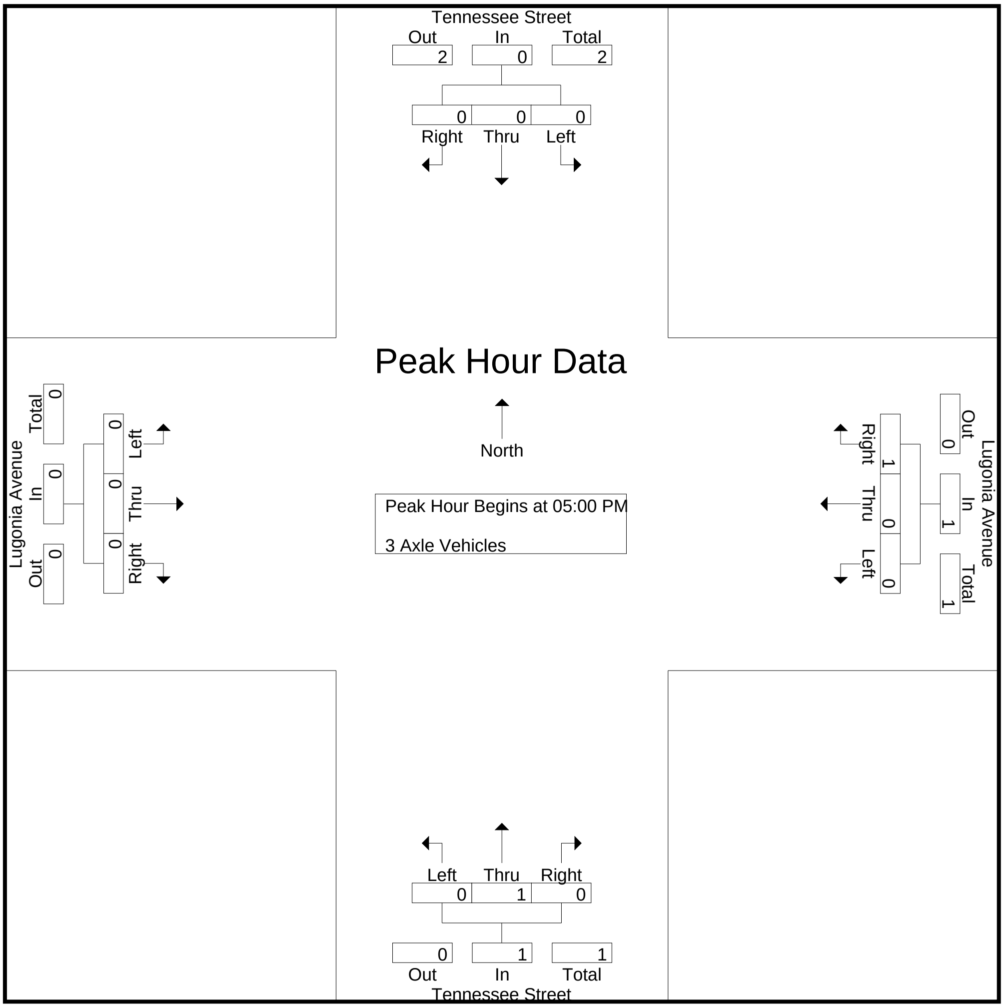
	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	1	0	3	1	1	0	2	0	2	0	2	0	0	0	0	7
05:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
Grand Total	2	1	0	3	1	1	1	3	0	3	0	3	0	0	0	0	9
Apprch %	66.7	33.3	0		33.3	33.3	33.3		0	100	0		0	0	0		
Total %	22.2	11.1	0	33.3	11.1	11.1	11.1	33.3	0	33.3	0	33.3	0	0	0	0	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
% App. Total	0	0	0		0	0	100		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0
% App. Total	0	0	0		0	0	100		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

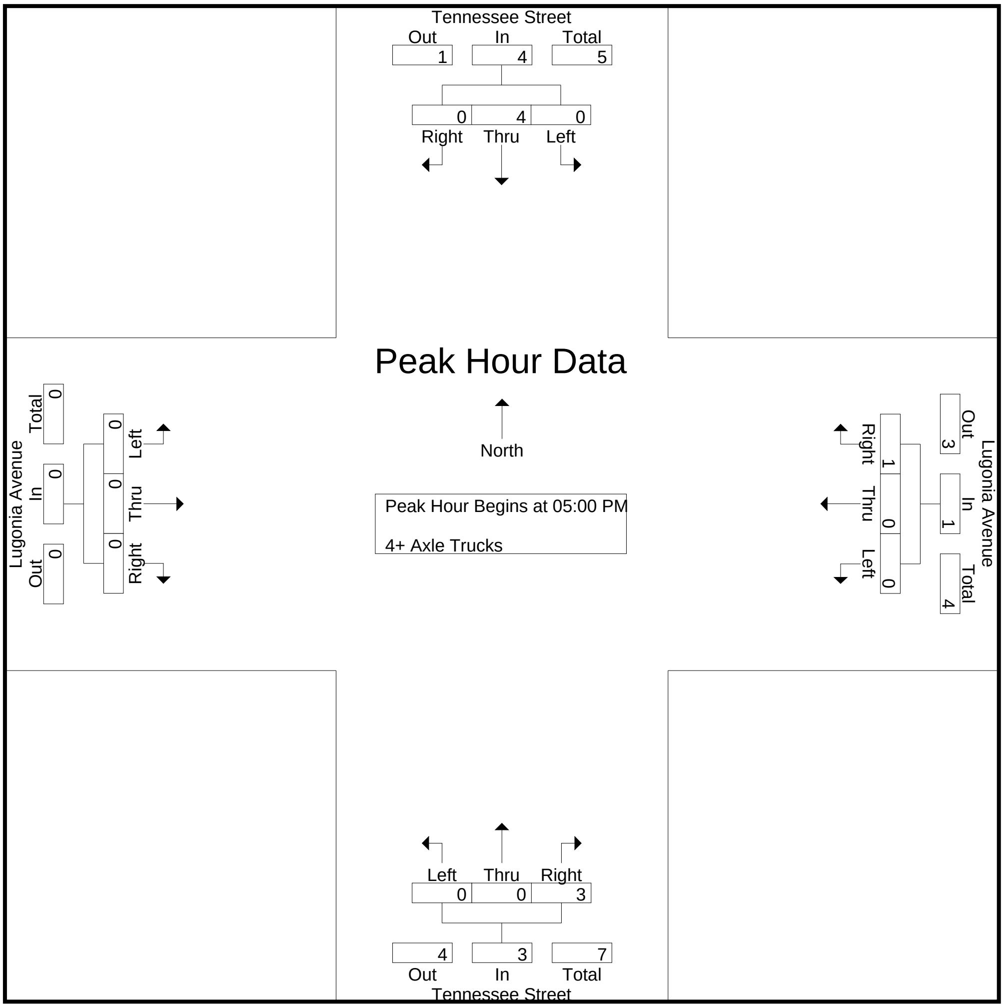
	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3
Total	0	0	0	0	1	0	1	2	0	0	4	4	0	1	0	1	7
05:00 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
05:15 PM	0	1	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	4	0	4	0	0	1	1	0	0	3	3	0	0	0	0	8
Grand Total	0	4	0	4	1	0	2	3	0	0	7	7	0	1	0	1	15
Apprch %	0	100	0		33.3	0	66.7		0	0	100		0	100	0		
Total %	0	26.7	0	26.7	6.7	0	13.3	20	0	0	46.7	46.7	0	6.7	0	6.7	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	1	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0	2
05:15 PM	0	1	0	1	0	0	0	0	0	0	**2**	**2**	0	0	0	0	**3**
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:45 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	4	0	4	0	0	1	1	0	0	3	3	0	0	0	0	8
% App. Total	0	100	0		0	0	100		0	0	100		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.250	.250	.000	.000	.375	.375	.000	.000	.000	.000	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 08_RED_Ten_Lug PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	1	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	**2**	**2**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+45 mins.	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	4	0	4	0	0	1	1	0	0	3	3	0	0	0	0
% App. Total	0	100	0		0	0	100		0	0	100		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.250	.250	.000	.000	.375	.375	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

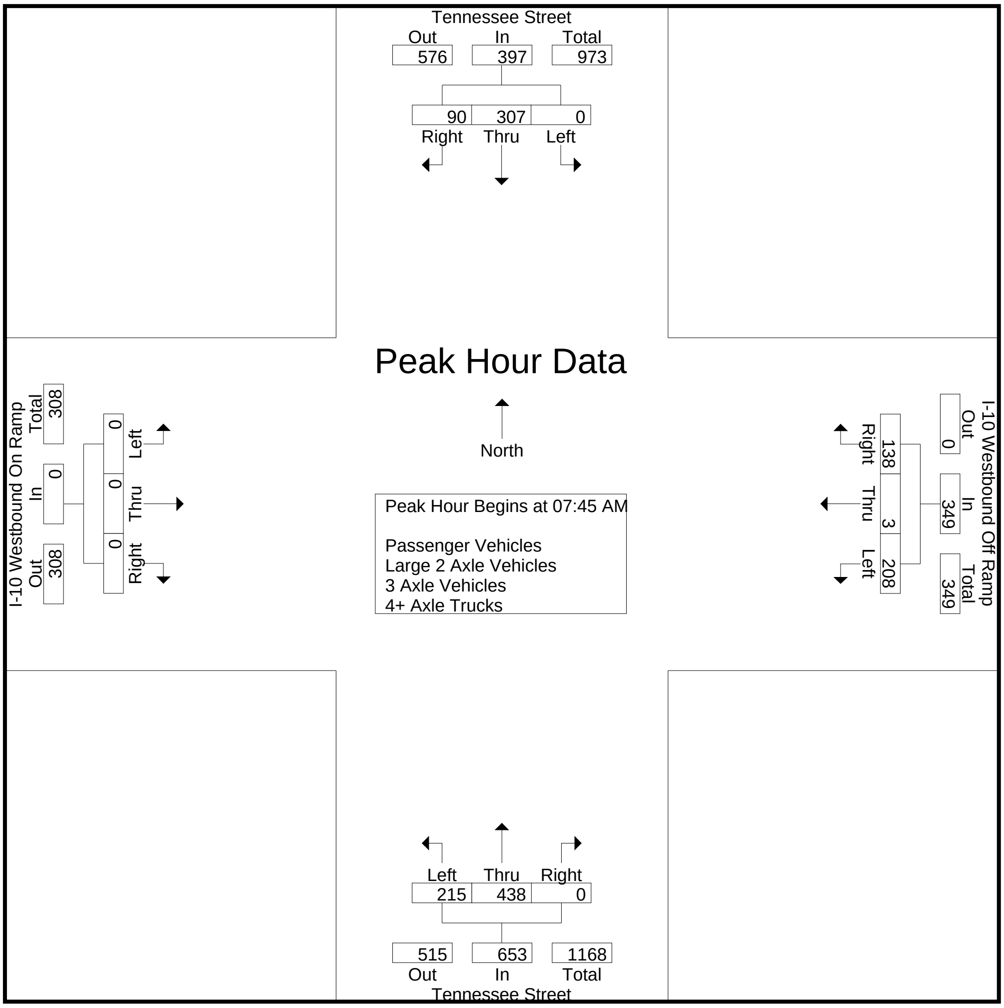
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	54	25	79	35	1	18	54	54	82	0	136	0	0	0	0	269
07:15 AM	0	57	35	92	46	0	17	63	57	96	0	153	0	0	0	0	308
07:30 AM	0	69	31	100	54	1	29	84	50	94	0	144	0	0	0	0	328
07:45 AM	0	88	17	105	74	1	34	109	47	100	0	147	0	0	0	0	361
Total	0	268	108	376	209	3	98	310	208	372	0	580	0	0	0	0	1266
08:00 AM	0	68	30	98	52	0	31	83	47	121	0	168	0	0	0	0	349
08:15 AM	0	76	18	94	40	0	34	74	63	124	0	187	0	0	0	0	355
08:30 AM	0	75	25	100	42	2	39	83	58	93	0	151	0	0	0	0	334
08:45 AM	0	77	24	101	51	2	47	100	47	84	0	131	0	0	0	0	332
Total	0	296	97	393	185	4	151	340	215	422	0	637	0	0	0	0	1370
Grand Total	0	564	205	769	394	7	249	650	423	794	0	1217	0	0	0	0	2636
Apprch %	0	73.3	26.7		60.6	1.1	38.3		34.8	65.2	0		0	0	0		
Total %	0	21.4	7.8	29.2	14.9	0.3	9.4	24.7	16	30.1	0	46.2	0	0	0	0	
Passenger Vehicles	0	547	192	739	384	5	245	634	410	744	0	1154	0	0	0	0	2527
% Passenger Vehicles	0	97	93.7	96.1	97.5	71.4	98.4	97.5	96.9	93.7	0	94.8	0	0	0	0	95.9
Large 2 Axle Vehicles	0	10	8	18	10	2	3	15	9	36	0	45	0	0	0	0	78
% Large 2 Axle Vehicles	0	1.8	3.9	2.3	2.5	28.6	1.2	2.3	2.1	4.5	0	3.7	0	0	0	0	3
3 Axle Vehicles	0	5	0	5	0	0	0	0	2	5	0	7	0	0	0	0	12
% 3 Axle Vehicles	0	0.9	0	0.7	0	0	0	0	0.5	0.6	0	0.6	0	0	0	0	0.5
4+ Axle Trucks	0	2	5	7	0	0	1	1	2	9	0	11	0	0	0	0	19
% 4+ Axle Trucks	0	0.4	2.4	0.9	0	0	0.4	0.2	0.5	1.1	0	0.9	0	0	0	0	0.7

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**88**	17	**105**	**74**	1	34	**109**	47	100	0	147	0	0	0	0	**361**
08:00 AM	0	68	**30**	98	52	0	31	83	47	121	0	168	0	0	0	0	349
08:15 AM	0	76	18	94	40	0	34	74	**63**	**124**	0	**187**	0	0	0	0	355
08:30 AM	0	75	25	100	42	**2**	**39**	83	58	93	0	151	0	0	0	0	334
Total Volume	0	307	90	397	208	3	138	349	215	438	0	653	0	0	0	0	1399
% App. Total	0	77.3	22.7		59.6	0.9	39.5		32.9	67.1	0		0	0	0		
PHF	.000	.872	.750	.945	.703	.375	.885	.800	.853	.883	.000	.873	.000	.000	.000	.000	.969

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:45 AM				07:00 AM			
+0 mins.	0	69	**31**	100	54	**1**	29	84	47	100	0	147	0	0	0	0
+15 mins.	0	**88**	17	**105**	**74**	1	**34**	**109**	47	121	0	168	0	0	0	0
+30 mins.	0	68	30	98	52	0	31	83	**63**	**124**	0	**187**	0	0	0	0
+45 mins.	0	76	18	94	40	0	34	74	58	93	0	151	0	0	0	0
Total Volume	0	301	96	397	220	2	128	350	215	438	0	653	0	0	0	0
% App. Total	0	75.8	24.2		62.9	0.6	36.6		32.9	67.1	0		0	0	0	
PHF	.000	.855	.774	.945	.743	.500	.941	.803	.853	.883	.000	.873	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

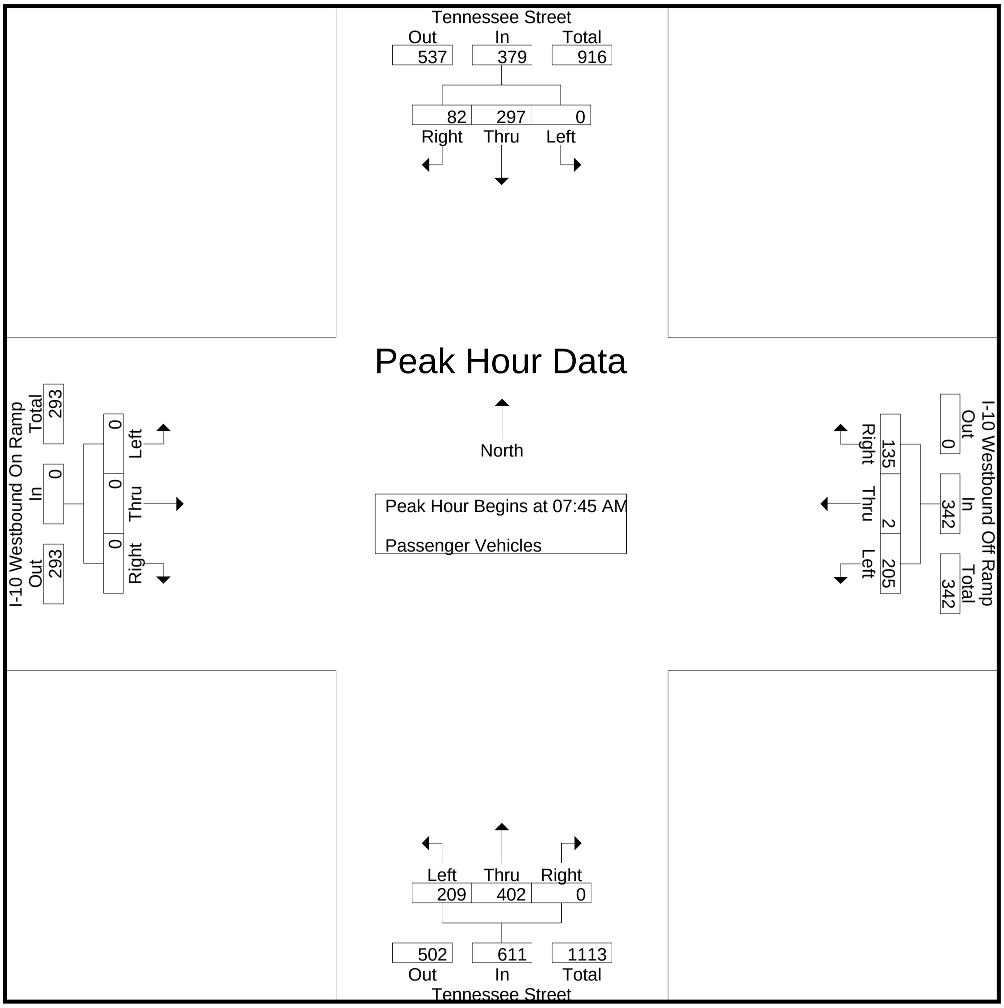
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	53	24	77	34	0	17	51	53	81	0	134	0	0	0	0	262
07:15 AM	0	56	33	89	44	0	17	61	55	90	0	145	0	0	0	0	295
07:30 AM	0	67	31	98	53	1	29	83	46	90	0	136	0	0	0	0	317
07:45 AM	0	86	17	103	71	1	34	106	46	97	0	143	0	0	0	0	352
Total	0	262	105	367	202	2	97	301	200	358	0	558	0	0	0	0	1226
08:00 AM	0	67	26	93	52	0	30	82	43	107	0	150	0	0	0	0	325
08:15 AM	0	72	16	88	40	0	34	74	62	113	0	175	0	0	0	0	337
08:30 AM	0	72	23	95	42	1	37	80	58	85	0	143	0	0	0	0	318
08:45 AM	0	74	22	96	48	2	47	97	47	81	0	128	0	0	0	0	321
Total	0	285	87	372	182	3	148	333	210	386	0	596	0	0	0	0	1301
Grand Total	0	547	192	739	384	5	245	634	410	744	0	1154	0	0	0	0	2527
Apprch %	0	74	26		60.6	0.8	38.6		35.5	64.5	0		0	0	0		
Total %	0	21.6	7.6	29.2	15.2	0.2	9.7	25.1	16.2	29.4	0	45.7	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**86**	17	**103**	**71**	**1**	34	**106**	46	97	0	143	0	0	0	0	**352**
08:00 AM	0	67	**26**	93	52	0	30	82	43	107	0	150	0	0	0	0	325
08:15 AM	0	72	16	88	40	0	34	74	**62**	**113**	0	**175**	0	0	0	0	337
08:30 AM	0	72	23	95	42	1	**37**	80	58	85	0	143	0	0	0	0	318
Total Volume	0	297	82	379	205	2	135	342	209	402	0	611	0	0	0	0	1332
% App. Total	0	78.4	21.6		59.9	0.6	39.5		34.2	65.8	0		0	0	0		
PHF	.000	.863	.788	.920	.722	.500	.912	.807	.843	.889	.000	.873	.000	.000	.000	.000	.946

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	**86**	17	**103**	**71**	**1**	34	**106**	46	97	0	143	0	0	0	0
+15 mins.	0	67	**26**	93	52	0	30	82	43	107	0	150	0	0	0	0
+30 mins.	0	72	16	88	40	0	34	74	**62**	**113**	0	**175**	0	0	0	0
+45 mins.	0	72	23	95	42	1	**37**	80	58	85	0	143	0	0	0	0
Total Volume	0	297	82	379	205	2	135	342	209	402	0	611	0	0	0	0
% App. Total	0	78.4	21.6		59.9	0.6	39.5		34.2	65.8	0		0	0	0	
PHF	.000	.863	.788	.920	.722	.500	.912	.807	.843	.889	.000	.873	.000	.000	.000	.000

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

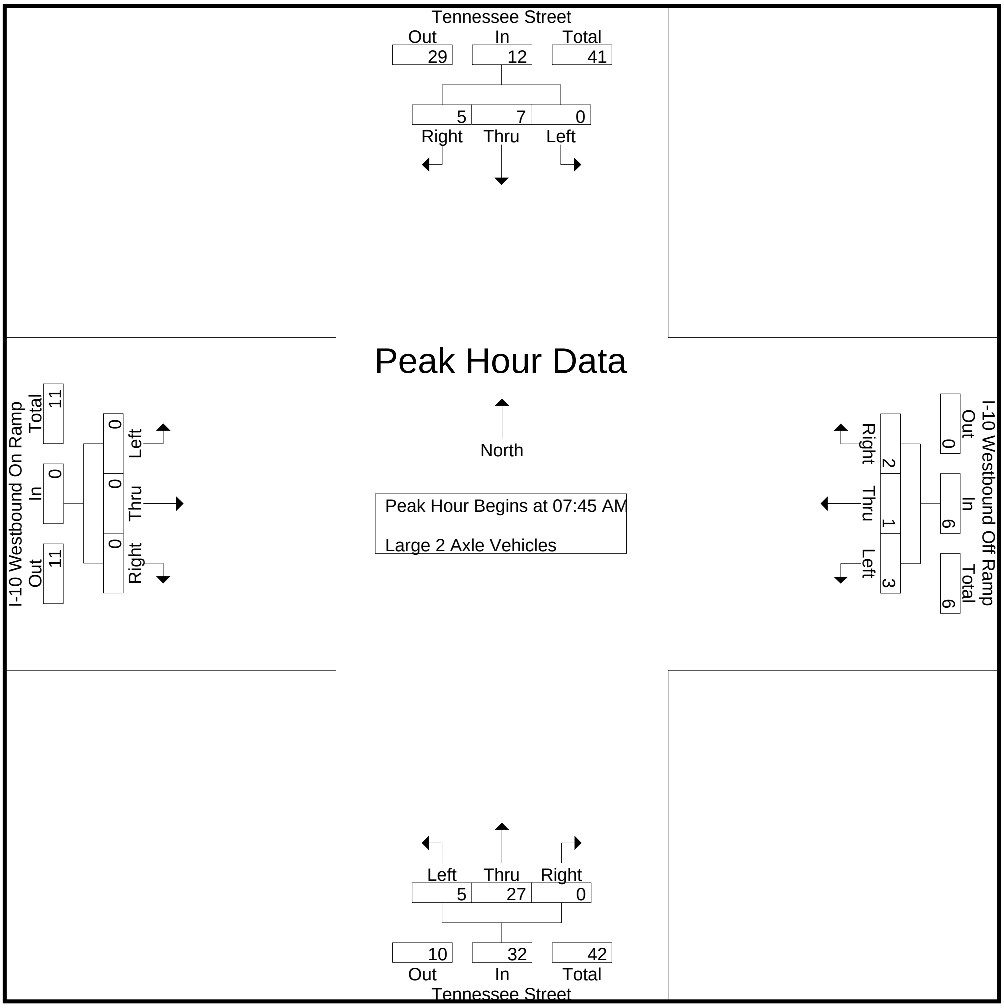
	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	1	3	1	1	0	2	0	0	0	0	5
07:15 AM	0	1	2	3	2	0	0	2	1	2	0	3	0	0	0	0	8
07:30 AM	0	0	0	0	1	0	0	1	2	3	0	5	0	0	0	0	6
07:45 AM	0	2	0	2	3	0	0	3	1	2	0	3	0	0	0	0	8
Total	0	3	2	5	7	1	1	9	5	8	0	13	0	0	0	0	27
08:00 AM	0	0	1	1	0	0	1	1	3	8	0	11	0	0	0	0	13
08:15 AM	0	3	2	5	0	0	0	0	1	11	0	12	0	0	0	0	17
08:30 AM	0	2	2	4	0	1	1	2	0	6	0	6	0	0	0	0	12
08:45 AM	0	2	1	3	3	0	0	3	0	3	0	3	0	0	0	0	9
Total	0	7	6	13	3	1	2	6	4	28	0	32	0	0	0	0	51
Grand Total	0	10	8	18	10	2	3	15	9	36	0	45	0	0	0	0	78
Apprch %	0	55.6	44.4		66.7	13.3	20		20	80	0		0	0	0		
Total %	0	12.8	10.3	23.1	12.8	2.6	3.8	19.2	11.5	46.2	0	57.7	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	2	0	2	**3**	0	0	**3**	1	2	0	3	0	0	0	0	8
08:00 AM	0	0	1	1	0	0	**1**	1	**3**	8	0	11	0	0	0	0	13
08:15 AM	0	**3**	**2**	**5**	0	0	0	0	1	**11**	0	**12**	0	0	0	0	**17**
08:30 AM	0	2	2	4	0	**1**	1	2	0	6	0	6	0	0	0	0	12
Total Volume	0	7	5	12	3	1	2	6	5	27	0	32	0	0	0	0	50
% App. Total	0	58.3	41.7		50	16.7	33.3		15.6	84.4	0		0	0	0		
PHF	.000	.583	.625	.600	.250	.250	.500	.500	.417	.614	.000	.667	.000	.000	.000	.000	.735

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	2	0	2	**3**	0	0	**3**	1	2	0	3	0	0	0	0
+15 mins.	0	0	1	1	0	0	**1**	1	**3**	8	0	11	0	0	0	0
+30 mins.	0	**3**	**2**	**5**	0	0	0	0	1	**11**	0	**12**	0	0	0	0
+45 mins.	0	2	2	4	0	**1**	1	2	0	6	0	6	0	0	0	0
Total Volume	0	7	5	12	3	1	2	6	5	27	0	32	0	0	0	0
% App. Total	0	58.3	41.7		50	16.7	33.3		15.6	84.4	0		0	0	0	
PHF	.000	.583	.625	.600	.250	.250	.500	.500	.417	.614	.000	.667	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

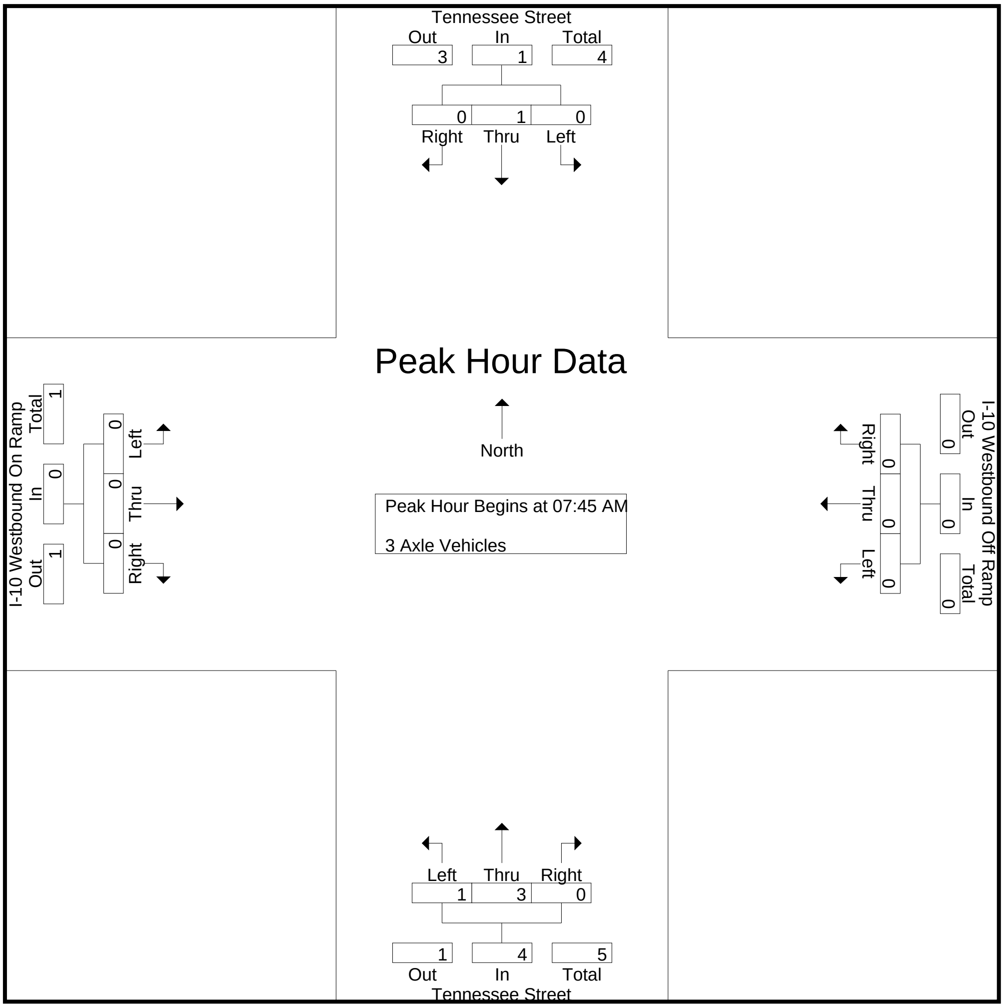
	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:30 AM	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	3	0	3	0	0	0	0	1	3	0	4	0	0	0	0	7
08:00 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	1	2	0	3	0	0	0	0	5
Grand Total	0	5	0	5	0	0	0	0	2	5	0	7	0	0	0	0	12
Apprch %	0	100	0		0	0	0		28.6	71.4	0		0	0	0		
Total %	0	41.7	0	41.7	0	0	0	0	16.7	41.7	0	58.3	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	**1**	1	0	**2**	0	0	0	0	**2**
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	**1**	0	**1**	0	0	0	0	0	1	0	1	0	0	0	0	2
Total Volume	0	1	0	1	0	0	0	0	1	3	0	4	0	0	0	0	5
% App. Total	0	100	0		0	0	0		25	75	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.750	.000	.500	.000	.000	.000	.000	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	**1**	1	0	**2**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	1	3	0	4	0	0	0	0
% App. Total	0	100	0		0	0	0		25	75	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.750	.000	.500	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

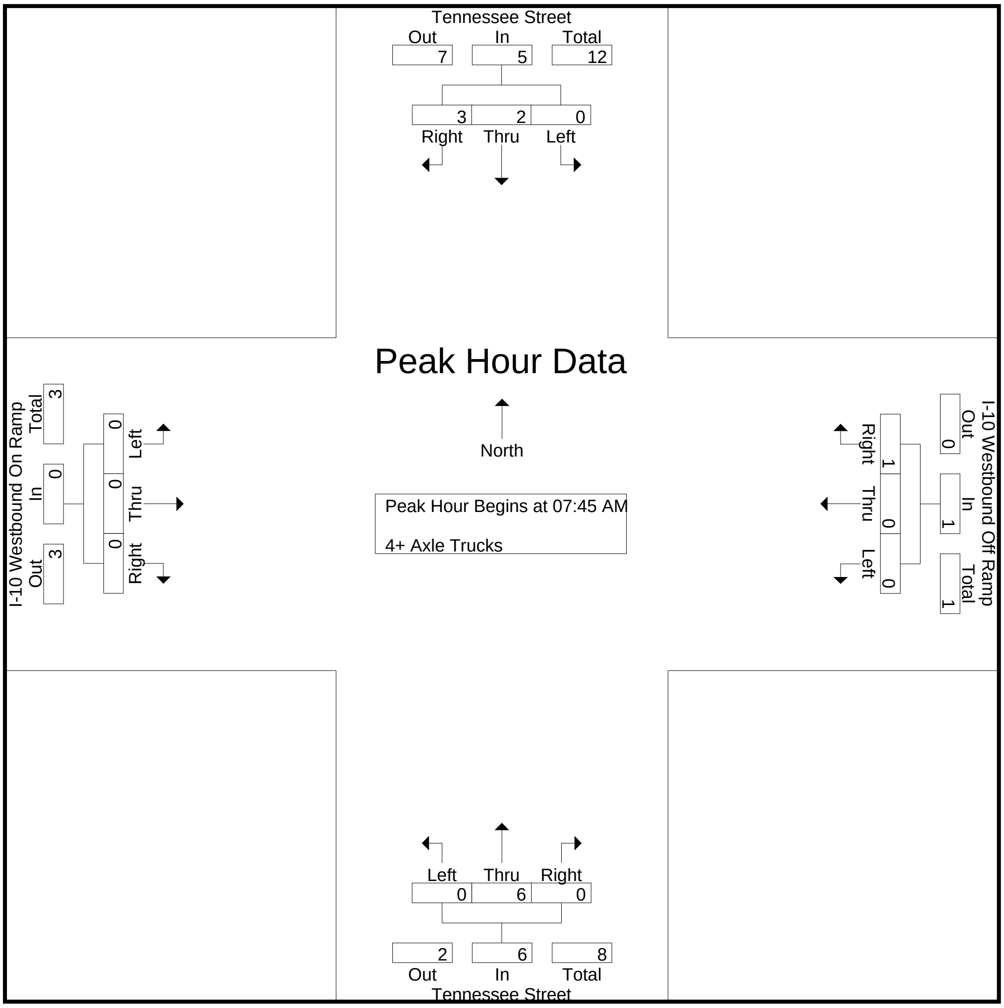
	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	2	3	0	5	0	0	0	0	6
08:00 AM	0	1	3	4	0	0	0	0	0	5	0	5	0	0	0	0	9
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
08:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	4	6	0	0	1	1	0	6	0	6	0	0	0	0	13
Grand Total	0	2	5	7	0	0	1	1	2	9	0	11	0	0	0	0	19
Apprch %	0	28.6	71.4		0	0	100		18.2	81.8	0		0	0	0		
Total %	0	10.5	26.3	36.8	0	0	5.3	5.3	10.5	47.4	0	57.9	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	**1**	**3**	**4**	0	0	0	0	0	**5**	0	**5**	0	0	0	0	**9**
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	**1**	**1**	0	1	0	1	0	0	0	0	2
Total Volume	0	2	3	5	0	0	1	1	0	6	0	6	0	0	0	0	12
% App. Total	0	40	60		0	0	100		0	100	0		0	0	0		
PHF	.000	.500	.250	.313	.000	.000	.250	.250	.000	.300	.000	.300	.000	.000	.000	.000	.333

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	**3**	**4**	0	0	0	0	0	**5**	0	**5**	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	**1**	0	1	0	1	0	0	0	0
Total Volume	0	2	3	5	0	0	1	1	0	6	0	6	0	0	0	0
% App. Total	0	40	60		0	0	100		0	100	0		0	0	0	
PHF	.000	.500	.250	.313	.000	.000	.250	.250	.000	.300	.000	.300	.000	.000	.000	.000

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

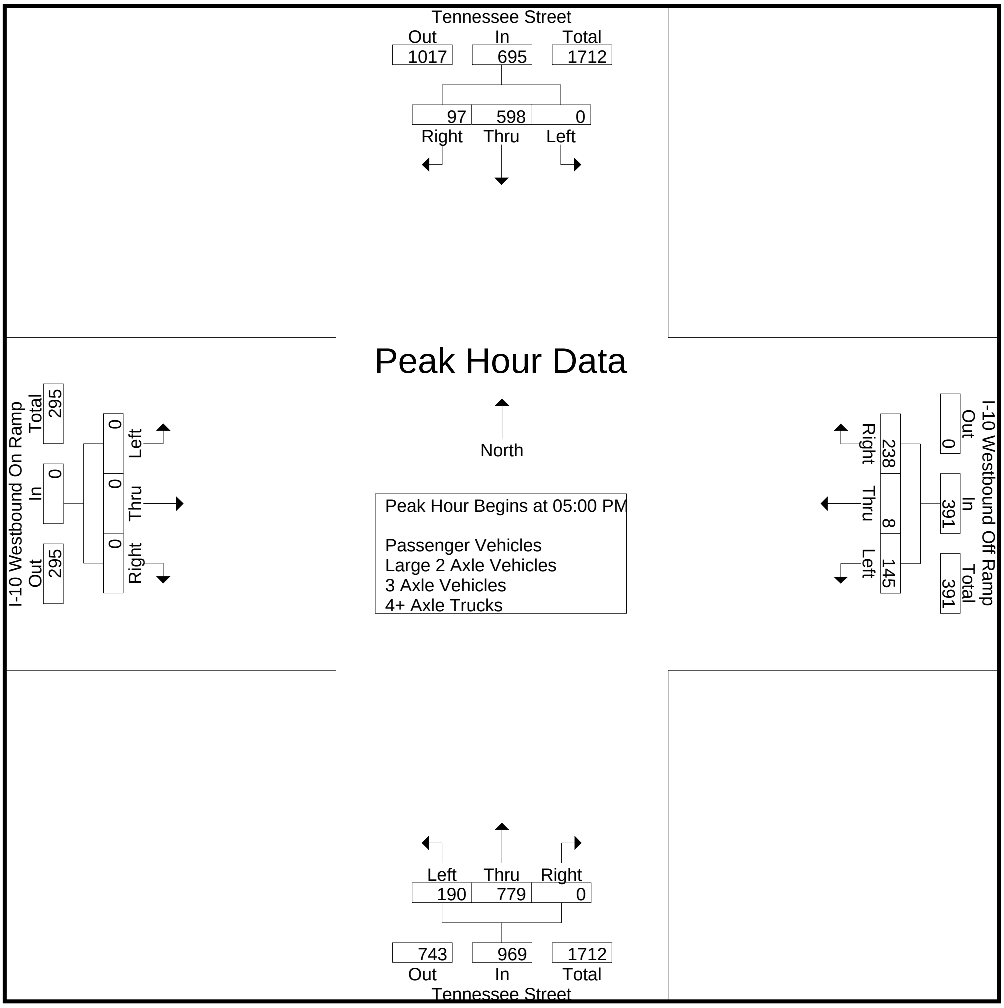
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	137	30	167	34	4	42	80	44	164	0	208	0	0	0	0	455
04:15 PM	0	132	19	151	37	2	66	105	52	161	0	213	0	0	0	0	469
04:30 PM	0	116	25	141	30	1	47	78	48	170	0	218	0	0	0	0	437
04:45 PM	0	152	24	176	37	4	61	102	52	161	0	213	0	0	0	0	491
Total	0	537	98	635	138	11	216	365	196	656	0	852	0	0	0	0	1852
05:00 PM	0	137	22	159	36	1	53	90	40	191	0	231	0	0	0	0	480
05:15 PM	0	159	26	185	37	3	60	100	66	211	0	277	0	0	0	0	562
05:30 PM	0	144	26	170	34	2	64	100	46	200	0	246	0	0	0	0	516
05:45 PM	0	158	23	181	38	2	61	101	38	177	0	215	0	0	0	0	497
Total	0	598	97	695	145	8	238	391	190	779	0	969	0	0	0	0	2055
Grand Total	0	1135	195	1330	283	19	454	756	386	1435	0	1821	0	0	0	0	3907
Apprch %	0	85.3	14.7		37.4	2.5	60.1		21.2	78.8	0		0	0	0		
Total %	0	29.1	5	34	7.2	0.5	11.6	19.3	9.9	36.7	0	46.6	0	0	0	0	
Passenger Vehicles	0	1122	192	1314	279	19	449	747	381	1413	0	1794	0	0	0	0	3855
% Passenger Vehicles	0	98.9	98.5	98.8	98.6	100	98.9	98.8	98.7	98.5	0	98.5	0	0	0	0	98.7
Large 2 Axle Vehicles	0	9	2	11	3	0	5	8	4	12	0	16	0	0	0	0	35
% Large 2 Axle Vehicles	0	0.8	1	0.8	1.1	0	1.1	1.1	1	0.8	0	0.9	0	0	0	0	0.9
3 Axle Vehicles	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
% 3 Axle Vehicles	0	0.1	0	0.1	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0.1
4+ Axle Trucks	0	3	1	4	1	0	0	1	1	7	0	8	0	0	0	0	13
% 4+ Axle Trucks	0	0.3	0.5	0.3	0.4	0	0	0.1	0.3	0.5	0	0.4	0	0	0	0	0.3

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	137	22	159	36	1	53	90	40	191	0	231	0	0	0	0	480
05:15 PM	0	**159**	**26**	**185**	37	**3**	60	100	**66**	**211**	0	**277**	0	0	0	0	**562**
05:30 PM	0	144	26	170	34	2	**64**	100	46	200	0	246	0	0	0	0	516
05:45 PM	0	158	23	181	**38**	2	61	**101**	38	177	0	215	0	0	0	0	497
Total Volume	0	598	97	695	145	8	238	391	190	779	0	969	0	0	0	0	2055
% App. Total	0	86	14		37.1	2	60.9		19.6	80.4	0		0	0	0		
PHF	.000	.940	.933	.939	.954	.667	.930	.968	.720	.923	.000	.875	.000	.000	.000	.000	.914

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				05:00 PM				04:00 PM			
+0 mins.	0	137	22	159	**37**	**4**	61	**102**	40	191	0	231	0	0	0	0
+15 mins.	0	**159**	**26**	**185**	36	1	53	90	**66**	**211**	0	**277**	0	0	0	0
+30 mins.	0	144	26	170	37	3	60	100	46	200	0	246	0	0	0	0
+45 mins.	0	158	23	181	34	2	**64**	100	38	177	0	215	0	0	0	0
Total Volume	0	598	97	695	144	10	238	392	190	779	0	969	0	0	0	0
% App. Total	0	86	14		36.7	2.6	60.7		19.6	80.4	0		0	0	0	
PHF	.000	.940	.933	.939	.973	.625	.930	.961	.720	.923	.000	.875	.000	.000	.000	.000

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

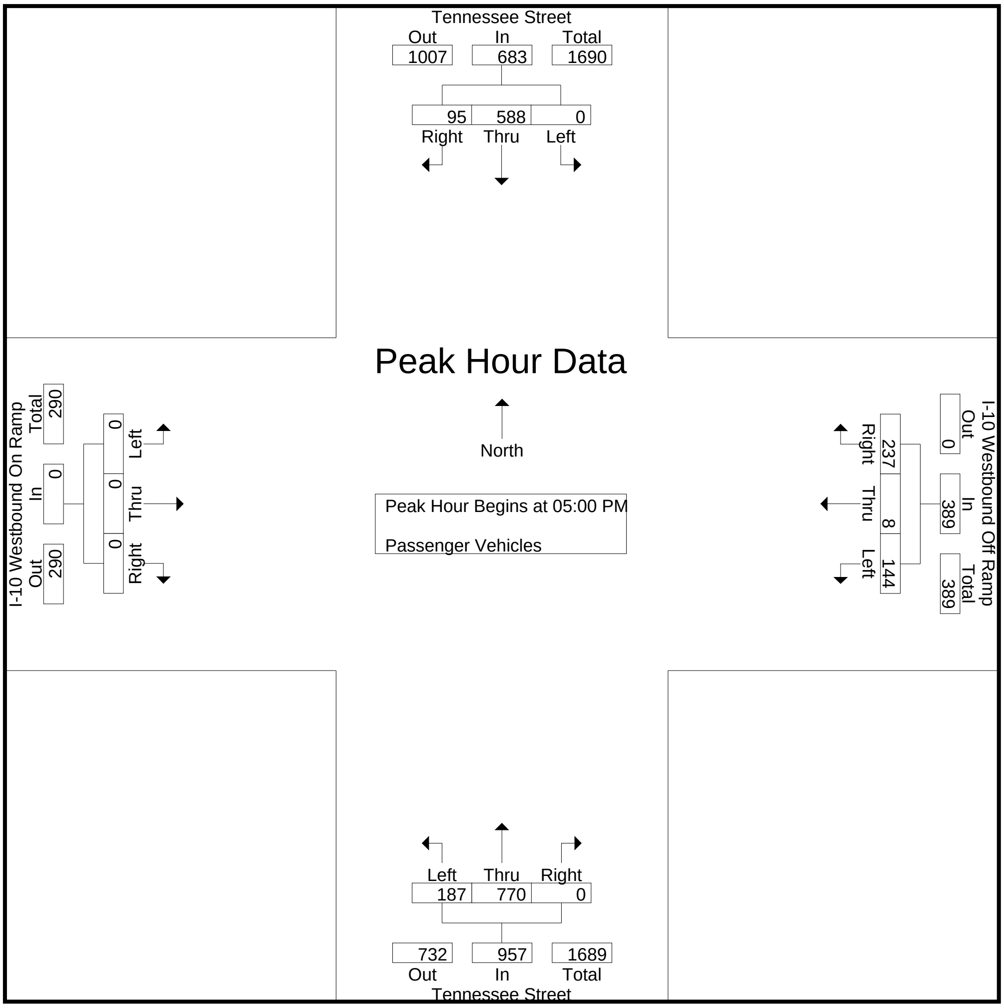
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	136	29	165	33	4	41	78	43	163	0	206	0	0	0	0	449
04:15 PM	0	132	19	151	36	2	64	102	51	158	0	209	0	0	0	0	462
04:30 PM	0	115	25	140	29	1	47	77	48	165	0	213	0	0	0	0	430
04:45 PM	0	151	24	175	37	4	60	101	52	157	0	209	0	0	0	0	485
Total	0	534	97	631	135	11	212	358	194	643	0	837	0	0	0	0	1826
05:00 PM	0	134	22	156	36	1	53	90	40	190	0	230	0	0	0	0	476
05:15 PM	0	156	25	181	37	3	60	100	66	208	0	274	0	0	0	0	555
05:30 PM	0	143	26	169	34	2	63	99	45	198	0	243	0	0	0	0	511
05:45 PM	0	155	22	177	37	2	61	100	36	174	0	210	0	0	0	0	487
Total	0	588	95	683	144	8	237	389	187	770	0	957	0	0	0	0	2029
Grand Total	0	1122	192	1314	279	19	449	747	381	1413	0	1794	0	0	0	0	3855
Apprch %	0	85.4	14.6		37.3	2.5	60.1		21.2	78.8	0		0	0	0		
Total %	0	29.1	5	34.1	7.2	0.5	11.6	19.4	9.9	36.7	0	46.5	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	134	22	156	36	1	53	90	40	190	0	230	0	0	0	0	476
05:15 PM	0	**156**	25	**181**	**37**	**3**	60	**100**	**66**	**208**	0	**274**	0	0	0	0	**555**
05:30 PM	0	143	**26**	169	34	2	**63**	99	45	198	0	243	0	0	0	0	511
05:45 PM	0	155	22	177	37	2	61	100	36	174	0	210	0	0	0	0	487
Total Volume	0	588	95	683	144	8	237	389	187	770	0	957	0	0	0	0	2029
% App. Total	0	86.1	13.9		37	2.1	60.9		19.5	80.5	0		0	0	0		
PHF	.000	.942	.913	.943	.973	.667	.940	.973	.708	.925	.000	.873	.000	.000	.000	.000	.914

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	134	22	156	36	1	53	90	40	190	0	230	0	0	0	0
+15 mins.	0	**156**	25	**181**	**37**	**3**	60	**100**	**66**	**208**	0	**274**	0	0	0	0
+30 mins.	0	143	**26**	169	34	2	**63**	99	45	198	0	243	0	0	0	0
+45 mins.	0	155	22	177	37	2	61	100	36	174	0	210	0	0	0	0
Total Volume	0	588	95	683	144	8	237	389	187	770	0	957	0	0	0	0
% App. Total	0	86.1	13.9		37	2.1	60.9		19.5	80.5	0		0	0	0	
PHF	.000	.942	.913	.943	.973	.667	.940	.973	.708	.925	.000	.873	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

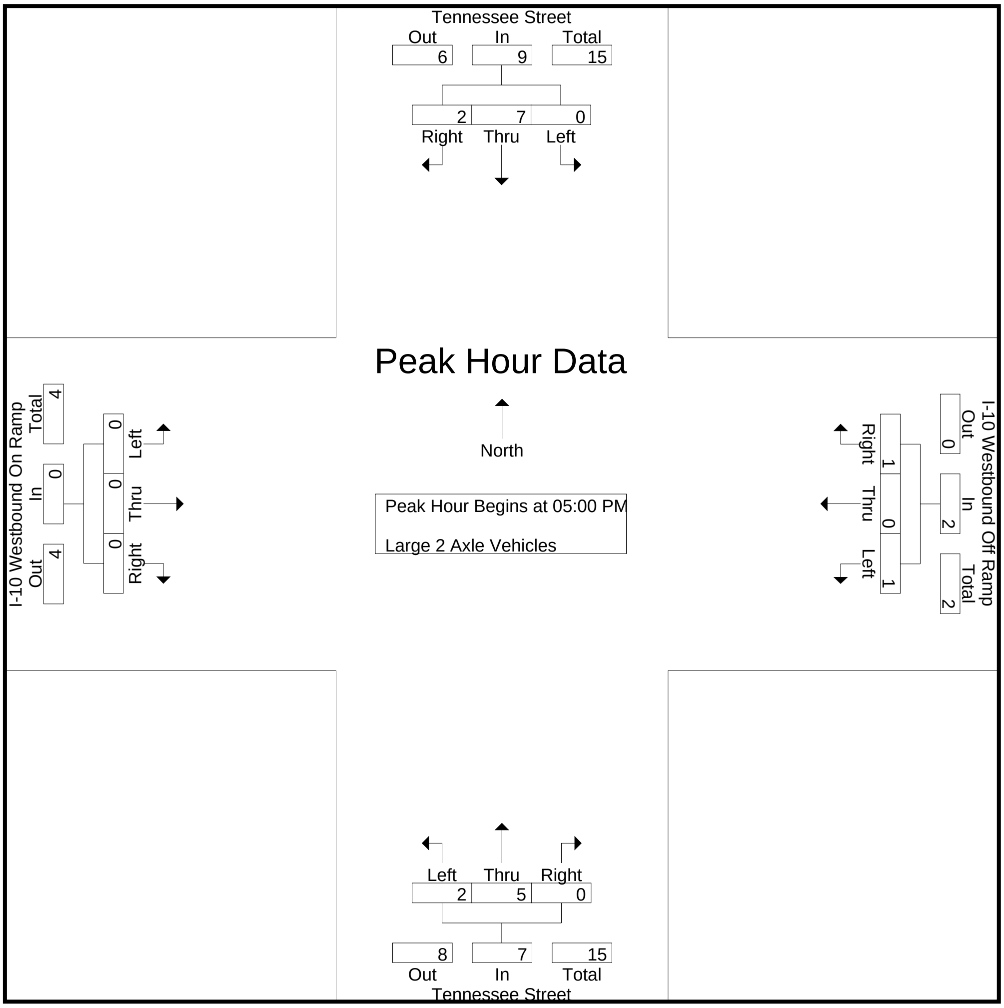
	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	1	1	1	0	2	0	0	0	0	3
04:15 PM	0	0	0	0	1	0	2	3	1	3	0	4	0	0	0	0	7
04:30 PM	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
04:45 PM	0	1	0	1	0	0	1	1	0	2	0	2	0	0	0	0	4
Total	0	2	0	2	2	0	4	6	2	7	0	9	0	0	0	0	17
05:00 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
05:15 PM	0	2	1	3	0	0	0	0	0	1	0	1	0	0	0	0	4
05:30 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
05:45 PM	0	2	1	3	1	0	0	1	2	3	0	5	0	0	0	0	9
Total	0	7	2	9	1	0	1	2	2	5	0	7	0	0	0	0	18
Grand Total	0	9	2	11	3	0	5	8	4	12	0	16	0	0	0	0	35
Apprch %	0	81.8	18.2		37.5	0	62.5		25	75	0		0	0	0		
Total %	0	25.7	5.7	31.4	8.6	0	14.3	22.9	11.4	34.3	0	45.7	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**2**	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
05:15 PM	0	2	**1**	**3**	0	0	0	0	0	1	0	1	0	0	0	0	4
05:30 PM	0	1	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0	2
05:45 PM	0	2	1	3	**1**	0	0	1	**2**	**3**	0	**5**	0	0	0	0	**9**
Total Volume	0	7	2	9	1	0	1	2	2	5	0	7	0	0	0	0	18
% App. Total	0	77.8	22.2		50	0	50		28.6	71.4	0		0	0	0		
PHF	.000	.875	.500	.750	.250	.000	.250	.500	.250	.417	.000	.350	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**2**	0	2	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	2	**1**	**3**	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	1	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+45 mins.	0	2	1	3	**1**	0	0	1	**2**	**3**	0	**5**	0	0	0	0
Total Volume	0	7	2	9	1	0	1	2	2	5	0	7	0	0	0	0
% App. Total	0	77.8	22.2		50	0	50		28.6	71.4	0		0	0	0	
PHF	.000	.875	.500	.750	.250	.000	.250	.500	.250	.417	.000	.350	.000	.000	.000	.000

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

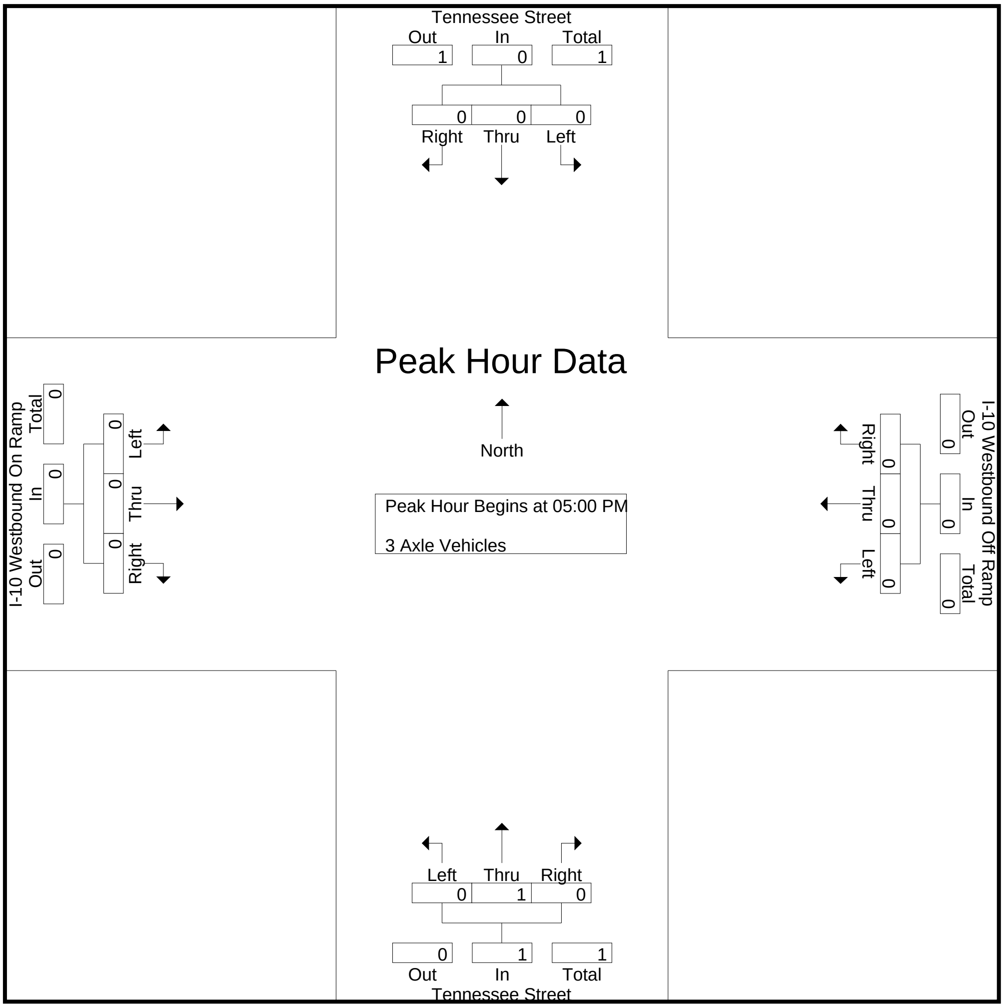
	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	25	0	25	0	0	0	0	0	75	0	75	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

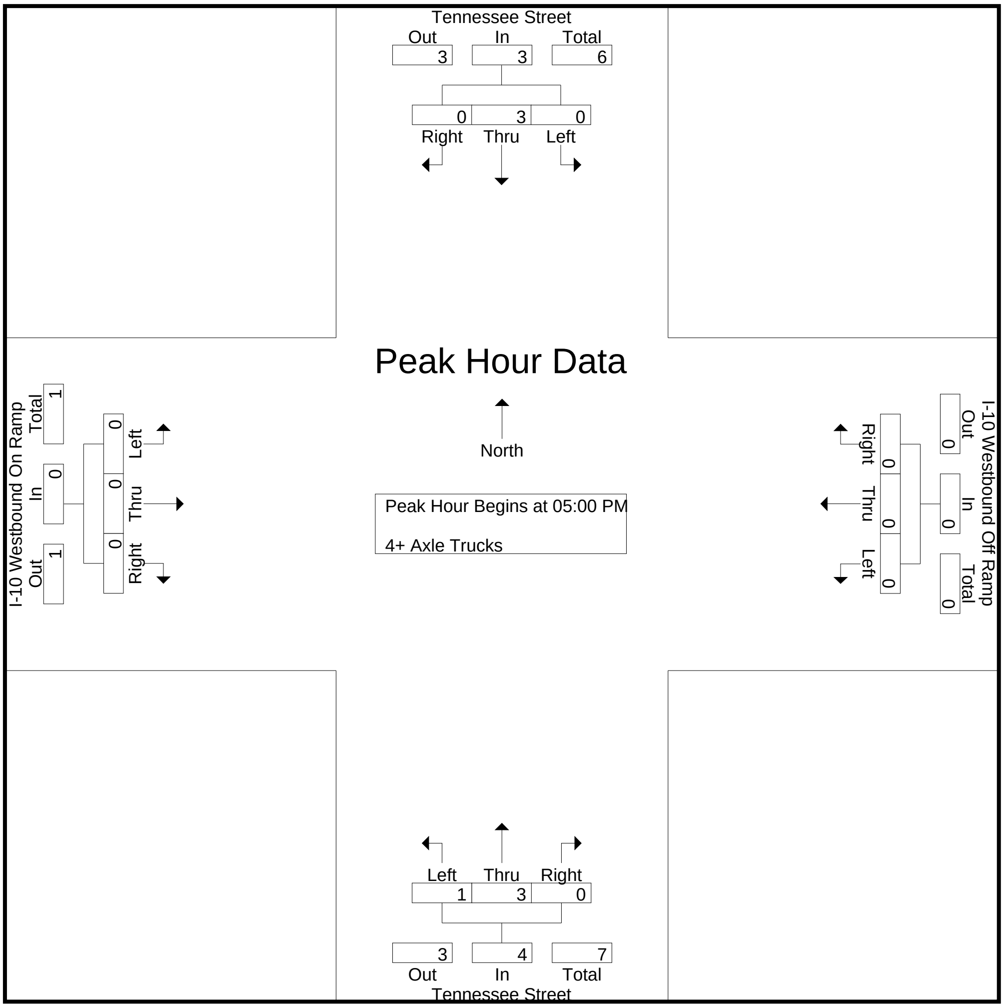
	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	0	1	1	1	0	0	1	0	4	0	4	0	0	0	0	6
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
05:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	3	0	0	0	0	1	3	0	4	0	0	0	0	7
Grand Total	0	3	1	4	1	0	0	1	1	7	0	8	0	0	0	0	13
Apprch %	0	75	25		100	0	0		12.5	87.5	0		0	0	0		
Total %	0	23.1	7.7	30.8	7.7	0	0	7.7	7.7	53.8	0	61.5	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**3**
05:30 PM	0	0	0	0	0	0	0	0	**1**	1	0	2	0	0	0	0	2
05:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	3	0	3	0	0	0	0	1	3	0	4	0	0	0	0	7
% App. Total	0	100	0		0	0	0		25	75	0		0	0	0		
PHF	.000	.750	.000	.750	.000	.000	.000	.000	.250	.375	.000	.500	.000	.000	.000	.000	.583

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 09_RED_Ten_10W PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	**1**	1	0	2	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	3	0	3	0	0	0	0	1	3	0	4	0	0	0	0
% App. Total	0	100	0		0	0	0		25	75	0		0	0	0	
PHF	.000	.750	.000	.750	.000	.000	.000	.000	.250	.375	.000	.500	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

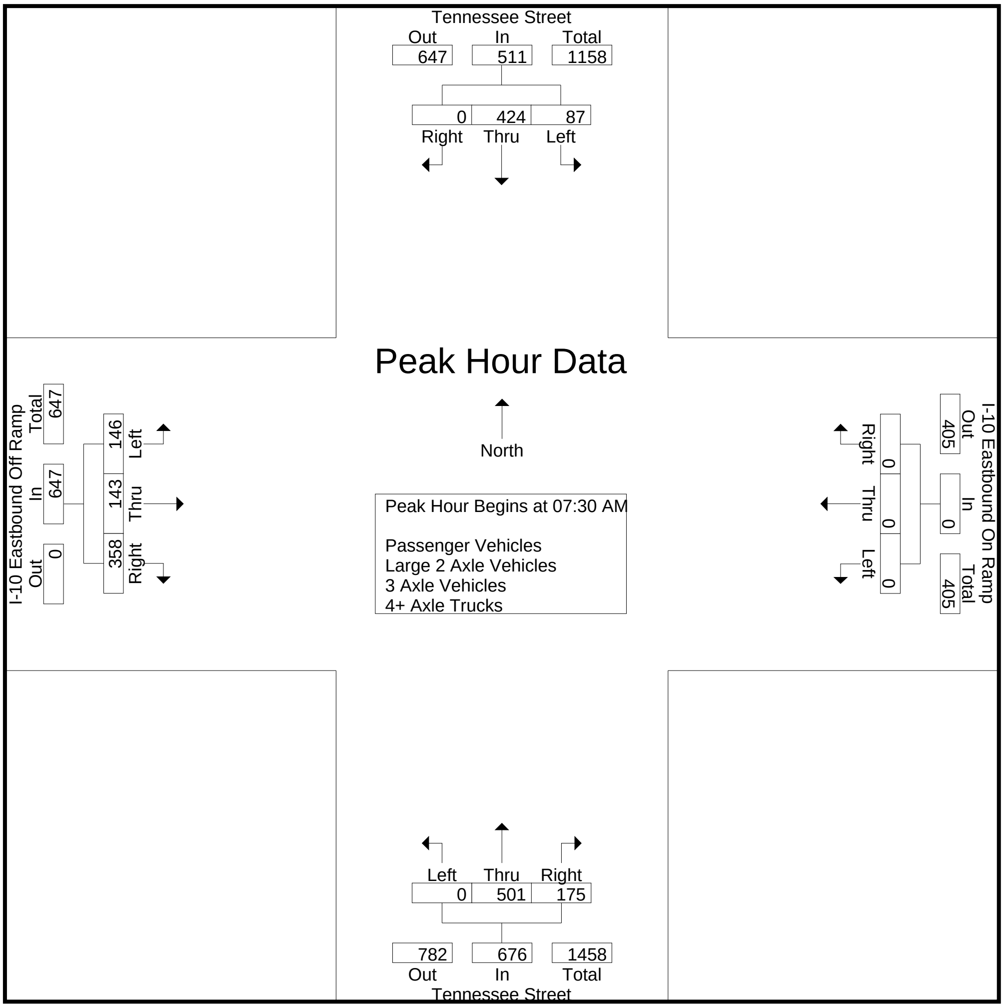
	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	77	0	86	0	0	0	0	0	99	19	118	38	34	62	134	338
07:15 AM	14	92	0	106	0	0	0	0	0	117	24	141	32	29	78	139	386
07:30 AM	17	102	0	119	0	0	0	0	0	104	46	150	39	31	90	160	429
07:45 AM	20	136	0	156	0	0	0	0	0	109	46	155	37	32	93	162	473
Total	60	407	0	467	0	0	0	0	0	429	135	564	146	126	323	595	1626
08:00 AM	25	106	0	131	0	0	0	0	0	139	48	187	32	44	92	168	486
08:15 AM	25	80	0	105	0	0	0	0	0	149	35	184	38	36	83	157	446
08:30 AM	19	96	0	115	0	0	0	0	0	127	32	159	23	42	75	140	414
08:45 AM	24	109	0	133	0	0	0	0	0	106	23	129	25	40	77	142	404
Total	93	391	0	484	0	0	0	0	0	521	138	659	118	162	327	607	1750
Grand Total	153	798	0	951	0	0	0	0	0	950	273	1223	264	288	650	1202	3376
Apprch %	16.1	83.9	0		0	0	0		0	77.7	22.3		22	24	54.1		
Total %	4.5	23.6	0	28.2	0	0	0	0	0	28.1	8.1	36.2	7.8	8.5	19.3	35.6	
Passenger Vehicles	145	780	0	925	0	0	0	0	0	905	258	1163	246	269	627	1142	3230
% Passenger Vehicles	94.8	97.7	0	97.3	0	0	0	0	0	95.3	94.5	95.1	93.2	93.4	96.5	95	95.7
Large 2 Axle Vehicles	5	14	0	19	0	0	0	0	0	34	14	48	13	14	19	46	113
% Large 2 Axle Vehicles	3.3	1.8	0	2	0	0	0	0	0	3.6	5.1	3.9	4.9	4.9	2.9	3.8	3.3
3 Axle Vehicles	1	3	0	4	0	0	0	0	0	7	0	7	0	3	4	7	18
% 3 Axle Vehicles	0.7	0.4	0	0.4	0	0	0	0	0	0.7	0	0.6	0	1	0.6	0.6	0.5
4+ Axle Trucks	2	1	0	3	0	0	0	0	0	4	1	5	5	2	0	7	15
% 4+ Axle Trucks	1.3	0.1	0	0.3	0	0	0	0	0	0.4	0.4	0.4	1.9	0.7	0	0.6	0.4

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	17	102	0	119	0	0	0	0	0	104	46	150	**39**	31	90	160	429
07:45 AM	20	**136**	0	**156**	0	0	0	0	0	109	46	155	37	32	**93**	162	473
08:00 AM	**25**	106	0	131	0	0	0	0	0	139	**48**	**187**	32	**44**	92	**168**	**486**
08:15 AM	25	80	0	105	0	0	0	0	0	**149**	35	184	38	36	83	157	446
Total Volume	87	424	0	511	0	0	0	0	0	501	175	676	146	143	358	647	1834
% App. Total	17	83	0		0	0	0		0	74.1	25.9		22.6	22.1	55.3		
PHF	.870	.779	.000	.819	.000	.000	.000	.000	.000	.841	.911	.904	.936	.813	.962	.963	.943

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:45 AM				07:30 AM			
+0 mins.	14	92	0	106	0	0	0	0	0	109	46	155	**39**	31	90	160
+15 mins.	17	102	0	119	0	0	0	0	0	139	**48**	**187**	37	32	**93**	162
+30 mins.	20	**136**	0	**156**	0	0	0	0	0	**149**	35	184	32	**44**	92	**168**
+45 mins.	**25**	106	0	131	0	0	0	0	0	127	32	159	38	36	83	157
Total Volume	76	436	0	512	0	0	0	0	0	524	161	685	146	143	358	647
% App. Total	14.8	85.2	0		0	0	0		0	76.5	23.5		22.6	22.1	55.3	
PHF	.760	.801	.000	.821	.000	.000	.000	.000	.000	.879	.839	.916	.936	.813	.962	.963

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

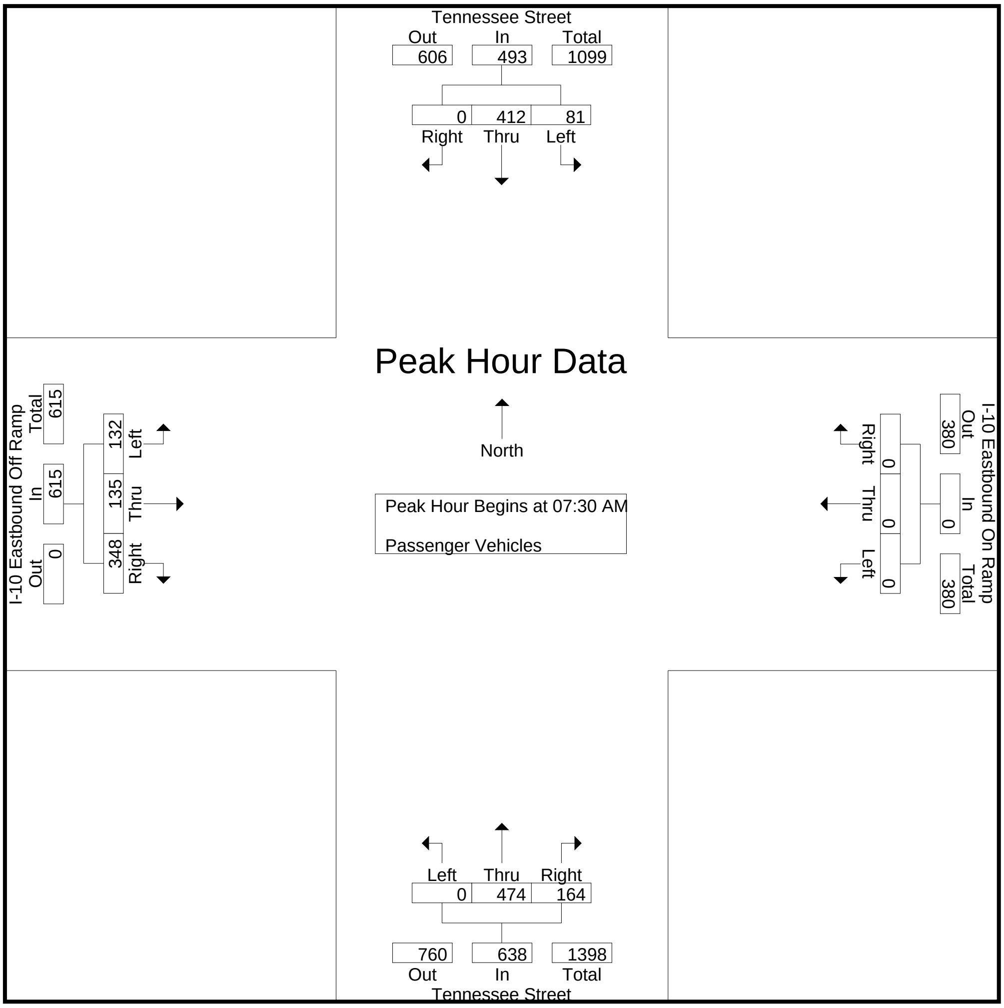
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	76	0	85	0	0	0	0	0	96	19	115	37	31	61	129	329
07:15 AM	13	92	0	105	0	0	0	0	0	109	23	132	32	27	75	134	371
07:30 AM	17	98	0	115	0	0	0	0	0	99	43	142	34	30	90	154	411
07:45 AM	18	130	0	148	0	0	0	0	0	105	41	146	35	30	90	155	449
Total	57	396	0	453	0	0	0	0	0	409	126	535	138	118	316	572	1560
08:00 AM	23	106	0	129	0	0	0	0	0	131	46	177	27	43	91	161	467
08:15 AM	23	78	0	101	0	0	0	0	0	139	34	173	36	32	77	145	419
08:30 AM	18	95	0	113	0	0	0	0	0	120	32	152	22	38	70	130	395
08:45 AM	24	105	0	129	0	0	0	0	0	106	20	126	23	38	73	134	389
Total	88	384	0	472	0	0	0	0	0	496	132	628	108	151	311	570	1670
Grand Total	145	780	0	925	0	0	0	0	0	905	258	1163	246	269	627	1142	3230
Apprch %	15.7	84.3	0		0	0	0		0	77.8	22.2		21.5	23.6	54.9		
Total %	4.5	24.1	0	28.6	0	0	0	0	0	28	8	36	7.6	8.3	19.4	35.4	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	17	98	0	115	0	0	0	0	0	99	43	142	34	30	90	154	411
07:45 AM	18	**130**	0	**148**	0	0	0	0	0	105	41	146	35	30	90	155	449
08:00 AM	**23**	106	0	129	0	0	0	0	0	131	**46**	**177**	27	**43**	**91**	**161**	**467**
08:15 AM	23	78	0	101	0	0	0	0	0	**139**	34	173	**36**	32	77	145	419
Total Volume	81	412	0	493	0	0	0	0	0	474	164	638	132	135	348	615	1746
% App. Total	16.4	83.6	0		0	0	0		0	74.3	25.7		21.5	22	56.6		
PHF	.880	.792	.000	.833	.000	.000	.000	.000	.000	.853	.891	.901	.917	.785	.956	.955	.935

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	17	98	0	115	0	0	0	0	0	99	43	142	34	30	90	154
+15 mins.	18	**130**	0	**148**	0	0	0	0	0	105	41	146	35	30	90	155
+30 mins.	**23**	106	0	129	0	0	0	0	0	131	**46**	**177**	27	**43**	**91**	**161**
+45 mins.	23	78	0	101	0	0	0	0	0	**139**	34	173	**36**	32	77	145
Total Volume	81	412	0	493	0	0	0	0	0	474	164	638	132	135	348	615
% App. Total	16.4	83.6	0		0	0	0		0	74.3	25.7		21.5	22	56.6	
PHF	.880	.792	.000	.833	.000	.000	.000	.000	.000	.853	.891	.901	.917	.785	.956	.955

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

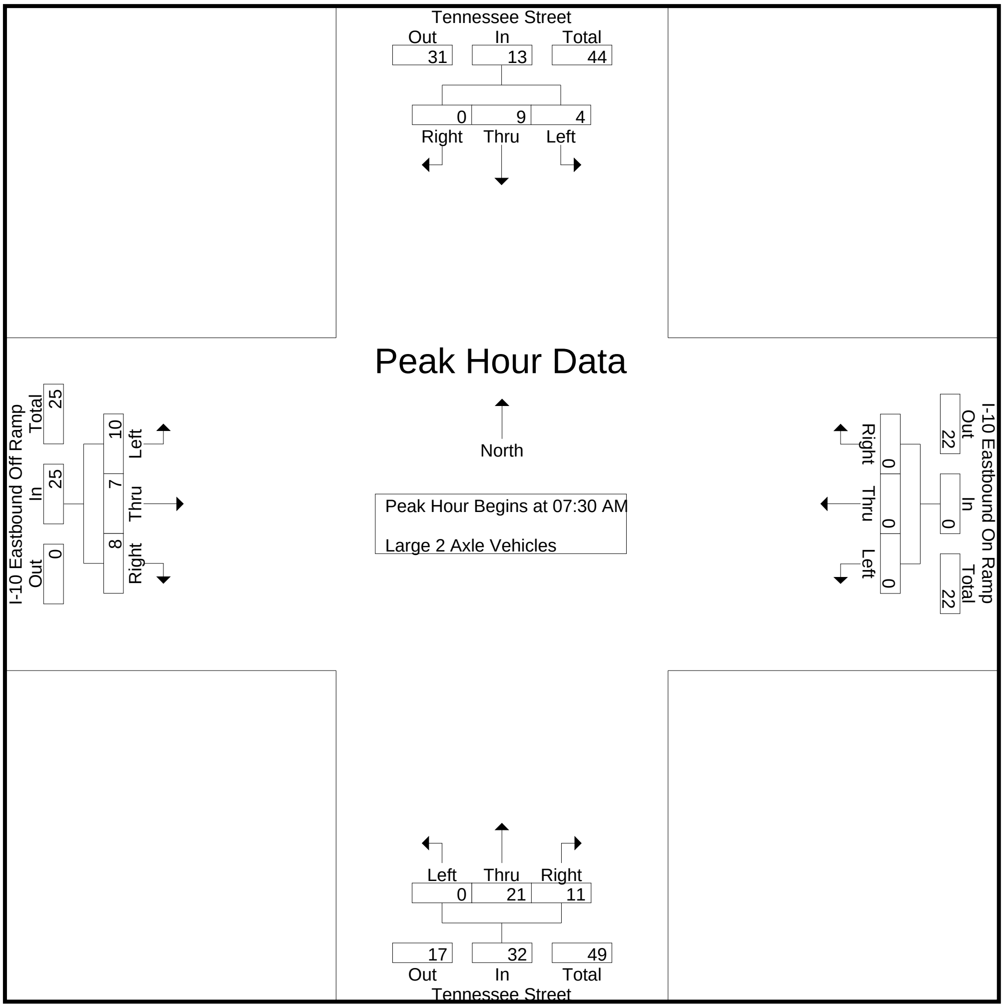
Groups Printed- Large 2 Axle Vehicles

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	3	0	3	1	1	0	2	6
07:15 AM	1	0	0	1	0	0	0	0	0	4	1	5	0	2	3	5	11
07:30 AM	0	2	0	2	0	0	0	0	0	3	3	6	5	1	0	6	14
07:45 AM	1	6	0	7	0	0	0	0	0	3	5	8	1	2	2	5	20
Total	2	9	0	11	0	0	0	0	0	13	9	22	7	6	5	18	51
08:00 AM	1	0	0	1	0	0	0	0	0	5	2	7	2	1	1	4	12
08:15 AM	2	1	0	3	0	0	0	0	0	10	1	11	2	3	5	10	24
08:30 AM	0	1	0	1	0	0	0	0	0	6	0	6	0	3	5	8	15
08:45 AM	0	3	0	3	0	0	0	0	0	0	2	2	2	1	3	6	11
Total	3	5	0	8	0	0	0	0	0	21	5	26	6	8	14	28	62
Grand Total	5	14	0	19	0	0	0	0	0	34	14	48	13	14	19	46	113
Apprch %	26.3	73.7	0		0	0	0		0	70.8	29.2		28.3	30.4	41.3		
Total %	4.4	12.4	0	16.8	0	0	0	0	0	30.1	12.4	42.5	11.5	12.4	16.8	40.7	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	2	0	2	0	0	0	0	0	3	3	6	**5**	1	0	6	14
07:45 AM	1	**6**	0	**7**	0	0	0	0	0	3	**5**	8	1	2	2	5	20
08:00 AM	1	0	0	1	0	0	0	0	0	5	2	7	2	1	1	4	12
08:15 AM	**2**	1	0	3	0	0	0	0	0	**10**	1	**11**	2	**3**	**5**	**10**	**24**
Total Volume	4	9	0	13	0	0	0	0	0	21	11	32	10	7	8	25	70
% App. Total	30.8	69.2	0		0	0	0		0	65.6	34.4		40	28	32		
PHF	.500	.375	.000	.464	.000	.000	.000	.000	.000	.525	.550	.727	.500	.583	.400	.625	.729

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	2	0	2	0	0	0	0	0	3	3	6	**5**	1	0	6
+15 mins.	1	**6**	0	**7**	0	0	0	0	0	3	**5**	8	1	2	2	5
+30 mins.	1	0	0	1	0	0	0	0	0	5	2	7	2	1	1	4
+45 mins.	**2**	1	0	3	0	0	0	0	0	**10**	1	**11**	2	**3**	**5**	**10**
Total Volume	4	9	0	13	0	0	0	0	0	21	11	32	10	7	8	25
% App. Total	30.8	69.2	0		0	0	0		0	65.6	34.4		40	28	32	
PHF	.500	.375	.000	.464	.000	.000	.000	.000	.000	.525	.550	.727	.500	.583	.400	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

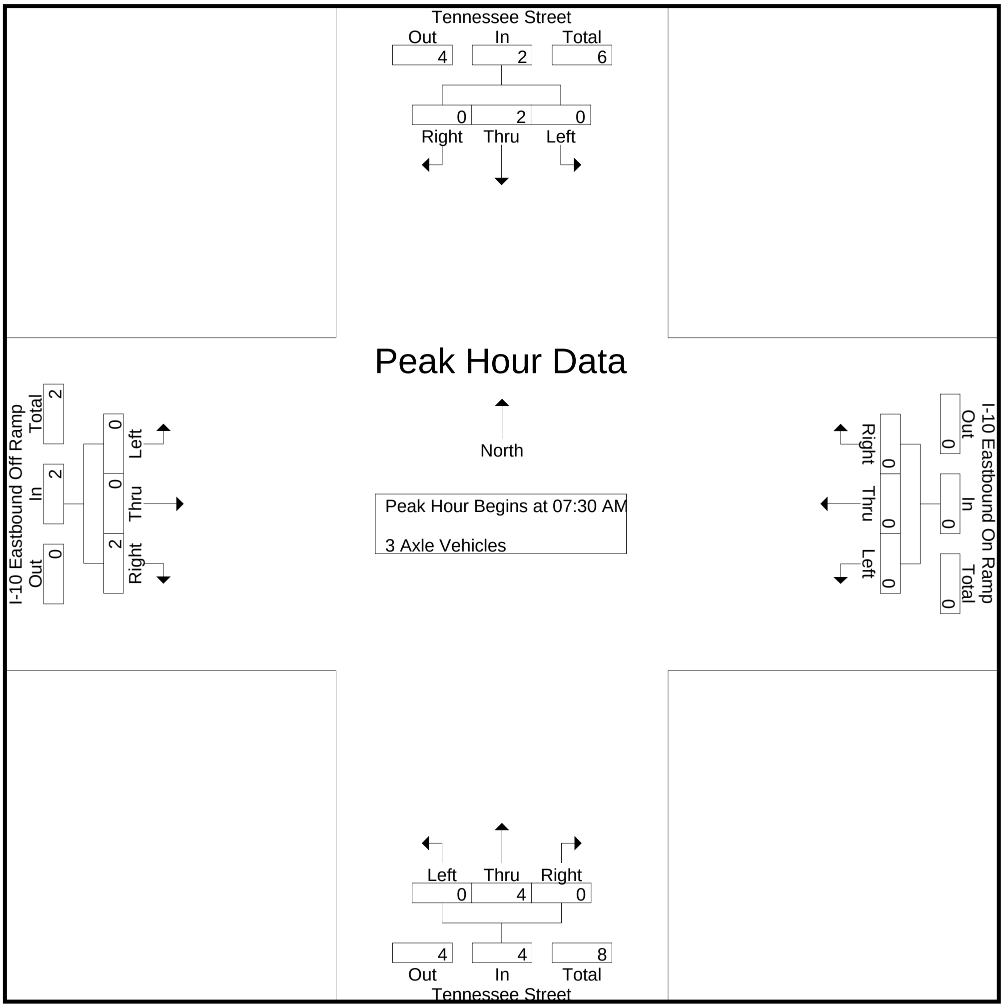
	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:30 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2
Total	0	2	0	2	0	0	0	0	0	4	0	4	0	1	2	3	9
08:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:30 AM	1	0	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	2	3
Total	1	1	0	2	0	0	0	0	0	3	0	3	0	2	2	4	9
Grand Total	1	3	0	4	0	0	0	0	0	7	0	7	0	3	4	7	18
Apprch %	25	75	0		0	0	0		0	100	0		0	42.9	57.1		
Total %	5.6	16.7	0	22.2	0	0	0	0	0	38.9	0	38.9	0	16.7	22.2	38.9	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**2**	0	**2**	0	0	0	0	0	1	0	1	0	0	0	0	**3**
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	**1**	**1**	2
08:00 AM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	2	0	2	0	0	0	0	0	4	0	4	0	0	2	2	8
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.500	.500	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	**2**	0	**2**	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	**1**	**1**
+30 mins.	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total Volume	0	2	0	2	0	0	0	0	0	4	0	4	0	0	2	2
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.500	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

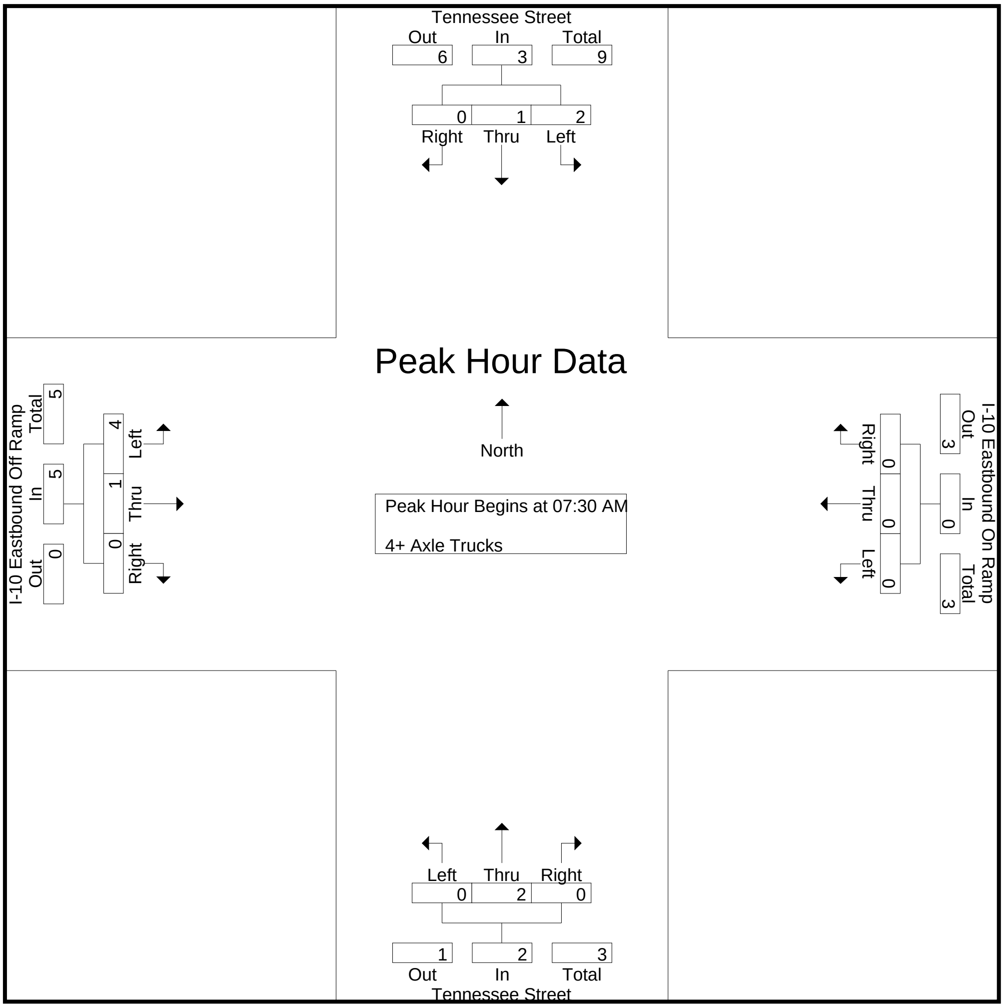
	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	1	0	0	1	0	0	0	0	0	3	0	3	1	1	0	2	6
08:00 AM	1	0	0	1	0	0	0	0	0	1	0	1	3	0	0	3	5
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	1	1	0	2	0	0	0	0	0	1	1	2	4	1	0	5	9
Grand Total	2	1	0	3	0	0	0	0	0	4	1	5	5	2	0	7	15
Apprch %	66.7	33.3	0		0	0	0		0	80	20		71.4	28.6	0		
Total %	13.3	6.7	0	20	0	0	0	0	0	26.7	6.7	33.3	33.3	13.3	0	46.7	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
07:45 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	1	0	0	1	2
08:00 AM	1	0	0	1	0	0	0	0	0	1	0	1	**3**	0	0	**3**	**5**
08:15 AM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	**1**	0	1	2
Total Volume	2	1	0	3	0	0	0	0	0	2	0	2	4	1	0	5	10
% App. Total	66.7	33.3	0		0	0	0		0	100	0		80	20	0		
PHF	.500	.250	.000	.750	.000	.000	.000	.000	.000	.500	.000	.500	.333	.250	.000	.417	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	**1**	0	0	**1**	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	1	0	0	1	0	0	0	0	0	1	0	1	**3**	0	0	**3**
+45 mins.	0	**1**	0	1	0	0	0	0	0	0	0	0	0	**1**	0	1
Total Volume	2	1	0	3	0	0	0	0	0	2	0	2	4	1	0	5
% App. Total	66.7	33.3	0		0	0	0		0	100	0		80	20	0	
PHF	.500	.250	.000	.750	.000	.000	.000	.000	.000	.500	.000	.500	.333	.250	.000	.417

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

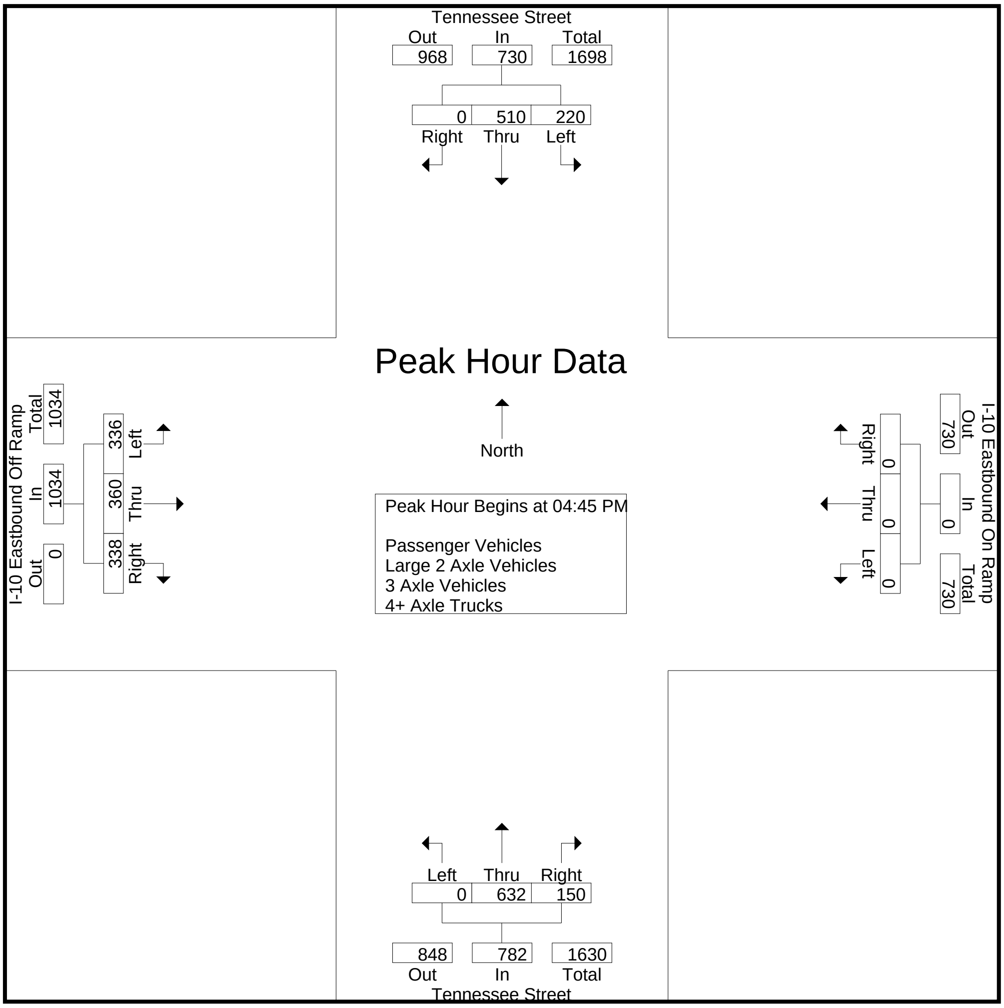
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	63	111	0	174	0	0	0	0	0	158	52	210	52	99	71	222	606
04:15 PM	53	115	0	168	0	0	0	0	0	137	52	189	74	85	85	244	601
04:30 PM	51	103	0	154	0	0	0	0	0	144	52	196	76	90	81	247	597
04:45 PM	48	135	0	183	0	0	0	0	0	131	40	171	80	82	95	257	611
Total	215	464	0	679	0	0	0	0	0	570	196	766	282	356	332	970	2415
05:00 PM	66	116	0	182	0	0	0	0	0	161	35	196	78	92	85	255	633
05:15 PM	52	135	0	187	0	0	0	0	0	170	38	208	100	105	87	292	687
05:30 PM	54	124	0	178	0	0	0	0	0	170	37	207	78	81	71	230	615
05:45 PM	58	136	0	194	0	0	0	0	0	135	28	163	75	43	82	200	557
Total	230	511	0	741	0	0	0	0	0	636	138	774	331	321	325	977	2492
Grand Total	445	975	0	1420	0	0	0	0	0	1206	334	1540	613	677	657	1947	4907
Apprch %	31.3	68.7	0		0	0	0		0	78.3	21.7		31.5	34.8	33.7		
Total %	9.1	19.9	0	28.9	0	0	0	0	0	24.6	6.8	31.4	12.5	13.8	13.4	39.7	
Passenger Vehicles	443	958	0	1401	0	0	0	0	0	1186	328	1514	601	672	644	1917	4832
% Passenger Vehicles	99.6	98.3	0	98.7	0	0	0	0	0	98.3	98.2	98.3	98	99.3	98	98.5	98.5
Large 2 Axle Vehicles	2	11	0	13	0	0	0	0	0	15	3	18	5	2	9	16	47
% Large 2 Axle Vehicles	0.4	1.1	0	0.9	0	0	0	0	0	1.2	0.9	1.2	0.8	0.3	1.4	0.8	1
3 Axle Vehicles	0	4	0	4	0	0	0	0	0	3	1	4	0	0	1	1	9
% 3 Axle Vehicles	0	0.4	0	0.3	0	0	0	0	0	0.2	0.3	0.3	0	0	0.2	0.1	0.2
4+ Axle Trucks	0	2	0	2	0	0	0	0	0	2	2	4	7	3	3	13	19
% 4+ Axle Trucks	0	0.2	0	0.1	0	0	0	0	0	0.2	0.6	0.3	1.1	0.4	0.5	0.7	0.4

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	48	**135**	0	183	0	0	0	0	0	131	**40**	171	80	82	**95**	257	611
05:00 PM	**66**	116	0	182	0	0	0	0	0	161	35	196	78	92	85	255	633
05:15 PM	52	135	0	**187**	0	0	0	0	0	**170**	38	**208**	**100**	**105**	87	**292**	**687**
05:30 PM	54	124	0	178	0	0	0	0	0	170	37	207	78	81	71	230	615
Total Volume	220	510	0	730	0	0	0	0	0	632	150	782	336	360	338	1034	2546
% App. Total	30.1	69.9	0		0	0	0		0	80.8	19.2		32.5	34.8	32.7		
PHF	.833	.944	.000	.976	.000	.000	.000	.000	.000	.929	.938	.940	.840	.857	.889	.885	.926

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:45 PM				04:30 PM			
+0 mins.	**66**	116	0	182	0	0	0	0	0	131	**40**	171	76	90	81	247
+15 mins.	52	135	0	187	0	0	0	0	0	161	35	196	80	82	**95**	257
+30 mins.	54	124	0	178	0	0	0	0	0	**170**	38	**208**	78	92	85	255
+45 mins.	58	**136**	0	**194**	0	0	0	0	0	170	37	207	**100**	**105**	87	**292**
Total Volume	230	511	0	741	0	0	0	0	0	632	150	782	334	369	348	1051
% App. Total	31	69	0		0	0	0		0	80.8	19.2		31.8	35.1	33.1	
PHF	.871	.939	.000	.955	.000	.000	.000	.000	.000	.929	.938	.940	.835	.879	.916	.900

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles

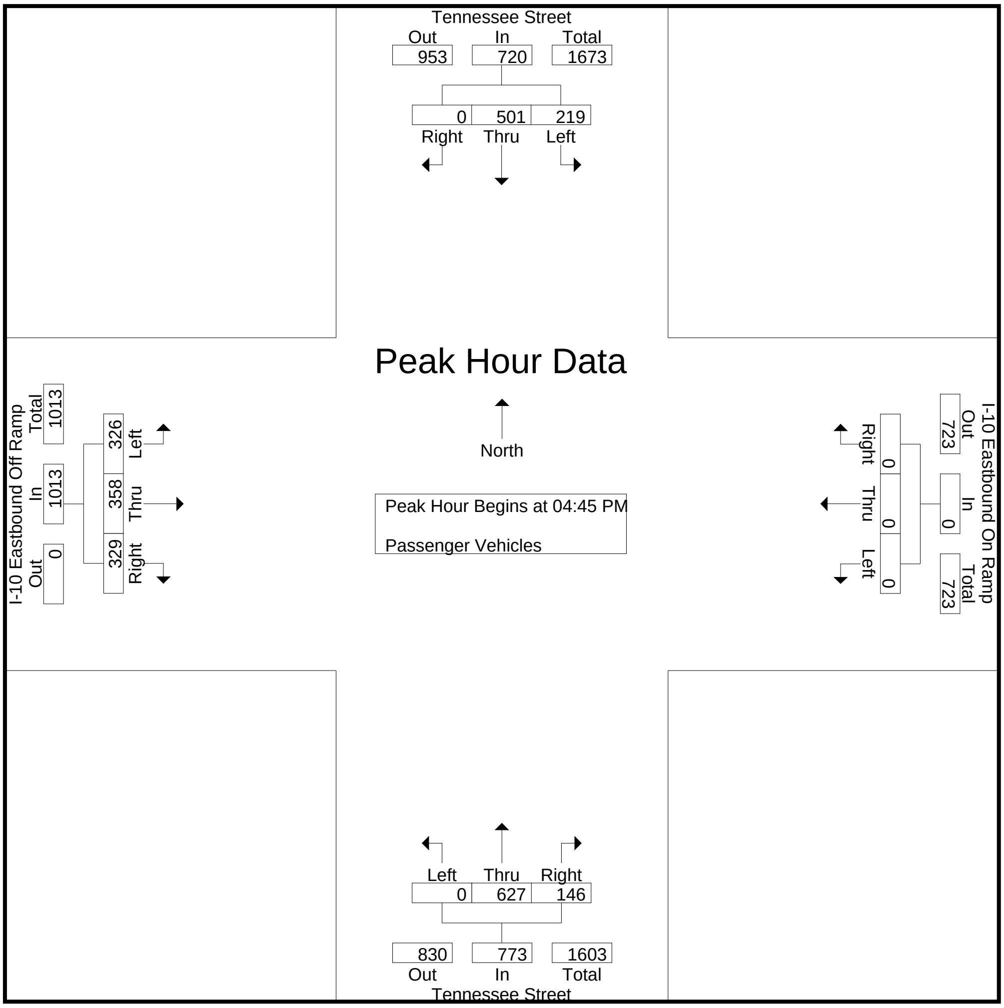
	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	63	108	0	171	0	0	0	0	0	157	51	208	52	96	70	218	597
04:15 PM	53	114	0	167	0	0	0	0	0	133	52	185	74	85	85	244	596
04:30 PM	50	102	0	152	0	0	0	0	0	139	51	190	74	90	78	242	584
04:45 PM	47	135	0	182	0	0	0	0	0	129	38	167	76	81	93	250	599
Total	213	459	0	672	0	0	0	0	0	558	192	750	276	352	326	954	2376
05:00 PM	66	112	0	178	0	0	0	0	0	161	34	195	77	92	80	249	622
05:15 PM	52	131	0	183	0	0	0	0	0	169	38	207	96	104	86	286	676
05:30 PM	54	123	0	177	0	0	0	0	0	168	36	204	77	81	70	228	609
05:45 PM	58	133	0	191	0	0	0	0	0	130	28	158	75	43	82	200	549
Total	230	499	0	729	0	0	0	0	0	628	136	764	325	320	318	963	2456
Grand Total	443	958	0	1401	0	0	0	0	0	1186	328	1514	601	672	644	1917	4832
Apprch %	31.6	68.4	0		0	0	0		0	78.3	21.7		31.4	35.1	33.6		
Total %	9.2	19.8	0	29	0	0	0	0	0	24.5	6.8	31.3	12.4	13.9	13.3	39.7	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	47	**135**	0	182	0	0	0	0	0	129	**38**	167	76	81	**93**	250	599
05:00 PM	**66**	112	0	178	0	0	0	0	0	161	34	195	77	92	80	249	622
05:15 PM	52	131	0	**183**	0	0	0	0	0	**169**	38	**207**	**96**	**104**	86	**286**	**676**
05:30 PM	54	123	0	177	0	0	0	0	0	168	36	204	77	81	70	228	609
Total Volume	219	501	0	720	0	0	0	0	0	627	146	773	326	358	329	1013	2506
% App. Total	30.4	69.6	0		0	0	0		0	81.1	18.9		32.2	35.3	32.5		
PHF	.830	.928	.000	.984	.000	.000	.000	.000	.000	.928	.961	.934	.849	.861	.884	.885	.927

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	47	**135**	0	182	0	0	0	0	0	129	**38**	167	76	81	**93**	250
+15 mins.	**66**	112	0	178	0	0	0	0	0	161	34	195	77	92	80	249
+30 mins.	52	131	0	**183**	0	0	0	0	0	**169**	38	**207**	**96**	**104**	86	**286**
+45 mins.	54	123	0	177	0	0	0	0	0	168	36	204	77	81	70	228
Total Volume	219	501	0	720	0	0	0	0	0	627	146	773	326	358	329	1013
% App. Total	30.4	69.6	0		0	0	0		0	81.1	18.9		32.2	35.3	32.5	
PHF	.830	.928	.000	.984	.000	.000	.000	.000	.000	.928	.961	.934	.849	.861	.884	.885

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

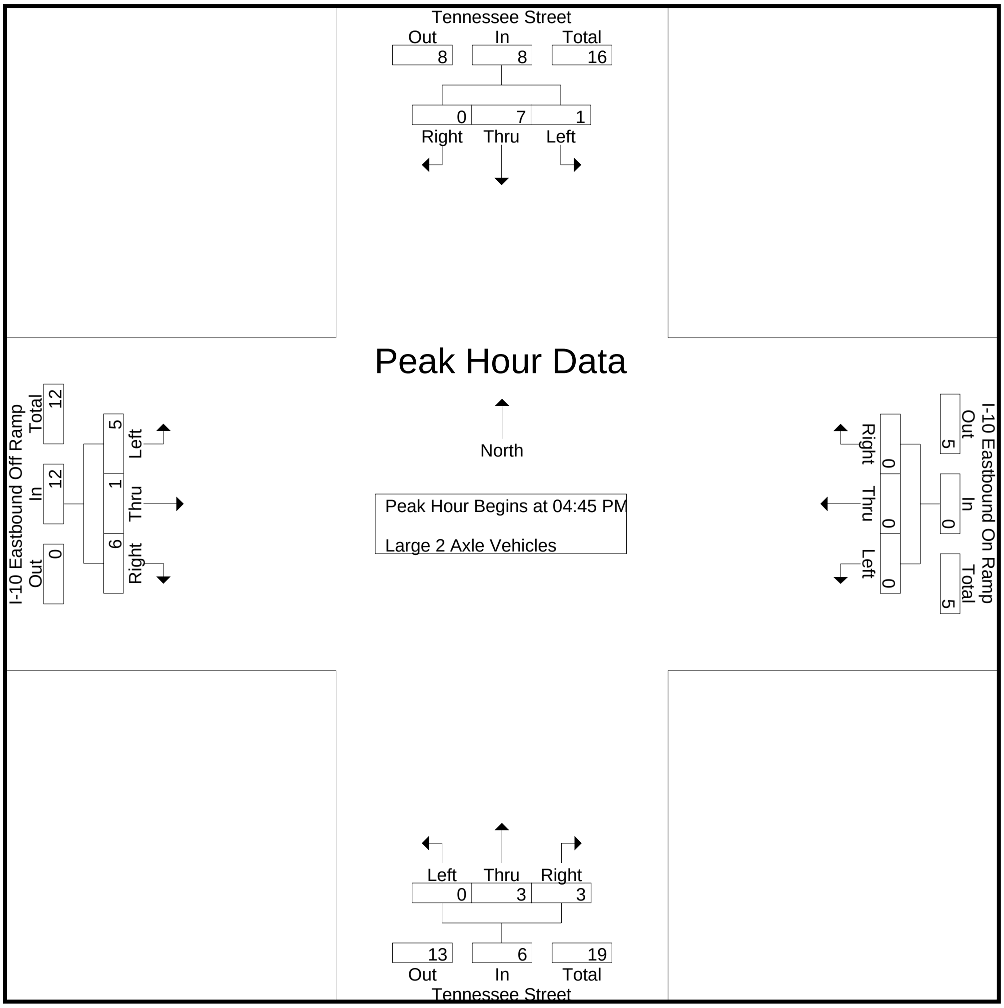
	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	3
04:15 PM	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
04:30 PM	1	1	0	2	0	0	0	0	0	3	0	3	0	0	2	2	7
04:45 PM	1	0	0	1	0	0	0	0	0	2	2	4	2	1	0	3	8
Total	2	2	0	4	0	0	0	0	0	10	2	12	2	2	3	7	23
05:00 PM	0	3	0	3	0	0	0	0	0	0	1	1	1	0	4	5	9
05:15 PM	0	3	0	3	0	0	0	0	0	1	0	1	2	0	1	3	7
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
05:45 PM	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
Total	0	9	0	9	0	0	0	0	0	5	1	6	3	0	6	9	24
Grand Total	2	11	0	13	0	0	0	0	0	15	3	18	5	2	9	16	47
Apprch %	15.4	84.6	0		0	0	0		0	83.3	16.7		31.2	12.5	56.2		
Total %	4.3	23.4	0	27.7	0	0	0	0	0	31.9	6.4	38.3	10.6	4.3	19.1	34	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**1**	0	0	1	0	0	0	0	0	**2**	**2**	**4**	**2**	**1**	0	3	8
05:00 PM	0	**3**	0	**3**	0	0	0	0	0	0	1	1	1	0	**4**	**5**	**9**
05:15 PM	0	3	0	3	0	0	0	0	0	1	0	1	2	0	1	3	7
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
Total Volume	1	7	0	8	0	0	0	0	0	3	3	6	5	1	6	12	26
% App. Total	12.5	87.5	0		0	0	0		0	50	50		41.7	8.3	50		
PHF	.250	.583	.000	.667	.000	.000	.000	.000	.000	.375	.375	.375	.625	.250	.375	.600	.722

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	**1**	0	0	1	0	0	0	0	0	**2**	**2**	**4**	**2**	**1**	0	3
+15 mins.	0	**3**	0	**3**	0	0	0	0	0	0	1	1	1	0	**4**	**5**
+30 mins.	0	3	0	3	0	0	0	0	0	1	0	1	2	0	1	3
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Total Volume	1	7	0	8	0	0	0	0	0	3	3	6	5	1	6	12
% App. Total	12.5	87.5	0		0	0	0		0	50	50		41.7	8.3	50	
PHF	.250	.583	.000	.667	.000	.000	.000	.000	.000	.375	.375	.375	.625	.250	.375	.600

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

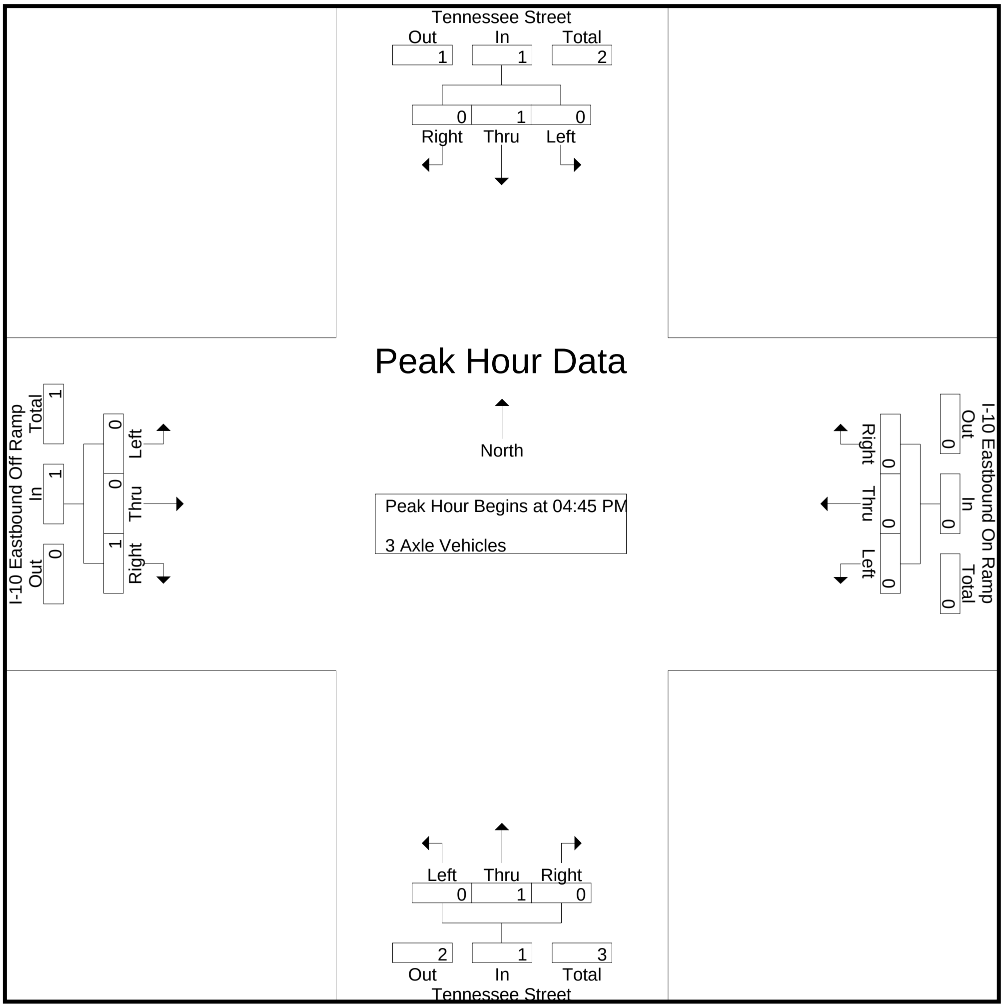
Groups Printed- 3 Axle Vehicles

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	3	0	3	0	0	0	0	0	2	1	3	0	0	1	1	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Grand Total	0	4	0	4	0	0	0	0	0	3	1	4	0	0	1	1	9
Apprch %	0	100	0		0	0	0		0	75	25		0	0	100		
Total %	0	44.4	0	44.4	0	0	0	0	0	33.3	11.1	44.4	0	0	11.1	11.1	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.750

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

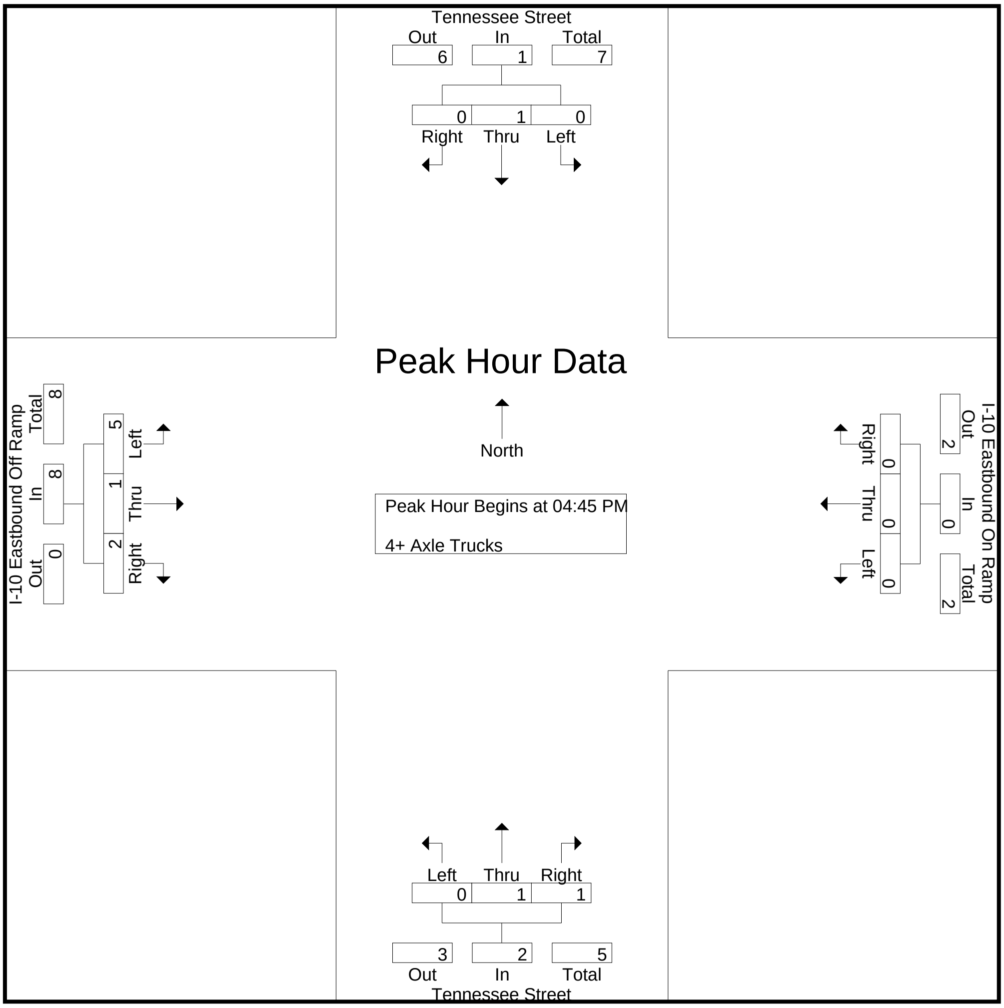
Groups Printed- 4+ Axle Trucks

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
Total	0	0	0	0	0	0	0	0	0	0	1	1	4	2	2	8	9
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	3
05:30 PM	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	1	3
05:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	2	0	2	0	0	0	0	0	2	1	3	3	1	1	5	10
Grand Total	0	2	0	2	0	0	0	0	0	2	2	4	7	3	3	13	19
Apprch %	0	100	0		0	0	0		0	50	50		53.8	23.1	23.1		
Total %	0	10.5	0	10.5	0	0	0	0	0	10.5	10.5	21.1	36.8	15.8	15.8	68.4	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**1**	**3**	**3**
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	1	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	**1**	0	3	3
05:30 PM	0	0	0	0	0	0	0	0	0	**1**	**1**	**2**	1	0	0	1	3
Total Volume	0	1	0	1	0	0	0	0	0	1	1	2	5	1	2	8	11
% App. Total	0	100	0		0	0	0		0	50	50		62.5	12.5	25		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.250	.250	.625	.250	.500	.667	.917

City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 10_RED_Ten_10E PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**1**	**3**
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	2	**1**	0	3
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	**1**	**2**	1	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	1	2	5	1	2	8
% App. Total	0	100	0		0	0	0		0	50	50		62.5	12.5	25	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.250	.250	.625	.250	.500	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	30	84	19	133	10	27	12	49	3	92	6	101	8	17	4	29	312
07:15 AM	27	124	15	166	5	23	13	41	4	115	7	126	16	18	4	38	371
07:30 AM	32	152	14	198	16	43	16	75	10	131	9	150	6	15	6	27	450
07:45 AM	40	158	35	233	19	51	15	85	8	118	15	141	14	28	4	46	505
Total	129	518	83	730	50	144	56	250	25	456	37	518	44	78	18	140	1638
08:00 AM	43	123	30	196	8	38	15	61	11	168	10	189	12	14	8	34	480
08:15 AM	22	104	31	157	16	54	29	99	7	131	12	150	14	27	7	48	454
08:30 AM	37	92	44	173	7	60	27	94	7	110	11	128	18	43	5	66	461
08:45 AM	21	109	52	182	11	52	15	78	15	103	10	128	12	35	5	52	440
Total	123	428	157	708	42	204	86	332	40	512	43	595	56	119	25	200	1835
Grand Total	252	946	240	1438	92	348	142	582	65	968	80	1113	100	197	43	340	3473
Apprch %	17.5	65.8	16.7		15.8	59.8	24.4		5.8	87	7.2		29.4	57.9	12.6		
Total %	7.3	27.2	6.9	41.4	2.6	10	4.1	16.8	1.9	27.9	2.3	32	2.9	5.7	1.2	9.8	
Passenger Vehicles	242	923	236	1401	87	338	135	560	63	926	74	1063	93	194	43	330	3354
% Passenger Vehicles	96	97.6	98.3	97.4	94.6	97.1	95.1	96.2	96.9	95.7	92.5	95.5	93	98.5	100	97.1	96.6
Large 2 Axle Vehicles	9	19	3	31	5	7	4	16	2	37	4	43	3	3	0	6	96
% Large 2 Axle Vehicles	3.6	2	1.2	2.2	5.4	2	2.8	2.7	3.1	3.8	5	3.9	3	1.5	0	1.8	2.8
3 Axle Vehicles	1	3	1	5	0	2	2	4	0	3	2	5	2	0	0	2	16
% 3 Axle Vehicles	0.4	0.3	0.4	0.3	0	0.6	1.4	0.7	0	0.3	2.5	0.4	2	0	0	0.6	0.5
4+ Axle Trucks	0	1	0	1	0	1	1	2	0	2	0	2	2	0	0	2	7
% 4+ Axle Trucks	0	0.1	0	0.1	0	0.3	0.7	0.3	0	0.2	0	0.2	2	0	0	0.6	0.2

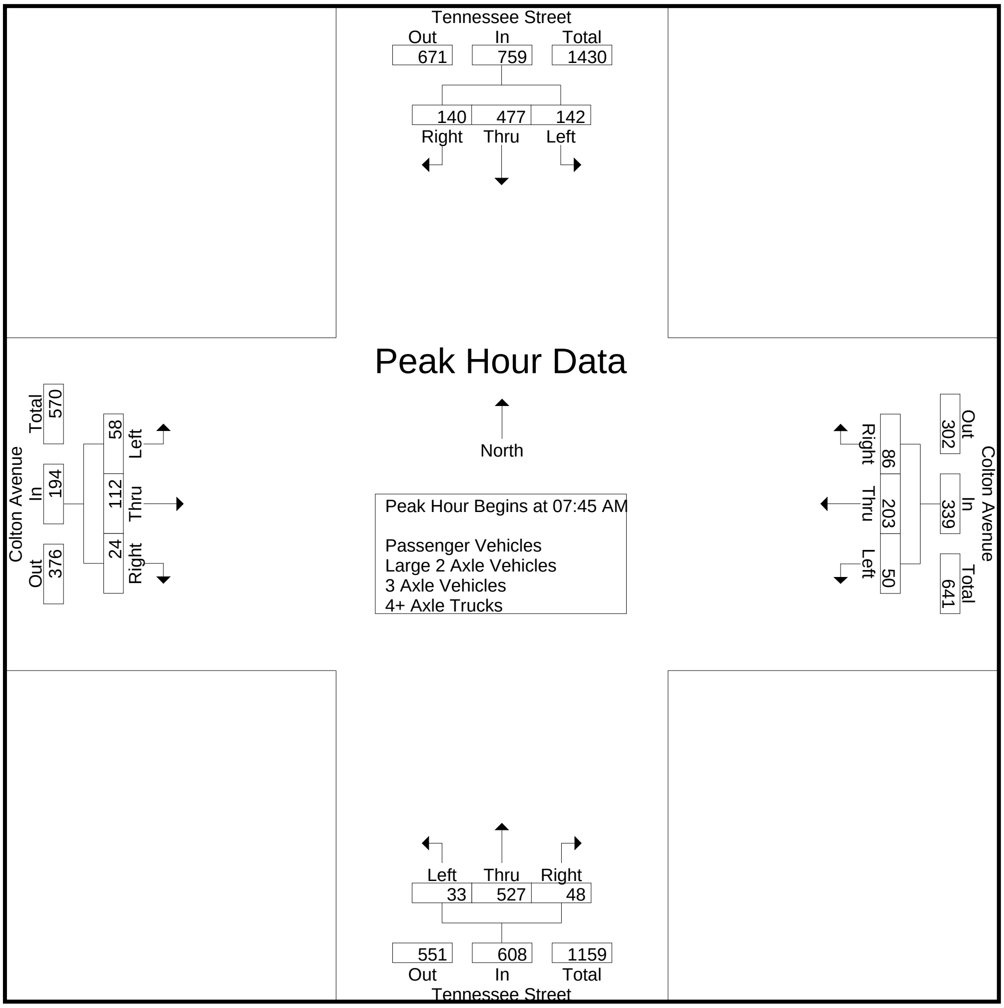
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:45 AM

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:45 AM	40	**158**	35	**233**	**19**	51	15	85	8	118	**15**	141	14	28	4	46	**505**
08:00 AM	**43**	123	30	196	8	38	15	61	**11**	**168**	10	**189**	12	14	**8**	34	480
08:15 AM	22	104	31	157	16	54	**29**	**99**	7	131	12	150	14	27	7	48	454
08:30 AM	37	92	**44**	173	7	**60**	27	94	7	110	11	128	**18**	**43**	5	**66**	461
Total Volume	142	477	140	759	50	203	86	339	33	527	48	608	58	112	24	194	1900
% App. Total	18.7	62.8	18.4		14.7	59.9	25.4		5.4	86.7	7.9		29.9	57.7	12.4		
PHF	.826	.755	.795	.814	.658	.846	.741	.856	.750	.784	.800	.804	.806	.651	.750	.735	.941

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				07:30 AM				08:00 AM			
+0 mins.	27	124	15	166	**19**	51	15	85	10	131	9	150	12	14	**8**	34
+15 mins.	32	152	14	198	8	38	15	61	8	118	**15**	141	14	27	7	48
+30 mins.	40	**158**	**35**	**233**	16	54	**29**	**99**	**11**	**168**	10	**189**	**18**	**43**	5	**66**
+45 mins.	**43**	123	30	196	7	**60**	27	94	7	131	12	150	12	35	5	52
Total Volume	142	557	94	793	50	203	86	339	36	548	46	630	56	119	25	200
% App. Total	17.9	70.2	11.9		14.7	59.9	25.4		5.7	87	7.3		28	59.5	12.5	
PHF	.826	.881	.671	.851	.658	.846	.741	.856	.818	.815	.767	.833	.778	.692	.781	.758

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

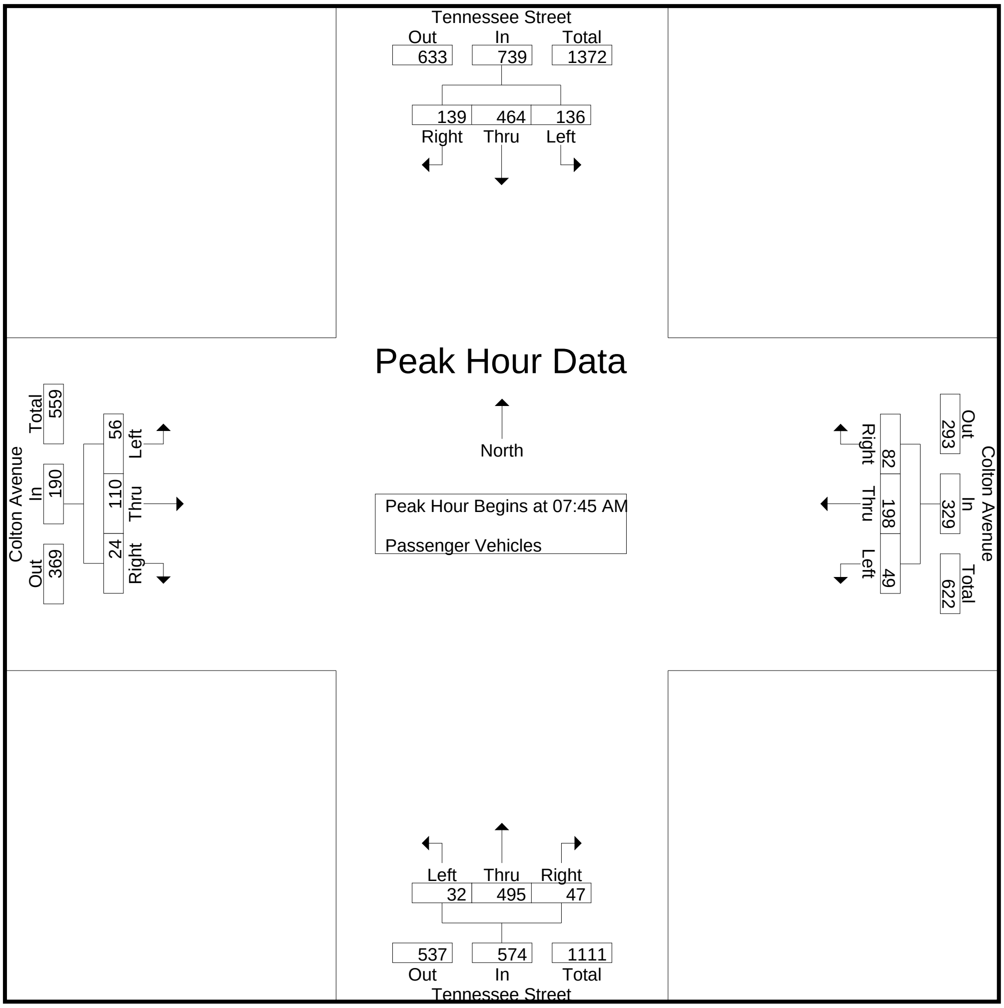
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	30	82	19	131	7	27	12	46	2	92	6	100	8	17	4	29	306
07:15 AM	26	122	15	163	5	23	13	41	4	112	5	121	11	18	4	33	358
07:30 AM	31	151	13	195	16	40	13	69	10	128	7	145	6	14	6	26	435
07:45 AM	39	153	34	226	18	51	14	83	8	111	14	133	13	28	4	45	487
Total	126	508	81	715	46	141	52	239	24	443	32	499	38	77	18	133	1586
08:00 AM	43	122	30	195	8	37	14	59	10	153	10	173	11	14	8	33	460
08:15 AM	19	100	31	150	16	53	28	97	7	124	12	143	14	26	7	47	437
08:30 AM	35	89	44	168	7	57	26	90	7	107	11	125	18	42	5	65	448
08:45 AM	19	104	50	173	10	50	15	75	15	99	9	123	12	35	5	52	423
Total	116	415	155	686	41	197	83	321	39	483	42	564	55	117	25	197	1768
Grand Total	242	923	236	1401	87	338	135	560	63	926	74	1063	93	194	43	330	3354
Apprch %	17.3	65.9	16.8		15.5	60.4	24.1		5.9	87.1	7		28.2	58.8	13		
Total %	7.2	27.5	7	41.8	2.6	10.1	4	16.7	1.9	27.6	2.2	31.7	2.8	5.8	1.3	9.8	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	39	**153**	34	**226**	**18**	51	14	83	8	111	**14**	133	13	28	4	45	**487**
08:00 AM	**43**	122	30	195	8	37	14	59	**10**	**153**	10	**173**	11	14	**8**	33	460
08:15 AM	19	100	31	150	16	53	**28**	**97**	7	124	12	143	14	26	7	47	437
08:30 AM	35	89	**44**	168	7	**57**	26	90	7	107	11	125	**18**	**42**	5	**65**	448
Total Volume	136	464	139	739	49	198	82	329	32	495	47	574	56	110	24	190	1832
% App. Total	18.4	62.8	18.8		14.9	60.2	24.9		5.6	86.2	8.2		29.5	57.9	12.6		
PHF	.791	.758	.790	.817	.681	.868	.732	.848	.800	.809	.839	.829	.778	.655	.750	.731	.940

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	39	**153**	34	**226**	**18**	51	14	83	8	111	**14**	133	13	28	4	45
+15 mins.	**43**	122	30	195	8	37	14	59	**10**	**153**	10	**173**	11	14	**8**	33
+30 mins.	19	100	31	150	16	53	**28**	**97**	7	124	12	143	14	26	7	47
+45 mins.	35	89	**44**	168	7	**57**	26	90	7	107	11	125	**18**	**42**	5	**65**
Total Volume	136	464	139	739	49	198	82	329	32	495	47	574	56	110	24	190
% App. Total	18.4	62.8	18.8		14.9	60.2	24.9		5.6	86.2	8.2		29.5	57.9	12.6	
PHF	.791	.758	.790	.817	.681	.868	.732	.848	.800	.809	.839	.829	.778	.655	.750	.731

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

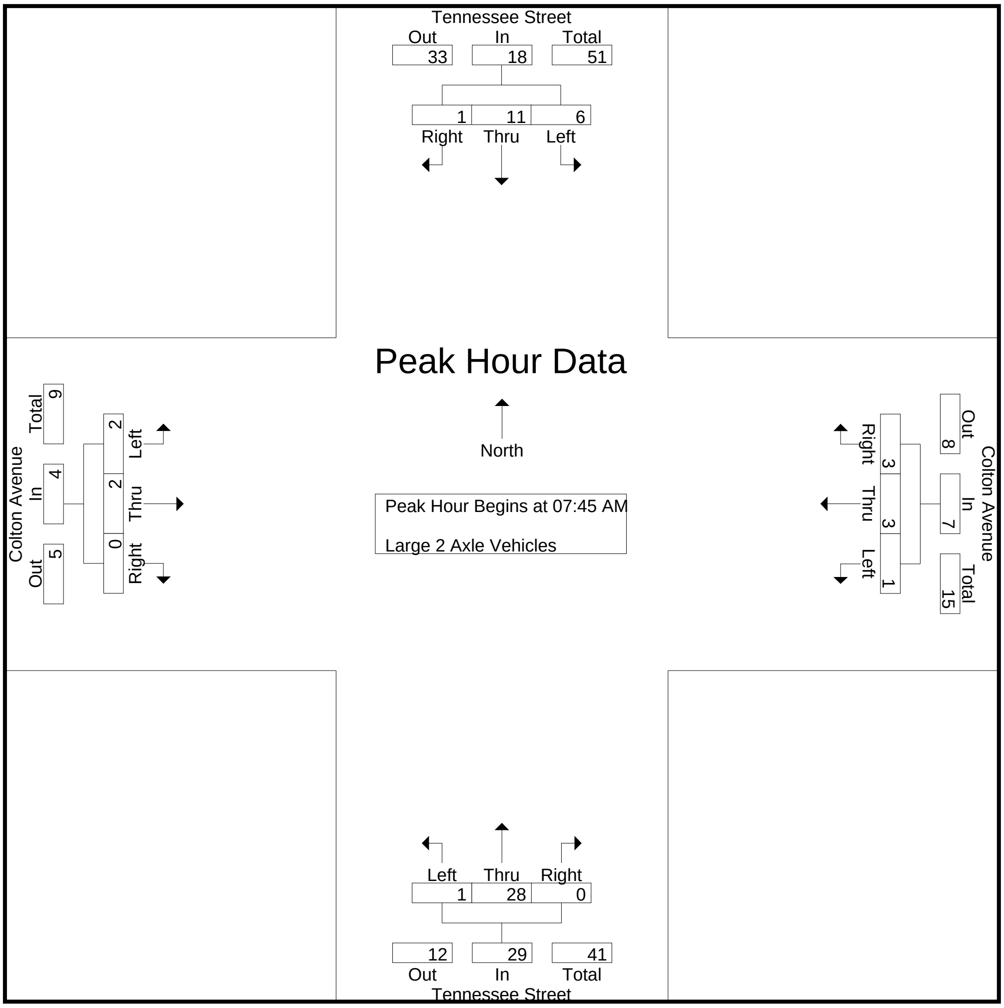
	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	0	2	3	0	0	3	1	0	0	1	0	0	0	0	6
07:15 AM	1	2	0	3	0	0	0	0	0	3	2	5	1	0	0	1	9
07:30 AM	0	1	0	1	0	2	1	3	0	3	1	4	0	1	0	1	9
07:45 AM	1	5	1	7	1	0	1	2	0	6	0	6	1	0	0	1	16
Total	2	10	1	13	4	2	2	8	1	12	3	16	2	1	0	3	40
08:00 AM	0	1	0	1	0	1	1	2	1	12	0	13	1	0	0	1	17
08:15 AM	3	2	0	5	0	0	1	1	0	7	0	7	0	1	0	1	14
08:30 AM	2	3	0	5	0	2	0	2	0	3	0	3	0	1	0	1	11
08:45 AM	2	3	2	7	1	2	0	3	0	3	1	4	0	0	0	0	14
Total	7	9	2	18	1	5	2	8	1	25	1	27	1	2	0	3	56
Grand Total	9	19	3	31	5	7	4	16	2	37	4	43	3	3	0	6	96
Apprch %	29	61.3	9.7		31.2	43.8	25		4.7	86	9.3		50	50	0		
Total %	9.4	19.8	3.1	32.3	5.2	7.3	4.2	16.7	2.1	38.5	4.2	44.8	3.1	3.1	0	6.2	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	1	**5**	**1**	**7**	**1**	0	**1**	**2**	0	6	0	6	**1**	0	0	**1**	16
08:00 AM	0	1	0	1	0	1	1	2	**1**	**12**	0	**13**	1	0	0	1	**17**
08:15 AM	**3**	2	0	5	0	0	1	1	0	7	0	7	0	**1**	0	1	14
08:30 AM	2	3	0	5	0	**2**	0	2	0	3	0	3	0	1	0	1	11
Total Volume	6	11	1	18	1	3	3	7	1	28	0	29	2	2	0	4	58
% App. Total	33.3	61.1	5.6		14.3	42.9	42.9		3.4	96.6	0		50	50	0		
PHF	.500	.550	.250	.643	.250	.375	.750	.875	.250	.583	.000	.558	.500	.500	.000	1.00	.853

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	1	**5**	**1**	**7**	**1**	0	**1**	**2**	0	6	0	6	**1**	0	0	**1**
+15 mins.	0	1	0	1	0	1	1	2	**1**	**12**	0	**13**	1	0	0	1
+30 mins.	**3**	2	0	5	0	0	1	1	0	7	0	7	0	**1**	0	1
+45 mins.	2	3	0	5	0	**2**	0	2	0	3	0	3	0	1	0	1
Total Volume	6	11	1	18	1	3	3	7	1	28	0	29	2	2	0	4
% App. Total	33.3	61.1	5.6		14.3	42.9	42.9		3.4	96.6	0		50	50	0	
PHF	.500	.550	.250	.643	.250	.375	.750	.875	.250	.583	.000	.558	.500	.500	.000	1.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

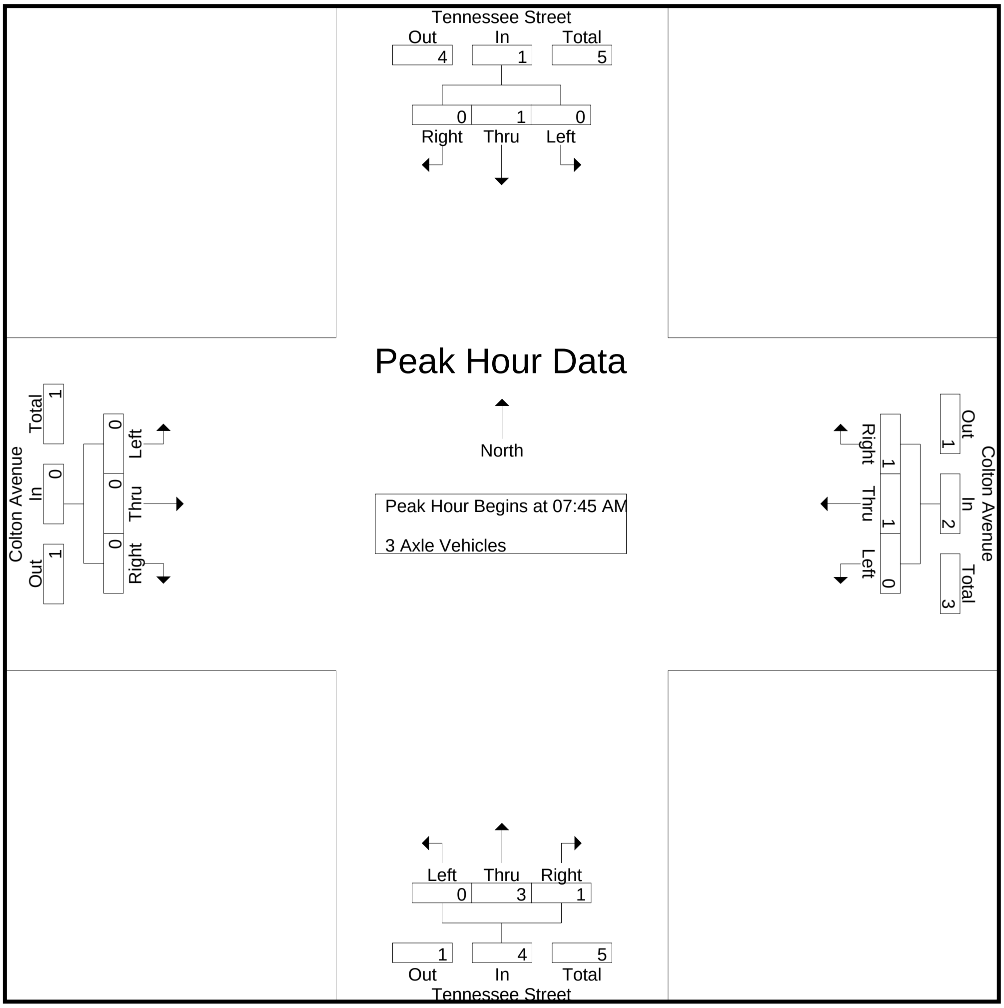
	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:30 AM	1	0	1	2	0	1	1	2	0	0	1	1	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Total	1	0	1	2	0	1	1	2	0	1	2	3	2	0	0	2	9
08:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:15 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	3	0	1	1	2	0	2	0	2	0	0	0	0	7
Grand Total	1	3	1	5	0	2	2	4	0	3	2	5	2	0	0	2	16
Apprch %	20	60	20		0	50	50		0	60	40		100	0	0		
Total %	6.2	18.8	6.2	31.2	0	12.5	12.5	25	0	18.8	12.5	31.2	12.5	0	0	12.5	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	1	**1**	**2**	0	0	0	0	**2**
08:00 AM	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	2
08:15 AM	0	**1**	0	**1**	0	**1**	0	**1**	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	1	1	2	0	3	1	4	0	0	0	0	7
% App. Total	0	100	0		0	50	50		0	75	25		0	0	0		
PHF	.000	.250	.000	.250	.000	.250	.250	.500	.000	.375	.250	.500	.000	.000	.000	.000	.875

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	**1**	**2**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0
+30 mins.	0	**1**	0	**1**	0	**1**	0	**1**	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	1	1	2	0	3	1	4	0	0	0	0
% App. Total	0	100	0		0	50	50		0	75	25		0	0	0	
PHF	.000	.250	.000	.250	.000	.250	.250	.500	.000	.375	.250	.500	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

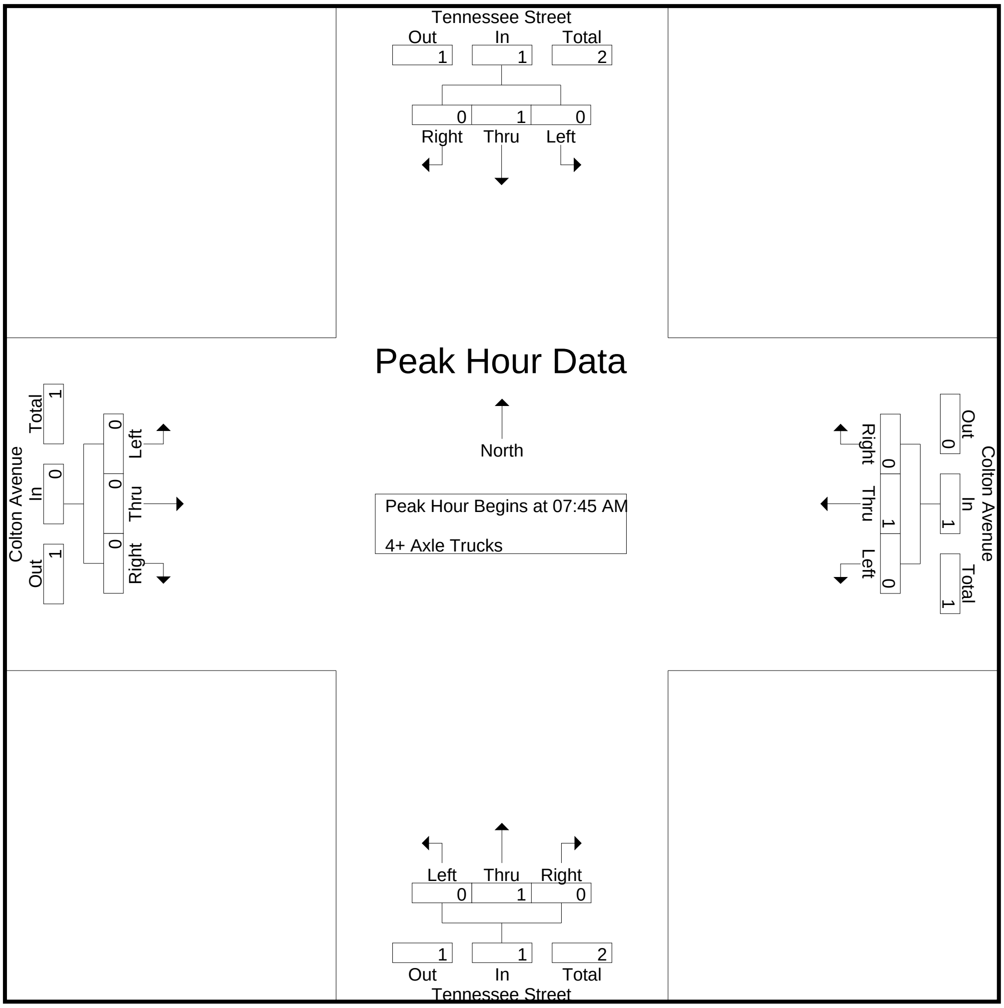
	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	2	3
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	1	0	1	0	1	0	1	0	2	0	2	0	0	0	0	4
Grand Total	0	1	0	1	0	1	1	2	0	2	0	2	2	0	0	2	7
Apprch %	0	100	0		0	50	50		0	100	0		100	0	0		
Total %	0	14.3	0	14.3	0	14.3	14.3	28.6	0	28.6	0	28.6	28.6	0	0	28.6	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
08:15 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	100	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+30 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0
% App. Total	0	100	0		0	100	0		0	100	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

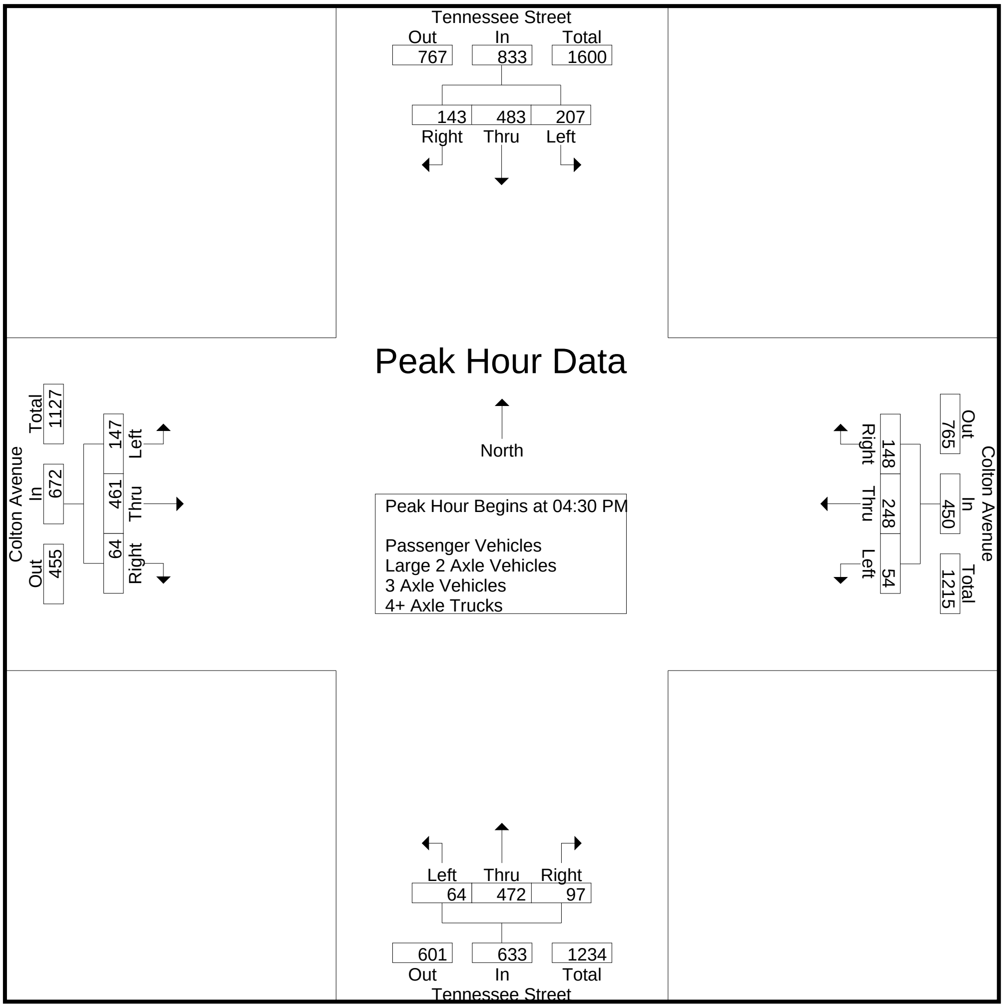
	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	30	106	46	182	16	75	38	129	22	131	21	174	36	105	15	156	641
04:15 PM	48	107	39	194	8	69	36	113	15	118	20	153	40	92	11	143	603
04:30 PM	48	90	46	184	17	58	39	114	18	115	24	157	36	111	12	159	614
04:45 PM	54	135	33	222	17	47	33	97	12	103	22	137	36	104	21	161	617
Total	180	438	164	782	58	249	146	453	67	467	87	621	148	412	59	619	2475
05:00 PM	48	120	28	196	10	69	47	126	13	119	20	152	37	118	17	172	646
05:15 PM	57	138	36	231	10	74	29	113	21	135	31	187	38	128	14	180	711
05:30 PM	46	110	33	189	18	45	29	92	13	122	22	157	48	112	12	172	610
05:45 PM	55	120	36	211	9	43	28	80	20	101	14	135	39	78	15	132	558
Total	206	488	133	827	47	231	133	411	67	477	87	631	162	436	58	656	2525
Grand Total	386	926	297	1609	105	480	279	864	134	944	174	1252	310	848	117	1275	5000
Apprch %	24	57.6	18.5		12.2	55.6	32.3		10.7	75.4	13.9		24.3	66.5	9.2		
Total %	7.7	18.5	5.9	32.2	2.1	9.6	5.6	17.3	2.7	18.9	3.5	25	6.2	17	2.3	25.5	
Passenger Vehicles	382	909	297	1588	103	478	273	854	134	926	174	1234	308	844	117	1269	4945
% Passenger Vehicles	99	98.2	100	98.7	98.1	99.6	97.8	98.8	100	98.1	100	98.6	99.4	99.5	100	99.5	98.9
Large 2 Axle Vehicles	2	11	0	13	2	1	3	6	0	11	0	11	1	4	0	5	35
% Large 2 Axle Vehicles	0.5	1.2	0	0.8	1.9	0.2	1.1	0.7	0	1.2	0	0.9	0.3	0.5	0	0.4	0.7
3 Axle Vehicles	0	5	0	5	0	1	0	1	0	5	0	5	0	0	0	0	11
% 3 Axle Vehicles	0	0.5	0	0.3	0	0.2	0	0.1	0	0.5	0	0.4	0	0	0	0	0.2
4+ Axle Trucks	2	1	0	3	0	0	3	3	0	2	0	2	1	0	0	1	9
% 4+ Axle Trucks	0.5	0.1	0	0.2	0	0	1.1	0.3	0	0.2	0	0.2	0.3	0	0	0.1	0.2

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	90	**46**	184	**17**	58	39	114	18	115	24	157	36	111	12	159	614
04:45 PM	54	135	33	222	17	47	33	97	12	103	22	137	36	104	**21**	161	617
05:00 PM	48	120	28	196	10	69	**47**	**126**	13	119	20	152	37	118	17	172	646
05:15 PM	**57**	**138**	36	**231**	10	**74**	29	113	**21**	**135**	**31**	**187**	**38**	**128**	14	**180**	**711**
Total Volume	207	483	143	833	54	248	148	450	64	472	97	633	147	461	64	672	2588
% App. Total	24.8	58	17.2		12	55.1	32.9		10.1	74.6	15.3		21.9	68.6	9.5		
PHF	.908	.875	.777	.902	.794	.838	.787	.893	.762	.874	.782	.846	.967	.900	.762	.933	.910

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	54	135	33	222	16	**75**	38	**129**	18	115	24	157	36	104	**21**	161
+15 mins.	48	120	28	196	8	69	36	113	12	103	22	137	37	118	17	172
+30 mins.	**57**	**138**	**36**	**231**	**17**	58	**39**	114	13	119	20	152	38	**128**	14	**180**
+45 mins.	46	110	33	189	17	47	33	97	**21**	**135**	**31**	**187**	**48**	112	12	172
Total Volume	205	503	130	838	58	249	146	453	64	472	97	633	159	462	64	685
% App. Total	24.5	60	15.5		12.8	55	32.2		10.1	74.6	15.3		23.2	67.4	9.3	
PHF	.899	.911	.903	.907	.853	.830	.936	.878	.762	.874	.782	.846	.828	.902	.762	.951

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	30	103	46	179	16	74	38	128	22	130	21	173	36	103	15	154	634
04:15 PM	48	106	39	193	8	69	33	110	15	116	20	151	39	92	11	142	596
04:30 PM	46	90	46	182	17	58	39	114	18	113	24	155	36	111	12	159	610
04:45 PM	53	133	33	219	15	47	33	95	12	101	22	135	36	104	21	161	610
Total	177	432	164	773	56	248	143	447	67	460	87	614	147	410	59	616	2450
05:00 PM	48	114	28	190	10	69	47	126	13	118	20	151	37	118	17	172	639
05:15 PM	56	135	36	227	10	74	29	113	21	132	31	184	38	127	14	179	703
05:30 PM	46	109	33	188	18	45	28	91	13	122	22	157	48	111	12	171	607
05:45 PM	55	119	36	210	9	42	26	77	20	94	14	128	38	78	15	131	546
Total	205	477	133	815	47	230	130	407	67	466	87	620	161	434	58	653	2495
Grand Total	382	909	297	1588	103	478	273	854	134	926	174	1234	308	844	117	1269	4945
Apprch %	24.1	57.2	18.7		12.1	56	32		10.9	75	14.1		24.3	66.5	9.2		
Total %	7.7	18.4	6	32.1	2.1	9.7	5.5	17.3	2.7	18.7	3.5	25	6.2	17.1	2.4	25.7	

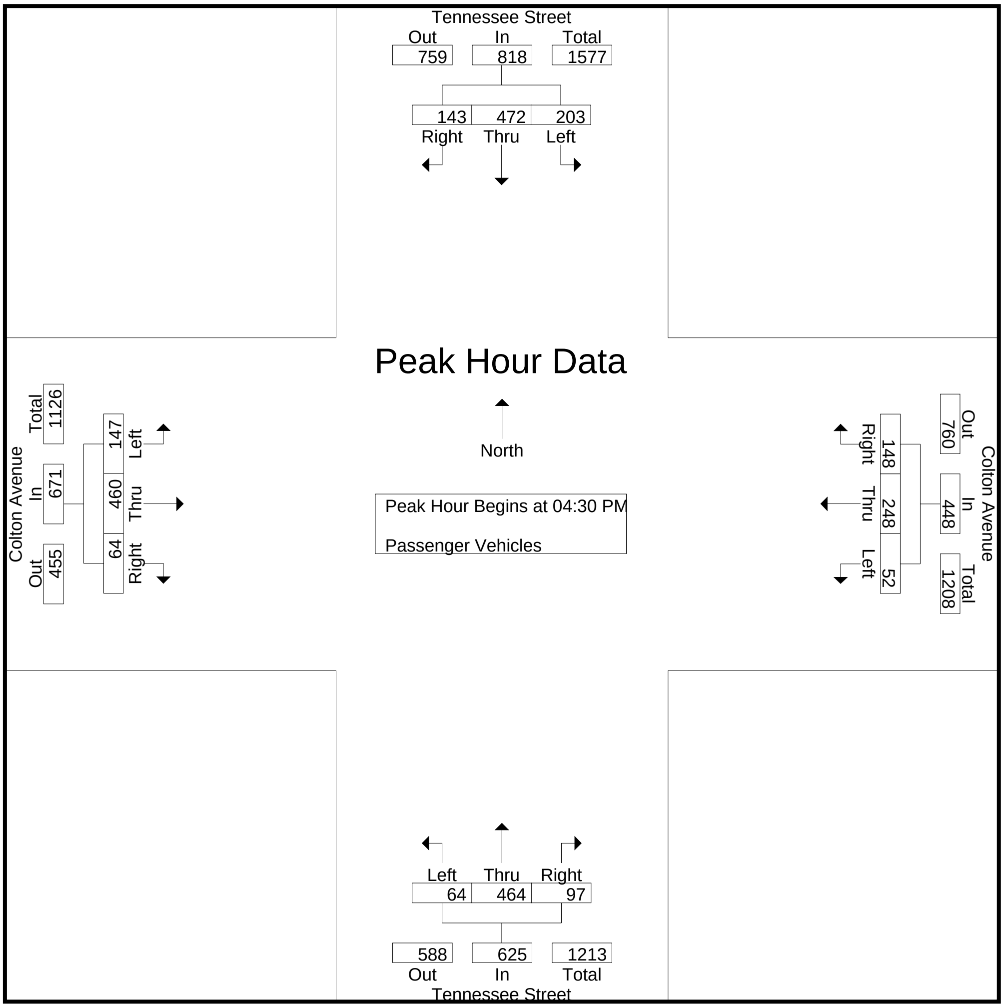
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 04:30 PM

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:30 PM	46	90	**46**	182	**17**	58	39	114	18	113	24	155	36	111	12	159	610
04:45 PM	53	133	33	219	15	47	33	95	12	101	22	135	36	104	**21**	161	610
05:00 PM	48	114	28	190	10	69	**47**	**126**	13	118	20	151	37	118	17	172	639
05:15 PM	**56**	**135**	36	**227**	10	**74**	29	113	**21**	**132**	**31**	**184**	**38**	**127**	14	**179**	**703**
Total Volume	203	472	143	818	52	248	148	448	64	464	97	625	147	460	64	671	2562
% App. Total	24.8	57.7	17.5		11.6	55.4	33		10.2	74.2	15.5		21.9	68.6	9.5		
PHF	.906	.874	.777	.901	.765	.838	.787	.889	.762	.879	.782	.849	.967	.906	.762	.937	.911

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	46	90	**46**	182	**17**	58	39	114	18	113	24	155	36	111	12	159
+15 mins.	53	133	33	219	15	47	33	95	12	101	22	135	36	104	**21**	161
+30 mins.	48	114	28	190	10	69	**47**	**126**	13	118	20	151	37	118	17	172
+45 mins.	**56**	**135**	36	**227**	10	**74**	29	113	**21**	**132**	**31**	**184**	**38**	**127**	14	**179**
Total Volume	203	472	143	818	52	248	148	448	64	464	97	625	147	460	64	671
% App. Total	24.8	57.7	17.5		11.6	55.4	33		10.2	74.2	15.5		21.9	68.6	9.5	
PHF	.906	.874	.777	.901	.765	.838	.787	.889	.762	.879	.782	.849	.967	.906	.762	.937

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

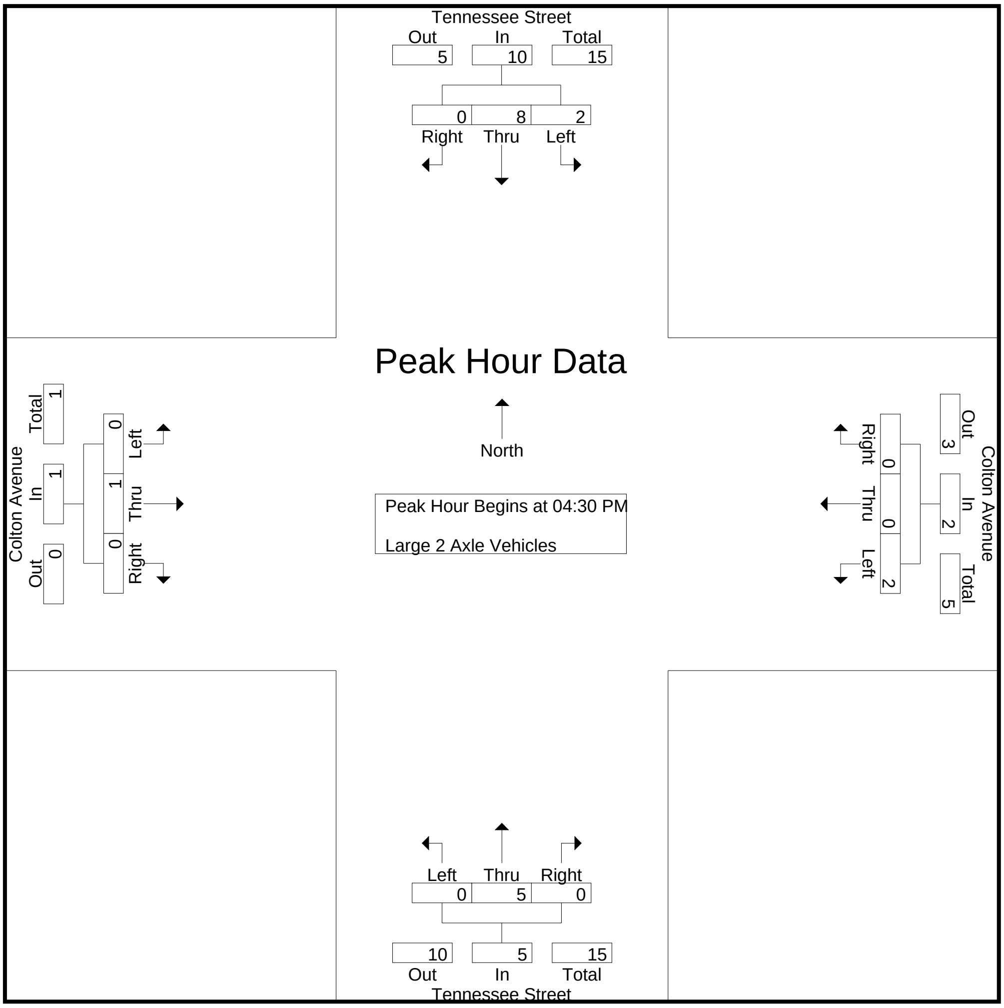
Groups Printed- Large 2 Axle Vehicles

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	1	0	1	0	0	3	3	0	0	0	0	1	0	0	1	5
04:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45 PM	0	1	0	1	2	0	0	2	0	2	0	2	0	0	0	0	5
Total	1	2	0	3	2	1	3	6	0	3	0	3	1	2	0	3	15
05:00 PM	0	5	0	5	0	0	0	0	0	1	0	1	0	0	0	0	6
05:15 PM	1	2	0	3	0	0	0	0	0	1	0	1	0	1	0	1	5
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
05:45 PM	0	1	0	1	0	0	0	0	0	6	0	6	0	0	0	0	7
Total	1	9	0	10	0	0	0	0	0	8	0	8	0	2	0	2	20
Grand Total	2	11	0	13	2	1	3	6	0	11	0	11	1	4	0	5	35
Apprch %	15.4	84.6	0		33.3	16.7	50		0	100	0		20	80	0		
Total %	5.7	31.4	0	37.1	5.7	2.9	8.6	17.1	0	31.4	0	31.4	2.9	11.4	0	14.3	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45 PM	0	1	0	1	**2**	0	0	**2**	0	**2**	0	**2**	0	0	0	0	5
05:00 PM	0	**5**	0	**5**	0	0	0	0	0	1	0	1	0	0	0	0	**6**
05:15 PM	1	2	0	3	0	0	0	0	0	1	0	1	0	**1**	0	**1**	5
Total Volume	2	8	0	10	2	0	0	2	0	5	0	5	0	1	0	1	18
% App. Total	20	80	0		100	0	0		0	100	0		0	100	0		
PHF	.500	.400	.000	.500	.250	.000	.000	.250	.000	.625	.000	.625	.000	.250	.000	.250	.750

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	1	0	1	**2**	0	0	**2**	0	**2**	0	**2**	0	0	0	0
+30 mins.	0	**5**	0	**5**	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	1	2	0	3	0	0	0	0	0	1	0	1	0	**1**	0	**1**
Total Volume	2	8	0	10	2	0	0	2	0	5	0	5	0	1	0	1
% App. Total	20	80	0		100	0	0		0	100	0		0	100	0	
PHF	.500	.400	.000	.500	.250	.000	.000	.250	.000	.625	.000	.625	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

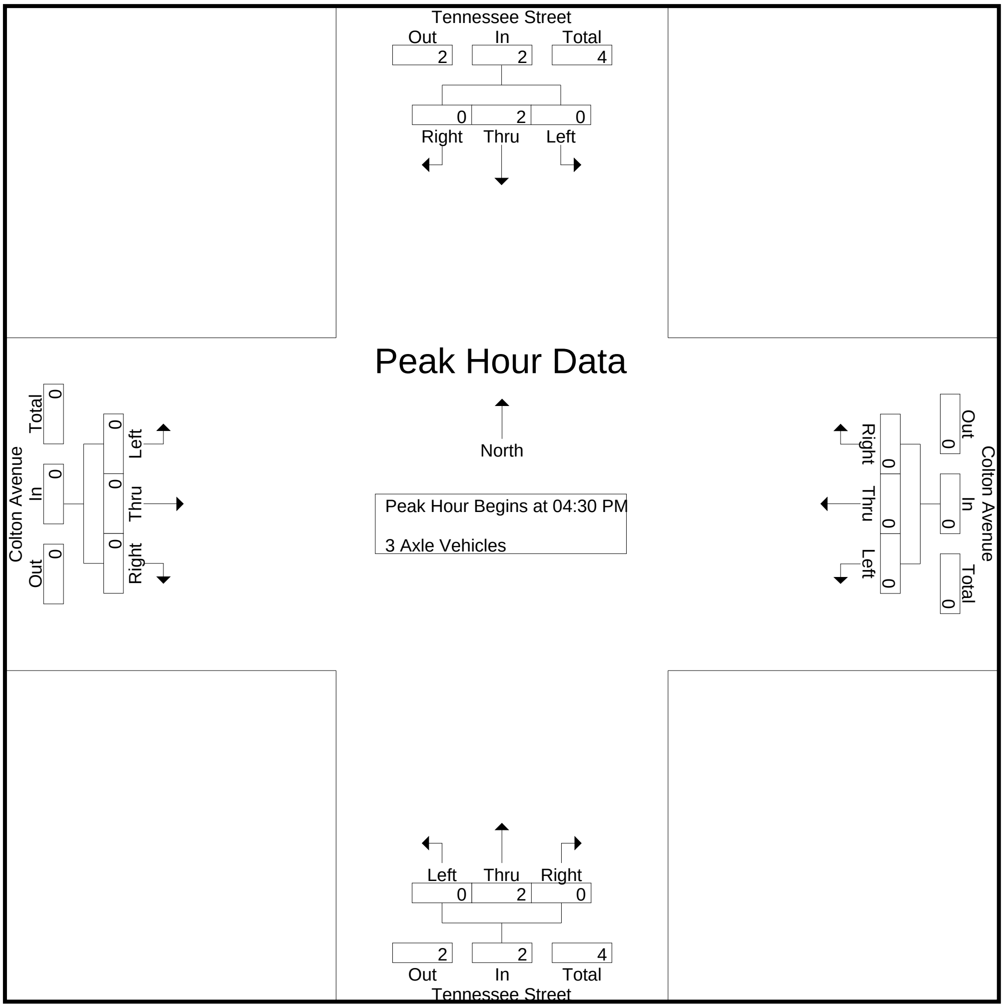
Groups Printed- 3 Axle Vehicles

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
Total	0	1	0	1	0	1	0	1	0	2	0	2	0	0	0	0	4
Grand Total	0	5	0	5	0	1	0	1	0	5	0	5	0	0	0	0	11
Apprch %	0	100	0		0	100	0		0	100	0		0	0	0		
Total %	0	45.5	0	45.5	0	9.1	0	9.1	0	45.5	0	45.5	0	0	0	0	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	**2**
Total Volume	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.500

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

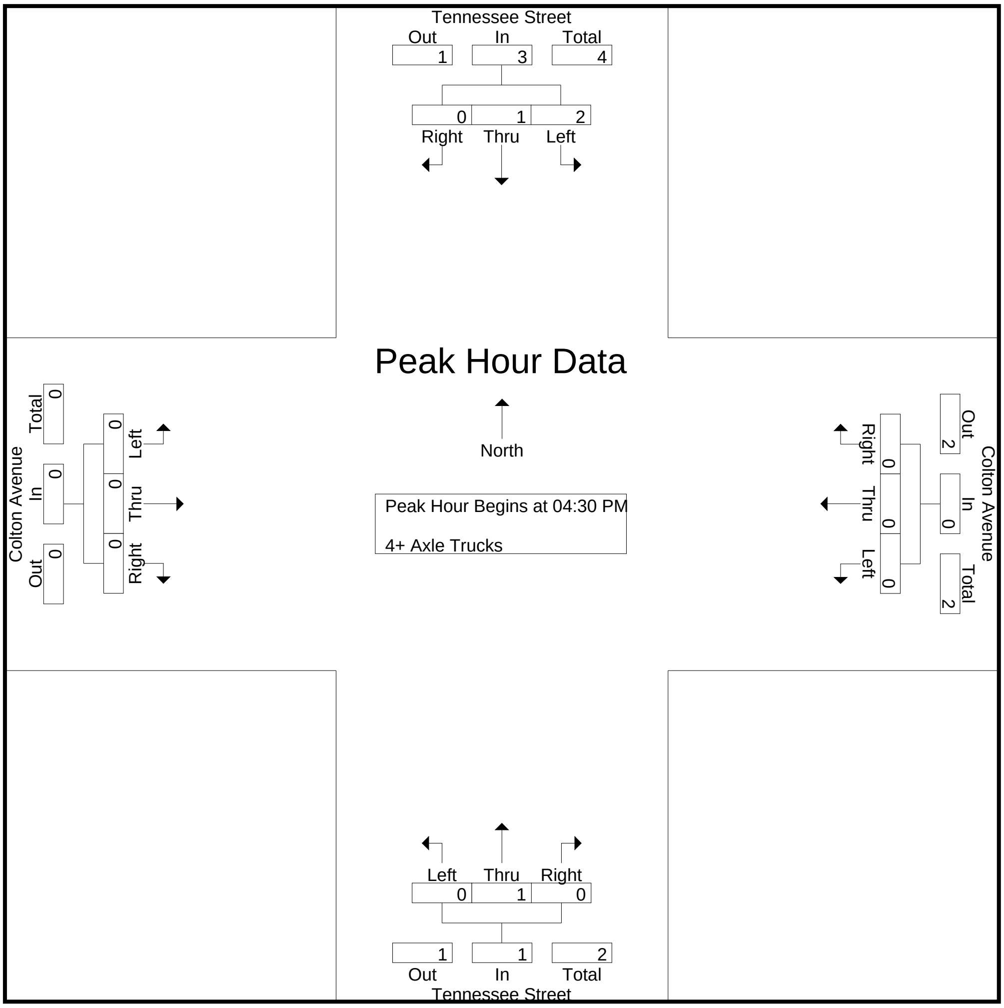
Groups Printed- 4+ Axle Trucks

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	1	0	0	1	3
Total	0	1	0	1	0	0	3	3	0	1	0	1	1	0	0	1	6
Grand Total	2	1	0	3	0	0	3	3	0	2	0	2	1	0	0	1	9
Apprch %	66.7	33.3	0		0	0	100		0	100	0		100	0	0		
Total %	22.2	11.1	0	33.3	0	0	33.3	33.3	0	22.2	0	22.2	11.1	0	0	11.1	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
04:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
Total Volume	2	1	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
% App. Total	66.7	33.3	0		0	0	0		0	100	0		0	0	0		
PHF	.500	.250	.000	.750	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	1.00

City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 11C_RED_Ten_Colt PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
Total Volume	2	1	0	3	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	66.7	33.3	0		0	0	0		0	100	0		0	0	0	
PHF	.500	.250	.000	.750	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

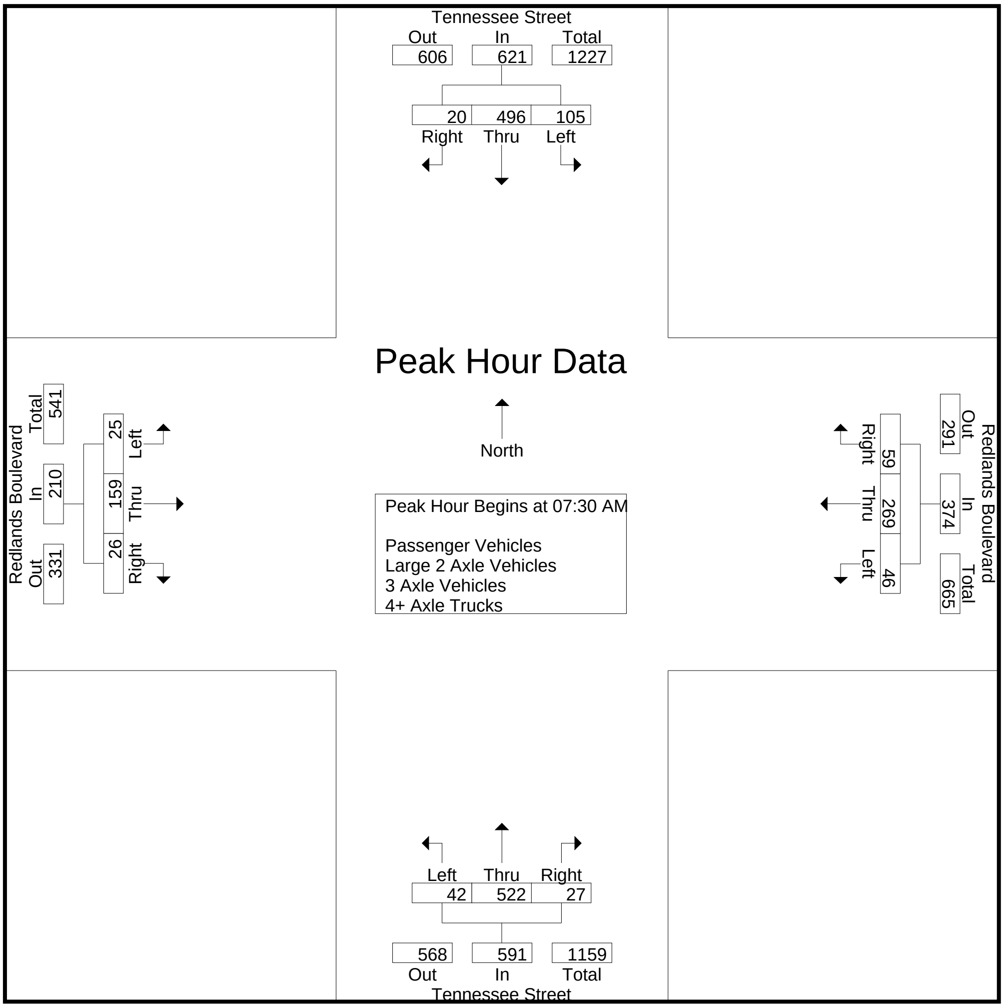
	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	13	67	2	82	4	18	14	36	2	84	2	88	7	21	5	33	239
07:15 AM	22	95	1	118	4	43	12	59	5	115	5	125	0	21	8	29	331
07:30 AM	21	125	4	150	12	62	7	81	12	141	3	156	9	26	8	43	430
07:45 AM	24	160	4	188	19	60	16	95	12	129	8	149	5	37	8	50	482
Total	80	447	11	538	39	183	49	271	31	469	18	518	21	105	29	155	1482
08:00 AM	36	105	3	144	5	71	16	92	6	145	7	158	4	53	2	59	453
08:15 AM	24	106	9	139	10	76	20	106	12	107	9	128	7	43	8	58	431
08:30 AM	25	73	4	102	11	95	13	119	19	104	8	131	7	38	5	50	402
08:45 AM	24	87	6	117	8	46	22	76	7	106	7	120	5	28	0	33	346
Total	109	371	22	502	34	288	71	393	44	462	31	537	23	162	15	200	1632
Grand Total	189	818	33	1040	73	471	120	664	75	931	49	1055	44	267	44	355	3114
Apprch %	18.2	78.7	3.2		11	70.9	18.1		7.1	88.2	4.6		12.4	75.2	12.4		
Total %	6.1	26.3	1.1	33.4	2.3	15.1	3.9	21.3	2.4	29.9	1.6	33.9	1.4	8.6	1.4	11.4	
Passenger Vehicles	178	806	33	1017	73	463	114	650	70	902	48	1020	42	260	44	346	3033
% Passenger Vehicles	94.2	98.5	100	97.8	100	98.3	95	97.9	93.3	96.9	98	96.7	95.5	97.4	100	97.5	97.4
Large 2 Axle Vehicles	9	10	0	19	0	5	6	11	4	22	1	27	2	6	0	8	65
% Large 2 Axle Vehicles	4.8	1.2	0	1.8	0	1.1	5	1.7	5.3	2.4	2	2.6	4.5	2.2	0	2.3	2.1
3 Axle Vehicles	0	2	0	2	0	1	0	1	1	5	0	6	0	1	0	1	10
% 3 Axle Vehicles	0	0.2	0	0.2	0	0.2	0	0.2	1.3	0.5	0	0.6	0	0.4	0	0.3	0.3
4+ Axle Trucks	2	0	0	2	0	2	0	2	0	2	0	2	0	0	0	0	6
% 4+ Axle Trucks	1.1	0	0	0.2	0	0.4	0	0.3	0	0.2	0	0.2	0	0	0	0	0.2

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	21	125	4	150	12	62	7	81	**12**	141	3	156	**9**	26	**8**	43	430
07:45 AM	24	**160**	4	**188**	**19**	60	16	95	12	129	8	149	5	37	8	50	**482**
08:00 AM	**36**	105	3	144	5	71	16	92	6	**145**	7	**158**	4	**53**	2	**59**	453
08:15 AM	24	106	**9**	139	10	**76**	**20**	**106**	12	107	**9**	128	7	43	8	58	431
Total Volume	105	496	20	621	46	269	59	374	42	522	27	591	25	159	26	210	1796
% App. Total	16.9	79.9	3.2		12.3	71.9	15.8		7.1	88.3	4.6		11.9	75.7	12.4		
PHF	.729	.775	.556	.826	.605	.885	.738	.882	.875	.900	.750	.935	.694	.750	.813	.890	.932

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:30 AM				07:45 AM			
+0 mins.	21	125	4	150	**19**	60	16	95	**12**	141	3	156	5	37	**8**	50
+15 mins.	24	**160**	4	**188**	5	71	16	92	12	129	8	149	4	**53**	2	**59**
+30 mins.	**36**	105	3	144	10	76	**20**	106	6	**145**	7	**158**	**7**	43	8	58
+45 mins.	24	106	**9**	139	11	**95**	13	**119**	12	107	**9**	128	7	38	5	50
Total Volume	105	496	20	621	45	302	65	412	42	522	27	591	23	171	23	217
% App. Total	16.9	79.9	3.2		10.9	73.3	15.8		7.1	88.3	4.6		10.6	78.8	10.6	
PHF	.729	.775	.556	.826	.592	.795	.813	.866	.875	.900	.750	.935	.821	.807	.719	.919

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

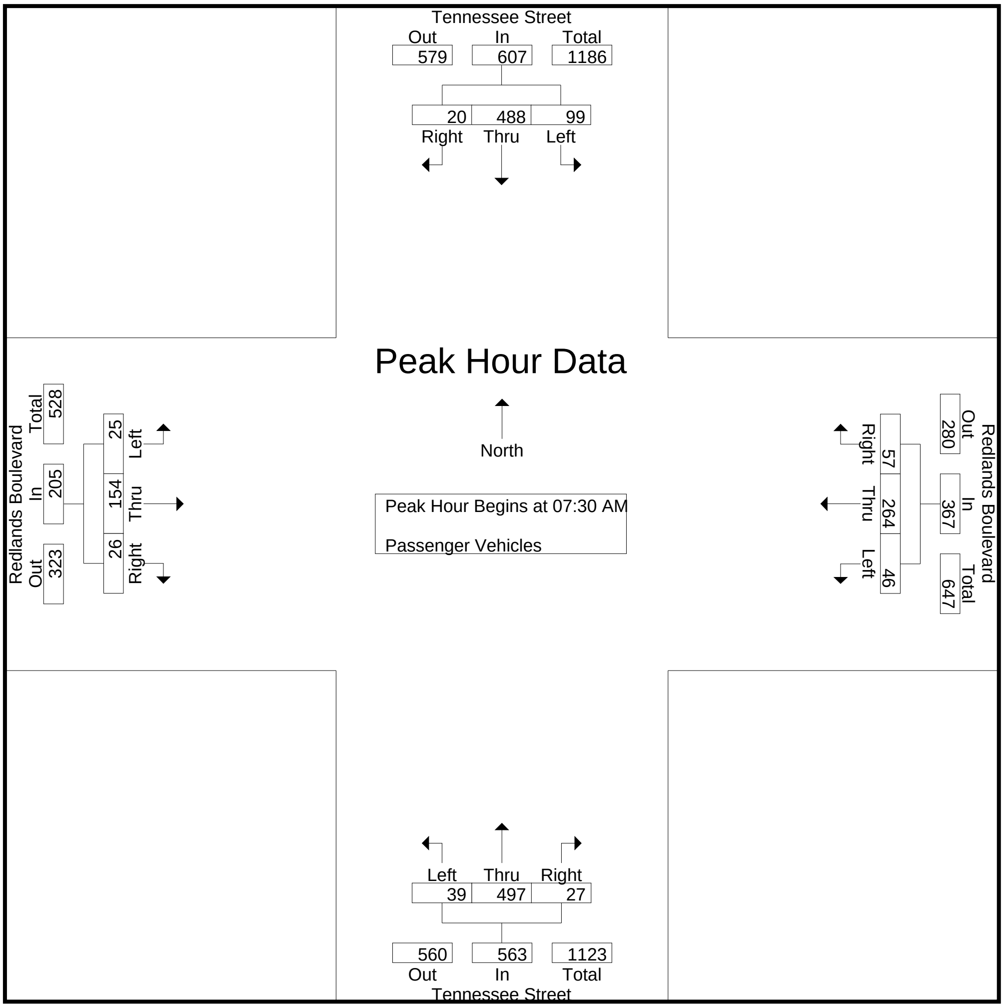
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	12	66	2	80	4	18	13	35	2	84	2	88	7	21	5	33	236
07:15 AM	21	95	1	117	4	42	10	56	5	113	5	123	0	21	8	29	325
07:30 AM	20	125	4	149	12	62	7	81	11	136	3	150	9	26	8	43	423
07:45 AM	23	156	4	183	19	57	15	91	11	119	8	138	5	36	8	49	461
Total	76	442	11	529	39	179	45	263	29	452	18	499	21	104	29	154	1445
08:00 AM	34	103	3	140	5	70	16	91	5	139	7	151	4	53	2	59	441
08:15 AM	22	104	9	135	10	75	19	104	12	103	9	124	7	39	8	54	417
08:30 AM	24	72	4	100	11	94	13	118	18	104	8	130	6	36	5	47	395
08:45 AM	22	85	6	113	8	45	21	74	6	104	6	116	4	28	0	32	335
Total	102	364	22	488	34	284	69	387	41	450	30	521	21	156	15	192	1588
Grand Total	178	806	33	1017	73	463	114	650	70	902	48	1020	42	260	44	346	3033
Apprch %	17.5	79.3	3.2		11.2	71.2	17.5		6.9	88.4	4.7		12.1	75.1	12.7		
Total %	5.9	26.6	1.1	33.5	2.4	15.3	3.8	21.4	2.3	29.7	1.6	33.6	1.4	8.6	1.5	11.4	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	20	125	4	149	12	62	7	81	11	136	3	150	**9**	26	**8**	43	423
07:45 AM	23	**156**	4	**183**	**19**	57	15	91	11	119	8	138	5	36	8	49	**461**
08:00 AM	**34**	103	3	140	5	70	16	91	5	**139**	7	**151**	4	**53**	2	**59**	441
08:15 AM	22	104	**9**	135	10	**75**	**19**	**104**	**12**	103	**9**	124	7	39	8	54	417
Total Volume	99	488	20	607	46	264	57	367	39	497	27	563	25	154	26	205	1742
% App. Total	16.3	80.4	3.3		12.5	71.9	15.5		6.9	88.3	4.8		12.2	75.1	12.7		
PHF	.728	.782	.556	.829	.605	.880	.750	.882	.813	.894	.750	.932	.694	.726	.813	.869	.945

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	20	125	4	149	12	62	7	81	11	136	3	150	**9**	26	**8**	43
+15 mins.	23	**156**	4	**183**	**19**	57	15	91	11	119	8	138	5	36	8	49
+30 mins.	**34**	103	3	140	5	70	16	91	5	**139**	7	**151**	4	**53**	2	**59**
+45 mins.	22	104	**9**	135	10	**75**	**19**	**104**	**12**	103	**9**	124	7	39	8	54
Total Volume	99	488	20	607	46	264	57	367	39	497	27	563	25	154	26	205
% App. Total	16.3	80.4	3.3		12.5	71.9	15.5		6.9	88.3	4.8		12.2	75.1	12.7	
PHF	.728	.782	.556	.829	.605	.880	.750	.882	.813	.894	.750	.932	.694	.726	.813	.869

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

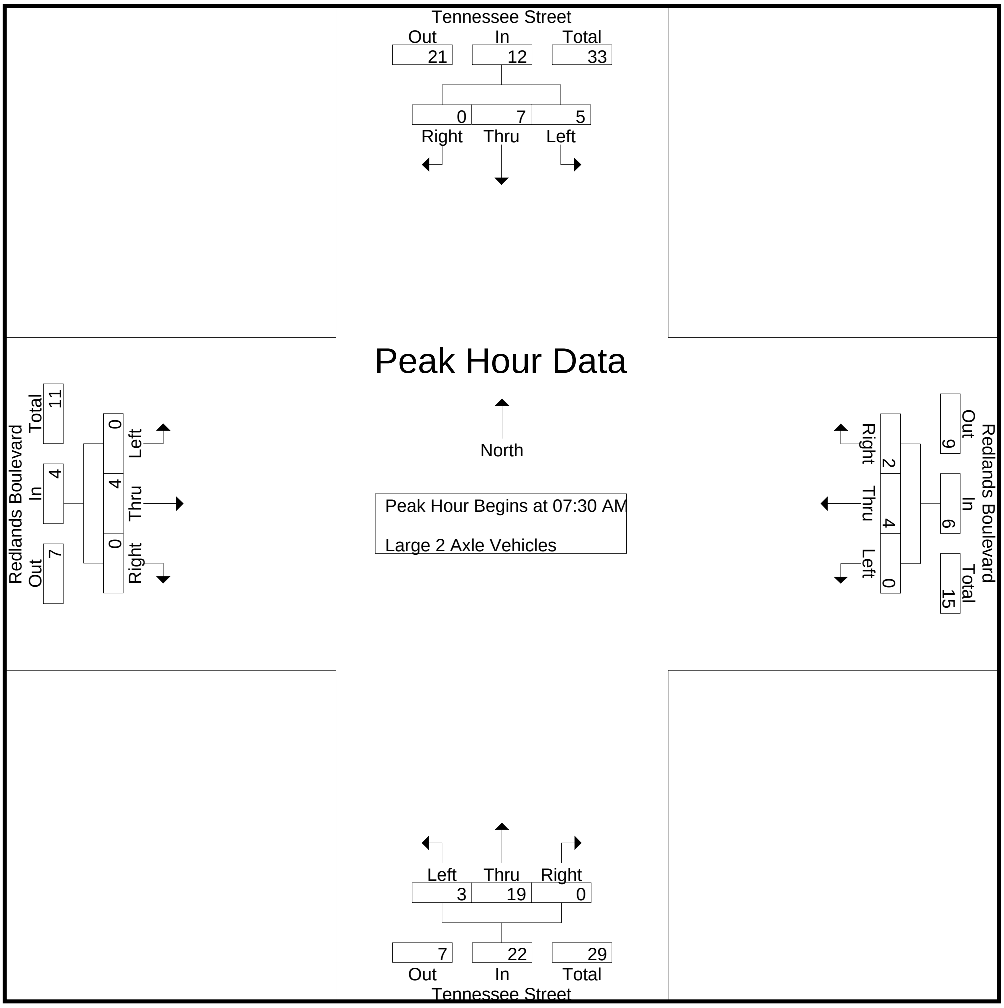
Groups Printed- Large 2 Axle Vehicles

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	1	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	4
07:30 AM	1	0	0	1	0	0	0	0	1	4	0	5	0	0	0	0	6
07:45 AM	1	4	0	5	0	2	1	3	1	7	0	8	0	1	0	1	17
Total	3	5	0	8	0	2	4	6	2	13	0	15	0	1	0	1	30
08:00 AM	2	2	0	4	0	1	0	1	1	4	0	5	0	0	0	0	10
08:15 AM	1	1	0	2	0	1	1	2	0	4	0	4	0	3	0	3	11
08:30 AM	1	1	0	2	0	0	0	0	0	0	0	0	1	2	0	3	5
08:45 AM	2	1	0	3	0	1	1	2	1	1	1	3	1	0	0	1	9
Total	6	5	0	11	0	3	2	5	2	9	1	12	2	5	0	7	35
Grand Total	9	10	0	19	0	5	6	11	4	22	1	27	2	6	0	8	65
Apprch %	47.4	52.6	0		0	45.5	54.5		14.8	81.5	3.7		25	75	0		
Total %	13.8	15.4	0	29.2	0	7.7	9.2	16.9	6.2	33.8	1.5	41.5	3.1	9.2	0	12.3	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	0	0	1	0	0	0	0	**1**	4	0	5	0	0	0	0	6
07:45 AM	1	**4**	0	**5**	0	**2**	**1**	**3**	1	**7**	0	**8**	0	1	0	1	**17**
08:00 AM	**2**	2	0	4	0	1	0	1	1	4	0	5	0	0	0	0	10
08:15 AM	1	1	0	2	0	1	1	2	0	4	0	4	0	**3**	0	**3**	11
Total Volume	5	7	0	12	0	4	2	6	3	19	0	22	0	4	0	4	44
% App. Total	41.7	58.3	0		0	66.7	33.3		13.6	86.4	0		0	100	0		
PHF	.625	.438	.000	.600	.000	.500	.500	.500	.750	.679	.000	.688	.000	.333	.000	.333	.647

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	1	0	0	1	0	0	0	0	**1**	4	0	5	0	0	0	0
+15 mins.	1	**4**	0	**5**	0	**2**	**1**	**3**	1	**7**	0	**8**	0	1	0	1
+30 mins.	**2**	2	0	4	0	1	0	1	1	4	0	5	0	0	0	0
+45 mins.	1	1	0	2	0	1	1	2	0	4	0	4	0	**3**	0	**3**
Total Volume	5	7	0	12	0	4	2	6	3	19	0	22	0	4	0	4
% App. Total	41.7	58.3	0		0	66.7	33.3		13.6	86.4	0		0	100	0	
PHF	.625	.438	.000	.600	.000	.500	.500	.500	.750	.679	.000	.688	.000	.333	.000	.333

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

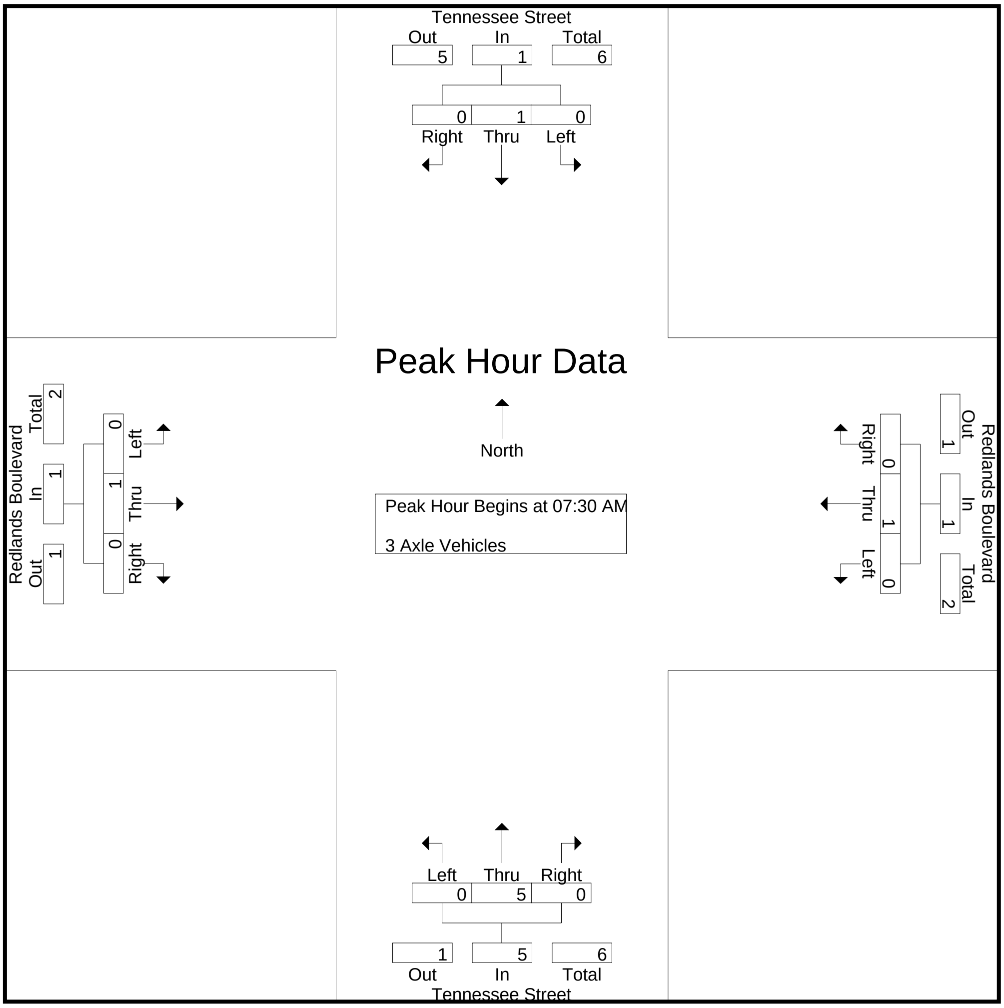
Groups Printed- 3 Axle Vehicles

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	1	0	1	0	2	0	2	0	0	0	0	3
Total	0	0	0	0	0	1	0	1	0	3	0	3	0	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	1	2	0	3	0	1	0	1	6
Grand Total	0	2	0	2	0	1	0	1	1	5	0	6	0	1	0	1	10
Apprch %	0	100	0		0	100	0		16.7	83.3	0		0	100	0		
Total %	0	20	0	20	0	10	0	10	10	50	0	60	0	10	0	10	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	**1**	0	**1**	0	**2**	0	**2**	0	0	0	0	**3**
08:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:15 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	**1**	0	**1**	2
Total Volume	0	1	0	1	0	1	0	1	0	5	0	5	0	1	0	1	8
% App. Total	0	100	0		0	100	0		0	100	0		0	100	0		
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.000	.625	.000	.625	.000	.250	.000	.250	.667

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	**1**	0	**1**	0	**2**	0	**2**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	**1**	0	**1**
Total Volume	0	1	0	1	0	1	0	1	0	5	0	5	0	1	0	1
% App. Total	0	100	0		0	100	0		0	100	0		0	100	0	
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.000	.625	.000	.625	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

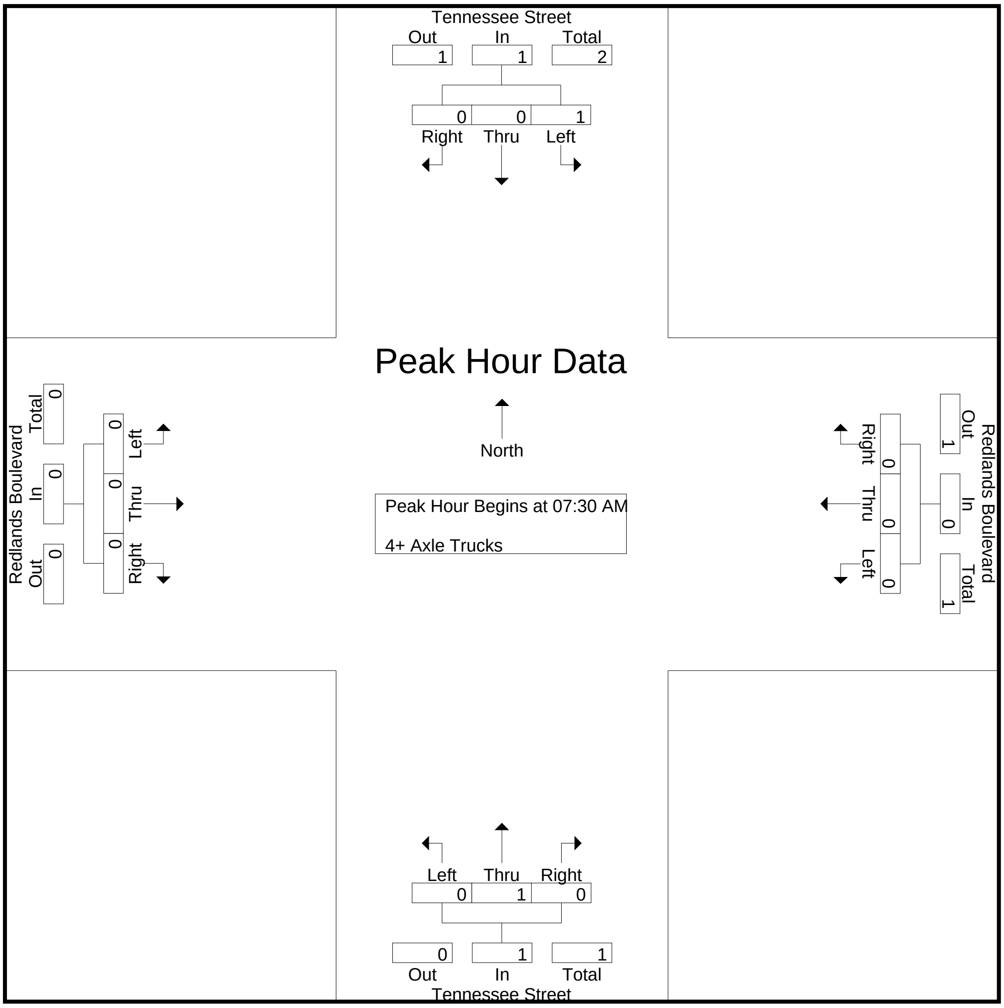
Groups Printed- 4+ Axle Trucks

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
Grand Total	2	0	0	2	0	2	0	2	0	2	0	2	0	0	0	0	6
Apprch %	100	0	0		0	100	0		0	100	0		0	0	0		
Total %	33.3	0	0	33.3	0	33.3	0	33.3	0	33.3	0	33.3	0	0	0	0	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
% App. Total	100	0	0		0	0	0		0	100	0		0	0	0		
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.500

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red AM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	100	0	0		0	0	0		0	100	0		0	0	0	
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

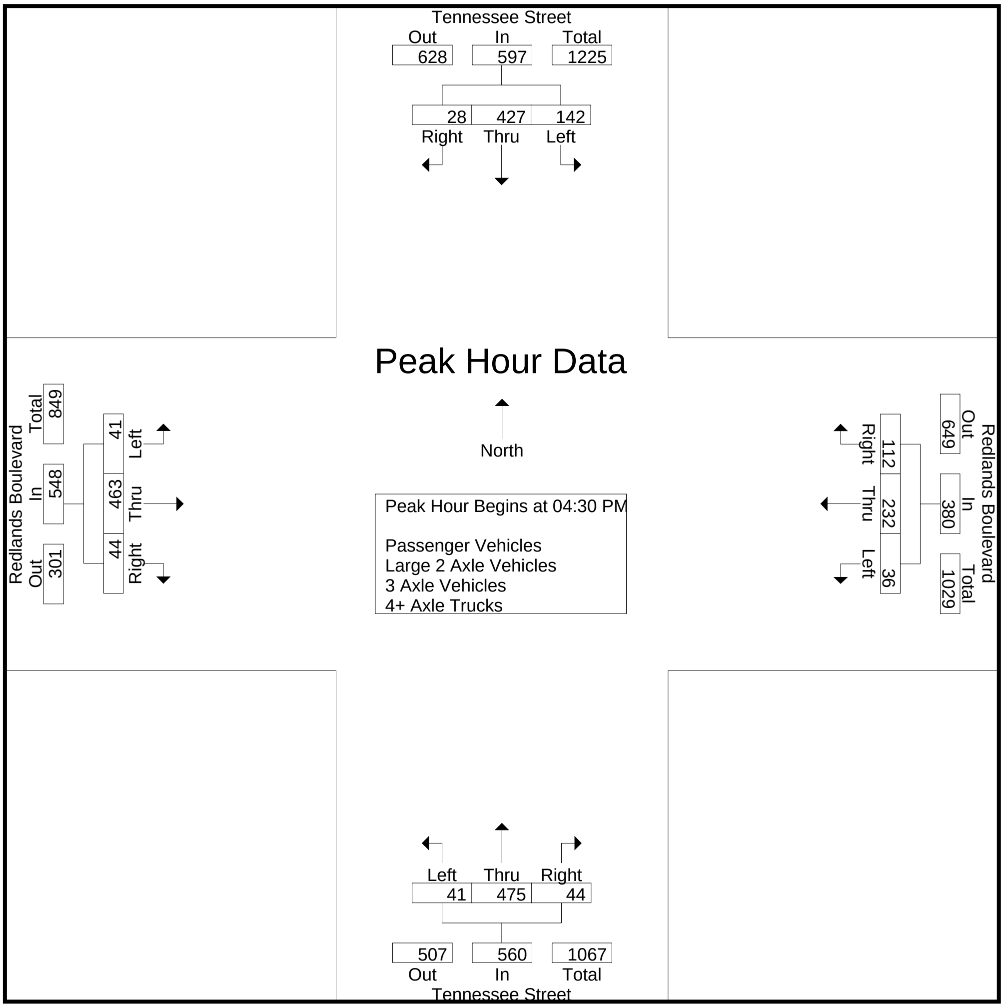
	Tennessee Street				Redlands Boulevard				Tennessee Street				Redlands Boulevard				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	27	104	9	140	14	65	30	109	9	125	11	145	11	93	11	115	509
04:15 PM	24	91	2	117	12	54	27	93	11	118	14	143	6	91	14	111	464
04:30 PM	33	92	4	129	10	51	24	85	12	122	13	147	9	111	7	127	488
04:45 PM	34	115	11	160	8	65	24	97	6	92	11	109	8	102	14	124	490
Total	118	402	26	546	44	235	105	384	38	457	49	544	34	397	46	477	1951
05:00 PM	32	95	4	131	5	66	34	105	12	153	11	176	10	126	16	152	564
05:15 PM	43	125	9	177	13	50	30	93	11	108	9	128	14	124	7	145	543
05:30 PM	37	97	10	144	12	42	26	80	15	103	9	127	11	104	9	124	475
05:45 PM	39	101	10	150	6	65	33	104	10	102	7	119	10	108	6	124	497
Total	151	418	33	602	36	223	123	382	48	466	36	550	45	462	38	545	2079
Grand Total	269	820	59	1148	80	458	228	766	86	923	85	1094	79	859	84	1022	4030
Apprch %	23.4	71.4	5.1		10.4	59.8	29.8		7.9	84.4	7.8		7.7	84.1	8.2		
Total %	6.7	20.3	1.5	28.5	2	11.4	5.7	19	2.1	22.9	2.1	27.1	2	21.3	2.1	25.4	
Passenger Vehicles	268	809	56	1133	80	454	226	760	86	910	84	1080	78	851	83	1012	3985
% Passenger Vehicles	99.6	98.7	94.9	98.7	100	99.1	99.1	99.2	100	98.6	98.8	98.7	98.7	99.1	98.8	99	98.9
Large 2 Axle Vehicles	1	6	2	9	0	4	1	5	0	8	1	9	0	7	1	8	31
% Large 2 Axle Vehicles	0.4	0.7	3.4	0.8	0	0.9	0.4	0.7	0	0.9	1.2	0.8	0	0.8	1.2	0.8	0.8
3 Axle Vehicles	0	4	0	4	0	0	1	1	0	4	0	4	0	0	0	0	9
% 3 Axle Vehicles	0	0.5	0	0.3	0	0	0.4	0.1	0	0.4	0	0.4	0	0	0	0	0.2
4+ Axle Trucks	0	1	1	2	0	0	0	0	0	1	0	1	1	1	0	2	5
% 4+ Axle Trucks	0	0.1	1.7	0.2	0	0	0	0	0	0.1	0	0.1	1.3	0.1	0	0.2	0.1

	Tennessee Street				Redlands Boulevard				Tennessee Street				Redlands Boulevard				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	33	92	4	129	10	51	24	85	**12**	122	**13**	147	9	111	7	127	488
04:45 PM	34	115	**11**	160	8	65	24	97	6	92	11	109	8	102	14	124	490
05:00 PM	32	95	4	131	5	**66**	**34**	**105**	12	**153**	11	**176**	10	**126**	**16**	**152**	**564**
05:15 PM	**43**	**125**	9	**177**	**13**	50	30	93	11	108	9	128	**14**	124	7	145	543
Total Volume	142	427	28	597	36	232	112	380	41	475	44	560	41	463	44	548	2085
% App. Total	23.8	71.5	4.7		9.5	61.1	29.5		7.3	84.8	7.9		7.5	84.5	8		
PHF	.826	.854	.636	.843	.692	.879	.824	.905	.854	.776	.846	.795	.732	.919	.688	.901	.924

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:15 PM				04:30 PM			
+0 mins.	34	115	**11**	160	**14**	**65**	**30**	**109**	11	118	**14**	143	9	111	7	127
+15 mins.	32	95	4	131	12	54	27	93	**12**	122	13	147	8	102	14	124
+30 mins.	**43**	**125**	9	**177**	10	51	24	85	6	92	11	109	10	**126**	**16**	**152**
+45 mins.	37	97	10	144	8	65	24	97	12	**153**	11	**176**	**14**	124	7	145
Total Volume	146	432	34	612	44	235	105	384	41	485	49	575	41	463	44	548
% App. Total	23.9	70.6	5.6		11.5	61.2	27.3		7.1	84.3	8.5		7.5	84.5	8	
PHF	.849	.864	.773	.864	.786	.904	.875	.881	.854	.792	.875	.817	.732	.919	.688	.901

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

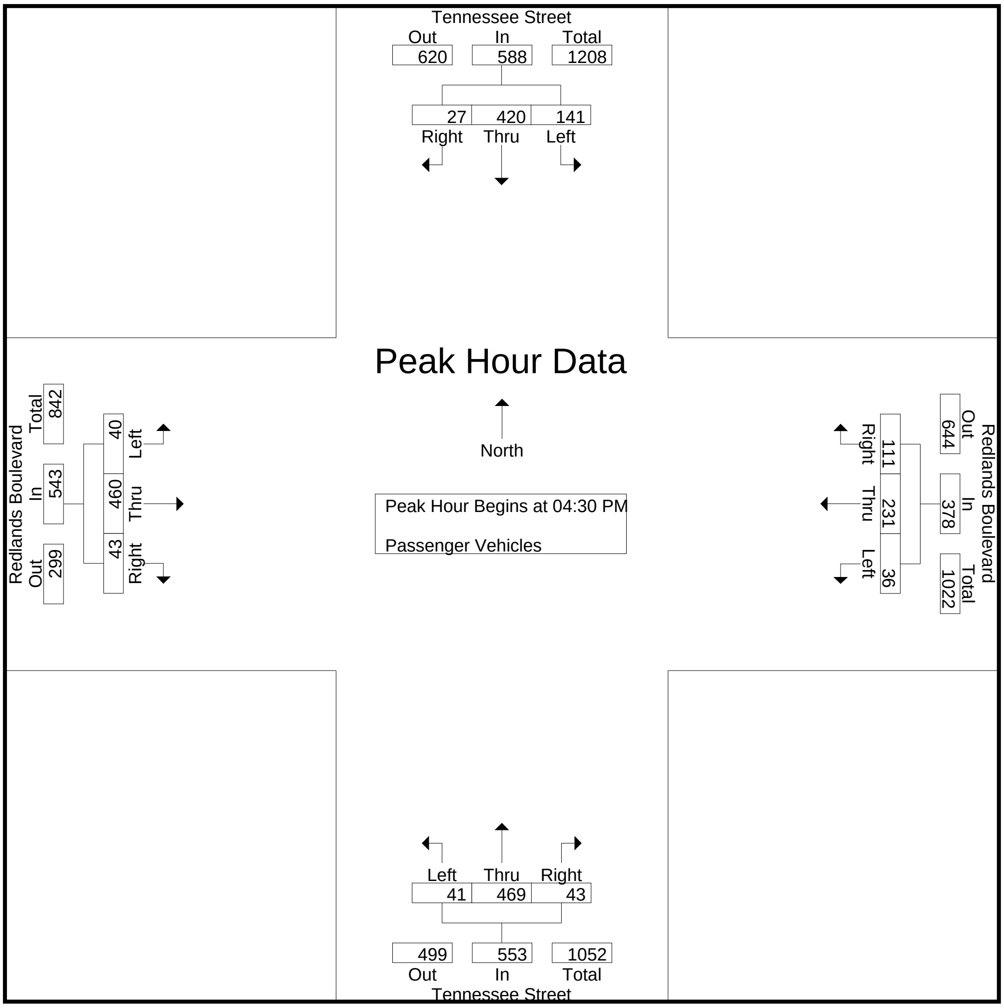
Groups Printed- Passenger Vehicles

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	27	102	9	138	14	65	30	109	9	124	11	144	11	90	11	112	503
04:15 PM	24	89	2	115	12	52	27	91	11	115	14	140	6	91	14	111	457
04:30 PM	33	92	4	129	10	51	24	85	12	119	12	143	9	111	7	127	484
04:45 PM	34	112	11	157	8	65	24	97	6	90	11	107	8	102	14	124	485
Total	118	395	26	539	44	233	105	382	38	448	48	534	34	394	46	474	1929
05:00 PM	31	91	4	126	5	65	34	104	12	152	11	175	10	124	15	149	554
05:15 PM	43	125	8	176	13	50	29	92	11	108	9	128	13	123	7	143	539
05:30 PM	37	97	8	142	12	41	26	79	15	103	9	127	11	104	9	124	472
05:45 PM	39	101	10	150	6	65	32	103	10	99	7	116	10	106	6	122	491
Total	150	414	30	594	36	221	121	378	48	462	36	546	44	457	37	538	2056
Grand Total	268	809	56	1133	80	454	226	760	86	910	84	1080	78	851	83	1012	3985
Apprch %	23.7	71.4	4.9		10.5	59.7	29.7		8	84.3	7.8		7.7	84.1	8.2		
Total %	6.7	20.3	1.4	28.4	2	11.4	5.7	19.1	2.2	22.8	2.1	27.1	2	21.4	2.1	25.4	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	33	92	4	129	10	51	24	85	**12**	119	**12**	143	9	111	7	127	484
04:45 PM	34	112	**11**	157	8	**65**	24	97	6	90	11	107	8	102	14	124	485
05:00 PM	31	91	4	126	5	65	**34**	**104**	12	**152**	11	**175**	10	**124**	**15**	**149**	**554**
05:15 PM	**43**	**125**	8	**176**	**13**	50	29	92	11	108	9	128	**13**	123	7	143	539
Total Volume	141	420	27	588	36	231	111	378	41	469	43	553	40	460	43	543	2062
% App. Total	24	71.4	4.6		9.5	61.1	29.4		7.4	84.8	7.8		7.4	84.7	7.9		
PHF	.820	.840	.614	.835	.692	.888	.816	.909	.854	.771	.896	.790	.769	.927	.717	.911	.931

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	33	92	4	129	10	51	24	85	**12**	119	**12**	143	9	111	7	127
+15 mins.	34	112	**11**	157	8	**65**	24	97	6	90	11	107	8	102	14	124
+30 mins.	31	91	4	126	5	65	**34**	**104**	12	**152**	11	**175**	10	**124**	**15**	**149**
+45 mins.	**43**	**125**	8	**176**	**13**	50	29	92	11	108	9	128	**13**	123	7	143
Total Volume	141	420	27	588	36	231	111	378	41	469	43	553	40	460	43	543
% App. Total	24	71.4	4.6		9.5	61.1	29.4		7.4	84.8	7.8		7.4	84.7	7.9	
PHF	.820	.840	.614	.835	.692	.888	.816	.909	.854	.771	.896	.790	.769	.927	.717	.911

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

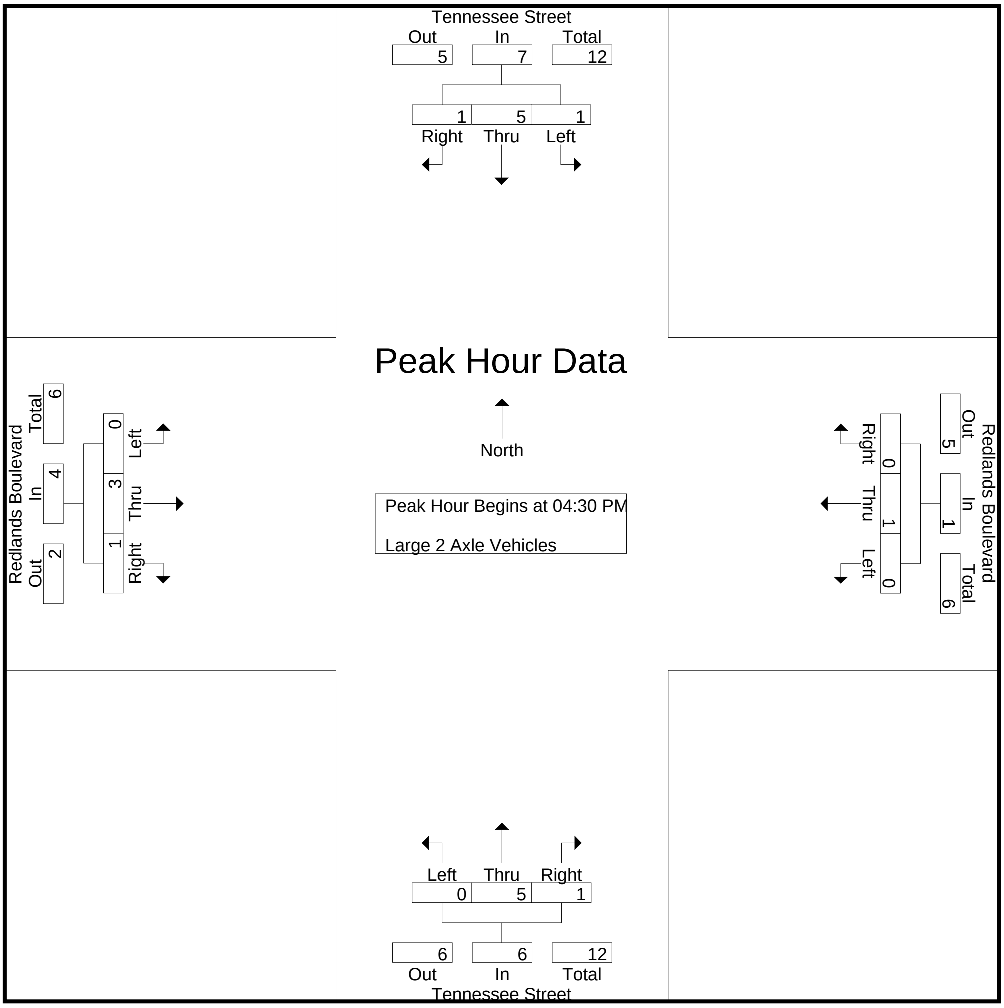
Groups Printed- Large 2 Axle Vehicles

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
04:15 PM	0	1	0	1	0	2	0	2	0	1	0	1	0	0	0	0	4
04:30 PM	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	3
04:45 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Total	0	3	0	3	0	2	0	2	0	5	1	6	0	3	0	3	14
05:00 PM	1	3	0	4	0	1	0	1	0	1	0	1	0	2	1	3	9
05:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
05:30 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	1	1	0	2	0	2	0	1	0	1	4
Total	1	3	2	6	0	2	1	3	0	3	0	3	0	4	1	5	17
Grand Total	1	6	2	9	0	4	1	5	0	8	1	9	0	7	1	8	31
Apprch %	11.1	66.7	22.2		0	80	20		0	88.9	11.1		0	87.5	12.5		
Total %	3.2	19.4	6.5	29	0	12.9	3.2	16.1	0	25.8	3.2	29	0	22.6	3.2	25.8	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	**2**	**1**	**3**	0	0	0	0	3
04:45 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
05:00 PM	**1**	**3**	0	**4**	0	**1**	0	**1**	0	1	0	1	0	**2**	**1**	**3**	**9**
05:15 PM	0	0	**1**	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total Volume	1	5	1	7	0	1	0	1	0	5	1	6	0	3	1	4	18
% App. Total	14.3	71.4	14.3		0	100	0		0	83.3	16.7		0	75	25		
PHF	.250	.417	.250	.438	.000	.250	.000	.250	.000	.625	.250	.500	.000	.375	.250	.333	.500

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	**2**	**1**	**3**	0	0	0	0
+15 mins.	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
+30 mins.	**1**	**3**	0	**4**	0	**1**	0	**1**	0	1	0	1	0	**2**	**1**	**3**
+45 mins.	0	0	**1**	1	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	1	5	1	7	0	1	0	1	0	5	1	6	0	3	1	4
% App. Total	14.3	71.4	14.3		0	100	0		0	83.3	16.7		0	75	25	
PHF	.250	.417	.250	.438	.000	.250	.000	.250	.000	.625	.250	.500	.000	.375	.250	.333

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

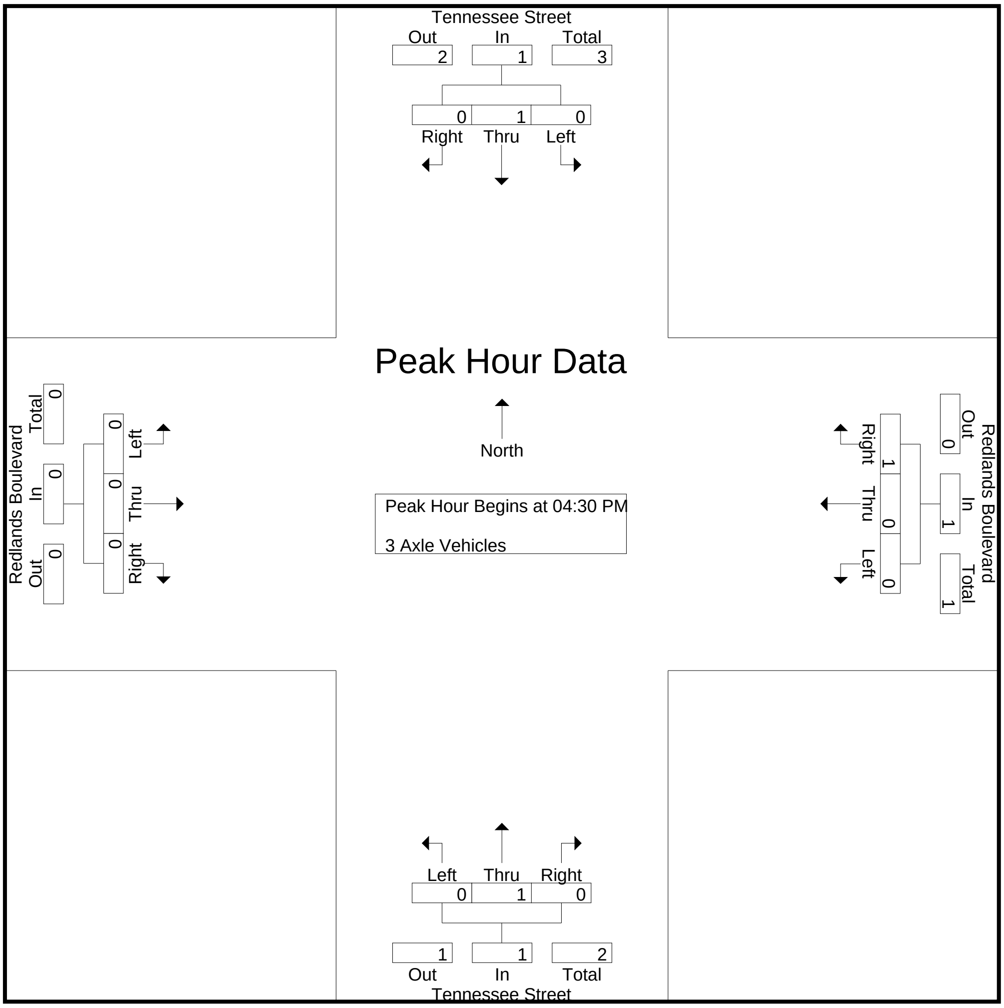
	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
Grand Total	0	4	0	4	0	0	1	1	0	4	0	4	0	0	0	0	9
Apprch %	0	100	0		0	0	100		0	100	0		0	0	0		
Total %	0	44.4	0	44.4	0	0	11.1	11.1	0	44.4	0	44.4	0	0	0	0	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

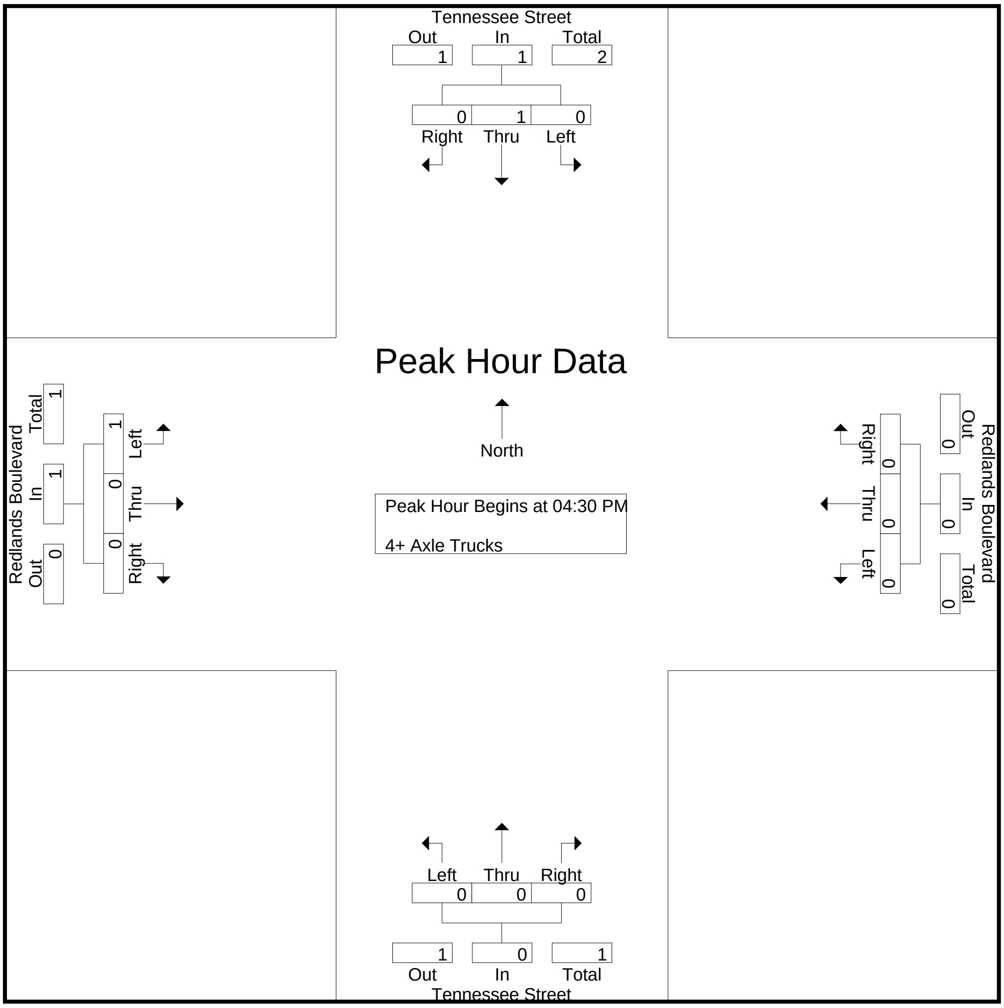
	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	1	2	0	0	0	0	0	0	0	0	1	1	0	2	4
Grand Total	0	1	1	2	0	0	0	0	0	1	0	1	1	1	0	2	5
Apprch %	0	50	50		0	0	0		0	100	0		50	50	0		
Total %	0	20	20	40	0	0	0	0	0	20	0	20	20	20	0	40	

	Tennessee Street Southbound				Redlands Boulevard Westbound				Tennessee Street Northbound				Redlands Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
% App. Total	0	100	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Redlands
N/S: Tennessee Street
E/W: Redlands Boulevard
Weather: Clear

File Name : 12_RED_Ten_Red PM
Site Code : 00322438
Start Date : 5/11/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		100	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250

APPENDIX B:
VOLUME DEVELOPMENT WORKSHEETS

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass.	Trucks				Total	Pass.	Trucks				Total
	Veh.	2 Axle	3 Axle	4 Axle	PCE	PCE Volume	Veh.	2 Axle	3 Axle	4 Axle	PCE	PCE Volume
1 . SR-210 EB Ramps/San Bernardino Ave												
NBL	10	0	0	1	3	13	44	0	0	0	0	44
NBT	4	0	0	0	0	4	58	0	0	0	0	58
NBR	38	0	0	0	0	38	300	1	0	0	2	302
SBL	202	1	0	0	2	204	127	5	0	5	23	150
SBT	196	2	0	2	9	205	253	4	0	2	12	265
SBR	128	1	1	5	19	147	112	1	1	3	13	125
EBL	39	0	1	1	5	44	101	0	0	2	6	107
EBT	421	9	4	1	25	446	612	4	1	1	11	623
EBR	45	1	1	2	10	55	96	1	0	0	2	98
WBL	47	0	0	0	0	47	131	0	0	0	0	131
WBT	338	5	3	9	41	379	270	5	1	1	13	283
WBR	234	2	0	12	39	273	95	1	0	9	29	124
North Leg												
Approach	526	4	1	7	30	556	492	10	1	10	48	540
Departure	277	2	1	13	44	321	254	1	0	11	35	289
Total	803	6	2	20	74	877	746	11	1	21	83	829
South Leg												
Approach	52	0	0	1	3	55	402	1	0	0	2	404
Departure	288	3	1	4	19	307	480	5	0	2	14	494
Total	340	3	1	5	22	362	882	6	0	2	16	898
East Leg												
Approach	619	7	3	21	80	699	496	6	1	10	42	538
Departure	661	10	4	1	27	688	1,039	10	1	6	36	1,075
Total	1,280	17	7	22	107	1,387	1,535	16	2	16	78	1,613
West Leg												
Approach	505	10	6	4	40	545	809	5	1	3	19	828
Departure	476	6	4	15	63	539	426	6	2	4	26	452
Total	981	16	10	19	103	1,084	1,235	11	3	7	45	1,280
Total Approaches												
Approach	1,702	21	10	33	153	1,855	2,199	22	3	23	111	2,310
Departure	1,702	21	10	33	153	1,855	2,199	22	3	23	111	2,310
Total	3,404	42	20	66	306	3,710	4,398	44	6	46	222	4,620

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
2 . SR-210 WB Ramps-Tennessee St/San Bernardino Ave												
NBL	43	1	0	0	2	45	70	1	0	0	2	72
NBT	304	5	1	1	13	317	395	1	1	3	13	408
NBR	48	1	1	1	7	55	58	0	0	0	0	58
SBL	111	3	3	11	44	155	169	1	1	4	16	185
SBT	20	0	0	0	0	20	10	0	0	1	3	13
SBR	58	1	2	5	21	79	99	0	0	1	3	102
EBL	100	3	2	0	9	109	432	0	1	1	5	437
EBT	446	6	2	1	16	462	508	4	0	2	12	520
EBR	116	1	0	0	2	118	171	2	2	1	10	181
WBL	27	0	0	0	0	27	29	1	0	0	2	31
WBT	521	6	2	16	61	582	316	5	1	7	31	347
WBR	277	6	0	3	18	295	169	1	2	0	6	175
North Leg												
Approach	189	4	5	16	65	254	278	1	1	6	22	300
Departure	681	14	3	4	40	721	996	2	4	4	24	1,020
Total	870	18	8	20	105	975	1,274	3	5	10	46	1,320
South Leg												
Approach	395	7	2	2	22	417	523	2	1	3	15	538
Departure	163	1	0	0	2	165	210	3	2	2	15	225
Total	558	8	2	2	24	582	733	5	3	5	30	763
East Leg												
Approach	825	12	2	19	79	904	514	7	3	7	39	553
Departure	605	10	6	13	67	672	735	5	1	6	28	763
Total	1,430	22	8	32	146	1,576	1,249	12	4	13	67	1,316
West Leg												
Approach	662	10	4	1	27	689	1,111	6	3	4	27	1,138
Departure	622	8	4	21	84	706	485	6	1	8	36	521
Total	1,284	18	8	22	111	1,395	1,596	12	4	12	63	1,659
Total Approaches												
Approach	2,071	33	13	38	193	2,264	2,426	16	8	20	103	2,529
Departure	2,071	33	13	38	193	2,264	2,426	16	8	20	103	2,529
Total	4,142	66	26	76	386	4,528	4,852	32	16	40	206	5,058

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
		Trucks				Total PCE Volume		Trucks				Total PCE Volume
	Pass. Veh.	2 Axle	3 Axle	4 Axle	PCE		Pass. Veh.	2 Axle	3 Axle	4 Axle	PCE	
5 . Tennessee St/Lugonia Ave												
NBL	138	2	1	1	8	146	294	0	0	0	0	294
NBT	244	8	1	3	23	267	359	2	1	0	5	364
NBR	91	1	0	2	8	99	265	2	0	3	12	277
SBL	77	1	0	0	2	79	74	2	0	0	3	77
SBT	73	1	0	0	2	75	104	5	0	4	20	124
SBR	8	0	0	0	0	8	7	0	0	0	0	7
EBL	33	1	0	0	2	35	67	0	0	0	0	67
EBT	228	6	1	2	17	245	746	5	0	0	8	754
EBR	144	3	0	0	5	149	453	3	0	0	5	458
WBL	114	3	1	4	19	133	99	1	0	0	2	101
WBT	424	3	1	1	10	434	435	3	0	0	5	440
WBR	103	0	0	0	0	103	123	1	1	1	7	130
North Leg												
Approach	158	2	0	0	4	162	185	7	0	4	23	208
Departure	380	9	1	3	25	405	549	3	2	1	12	561
Total	538	11	1	3	29	567	734	10	2	5	35	769
South Leg												
Approach	473	11	2	6	39	512	918	4	1	3	17	935
Departure	331	7	1	4	26	357	656	9	0	4	27	683
Total	804	18	3	10	65	869	1,574	13	1	7	44	1,618
East Leg												
Approach	641	6	2	5	29	670	657	5	1	1	14	671
Departure	396	8	1	4	27	423	1,085	9	0	3	23	1,108
Total	1,037	14	3	9	56	1,093	1,742	14	1	4	37	1,779
West Leg												
Approach	405	10	1	2	24	429	1,266	8	0	0	13	1,279
Departure	570	5	2	2	18	588	736	3	0	0	5	741
Total	975	15	3	4	42	1,017	2,002	11	0	0	18	2,020
Total Approaches												
Approach	1,677	29	5	13	96	1,773	3,026	24	2	8	67	3,093
Departure	1,677	29	5	13	96	1,773	3,026	24	2	8	67	3,093
Total	3,354	58	10	26	192	3,546	6,052	48	4	16	134	6,186

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
		Trucks				Total		Trucks				Total
	Pass. Veh.	2 Axle	3 Axle	4 Axle	PCE	PCE Volume	Pass. Veh.	2 Axle	3 Axle	4 Axle	PCE	PCE Volume
6 . Tennessee St/I-10 WB Ramps												
NBL	209	5	1	0	10	219	187	2	0	1	6	193
NBT	402	27	3	6	65	467	770	5	1	3	19	789
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	297	7	1	2	19	316	588	7	0	3	20	608
SBR	82	5	0	3	17	99	95	2	0	0	3	98
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	205	3	0	0	5	210	144	1	0	0	2	146
WBT	2	1	0	0	2	4	8	0	0	0	0	8
WBR	135	2	0	1	6	141	237	1	0	0	2	239
North Leg												
Approach	379	12	1	5	36	415	683	9	0	3	23	706
Departure	537	29	3	7	71	608	1,007	6	1	3	21	1,028
Total	916	41	4	12	107	1,023	1,690	15	1	6	44	1,734
South Leg												
Approach	611	32	4	6	75	686	957	7	1	4	25	982
Departure	502	10	1	2	24	526	732	8	0	3	22	754
Total	1,113	42	5	8	99	1,212	1,689	15	1	7	47	1,736
East Leg												
Approach	342	6	0	1	13	355	389	2	0	0	4	393
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	342	6	0	1	13	355	389	2	0	0	4	393
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	293	11	1	3	29	322	290	4	0	1	9	299
Total	293	11	1	3	29	322	290	4	0	1	9	299
Total Approaches												
Approach	1,332	50	5	12	124	1,456	2,029	18	1	7	52	2,081
Departure	1,332	50	5	12	124	1,456	2,029	18	1	7	52	2,081
Total	2,664	100	10	24	248	2,912	4,058	36	2	14	104	4,162

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
		Trucks				Total		Trucks				Total
	Pass. Veh.	2 Axle	3 Axle	4 Axle	PCE	PCE Volume	Pass. Veh.	2 Axle	3 Axle	4 Axle	PCE	PCE Volume
7 . Tennessee St/I-10 EB Ramps												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	474	21	4	2	46	520	627	3	1	1	10	637
NBR	164	11	0	0	17	181	146	3	0	1	8	154
SBL	81	4	0	2	12	93	219	1	0	0	2	221
SBT	412	9	2	1	21	433	501	7	1	1	16	517
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	132	10	0	4	27	159	326	5	0	5	23	349
EBT	135	7	0	1	14	149	358	1	0	1	5	363
EBR	348	8	2	0	16	364	329	6	1	2	17	346
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	493	13	2	3	33	526	720	8	1	1	18	738
Departure	606	31	4	6	73	679	953	8	1	6	33	986
Total	1,099	44	6	9	106	1,205	1,673	16	2	7	51	1,724
South Leg												
Approach	638	32	4	2	63	701	773	6	1	2	18	791
Departure	760	17	4	1	37	797	830	13	2	3	33	863
Total	1,398	49	8	3	100	1,498	1,603	19	3	5	51	1,654
East Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	380	22	0	3	43	423	723	5	0	2	15	738
Total	380	22	0	3	43	423	723	5	0	2	15	738
West Leg												
Approach	615	25	2	5	57	672	1,013	12	1	8	45	1,058
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	615	25	2	5	57	672	1,013	12	1	8	45	1,058
Total Approaches												
Approach	1,746	70	8	10	153	1,899	2,506	26	3	11	81	2,587
Departure	1,746	70	8	10	153	1,899	2,506	26	3	11	81	2,587
Total	3,492	140	16	20	306	3,798	5,012	52	6	22	162	5,174

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks				Total PCE Volume	Pass. Veh.	Trucks				Total PCE Volume
		2 Axle	3 Axle	4 Axle	PCE			2 Axle	3 Axle	4 Axle	PCE	
8 . Tennessee St/Colton Ave												
NBL	32	1	0	0	2	34	64	0	0	0	0	64
NBT	495	28	3	1	51	546	464	5	2	1	15	479
NBR	47	0	1	0	2	49	97	0	0	0	0	97
SBL	136	6	0	0	9	145	203	2	0	2	9	212
SBT	464	11	1	1	22	486	472	8	2	1	19	491
SBR	139	1	0	0	2	141	143	0	0	0	0	143
EBL	56	2	0	0	3	59	147	0	0	0	0	147
EBT	110	2	0	0	3	113	460	1	0	0	2	462
EBR	24	0	0	0	0	24	64	0	0	0	0	64
WBL	49	1	0	0	2	51	52	2	0	0	3	55
WBT	198	3	1	1	10	208	248	0	0	0	0	248
WBR	82	3	1	0	7	89	148	0	0	0	0	148
North Leg												
Approach	739	18	1	1	33	772	818	10	2	3	28	846
Departure	633	33	4	1	61	694	759	5	2	1	15	774
Total	1,372	51	5	2	94	1,466	1,577	15	4	4	43	1,620
South Leg												
Approach	574	29	4	1	55	629	625	5	2	1	15	640
Departure	537	12	1	1	24	561	588	10	2	1	22	610
Total	1,111	41	5	2	79	1,190	1,213	15	4	2	37	1,250
East Leg												
Approach	329	7	2	1	19	348	448	2	0	0	3	451
Departure	293	8	1	0	14	307	760	3	0	2	11	771
Total	622	15	3	1	33	655	1,208	5	0	2	14	1,222
West Leg												
Approach	190	4	0	0	6	196	671	1	0	0	2	673
Departure	369	5	1	1	14	383	455	0	0	0	0	455
Total	559	9	1	1	20	579	1,126	1	0	0	2	1,128
Total Approaches												
Approach	1,832	58	7	3	113	1,945	2,562	18	4	4	48	2,610
Departure	1,832	58	7	3	113	1,945	2,562	18	4	4	48	2,610
Total	3,664	116	14	6	226	3,890	5,124	36	8	8	96	5,220

Table B-1: Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
9 . Tennessee St/Redlands Ave												
NBL	39	3	0	0	5	44	41	0	0	0	0	41
NBT	497	19	5	1	42	539	469	5	1	0	10	479
NBR	27	0	0	0	0	27	43	1	0	0	2	45
SBL	99	5	0	1	11	110	141	1	0	0	2	143
SBT	488	7	1	0	13	501	420	5	1	1	13	433
SBR	20	0	0	0	0	20	27	1	0	0	2	29
EBL	25	0	0	0	0	25	40	0	0	1	3	43
EBT	154	4	1	0	8	162	460	3	0	0	5	465
EBR	26	0	0	0	0	26	43	1	0	0	2	45
WBL	46	0	0	0	0	46	36	0	0	0	0	36
WBT	264	4	1	0	8	272	231	1	0	0	2	233
WBR	57	2	0	0	3	60	111	0	1	0	2	113
North Leg												
Approach	607	12	1	1	24	631	588	7	1	1	17	605
Departure	579	21	5	1	45	624	620	5	2	1	15	635
Total	1,186	33	6	2	69	1,255	1,208	12	3	2	32	1,240
South Leg												
Approach	563	22	5	1	47	610	553	6	1	0	12	565
Departure	560	7	1	0	13	573	499	6	1	1	15	514
Total	1,123	29	6	1	60	1,183	1,052	12	2	1	27	1,079
East Leg												
Approach	367	6	1	0	11	378	378	1	1	0	4	382
Departure	280	9	1	1	19	299	644	5	0	0	9	653
Total	647	15	2	1	30	677	1,022	6	1	0	13	1,035
West Leg												
Approach	205	4	1	0	8	213	543	4	0	1	10	553
Departure	323	7	1	0	13	336	299	2	0	0	4	303
Total	528	11	2	0	21	549	842	6	0	1	14	856
Total Approaches												
Approach	1,742	44	8	2	90	1,832	2,062	18	3	2	43	2,105
Departure	1,742	44	8	2	90	1,832	2,062	18	3	2	43	2,105
Total	3,484	88	16	4	180	3,664	4,124	36	6	4	86	4,210

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
1 . SR-210 EB Ramps/San Bernardino Ave								
NBL	10	1	11	9.09%	44	0	44	0.00%
NBT	4	0	4	0.00%	58	0	58	0.00%
NBR	38	0	38	0.00%	300	1	301	0.33%
SBL	202	1	203	0.49%	127	10	137	7.30%
SBT	196	4	200	2.00%	253	6	259	2.32%
SBR	128	7	135	5.19%	112	5	117	4.27%
EBL	39	2	41	4.88%	101	2	103	1.94%
EBT	421	14	435	3.22%	612	6	618	0.97%
EBR	45	4	49	8.16%	96	1	97	1.03%
WBL	47	0	47	0.00%	131	0	131	0.00%
WBT	338	17	355	4.79%	270	7	277	2.53%
WBR	234	14	248	5.65%	95	10	105	9.52%
North Leg								
Approach	526	12	538	2.2%	492	21	513	4.1%
Departure	277	16	293	5.5%	254	12	266	4.5%
Total	803	28	831	3.4%	746	33	779	4.2%
South Leg								
Approach	52	1	53	1.9%	402	1	403	0.2%
Departure	288	8	296	2.7%	480	7	487	1.4%
Total	340	9	349	2.6%	882	8	890	0.9%
East Leg								
Approach	619	31	650	4.8%	496	17	513	3.3%
Departure	661	15	676	2.2%	1,039	17	1,056	1.6%
Total	1,280	46	1,326	3.5%	1,535	34	1,569	2.2%
West Leg								
Approach	505	20	525	3.8%	809	9	818	1.1%
Departure	476	25	501	5.0%	426	12	438	2.7%
Total	981	45	1,026	4.4%	1,235	21	1,256	1.7%
Total Approaches								
Approach	1,702	64	1,766		2,199	48	2,247	
Departure	1,702	64	1,766		2,199	48	2,247	
Total	3,404	128	3,532	3.6%	4,398	96	4,494	2.1%

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
2 . SR-210 WB Ramps-Tennessee St/San Bernardino Ave								
NBL	43	1	44	2.27%	70	1	71	1.41%
NBT	304	7	311	2.25%	395	5	400	1.25%
NBR	48	3	51	5.88%	58	0	58	0.00%
SBL	111	17	128	13.28%	169	6	175	3.43%
SBT	20	0	20	0.00%	10	1	11	9.09%
SBR	58	8	66	12.12%	99	1	100	1.00%
EBL	100	5	105	4.76%	432	2	434	0.46%
EBT	446	9	455	1.98%	508	6	514	1.17%
EBR	116	1	117	0.85%	171	5	176	2.84%
WBL	27	0	27	0.00%	29	1	30	3.33%
WBT	521	24	545	4.40%	316	13	329	3.95%
WBR	277	9	286	3.15%	169	3	172	1.74%
North Leg								
Approach	189	25	214	11.7%	278	8	286	2.8%
Departure	681	21	702	3.0%	996	10	1,006	1.0%
Total	870	46	916	5.0%	1,274	18	1,292	1.4%
South Leg								
Approach	395	11	406	2.7%	523	6	529	1.1%
Departure	163	1	164	0.6%	210	7	217	3.2%
Total	558	12	570	2.1%	733	13	746	1.7%
East Leg								
Approach	825	33	858	3.8%	514	17	531	3.2%
Departure	605	29	634	4.6%	735	12	747	1.6%
Total	1,430	62	1,492	4.2%	1,249	29	1,278	2.3%
West Leg								
Approach	662	15	677	2.2%	1,111	13	1,124	1.2%
Departure	622	33	655	5.0%	485	15	500	3.0%
Total	1,284	48	1,332	3.6%	1,596	28	1,624	1.7%
Total Approaches								
Approach	2,071	84	2,155		2,426	44	2,470	
Departure	2,071	84	2,155		2,426	44	2,470	
Total	4,142	168	4,310	3.9%	4,852	88	4,940	1.8%

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
5 . Tennessee St/Lugonia Ave								
NBL	138	4	142	2.82%	294	0	294	0.00%
NBT	244	12	256	4.69%	359	3	362	0.83%
NBR	91	3	94	3.19%	265	5	270	1.85%
SBL	77	1	78	1.28%	74	2	76	2.63%
SBT	73	1	74	1.35%	104	9	113	7.96%
SBR	8	0	8	0.00%	7	0	7	0.00%
EBL	33	1	34	2.94%	67	0	67	0.00%
EBT	228	9	237	3.80%	746	5	751	0.67%
EBR	144	3	147	2.04%	453	3	456	0.66%
WBL	114	8	122	6.56%	99	1	100	1.00%
WBT	424	5	429	1.17%	435	3	438	0.68%
WBR	103	0	103	0.00%	123	3	126	2.38%
North Leg								
Approach	158	2	160	1.3%	185	11	196	5.6%
Departure	380	13	393	3.3%	549	6	555	1.1%
Total	538	15	553	2.7%	734	17	751	2.3%
South Leg								
Approach	473	19	492	3.9%	918	8	926	0.9%
Departure	331	12	343	3.5%	656	13	669	1.9%
Total	804	31	835	3.7%	1,574	21	1,595	1.3%
East Leg								
Approach	641	13	654	2.0%	657	7	664	1.1%
Departure	396	13	409	3.2%	1,085	12	1,097	1.1%
Total	1,037	26	1,063	2.4%	1,742	19	1,761	1.1%
West Leg								
Approach	405	13	418	3.1%	1,266	8	1,274	0.6%
Departure	570	9	579	1.6%	736	3	739	0.4%
Total	975	22	997	2.2%	2,002	11	2,013	0.5%
Total Approaches								
Approach	1,677	47	1,724		3,026	34	3,060	
Departure	1,677	47	1,724		3,026	34	3,060	
Total	3,354	94	3,448	2.7%	6,052	68	6,120	1.1%

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
6 . Tennessee St/I-10 WB Ramps								
NBL	209	6	215	2.79%	187	3	190	1.58%
NBT	402	36	438	8.22%	770	9	779	1.16%
NBR	0	0	0	0.00%	0	0	0	0.00%
SBL	0	0	0	0.00%	0	0	0	0.00%
SBT	297	10	307	3.26%	588	10	598	1.67%
SBR	82	8	90	8.89%	95	2	97	2.06%
EBL	0	0	0	0.00%	0	0	0	0.00%
EBT	0	0	0	0.00%	0	0	0	0.00%
EBR	0	0	0	0.00%	0	0	0	0.00%
WBL	205	3	208	1.44%	144	1	145	0.69%
WBT	2	1	3	33.33%	8	0	8	0.00%
WBR	135	3	138	2.17%	237	1	238	0.42%
North Leg								
Approach	379	18	397	4.5%	683	12	695	1.7%
Departure	537	39	576	6.8%	1,007	10	1,017	1.0%
Total	916	57	973	5.9%	1,690	22	1,712	1.3%
South Leg								
Approach	611	42	653	6.4%	957	12	969	1.2%
Departure	502	13	515	2.5%	732	11	743	1.5%
Total	1,113	55	1,168	4.7%	1,689	23	1,712	1.3%
East Leg								
Approach	342	7	349	2.0%	389	2	391	0.5%
Departure	0	0	0	0.0%	0	0	0	0.0%
Total	342	7	349	2.0%	389	2	391	0.5%
West Leg								
Approach	0	0	0	0.0%	0	0	0	0.0%
Departure	293	15	308	4.9%	290	5	295	1.7%
Total	293	15	308	4.9%	290	5	295	1.7%
Total Approaches								
Approach	1,332	67	1,399		2,029	26	2,055	
Departure	1,332	67	1,399		2,029	26	2,055	
Total	2,664	134	2,798	4.8%	4,058	52	4,110	1.3%

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
7 . Tennessee St/I-10 EB Ramps								
NBL	0	0	0	0.00%	0	0	0	0.00%
NBT	474	27	501	5.39%	627	5	632	0.79%
NBR	164	11	175	6.29%	146	4	150	2.67%
SBL	81	6	87	6.90%	219	1	220	0.45%
SBT	412	12	424	2.83%	501	9	510	1.76%
SBR	0	0	0	0.00%	0	0	0	0.00%
EBL	132	14	146	9.59%	326	10	336	2.98%
EBT	135	8	143	5.59%	358	2	360	0.56%
EBR	348	10	358	2.79%	329	9	338	2.66%
WBL	0	0	0	0.00%	0	0	0	0.00%
WBT	0	0	0	0.00%	0	0	0	0.00%
WBR	0	0	0	0.00%	0	0	0	0.00%
North Leg								
Approach	493	18	511	3.5%	720	10	730	1.4%
Departure	606	41	647	6.3%	953	15	968	1.5%
Total	1,099	59	1,158	5.1%	1,673	25	1,698	1.5%
South Leg								
Approach	638	38	676	5.6%	773	9	782	1.2%
Departure	760	22	782	2.8%	830	18	848	2.1%
Total	1,398	60	1,458	4.1%	1,603	27	1,630	1.7%
East Leg								
Approach	0	0	0	0.0%	0	0	0	0.0%
Departure	380	25	405	6.2%	723	7	730	1.0%
Total	380	25	405	6.2%	723	7	730	1.0%
West Leg								
Approach	615	32	647	4.9%	1,013	21	1,034	2.0%
Departure	0	0	0	0.0%	0	0	0	0.0%
Total	615	32	647	4.9%	1,013	21	1,034	2.0%
Total Approaches								
Approach	1,746	88	1,834		2,506	40	2,546	
Departure	1,746	88	1,834		2,506	40	2,546	
Total	3,492	176	3,668	4.8%	5,012	80	5,092	1.6%

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
8 . Tennessee St/Colton Ave								
NBL	32	1	33	3.03%	64	0	64	0.00%
NBT	495	32	527	6.07%	464	8	472	1.69%
NBR	47	1	48	2.08%	97	0	97	0.00%
SBL	136	6	142	4.23%	203	4	207	1.93%
SBT	464	13	477	2.73%	472	11	483	2.28%
SBR	139	1	140	0.71%	143	0	143	0.00%
EBL	56	2	58	3.45%	147	0	147	0.00%
EBT	110	2	112	1.79%	460	1	461	0.22%
EBR	24	0	24	0.00%	64	0	64	0.00%
WBL	49	1	50	2.00%	52	2	54	3.70%
WBT	198	5	203	2.46%	248	0	248	0.00%
WBR	82	4	86	4.65%	148	0	148	0.00%
North Leg								
Approach	739	20	759	2.6%	818	15	833	1.8%
Departure	633	38	671	5.7%	759	8	767	1.0%
Total	1,372	58	1,430	4.1%	1,577	23	1,600	1.4%
South Leg								
Approach	574	34	608	5.6%	625	8	633	1.3%
Departure	537	14	551	2.5%	588	13	601	2.2%
Total	1,111	48	1,159	4.1%	1,213	21	1,234	1.7%
East Leg								
Approach	329	10	339	2.9%	448	2	450	0.4%
Departure	293	9	302	3.0%	760	5	765	0.7%
Total	622	19	641	3.0%	1,208	7	1,215	0.6%
West Leg								
Approach	190	4	194	2.1%	671	1	672	0.1%
Departure	369	7	376	1.9%	455	0	455	0.0%
Total	559	11	570	1.9%	1,126	1	1,127	0.1%
Total Approaches								
Approach	1,832	68	1,900		2,562	26	2,588	
Departure	1,832	68	1,900		2,562	26	2,588	
Total	3,664	136	3,800	3.6%	5,124	52	5,176	1.0%

Table B-2: Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
9 . Tennessee St/Redlands Ave								
NBL	39	3	42	7.14%	41	0	41	0.00%
NBT	497	25	522	4.79%	469	6	475	1.26%
NBR	27	0	27	0.00%	43	1	44	2.27%
SBL	99	6	105	5.71%	141	1	142	0.70%
SBT	488	8	496	1.61%	420	7	427	1.64%
SBR	20	0	20	0.00%	27	1	28	3.57%
EBL	25	0	25	0.00%	40	1	41	2.44%
EBT	154	5	159	3.14%	460	3	463	0.65%
EBR	26	0	26	0.00%	43	1	44	2.27%
WBL	46	0	46	0.00%	36	0	36	0.00%
WBT	264	5	269	1.86%	231	1	232	0.43%
WBR	57	2	59	3.39%	111	1	112	0.89%
North Leg								
Approach	607	14	621	2.3%	588	9	597	1.5%
Departure	579	27	606	4.5%	620	8	628	1.3%
Total	1,186	41	1,227	3.3%	1,208	17	1,225	1.4%
South Leg								
Approach	563	28	591	4.7%	553	7	560	1.3%
Departure	560	8	568	1.4%	499	8	507	1.6%
Total	1,123	36	1,159	3.1%	1,052	15	1,067	1.4%
East Leg								
Approach	367	7	374	1.9%	378	2	380	0.5%
Departure	280	11	291	3.8%	644	5	649	0.8%
Total	647	18	665	2.7%	1,022	7	1,029	0.7%
West Leg								
Approach	205	5	210	2.4%	543	5	548	0.9%
Departure	323	8	331	2.4%	299	2	301	0.7%
Total	528	13	541	2.4%	842	7	849	0.8%
Total Approaches								
Approach	1,742	54	1,796		2,062	23	2,085	
Departure	1,742	54	1,796		2,062	23	2,085	
Total	3,484	108	3,592	3.0%	4,124	46	4,170	1.1%

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
1 . SR-210 EB Ramps/San Bernardino Ave						
NBL	13	0	13	44	0	44
NBT	4	0	4	58	0	58
NBR	38	0	38	320	0	320
SBL	204	8	212	159	22	181
SBT	205	0	205	265	0	265
SBR	147	0	147	125	0	125
EBL	44	0	44	107	0	107
EBT	447	8	455	660	20	680
EBR	55	0	55	98	0	98
WBL	47	0	47	127	0	127
WBT	383	15	398	274	15	289
WBR	276	0	276	120	0	120
North Leg						
Approach	556	8	564	549	22	571
Departure	324	0	324	285	0	285
Total	880	8	888	834	22	856
South Leg						
Approach	55	0	55	422	0	422
Departure	307	0	307	490	0	490
Total	362	0	362	912	0	912
East Leg						
Approach	706	15	721	521	15	536
Departure	689	16	705	1,139	42	1,181
Total	1,395	31	1,426	1,660	57	1,717
West Leg						
Approach	546	8	554	865	20	885
Departure	543	15	558	443	15	458
Total	1,089	23	1,112	1,308	35	1,343
Total Approaches						
Approach	1,863	31	1,894	2,357	57	2,414
Departure	1,863	31	1,894	2,357	57	2,414
Total	3,726	62	3,788	4,714	114	4,828

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
2 . SR-210 WB Ramps-Tennessee St/San Bernardino Ave						
NBL	45	15	60	72	15	87
NBT	317	26	343	408	14	422
NBR	55	15	70	58	13	71
SBL	155	0	155	185	0	185
SBT	20	0	20	13	0	13
SBR	79	0	79	102	0	102
EBL	109	0	109	437	0	437
EBT	462	0	462	520	0	520
EBR	118	16	134	181	42	223
WBL	27	7	34	31	18	49
WBT	582	0	582	347	0	347
WBR	295	0	295	175	0	175
North Leg						
Approach	254	0	254	300	0	300
Departure	721	26	747	1,020	14	1,034
Total	975	26	1,001	1,320	14	1,334
South Leg						
Approach	417	56	473	538	42	580
Departure	165	23	188	225	60	285
Total	582	79	661	763	102	865
East Leg						
Approach	904	7	911	553	18	571
Departure	672	15	687	763	13	776
Total	1,576	22	1,598	1,316	31	1,347
West Leg						
Approach	689	16	705	1,138	42	1,180
Departure	706	15	721	521	15	536
Total	1,395	31	1,426	1,659	57	1,716
Total Approaches						
Approach	2,264	79	2,343	2,529	102	2,631
Departure	2,264	79	2,343	2,529	102	2,631
Total	4,528	158	4,686	5,058	204	5,262

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
3 . Tennessee St/Pennslyvania Ave						
NBL	0	0	0	0	0	0
NBT	417	43	460	538	35	573
NBR	0	6	6	0	17	17
SBL	0	4	4	0	11	11
SBT	165	20	185	225	48	273
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	0	20	20	0	10	10
WBT	0	0	0	0	0	0
WBR	0	13	13	0	7	7
North Leg						
Approach	165	24	189	225	59	284
Departure	417	56	473	538	42	580
Total	582	80	662	763	101	864
South Leg						
Approach	417	49	466	538	52	590
Departure	165	40	205	225	58	283
Total	582	89	671	763	110	873
East Leg						
Approach	0	33	33	0	17	17
Departure	0	10	10	0	28	28
Total	0	43	43	0	45	45
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	582	106	688	763	128	891
Departure	582	106	688	763	128	891
Total	1,164	212	1,376	1,526	256	1,782

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
4 . Tennessee St/Dwy 1						
NBL	0	0	0	0	0	0
NBT	417	0	417	538	2	540
NBR	0	33	33	0	84	84
SBL	0	22	22	0	54	54
SBT	165	18	183	225	4	229
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	0	66	66	0	55	55
WBT	0	0	0	0	0	0
WBR	0	49	49	0	50	50
North Leg						
Approach	165	40	205	225	58	283
Departure	417	49	466	538	52	590
Total	582	89	671	763	110	873
South Leg						
Approach	417	33	450	538	86	624
Departure	165	84	249	225	59	284
Total	582	117	699	763	145	908
East Leg						
Approach	0	115	115	0	105	105
Departure	0	55	55	0	138	138
Total	0	170	170	0	243	243
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	582	188	770	763	249	1,012
Departure	582	188	770	763	249	1,012
Total	1,164	376	1,540	1,526	498	2,024

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
5 . Tennessee St/Lugonia Ave						
NBL	146	0	146	294	0	294
NBT	267	24	291	364	65	429
NBR	99	0	99	277	0	277
SBL	79	8	87	77	8	85
SBT	75	68	143	124	43	167
SBR	8	8	16	7	8	15
EBL	35	5	40	67	11	78
EBT	245	0	245	754	0	754
EBR	149	0	149	458	0	458
WBL	133	0	133	101	0	101
WBT	434	0	434	440	0	440
WBR	103	5	108	130	11	141
North Leg						
Approach	162	84	246	208	59	267
Departure	405	34	439	561	87	648
Total	567	118	685	769	146	915
South Leg						
Approach	512	24	536	935	65	1,000
Departure	357	68	425	683	43	726
Total	869	92	961	1,618	108	1,726
East Leg						
Approach	670	5	675	671	11	682
Departure	423	8	431	1,108	8	1,116
Total	1,093	13	1,106	1,779	19	1,798
West Leg						
Approach	429	5	434	1,279	11	1,290
Departure	588	8	596	741	8	749
Total	1,017	13	1,030	2,020	19	2,039
Total Approaches						
Approach	1,773	118	1,891	3,093	146	3,239
Departure	1,773	118	1,891	3,093	146	3,239
Total	3,546	236	3,782	6,186	292	6,478

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
6 . Tennessee St/I-10 WB Ramps						
NBL	219	0	219	193	0	193
NBT	467	18	485	789	48	837
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	316	48	364	608	32	640
SBR	99	20	119	98	10	108
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	210	0	210	146	0	146
WBT	4	0	4	8	0	8
WBR	141	6	147	239	17	256
North Leg						
Approach	415	68	483	706	42	748
Departure	608	24	632	1,028	65	1,093
Total	1,023	92	1,115	1,734	107	1,841
South Leg						
Approach	686	18	704	982	48	1,030
Departure	526	48	574	754	32	786
Total	1,212	66	1,278	1,736	80	1,816
East Leg						
Approach	355	6	361	393	17	410
Departure	0	0	0	0	0	0
Total	355	6	361	393	17	410
West Leg						
Approach	0	0	0	0	0	0
Departure	322	20	342	299	10	309
Total	322	20	342	299	10	309
Total Approaches						
Approach	1,456	92	1,548	2,081	107	2,188
Departure	1,456	92	1,548	2,081	107	2,188
Total	2,912	184	3,096	4,162	214	4,376

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
7 . Tennessee St/I-10 EB Ramps						
NBL	0	0	0	0	0	0
NBT	525	12	537	634	31	665
NBR	181	0	181	154	0	154
SBL	93	20	113	226	10	236
SBT	433	28	461	528	22	550
SBR	0	0	0	0	0	0
EBL	161	6	167	348	17	365
EBT	149	0	149	363	0	363
EBR	364	0	364	346	0	346
WBL	0	0	0	0	0	0
WBT	0	0	0	0	0	0
WBR	0	0	0	0	0	0
North Leg						
Approach	526	48	574	754	32	786
Departure	686	18	704	982	48	1,030
Total	1,212	66	1,278	1,736	80	1,816
South Leg						
Approach	706	12	718	788	31	819
Departure	797	28	825	874	22	896
Total	1,503	40	1,543	1,662	53	1,715
East Leg						
Approach	0	0	0	0	0	0
Departure	423	20	443	743	10	753
Total	423	20	443	743	10	753
West Leg						
Approach	674	6	680	1,057	17	1,074
Departure	0	0	0	0	0	0
Total	674	6	680	1,057	17	1,074
Total Approaches						
Approach	1,906	66	1,972	2,599	80	2,679
Departure	1,906	66	1,972	2,599	80	2,679
Total	3,812	132	3,944	5,198	160	5,358

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
8 . Tennessee St/Colton Ave						
NBL	34	0	34	64	0	64
NBT	555	8	563	488	21	509
NBR	49	0	49	97	0	97
SBL	150	4	154	219	4	223
SBT	502	19	521	507	15	522
SBR	146	4	150	148	4	152
EBL	60	2	62	150	5	155
EBT	113	0	113	462	0	462
EBR	24	0	24	64	0	64
WBL	51	0	51	55	0	55
WBT	208	0	208	248	0	248
WBR	91	2	93	151	5	156
North Leg						
Approach	798	27	825	874	23	897
Departure	706	12	718	789	31	820
Total	1,504	39	1,543	1,663	54	1,717
South Leg						
Approach	638	8	646	649	21	670
Departure	577	19	596	626	15	641
Total	1,215	27	1,242	1,275	36	1,311
East Leg						
Approach	350	2	352	454	5	459
Departure	312	4	316	778	4	782
Total	662	6	668	1,232	9	1,241
West Leg						
Approach	197	2	199	676	5	681
Departure	388	4	392	460	4	464
Total	585	6	591	1,136	9	1,145
Total Approaches						
Approach	1,983	39	2,022	2,653	54	2,707
Departure	1,983	39	2,022	2,653	54	2,707
Total	3,966	78	4,044	5,306	108	5,414

Table B-3: Existing With Project Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Exist PCE Volume	Project Trips	Exist With Project	Exist PCE Volume	Project Trips	Exist With Project
9 . Tennessee St/Redlands Ave						
NBL	44	0	44	41	0	41
NBT	539	4	543	479	11	490
NBR	27	0	27	45	0	45
SBL	110	4	114	143	4	147
SBT	501	10	511	433	8	441
SBR	20	4	24	29	4	33
EBL	25	2	27	43	5	48
EBT	162	0	162	465	0	465
EBR	26	0	26	45	0	45
WBL	46	0	46	36	0	36
WBT	272	0	272	233	0	233
WBR	60	2	62	113	5	118
North Leg						
Approach	631	18	649	605	16	621
Departure	624	8	632	635	21	656
Total	1,255	26	1,281	1,240	37	1,277
South Leg						
Approach	610	4	614	565	11	576
Departure	573	10	583	514	8	522
Total	1,183	14	1,197	1,079	19	1,098
East Leg						
Approach	378	2	380	382	5	387
Departure	299	4	303	653	4	657
Total	677	6	683	1,035	9	1,044
West Leg						
Approach	213	2	215	553	5	558
Departure	336	4	340	303	4	307
Total	549	6	555	856	9	865
Total Approaches						
Approach	1,832	26	1,858	2,105	37	2,142
Departure	1,832	26	1,858	2,105	37	2,142
Total	3,664	52	3,716	4,210	74	4,284

APPENDIX C:
LEVEL OF SERVICE/QUEUE WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑	↱	↰	↑↱	
Traffic Volume (veh/h)	44	447	55	47	383	276	13	4	38	204	205	147
Future Volume (veh/h)	44	447	55	47	383	276	13	4	38	204	205	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	471	58	49	403	291	14	4	40	215	216	155
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	1097	489	135	578	489	135	578	617	229	736	504
Arrive On Green	0.08	0.32	0.32	0.11	0.43	0.43	0.08	0.32	0.32	0.14	0.38	0.38
Sat Flow, veh/h	1619	3420	1525	1619	1800	1525	1619	1800	1525	1619	1941	1330
Grp Volume(v), veh/h	46	471	58	49	403	291	14	4	40	215	189	182
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1800	1525	1619	1800	1525	1619	1710	1561
Q Serve(g_s), s	3.2	13.0	3.2	3.4	21.9	17.6	1.0	0.2	0.0	15.8	9.3	9.8
Cycle Q Clear(g_c), s	3.2	13.0	3.2	3.4	21.9	17.6	1.0	0.2	0.0	15.8	9.3	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.85
Lane Grp Cap(c), veh/h	135	1097	489	135	578	489	135	578	617	229	648	592
V/C Ratio(X)	0.34	0.43	0.12	0.36	0.70	0.59	0.10	0.01	0.06	0.94	0.29	0.31
Avail Cap(c_a), veh/h	135	1097	489	135	578	489	135	578	617	229	648	592
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.28	0.28	0.28	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	32.1	28.8	50.4	29.6	28.4	50.9	27.7	21.9	51.0	26.0	26.2
Incr Delay (d2), s/veh	1.5	1.2	0.5	0.5	2.0	1.5	0.3	0.0	0.2	42.3	1.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.4	1.2	1.3	8.6	6.0	0.4	0.1	0.7	9.0	3.9	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	33.3	29.3	50.9	31.6	29.9	51.2	27.8	22.1	93.3	27.1	27.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	F	C	C
Approach Vol, veh/h		575			743			58			586	
Approach Delay, s/veh		34.5			32.2			29.5			51.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.5	14.0	49.5	14.0	42.5	21.0	42.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	38.5	10.0	45.5	10.0	38.5	17.0	38.5
Max Q Clear Time (g_c+I1), s	5.4	15.0	3.0	11.8	5.2	23.9	17.8	2.2
Green Ext Time (p_c), s	0.0	3.0	0.0	2.3	0.0	2.8	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
2: Tennessee St/SR-210 NB Ramps & San Bernardino Ave

07/20/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↱	
Traffic Volume (veh/h)	109	462	118	27	582	295	45	317	55	155	20	79
Future Volume (veh/h)	109	462	118	27	582	295	45	317	55	155	20	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	122	519	133	30	654	331	51	356	62	174	22	89
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	738	625	85	682	578	110	863	149	175	105	424
Arrive On Green	0.17	0.82	0.82	0.05	0.38	0.38	0.07	0.30	0.30	0.11	0.34	0.34
Sat Flow, veh/h	2956	1800	1525	1619	1800	1525	1619	2916	503	1619	312	1261
Grp Volume(v), veh/h	122	519	133	30	654	331	51	207	211	174	0	111
Grp Sat Flow(s),veh/h/ln	1478	1800	1525	1619	1800	1525	1619	1710	1709	1619	0	1573
Q Serve(g_s), s	4.5	14.7	2.3	2.1	42.5	20.6	3.6	11.7	11.9	12.9	0.0	6.0
Cycle Q Clear(g_c), s	4.5	14.7	2.3	2.1	42.5	20.6	3.6	11.7	11.9	12.9	0.0	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.80
Lane Grp Cap(c), veh/h	246	738	625	85	683	578	110	506	506	175	0	529
V/C Ratio(X)	0.50	0.70	0.21	0.35	0.96	0.57	0.46	0.41	0.42	0.99	0.00	0.21
Avail Cap(c_a), veh/h	246	738	625	135	683	578	135	506	506	175	0	529
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.7	7.7	6.6	54.9	36.3	29.5	53.8	33.9	33.9	53.4	0.0	28.5
Incr Delay (d2), s/veh	1.2	4.5	0.6	2.5	25.6	4.1	3.0	2.4	2.5	65.5	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.7	0.8	0.9	22.5	8.0	1.6	5.1	5.2	8.4	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	12.3	7.2	57.3	61.9	33.6	56.8	36.3	36.5	118.9	0.0	29.4
LnGrp LOS	D	B	A	E	E	C	E	D	D	F	A	C
Approach Vol, veh/h		774			1015			469			285	
Approach Delay, s/veh		17.2			52.6			38.6			84.1	
Approach LOS		B			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	53.2	12.2	44.3	14.0	49.5	17.0	39.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	45.5	10.0	38.5	10.0	45.5	13.0	35.5
Max Q Clear Time (g_c+I1), s	4.1	16.7	5.6	8.0	6.5	44.5	14.9	13.9
Green Ext Time (p_c), s	0.0	3.6	0.0	0.6	0.1	0.5	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	42.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	35	245	149	133	434	103	146	267	99	79	75	8
Future Volume (veh/h)	35	245	149	133	434	103	146	267	99	79	75	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	37	261	159	141	462	110	155	284	105	84	80	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	1074	479	210	534	127	162	533	452	162	533	452
Arrive On Green	0.06	0.31	0.31	0.13	0.38	0.38	0.03	0.10	0.10	0.10	0.30	0.30
Sat Flow, veh/h	1619	3420	1525	1619	1405	335	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	37	261	159	141	0	572	155	284	105	84	80	9
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	0	1740	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	2.2	5.7	5.9	8.3	0.0	30.4	9.6	15.0	6.4	4.9	3.3	0.4
Cycle Q Clear(g_c), s	2.2	5.7	5.9	8.3	0.0	30.4	9.6	15.0	6.4	4.9	3.3	0.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	1074	479	210	0	661	162	533	452	162	533	452
V/C Ratio(X)	0.36	0.24	0.33	0.67	0.00	0.87	0.96	0.53	0.23	0.52	0.15	0.02
Avail Cap(c_a), veh/h	162	1074	479	210	0	661	162	533	452	162	533	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	25.5	14.3	41.5	0.0	28.7	48.1	38.5	34.6	42.7	25.9	24.9
Incr Delay (d2), s/veh	2.1	0.5	1.9	7.9	0.0	14.2	57.6	3.8	1.2	2.9	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	2.9	3.7	0.0	14.7	6.6	7.7	2.5	2.0	1.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	26.0	16.1	49.4	0.0	42.9	105.7	42.3	35.8	45.6	26.5	25.0
LnGrp LOS	D	C	B	D	A	D	F	D	D	D	C	C
Approach Vol, veh/h		457			713			544			173	
Approach Delay, s/veh		24.3			44.2			59.1			35.7	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	35.4	14.0	33.6	10.4	42.0	14.0	33.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	31.4	10.0	29.6	10.0	34.4	10.0	29.6
Max Q Clear Time (g_c+I1), s	10.3	7.9	11.6	5.3	4.2	32.4	6.9	17.0
Green Ext Time (p_c), s	0.1	2.1	0.0	0.3	0.0	0.7	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
6: Tennessee St & I-10 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↱			↑↑↱	
Traffic Volume (veh/h)	0	0	0	210	4	141	219	467	0	0	316	99
Future Volume (veh/h)	0	0	0	210	4	141	219	467	0	0	316	99
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1700	1800	1800	0	1800	1800
Adj Flow Rate, veh/h				216	4	145	226	481	0	0	326	102
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				270	6	235	255	2607	0	0	1454	447
Arrive On Green				0.16	0.16	0.16	0.32	1.00	0.00	0.00	1.00	1.00
Sat Flow, veh/h				1714	41	1491	1619	3510	0	0	2665	792
Grp Volume(v), veh/h				216	0	149	226	481	0	0	215	213
Grp Sat Flow(s),veh/h/ln				1714	0	1532	1619	1710	0	0	1710	1657
Q Serve(g_s), s				12.1	0.0	9.1	13.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				12.1	0.0	9.1	13.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				270	0	242	255	2607	0	0	965	936
V/C Ratio(X)				0.80	0.00	0.62	0.89	0.18	0.00	0.00	0.22	0.23
Avail Cap(c_a), veh/h				429	0	383	518	2607	0	0	965	936
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	0.92	0.92
Uniform Delay (d), s/veh				40.6	0.0	39.3	33.4	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				5.5	0.0	2.5	9.2	0.1	0.0	0.0	0.5	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	3.6	4.8	0.1	0.0	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				46.1	0.0	41.8	42.5	0.1	0.0	0.0	0.5	0.5
LnGrp LOS				D	A	D	D	A	A	A	A	A
Approach Vol, veh/h					365			707			428	
Approach Delay, s/veh					44.4			13.7			0.5	
Approach LOS					D			B			A	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		80.2			19.8	60.4		19.8
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		67.0			32.0	31.0		25.0
Max Q Clear Time (g_c+I1), s		2.0			15.3	2.0		14.1
Green Ext Time (p_c), s		3.3			0.5	2.5		1.6

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
7: Tennessee St & I-10 EB Ramps

07/20/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱						↑↱		↰	↑↑	
Traffic Volume (veh/h)	161	149	364	0	0	0	0	525	181	93	433	0
Future Volume (veh/h)	161	149	364	0	0	0	0	525	181	93	433	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h	171	159	387				0	559	193	99	461	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	262	244	439				0	998	344	311	2161	0
Arrive On Green	0.29	0.29	0.29				0.00	0.13	0.13	0.38	1.00	0.00
Sat Flow, veh/h	909	845	1525				0	2586	859	1619	3510	0
Grp Volume(v), veh/h	330	0	387				0	382	370	99	461	0
Grp Sat Flow(s),veh/h/ln	1755	0	1525				0	1710	1645	1619	1710	0
Q Serve(g_s), s	16.5	0.0	24.2				0.0	21.0	21.1	4.3	0.0	0.0
Cycle Q Clear(g_c), s	16.5	0.0	24.2				0.0	21.0	21.1	4.3	0.0	0.0
Prop In Lane	0.52		1.00				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	505	0	439				0	684	658	311	2161	0
V/C Ratio(X)	0.65	0.00	0.88				0.00	0.56	0.56	0.32	0.21	0.00
Avail Cap(c_a), veh/h	579	0	503				0	684	658	311	2161	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	0.33	0.33	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.92	0.92	0.98	0.98	0.00
Uniform Delay (d), s/veh	31.2	0.0	34.0				0.0	35.1	35.2	26.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	15.1				0.0	3.0	3.2	0.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	10.6				0.0	10.1	9.7	1.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	0.0	49.0				0.0	38.2	38.4	26.8	0.2	0.0
LnGrp LOS	C	A	D				A	D	D	C	A	A
Approach Vol, veh/h		717						752			560	
Approach Delay, s/veh		41.8						38.3			4.9	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.2	44.0		32.8		67.2
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s	15.0	40.0		33.0		59.0
Max Q Clear Time (g_c+I1), s	6.3	23.1		26.2		2.0
Green Ext Time (p_c), s	0.1	4.2		2.6		3.2

Intersection Summary		
HCM 6th Ctrl Delay		30.3
HCM 6th LOS		C

8: Tennessee St & Colton Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	60	113	24	51	208	91	34	555	49	150	502	146
Future Volume (veh/h)	60	113	24	51	208	91	34	555	49	150	502	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	64	120	26	54	221	97	36	590	52	160	534	155
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	380	80	126	304	129	102	1628	143	186	1476	427
Arrive On Green	0.08	0.14	0.14	0.08	0.13	0.13	0.06	0.51	0.51	0.23	1.00	1.00
Sat Flow, veh/h	1619	2810	593	1619	2339	993	1619	3180	280	1619	2617	757
Grp Volume(v), veh/h	64	72	74	54	160	158	36	317	325	160	348	341
Grp Sat Flow(s),veh/h/ln	1619	1710	1693	1619	1710	1621	1619	1710	1750	1619	1710	1664
Q Serve(g_s), s	3.8	3.8	4.0	3.2	9.0	9.4	2.1	11.1	11.1	9.5	0.0	0.0
Cycle Q Clear(g_c), s	3.8	3.8	4.0	3.2	9.0	9.4	2.1	11.1	11.1	9.5	0.0	0.0
Prop In Lane	1.00		0.35	1.00		0.61	1.00		0.16	1.00		0.45
Lane Grp Cap(c), veh/h	135	231	229	126	222	211	102	876	896	186	964	938
V/C Ratio(X)	0.48	0.31	0.32	0.43	0.72	0.75	0.35	0.36	0.36	0.86	0.36	0.36
Avail Cap(c_a), veh/h	162	470	466	162	470	446	162	876	896	259	964	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90	0.99	0.99	0.99
Uniform Delay (d), s/veh	43.8	39.0	39.1	44.0	41.7	42.0	44.9	14.6	14.6	37.7	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.8	0.8	2.3	4.3	5.3	1.8	1.0	1.0	18.2	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	1.7	1.3	4.0	4.0	0.9	4.2	4.3	4.2	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	39.8	39.9	46.3	46.1	47.3	46.7	15.7	15.7	55.9	1.0	1.1
LnGrp LOS	D	D	D	D	D	D	D	B	B	E	A	A
Approach Vol, veh/h		210			372			678			849	
Approach Delay, s/veh		41.8			46.6			17.3			11.4	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	55.2	11.8	17.5	10.3	60.4	12.3	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	30.5	10.0	27.5	10.0	36.5	10.0	27.5
Max Q Clear Time (g_c+I1), s	11.5	13.1	5.2	6.0	4.1	2.0	5.8	11.4
Green Ext Time (p_c), s	0.2	3.4	0.0	0.7	0.0	4.4	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			↰↑↱			↰↑↱	
Traffic Volume (veh/h)	25	162	26	46	272	60	44	539	27	110	501	20
Future Volume (veh/h)	25	162	26	46	272	60	44	539	27	110	501	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	27	174	28	49	292	65	47	580	29	118	539	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	240	38	159	366	80	108	1398	73	149	721	31
Arrive On Green	0.05	0.08	0.08	0.10	0.13	0.13	0.44	0.44	0.44	0.25	0.25	0.25
Sat Flow, veh/h	1619	2958	468	1619	2789	611	244	3149	165	589	2839	121
Grp Volume(v), veh/h	27	99	103	49	177	180	345	0	311	355	0	324
Grp Sat Flow(s),veh/h/ln	1619	1710	1716	1619	1710	1690	1788	0	1770	1771	0	1778
Q Serve(g_s), s	2.1	7.4	7.6	3.7	13.1	13.4	17.3	0.0	15.4	24.3	0.0	21.6
Cycle Q Clear(g_c), s	2.1	7.4	7.6	3.7	13.1	13.4	17.3	0.0	15.4	24.3	0.0	21.6
Prop In Lane	1.00		0.27	1.00		0.36	0.14		0.09	0.33		0.07
Lane Grp Cap(c), veh/h	78	139	139	159	224	222	794	0	786	449	0	451
V/C Ratio(X)	0.35	0.72	0.74	0.31	0.79	0.81	0.43	0.00	0.40	0.79	0.00	0.72
Avail Cap(c_a), veh/h	125	395	396	159	395	390	794	0	786	449	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	59.9	58.3	58.4	54.5	54.7	54.9	24.9	0.0	24.4	45.3	0.0	44.3
Incr Delay (d2), s/veh	2.7	6.7	7.4	1.1	6.1	6.9	1.7	0.0	1.5	12.5	0.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.4	3.5	1.5	5.9	6.1	7.5	0.0	6.6	12.0	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	65.0	65.8	55.6	60.9	61.8	26.6	0.0	25.9	57.7	0.0	53.2
LnGrp LOS	E	E	E	E	E	E	C	A	C	E	A	D
Approach Vol, veh/h		229			406			656			679	
Approach Delay, s/veh		65.1			60.7			26.3			55.6	
Approach LOS		E			E			C			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		61.7	16.7	14.5		37.0	10.2	21.1
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		41.0	10.0	30.0		33.0	10.0	30.0
Max Q Clear Time (g_c+I1), s		19.3	5.7	9.6		26.3	4.1	15.4
Green Ext Time (p_c), s		3.7	0.0	0.9		2.2	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
1: Citrus Plaza Dr/SR-210 SB Ramps & San Bernardino Ave

07/20/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑	↱	↰	↑↱	
Traffic Volume (veh/h)	107	660	98	127	274	120	44	58	320	159	265	125
Future Volume (veh/h)	107	660	98	127	274	120	44	58	320	159	265	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	119	733	109	141	304	133	49	64	356	177	294	139
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	137	1097	489	164	608	515	133	578	644	201	824	380
Arrive On Green	0.08	0.32	0.32	0.20	0.68	0.68	0.08	0.32	0.32	0.12	0.36	0.36
Sat Flow, veh/h	1619	3420	1525	1619	1800	1525	1619	1800	1525	1619	2273	1048
Grp Volume(v), veh/h	119	733	109	141	304	133	49	64	356	177	219	214
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1800	1525	1619	1800	1525	1619	1710	1611
Q Serve(g_s), s	8.7	22.2	6.3	10.1	9.9	4.1	3.4	3.0	9.0	12.9	11.3	11.7
Cycle Q Clear(g_c), s	8.7	22.2	6.3	10.1	9.9	4.1	3.4	3.0	9.0	12.9	11.3	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	137	1097	489	164	608	515	133	578	644	201	620	584
V/C Ratio(X)	0.87	0.67	0.22	0.86	0.50	0.26	0.37	0.11	0.55	0.88	0.35	0.37
Avail Cap(c_a), veh/h	137	1097	489	164	608	515	135	578	644	202	620	584
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	35.2	29.8	47.1	14.5	13.6	52.1	28.7	26.2	51.7	28.0	28.1
Incr Delay (d2), s/veh	41.3	3.2	1.1	26.3	2.1	0.9	1.7	0.4	3.4	33.2	1.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	9.4	2.4	4.8	3.4	1.4	1.5	1.4	8.1	7.0	4.8	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.6	38.5	30.9	73.4	16.6	14.4	53.8	29.1	29.6	84.9	29.6	29.9
LnGrp LOS	F	D	C	E	B	B	D	C	C	F	C	C
Approach Vol, veh/h		961			578			469			610	
Approach Delay, s/veh		44.7			30.0			32.0			45.7	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	42.5	13.9	47.5	14.1	44.5	18.9	42.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	38.5	10.0	43.5	10.0	40.5	15.0	38.5
Max Q Clear Time (g_c+I1), s	12.1	24.2	5.4	13.7	10.7	11.9	14.9	11.0
Green Ext Time (p_c), s	0.0	4.2	0.0	2.7	0.0	2.1	0.0	1.6

Intersection Summary			
HCM 6th Ctrl Delay			39.4
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↱	
Traffic Volume (veh/h)	437	520	181	31	347	175	72	408	58	185	13	102
Future Volume (veh/h)	437	520	181	31	347	175	72	408	58	185	13	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	465	553	193	33	369	186	77	434	62	197	14	109
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	443	717	608	90	548	464	125	889	126	189	59	462
Arrive On Green	0.25	0.67	0.67	0.06	0.30	0.30	0.08	0.30	0.30	0.12	0.34	0.34
Sat Flow, veh/h	2956	1800	1525	1619	1800	1525	1619	3006	427	1619	177	1376
Grp Volume(v), veh/h	465	553	193	33	369	186	77	246	250	197	0	123
Grp Sat Flow(s),veh/h/ln	1478	1800	1525	1619	1800	1525	1619	1710	1723	1619	0	1552
Q Serve(g_s), s	18.0	25.3	6.4	2.4	21.5	8.5	5.5	14.2	14.4	14.0	0.0	6.9
Cycle Q Clear(g_c), s	18.0	25.3	6.4	2.4	21.5	8.5	5.5	14.2	14.4	14.0	0.0	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.89
Lane Grp Cap(c), veh/h	443	717	608	90	548	464	125	506	510	189	0	521
V/C Ratio(X)	1.05	0.77	0.32	0.37	0.67	0.40	0.62	0.49	0.49	1.04	0.00	0.24
Avail Cap(c_a), veh/h	443	717	608	135	548	464	135	506	510	189	0	521
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.0	16.3	13.1	54.6	36.5	17.9	53.7	34.7	34.8	53.0	0.0	28.8
Incr Delay (d2), s/veh	49.7	5.8	1.0	2.5	6.5	2.6	7.3	3.3	3.4	77.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	7.3	2.1	1.0	10.1	3.2	2.5	6.2	6.4	9.7	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.6	22.1	14.1	57.1	43.0	20.5	61.0	38.1	38.2	130.2	0.0	29.8
LnGrp LOS	F	C	B	E	D	C	E	D	D	F	A	C
Approach Vol, veh/h		1211			588			573			320	
Approach Delay, s/veh		48.7			36.7			41.2			91.6	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	51.8	13.2	44.3	22.0	40.5	18.0	39.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	44.5	10.0	39.5	18.0	36.5	14.0	35.5
Max Q Clear Time (g_c+I1), s	14.4	27.3	7.5	8.9	20.0	23.5	16.0	16.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.7	0.0	2.2	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
5: Tennessee St & Lugonia Ave

07/20/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	67	754	458	101	440	130	294	364	277	77	124	7
Future Volume (veh/h)	67	754	458	101	440	130	294	364	277	77	124	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	69	777	472	104	454	134	303	375	286	79	128	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	1148	512	141	443	131	265	628	532	134	483	409
Arrive On Green	0.09	0.34	0.34	0.09	0.33	0.33	0.27	0.58	0.58	0.08	0.27	0.27
Sat Flow, veh/h	1619	3420	1525	1619	1335	394	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	69	777	472	104	0	588	303	375	286	79	128	7
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	0	1729	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	4.5	21.5	21.1	6.9	0.0	36.5	18.0	14.7	12.5	5.2	6.2	0.4
Cycle Q Clear(g_c), s	4.5	21.5	21.1	6.9	0.0	36.5	18.0	14.7	12.5	5.2	6.2	0.4
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	1148	512	141	0	574	265	628	532	134	483	409
V/C Ratio(X)	0.47	0.68	0.92	0.74	0.00	1.02	1.14	0.60	0.54	0.59	0.27	0.02
Avail Cap(c_a), veh/h	147	1148	512	147	0	574	265	628	532	147	483	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	31.4	14.6	49.0	0.0	36.8	40.0	18.0	17.5	48.6	31.7	29.6
Incr Delay (d2), s/veh	2.3	3.2	24.5	16.9	0.0	44.0	98.7	4.0	3.7	5.1	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	9.1	10.1	3.4	0.0	21.9	13.3	5.3	4.0	2.2	2.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	34.6	39.1	65.9	0.0	80.8	138.6	22.0	21.2	53.8	33.1	29.7
LnGrp LOS	D	C	D	E	A	F	F	C	C	D	C	C
Approach Vol, veh/h		1318			692			964			214	
Approach Delay, s/veh		37.0			78.6			58.4			40.6	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	40.9	22.0	33.5	14.0	40.5	13.1	42.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	36.5	18.0	29.5	10.0	36.5	10.0	37.5
Max Q Clear Time (g_c+I1), s	8.9	23.5	20.0	8.2	6.5	38.5	7.2	16.7
Green Ext Time (p_c), s	0.0	5.8	0.0	0.6	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↱		↰	↑↱			↑↱	
Traffic Volume (veh/h)	0	0	0	146	8	239	193	789	0	0	608	98
Future Volume (veh/h)	0	0	0	146	8	239	193	789	0	0	608	98
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1700	1800	1800	0	1800	1800
Adj Flow Rate, veh/h				160	9	263	212	867	0	0	668	108
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				316	18	296	466	2507	0	0	1206	195
Arrive On Green				0.19	0.19	0.19	0.58	1.00	0.00	0.00	0.54	0.54
Sat Flow, veh/h				1627	92	1525	1619	3510	0	0	3038	476
Grp Volume(v), veh/h				169	0	263	212	867	0	0	387	389
Grp Sat Flow(s),veh/h/ln				1719	0	1525	1619	1710	0	0	1710	1714
Q Serve(g_s), s				9.7	0.0	18.5	8.3	0.0	0.0	0.0	16.2	16.3
Cycle Q Clear(g_c), s				9.7	0.0	18.5	8.3	0.0	0.0	0.0	16.2	16.3
Prop In Lane				0.95		1.00	1.00		0.00	0.00		0.28
Lane Grp Cap(c), veh/h				334	0	296	466	2507	0	0	700	701
V/C Ratio(X)				0.51	0.00	0.89	0.46	0.35	0.00	0.00	0.55	0.55
Avail Cap(c_a), veh/h				375	0	333	466	2507	0	0	700	701
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.33	1.33
Upstream Filter(I)				1.00	0.00	1.00	0.55	0.55	0.00	0.00	0.74	0.74
Uniform Delay (d), s/veh				39.6	0.0	43.1	18.4	0.0	0.0	0.0	18.5	18.5
Incr Delay (d2), s/veh				1.2	0.0	22.3	0.4	0.2	0.0	0.0	2.3	2.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	0.0	8.7	2.6	0.1	0.0	0.0	5.8	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				40.8	0.0	65.5	18.8	0.2	0.0	0.0	20.9	20.9
LnGrp LOS				D	A	E	B	A	A	A	C	C
Approach Vol, veh/h					432			1079			776	
Approach Delay, s/veh					55.8			3.9			20.9	
Approach LOS					E			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		84.6			35.6	49.0		25.4				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		78.0			29.0	45.0		24.0				
Max Q Clear Time (g_c+I1), s		2.0			10.3	18.3		20.5				
Green Ext Time (p_c), s		7.0			0.5	4.9		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			19.4
HCM 6th LOS			B

HCM 6th Signalized Intersection Summary
7: Tennessee St & I-10 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱						↑↱		↰	↑↑	
Traffic Volume (veh/h)	348	363	346	0	0	0	0	634	154	226	528	0
Future Volume (veh/h)	348	363	346	0	0	0	0	634	154	226	528	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h	374	390	372				0	682	166	243	568	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	396	427	431				0	868	211	319	1887	0
Arrive On Green	0.38	0.38	0.38				0.00	0.32	0.32	0.39	1.00	0.00
Sat Flow, veh/h	1054	1138	1149				0	2817	663	1619	3510	0
Grp Volume(v), veh/h	620	0	516				0	427	421	243	568	0
Grp Sat Flow(s),veh/h/ln	1747	0	1593				0	1710	1681	1619	1710	0
Q Serve(g_s), s	37.8	0.0	32.9				0.0	25.0	25.0	14.3	0.0	0.0
Cycle Q Clear(g_c), s	37.8	0.0	32.9				0.0	25.0	25.0	14.3	0.0	0.0
Prop In Lane	0.60		0.72				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	656	0	598				0	544	535	319	1887	0
V/C Ratio(X)	0.95	0.00	0.86				0.00	0.79	0.79	0.76	0.30	0.00
Avail Cap(c_a), veh/h	667	0	608				0	544	535	319	1887	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.81	0.81	0.88	0.88	0.00
Uniform Delay (d), s/veh	33.3	0.0	31.7				0.0	34.1	34.1	31.1	0.0	0.0
Incr Delay (d2), s/veh	22.2	0.0	12.0				0.0	9.0	9.2	9.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.6	0.0	14.3				0.0	11.3	11.2	5.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	0.0	43.7				0.0	43.1	43.3	40.2	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		1136						848			811	
Approach Delay, s/veh		50.1						43.2			12.3	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.7	39.0		45.3		64.7
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s	21.0	35.0		42.0		60.0
Max Q Clear Time (g_c+I1), s	16.3	27.0		39.8		2.0
Green Ext Time (p_c), s	0.3	3.1		1.5		4.0

Intersection Summary			
HCM 6th Ctrl Delay			37.0
HCM 6th LOS			D

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	150	462	64	55	248	151	64	488	97	219	507	148
Future Volume (veh/h)	150	462	64	55	248	151	64	488	97	219	507	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	165	508	70	60	273	166	70	536	107	241	557	163
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	192	631	87	124	345	204	130	1154	229	264	1277	372
Arrive On Green	0.12	0.21	0.21	0.08	0.17	0.17	0.08	0.41	0.41	0.33	0.98	0.98
Sat Flow, veh/h	1619	3021	415	1619	2070	1220	1619	2843	565	1619	2611	762
Grp Volume(v), veh/h	165	287	291	60	224	215	70	322	321	241	364	356
Grp Sat Flow(s),veh/h/ln	1619	1710	1725	1619	1710	1580	1619	1710	1698	1619	1710	1663
Q Serve(g_s), s	11.0	17.5	17.7	3.9	13.8	14.4	4.6	15.1	15.3	15.7	0.9	0.9
Cycle Q Clear(g_c), s	11.0	17.5	17.7	3.9	13.8	14.4	4.6	15.1	15.3	15.7	0.9	0.9
Prop In Lane	1.00		0.24	1.00		0.77	1.00		0.33	1.00		0.46
Lane Grp Cap(c), veh/h	192	357	361	124	285	264	130	694	689	264	836	813
V/C Ratio(X)	0.86	0.80	0.81	0.49	0.79	0.82	0.54	0.46	0.47	0.91	0.44	0.44
Avail Cap(c_a), veh/h	235	521	525	147	428	395	147	694	689	324	836	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.96	0.96	0.96
Uniform Delay (d), s/veh	47.6	41.3	41.4	48.7	43.9	44.2	48.6	23.9	23.9	36.3	0.6	0.6
Incr Delay (d2), s/veh	22.5	5.7	5.9	2.9	5.5	7.8	2.9	1.9	1.9	24.9	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	7.8	8.0	1.7	6.2	6.1	1.9	6.2	6.2	6.7	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	47.0	47.3	51.7	49.5	52.0	51.6	25.8	25.9	61.2	2.2	2.3
LnGrp LOS	E	D	D	D	D	D	D	C	C	E	A	A
Approach Vol, veh/h		743			499			713			961	
Approach Delay, s/veh		52.3			50.8			28.4			17.0	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	48.7	12.4	27.0	12.8	57.8	17.0	22.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	28.5	10.0	33.5	10.0	40.5	16.0	27.5
Max Q Clear Time (g_c+I1), s	17.7	17.3	5.9	19.7	6.6	2.9	13.0	16.4
Green Ext Time (p_c), s	0.3	2.8	0.0	2.9	0.0	4.7	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
9: Tennessee St & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			↰↑↱			↰↑↱	
Traffic Volume (veh/h)	43	465	45	36	233	113	41	479	45	143	433	29
Future Volume (veh/h)	43	465	45	36	233	113	41	479	45	143	433	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	47	505	49	39	253	123	45	521	49	155	471	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	102	589	57	94	411	194	90	1085	107	214	688	48
Arrive On Green	0.06	0.19	0.19	0.06	0.18	0.18	0.36	0.36	0.36	0.27	0.27	0.27
Sat Flow, veh/h	1619	3150	305	1619	2255	1063	247	2992	295	793	2554	180
Grp Volume(v), veh/h	47	273	281	39	190	186	325	0	290	344	0	314
Grp Sat Flow(s),veh/h/ln	1619	1710	1745	1619	1710	1609	1788	0	1747	1760	0	1768
Q Serve(g_s), s	3.6	20.1	20.3	3.0	13.3	13.9	18.4	0.0	16.5	23.1	0.0	20.5
Cycle Q Clear(g_c), s	3.6	20.1	20.3	3.0	13.3	13.9	18.4	0.0	16.5	23.1	0.0	20.5
Prop In Lane	1.00		0.17	1.00		0.66	0.14		0.17	0.45		0.10
Lane Grp Cap(c), veh/h	102	320	326	94	312	293	648	0	634	474	0	476
V/C Ratio(X)	0.46	0.86	0.86	0.41	0.61	0.63	0.50	0.00	0.46	0.73	0.00	0.66
Avail Cap(c_a), veh/h	125	408	416	125	408	384	648	0	634	474	0	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.89	0.00	0.89
Uniform Delay (d), s/veh	58.8	51.1	51.2	59.1	48.9	49.2	32.3	0.0	31.7	43.1	0.0	42.2
Incr Delay (d2), s/veh	3.2	13.4	13.7	2.9	1.9	2.3	2.8	0.0	2.4	8.4	0.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	9.7	9.9	1.3	5.8	5.7	8.3	0.0	7.3	11.0	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	64.5	64.9	62.0	50.8	51.4	35.0	0.0	34.0	51.5	0.0	48.5
LnGrp LOS	E	E	E	E	D	D	D	A	C	D	A	D
Approach Vol, veh/h		601			415			615			658	
Approach Delay, s/veh		64.5			52.2			34.6			50.1	
Approach LOS		E			D			C			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		51.1	11.6	28.3		39.0	12.2	27.7
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		38.0	10.0	31.0		35.0	10.0	31.0
Max Q Clear Time (g_c+I1), s		20.4	5.0	22.3		25.1	5.6	15.9
Green Ext Time (p_c), s		3.3	0.0	2.0		2.7	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	50.1
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
1: Citrus Plaza Dr/SR-210 SB Ramps & San Bernardino Ave

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑	↱	↰	↑↱	
Traffic Volume (veh/h)	44	455	55	47	398	276	13	4	38	212	205	147
Future Volume (veh/h)	44	455	55	47	398	276	13	4	38	212	205	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	46	479	58	49	419	291	14	4	40	223	216	155
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	1097	489	135	578	489	135	578	617	229	736	504
Arrive On Green	0.08	0.32	0.32	0.11	0.43	0.43	0.08	0.32	0.32	0.14	0.38	0.38
Sat Flow, veh/h	1619	3420	1525	1619	1800	1525	1619	1800	1525	1619	1941	1330
Grp Volume(v), veh/h	46	479	58	49	419	291	14	4	40	223	189	182
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1800	1525	1619	1800	1525	1619	1710	1561
Q Serve(g_s), s	3.2	13.3	3.2	3.4	23.2	17.6	1.0	0.2	0.0	16.5	9.3	9.8
Cycle Q Clear(g_c), s	3.2	13.3	3.2	3.4	23.2	17.6	1.0	0.2	0.0	16.5	9.3	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.85
Lane Grp Cap(c), veh/h	135	1097	489	135	578	489	135	578	617	229	648	592
V/C Ratio(X)	0.34	0.44	0.12	0.36	0.73	0.59	0.10	0.01	0.06	0.97	0.29	0.31
Avail Cap(c_a), veh/h	135	1097	489	135	578	489	135	578	617	229	648	592
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.28	0.28	0.28	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	32.2	28.8	50.4	30.0	28.4	50.9	27.7	21.9	51.3	26.0	26.2
Incr Delay (d2), s/veh	1.5	1.3	0.5	0.5	2.3	1.5	0.3	0.0	0.2	51.4	1.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.5	1.2	1.3	9.1	6.0	0.4	0.1	0.7	9.9	3.9	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	33.4	29.3	50.9	32.3	29.9	51.2	27.8	22.1	102.7	27.1	27.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	F	C	C
Approach Vol, veh/h		583			759			58			594	
Approach Delay, s/veh		34.6			32.6			29.5			55.6	
Approach LOS		C			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.5	14.0	49.5	14.0	42.5	21.0	42.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	38.5	10.0	45.5	10.0	38.5	17.0	38.5
Max Q Clear Time (g_c+I1), s	5.4	15.3	3.0	11.8	5.2	25.2	18.5	2.2
Green Ext Time (p_c), s	0.0	3.1	0.0	2.3	0.0	2.8	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↱	
Traffic Volume (veh/h)	109	462	134	34	582	295	60	343	70	155	20	79
Future Volume (veh/h)	109	462	134	34	582	295	60	343	70	155	20	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	122	519	151	38	654	331	67	385	79	174	22	89
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	246	725	614	97	682	578	120	838	170	175	103	416
Arrive On Green	0.17	0.81	0.81	0.06	0.38	0.38	0.07	0.30	0.30	0.11	0.33	0.33
Sat Flow, veh/h	2956	1800	1525	1619	1800	1525	1619	2831	575	1619	312	1261
Grp Volume(v), veh/h	122	519	151	38	654	331	67	231	233	174	0	111
Grp Sat Flow(s),veh/h/ln	1478	1800	1525	1619	1800	1525	1619	1710	1696	1619	0	1573
Q Serve(g_s), s	4.5	15.9	2.9	2.7	42.5	20.6	4.8	13.2	13.4	12.9	0.0	6.1
Cycle Q Clear(g_c), s	4.5	15.9	2.9	2.7	42.5	20.6	4.8	13.2	13.4	12.9	0.0	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.80
Lane Grp Cap(c), veh/h	246	725	614	97	683	578	120	506	502	175	0	519
V/C Ratio(X)	0.50	0.72	0.25	0.39	0.96	0.57	0.56	0.46	0.46	0.99	0.00	0.21
Avail Cap(c_a), veh/h	246	725	614	135	683	578	135	506	502	175	0	519
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.7	8.5	7.3	54.3	36.3	29.5	53.6	34.4	34.5	53.4	0.0	29.0
Incr Delay (d2), s/veh	1.2	4.8	0.8	2.6	25.6	4.1	4.0	3.0	3.1	65.5	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.0	1.0	1.2	22.5	8.0	2.1	5.8	5.9	8.4	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.9	13.3	8.0	56.9	61.9	33.6	57.6	37.4	37.6	118.9	0.0	29.9
LnGrp LOS	D	B	A	E	E	C	E	D	D	F	A	C
Approach Vol, veh/h		792			1023			531			285	
Approach Delay, s/veh		17.8			52.6			40.0			84.3	
Approach LOS		B			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	52.3	12.9	43.6	14.0	49.5	17.0	39.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	45.5	10.0	38.5	10.0	45.5	13.0	35.5
Max Q Clear Time (g_c+I1), s	4.7	17.9	6.8	8.1	6.5	44.5	14.9	15.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.6	0.1	0.5	0.0	2.5

Intersection Summary			
HCM 6th Ctrl Delay			43.0
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	20	13	460	6	4	185
Future Vol, veh/h	20	13	460	6	4	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	22	14	500	7	4	201

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	713	504	0	0	507	0
Stage 1	504	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	401	572	-	-	1068	-
Stage 1	611	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	399	572	-	-	1068	-
Mov Cap-2 Maneuver	399	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	13.6		0		0.2	
HCM LOS	B					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	453	1068	-
HCM Lane V/C Ratio	-	-	0.079	0.004	-
HCM Control Delay (s)	-	-	13.6	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	66	49	417	33	22	183
Future Vol, veh/h	66	49	417	33	22	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	72	53	453	36	24	199

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	718	471	0	0	489	0
Stage 1	471	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	399	597	-	-	1085	-
Stage 1	632	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	389	597	-	-	1085	-
Mov Cap-2 Maneuver	389	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	779	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	457	1085	-
HCM Lane V/C Ratio	-	-	0.274	0.022	-
HCM Control Delay (s)	-	-	15.8	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-

HCM 6th Signalized Intersection Summary
5: Tennessee St & Lugonia Ave

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↱		↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	40	245	149	133	434	108	146	291	99	87	143	16
Future Volume (veh/h)	40	245	149	133	434	108	146	291	99	87	143	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	43	261	159	141	462	115	155	310	105	93	152	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	113	1074	479	210	521	130	162	533	452	162	533	452
Arrive On Green	0.07	0.31	0.31	0.13	0.37	0.37	0.03	0.10	0.10	0.10	0.30	0.30
Sat Flow, veh/h	1619	3420	1525	1619	1391	346	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	43	261	159	141	0	577	155	310	105	93	152	17
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	0	1738	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	2.5	5.7	5.9	8.3	0.0	31.1	9.6	16.5	6.4	5.5	6.5	0.8
Cycle Q Clear(g_c), s	2.5	5.7	5.9	8.3	0.0	31.1	9.6	16.5	6.4	5.5	6.5	0.8
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	1074	479	210	0	650	162	533	452	162	533	452
V/C Ratio(X)	0.38	0.24	0.33	0.67	0.00	0.89	0.96	0.58	0.23	0.57	0.29	0.04
Avail Cap(c_a), veh/h	162	1074	479	210	0	650	162	533	452	162	533	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	25.5	14.3	41.5	0.0	29.3	48.1	39.2	34.6	43.0	27.1	25.1
Incr Delay (d2), s/veh	2.1	0.5	1.9	7.9	0.0	16.4	57.6	4.5	1.2	4.9	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.3	2.9	3.7	0.0	15.3	6.6	8.5	2.5	2.4	2.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	26.0	16.1	49.4	0.0	45.7	105.7	43.7	35.8	47.8	28.4	25.2
LnGrp LOS	D	C	B	D	A	D	F	D	D	D	C	C
Approach Vol, veh/h		463			718			570			262	
Approach Delay, s/veh		24.5			46.5			59.1			35.1	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	35.4	14.0	33.6	11.0	41.4	14.0	33.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	31.4	10.0	29.6	10.0	34.4	10.0	29.6
Max Q Clear Time (g_c+I1), s	10.3	7.9	11.6	8.5	4.5	33.1	7.5	18.5
Green Ext Time (p_c), s	0.1	2.1	0.0	0.7	0.0	0.5	0.0	1.5

Intersection Summary			
HCM 6th Ctrl Delay			43.5
HCM 6th LOS			D

HCM 6th Signalized Intersection Summary
6: Tennessee St & I-10 WB Ramps

09/21/2022

	↰	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↱		↰	↑↱			↑↱	
Traffic Volume (veh/h)	0	0	0	210	4	147	219	485	0	0	364	119
Future Volume (veh/h)	0	0	0	210	4	147	219	485	0	0	364	119
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1700	1800	1800	0	1800	1800
Adj Flow Rate, veh/h				216	4	152	226	500	0	0	375	123
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				271	6	236	255	2606	0	0	1433	464
Arrive On Green				0.16	0.16	0.16	0.32	1.00	0.00	0.00	1.00	1.00
Sat Flow, veh/h				1714	39	1492	1619	3510	0	0	2630	822
Grp Volume(v), veh/h				216	0	156	226	500	0	0	251	247
Grp Sat Flow(s),veh/h/ln				1714	0	1531	1619	1710	0	0	1710	1652
Q Serve(g_s), s				12.1	0.0	9.5	13.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				12.1	0.0	9.5	13.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.50
Lane Grp Cap(c), veh/h				271	0	242	255	2606	0	0	965	932
V/C Ratio(X)				0.80	0.00	0.64	0.89	0.19	0.00	0.00	0.26	0.27
Avail Cap(c_a), veh/h				429	0	383	518	2606	0	0	965	932
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.89	0.89	0.00	0.00	0.92	0.92
Uniform Delay (d), s/veh				40.5	0.0	39.5	33.4	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				5.5	0.0	2.9	8.9	0.1	0.0	0.0	0.6	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	3.7	4.8	0.1	0.0	0.0	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				46.0	0.0	42.3	42.3	0.1	0.0	0.0	0.6	0.6
LnGrp LOS				D	A	D	D	A	A	A	A	A
Approach Vol, veh/h					372			726			498	
Approach Delay, s/veh					44.5			13.3			0.6	
Approach LOS					D			B			A	

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	80.2	19.8	60.4	19.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	67.0	32.0	31.0	25.0
Max Q Clear Time (g_c+I1), s	2.0	15.3	2.0	14.1
Green Ext Time (p_c), s	3.5	0.5	3.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱						↑↱		↰	↑↑	
Traffic Volume (veh/h)	167	149	364	0	0	0	0	537	181	113	461	0
Future Volume (veh/h)	167	149	364	0	0	0	0	537	181	113	461	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h	178	159	387				0	571	193	120	490	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	267	239	440				0	1004	339	310	2161	0
Arrive On Green	0.29	0.29	0.29				0.00	0.13	0.13	0.38	1.00	0.00
Sat Flow, veh/h	926	827	1525				0	2601	847	1619	3510	0
Grp Volume(v), veh/h	337	0	387				0	388	376	120	490	0
Grp Sat Flow(s),veh/h/ln	1754	0	1525				0	1710	1648	1619	1710	0
Q Serve(g_s), s	16.9	0.0	24.2				0.0	21.3	21.4	5.4	0.0	0.0
Cycle Q Clear(g_c), s	16.9	0.0	24.2				0.0	21.3	21.4	5.4	0.0	0.0
Prop In Lane	0.53		1.00				0.00		0.51	1.00		0.00
Lane Grp Cap(c), veh/h	506	0	440				0	684	659	310	2161	0
V/C Ratio(X)	0.67	0.00	0.88				0.00	0.57	0.57	0.39	0.23	0.00
Avail Cap(c_a), veh/h	579	0	503				0	684	659	310	2161	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	0.33	0.33	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.92	0.92	0.97	0.97	0.00
Uniform Delay (d), s/veh	31.4	0.0	33.9				0.0	35.3	35.3	26.6	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.0	15.0				0.0	3.1	3.3	0.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	10.6				0.0	10.3	9.9	1.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	0.0	48.9				0.0	38.4	38.6	27.3	0.2	0.0
LnGrp LOS	C	A	D				A	D	D	C	A	A
Approach Vol, veh/h		724						764			610	
Approach Delay, s/veh		41.9						38.5			5.6	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.2	44.0		32.8		67.2
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s	15.0	40.0		33.0		59.0
Max Q Clear Time (g_c+I1), s	7.4	23.4		26.2		2.0
Green Ext Time (p_c), s	0.1	4.2		2.6		3.4

Intersection Summary			
HCM 6th Ctrl Delay			30.1
HCM 6th LOS			C

HCM 6th Signalized Intersection Summary
8: Tennessee St & Colton Ave

09/21/2022

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	62	113	24	51	208	93	34	563	49	154	521	150
Future Volume (veh/h)	62	113	24	51	208	93	34	563	49	154	521	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	66	120	26	54	221	99	36	599	52	164	554	160
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	136	385	81	126	304	131	102	1617	140	190	1473	424
Arrive On Green	0.08	0.14	0.14	0.08	0.13	0.13	0.06	0.51	0.51	0.23	1.00	1.00
Sat Flow, veh/h	1619	2810	593	1619	2323	1006	1619	3184	276	1619	2620	754
Grp Volume(v), veh/h	66	72	74	54	161	159	36	321	330	164	361	353
Grp Sat Flow(s),veh/h/ln	1619	1710	1693	1619	1710	1619	1619	1710	1750	1619	1710	1664
Q Serve(g_s), s	3.9	3.8	4.0	3.2	9.0	9.5	2.1	11.4	11.4	9.7	0.0	0.0
Cycle Q Clear(g_c), s	3.9	3.8	4.0	3.2	9.0	9.5	2.1	11.4	11.4	9.7	0.0	0.0
Prop In Lane	1.00		0.35	1.00		0.62	1.00		0.16	1.00		0.45
Lane Grp Cap(c), veh/h	136	234	232	126	223	212	102	868	889	190	961	936
V/C Ratio(X)	0.49	0.31	0.32	0.43	0.72	0.75	0.35	0.37	0.37	0.86	0.38	0.38
Avail Cap(c_a), veh/h	162	470	466	162	470	445	162	868	889	259	961	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.99	0.99	0.99
Uniform Delay (d), s/veh	43.7	38.9	38.9	44.0	41.7	41.9	44.9	14.9	14.9	37.5	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.7	0.8	2.3	4.3	5.4	1.8	1.1	1.1	19.1	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	1.7	1.3	4.0	4.0	0.9	4.3	4.5	4.3	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	39.6	39.7	46.3	46.0	47.3	46.7	16.0	16.0	56.6	1.1	1.2
LnGrp LOS	D	D	D	D	D	D	D	B	B	E	A	A
Approach Vol, veh/h		212			374			687			878	
Approach Delay, s/veh		41.8			46.6			17.6			11.5	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	54.8	11.8	17.7	10.3	60.2	12.4	17.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	30.5	10.0	27.5	10.0	36.5	10.0	27.5
Max Q Clear Time (g_c+I1), s	11.7	13.4	5.2	6.0	4.1	2.0	5.9	11.5
Green Ext Time (p_c), s	0.2	3.4	0.0	0.7	0.0	4.6	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
9: Tennessee St & Redlands Blvd

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			↰↑↱			↰↑↱	
Traffic Volume (veh/h)	27	162	26	46	272	62	44	543	27	114	511	24
Future Volume (veh/h)	27	162	26	46	272	62	44	543	27	114	511	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	29	174	28	49	292	67	47	584	29	123	549	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	240	38	163	366	83	105	1366	71	156	735	36
Arrive On Green	0.05	0.08	0.08	0.10	0.13	0.13	0.43	0.43	0.43	0.26	0.26	0.26
Sat Flow, veh/h	1619	2958	468	1619	2771	626	242	3152	164	597	2810	139
Grp Volume(v), veh/h	29	99	103	49	178	181	347	0	313	365	0	333
Grp Sat Flow(s),veh/h/ln	1619	1710	1716	1619	1710	1687	1788	0	1770	1770	0	1775
Q Serve(g_s), s	2.3	7.4	7.6	3.6	13.1	13.5	17.7	0.0	15.8	24.9	0.0	22.2
Cycle Q Clear(g_c), s	2.3	7.4	7.6	3.6	13.1	13.5	17.7	0.0	15.8	24.9	0.0	22.2
Prop In Lane	1.00		0.27	1.00		0.37	0.14		0.09	0.34		0.08
Lane Grp Cap(c), veh/h	81	139	139	163	226	223	775	0	768	463	0	464
V/C Ratio(X)	0.36	0.72	0.74	0.30	0.79	0.81	0.45	0.00	0.41	0.79	0.00	0.72
Avail Cap(c_a), veh/h	125	395	396	163	395	389	775	0	768	463	0	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	59.7	58.3	58.4	54.2	54.7	54.8	25.9	0.0	25.3	44.7	0.0	43.6
Incr Delay (d2), s/veh	2.7	6.7	7.4	1.0	6.1	6.9	1.9	0.0	1.6	12.1	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.4	3.5	1.5	6.0	6.1	7.8	0.0	6.9	12.3	0.0	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	65.0	65.8	55.2	60.8	61.8	27.8	0.0	26.9	56.7	0.0	52.3
LnGrp LOS	E	E	E	E	E	E	C	A	C	E	A	D
Approach Vol, veh/h		231			408			660			698	
Approach Delay, s/veh		65.0			60.6			27.4			54.6	
Approach LOS		E			E			C			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		60.4	17.1	14.5		38.0	10.5	21.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		40.0	10.0	30.0		34.0	10.0	30.0
Max Q Clear Time (g_c+I1), s		19.7	5.6	9.6		26.9	4.3	15.5
Green Ext Time (p_c), s		3.7	0.0	0.9		2.3	0.0	1.6

Intersection Summary			
HCM 6th Ctrl Delay			48.0
HCM 6th LOS			D

HCM 6th Signalized Intersection Summary

1: Citrus Plaza Dr/SR-210 SB Ramps & San Bernardino Ave

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑	↱	↰	↑↱	
Traffic Volume (veh/h)	107	680	98	127	289	120	44	58	320	181	265	125
Future Volume (veh/h)	107	680	98	127	289	120	44	58	320	181	265	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	119	756	109	141	321	133	49	64	356	201	294	139
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	140	1040	464	167	578	489	130	578	646	225	862	398
Arrive On Green	0.09	0.30	0.30	0.21	0.64	0.64	0.08	0.32	0.32	0.14	0.38	0.38
Sat Flow, veh/h	1619	3420	1525	1619	1800	1525	1619	1800	1525	1619	2273	1048
Grp Volume(v), veh/h	119	756	109	141	321	133	49	64	356	201	219	214
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	1800	1525	1619	1800	1525	1619	1710	1611
Q Serve(g_s), s	8.7	23.7	6.4	10.0	11.9	4.5	3.4	3.0	8.7	14.6	11.0	11.4
Cycle Q Clear(g_c), s	8.7	23.7	6.4	10.0	11.9	4.5	3.4	3.0	8.7	14.6	11.0	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	140	1040	464	167	578	489	130	578	646	225	648	611
V/C Ratio(X)	0.85	0.73	0.23	0.85	0.56	0.27	0.38	0.11	0.55	0.89	0.34	0.35
Avail Cap(c_a), veh/h	140	1040	464	167	578	489	135	578	646	229	648	611
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	37.3	31.3	46.7	16.7	15.4	52.3	28.7	26.0	50.8	26.5	26.7
Incr Delay (d2), s/veh	36.8	4.4	1.2	23.3	2.7	0.9	1.8	0.4	3.4	32.6	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	10.2	2.5	4.6	4.0	1.6	1.5	1.4	8.1	7.9	4.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.8	41.7	32.5	70.0	19.4	16.4	54.1	29.1	29.3	83.4	27.9	28.2
LnGrp LOS	F	D	C	E	B	B	D	C	C	F	C	C
Approach Vol, veh/h		984			595			469			634	
Approach Delay, s/veh		46.6			30.7			31.9			45.6	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	40.5	13.6	49.5	14.4	42.5	20.6	42.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	36.5	10.0	45.5	10.0	38.5	17.0	38.5
Max Q Clear Time (g_c+I1), s	12.0	25.7	5.4	13.4	10.7	13.9	16.6	10.7
Green Ext Time (p_c), s	0.0	3.8	0.0	2.7	0.0	2.1	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↱	
Traffic Volume (veh/h)	437	520	223	49	347	175	87	422	71	185	13	102
Future Volume (veh/h)	437	520	223	49	347	175	87	422	71	185	13	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	465	553	237	52	369	186	93	449	76	197	14	109
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	443	694	588	111	548	464	129	866	146	189	59	458
Arrive On Green	0.25	0.64	0.64	0.07	0.30	0.30	0.08	0.30	0.30	0.12	0.33	0.33
Sat Flow, veh/h	2956	1800	1525	1619	1800	1525	1619	2929	493	1619	177	1376
Grp Volume(v), veh/h	465	553	237	52	369	186	93	261	264	197	0	123
Grp Sat Flow(s),veh/h/ln	1478	1800	1525	1619	1800	1525	1619	1710	1711	1619	0	1552
Q Serve(g_s), s	18.0	27.0	9.0	3.7	21.5	8.5	6.7	15.2	15.4	14.0	0.0	6.9
Cycle Q Clear(g_c), s	18.0	27.0	9.0	3.7	21.5	8.5	6.7	15.2	15.4	14.0	0.0	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.89
Lane Grp Cap(c), veh/h	443	694	588	111	548	464	129	506	506	189	0	517
V/C Ratio(X)	1.05	0.80	0.40	0.47	0.67	0.40	0.72	0.52	0.52	1.04	0.00	0.24
Avail Cap(c_a), veh/h	443	694	588	135	548	464	148	506	506	189	0	517
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.0	17.9	14.7	53.8	36.5	17.9	53.9	35.1	35.2	53.0	0.0	29.0
Incr Delay (d2), s/veh	48.4	6.4	1.4	3.0	6.5	2.6	13.6	3.7	3.8	77.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	8.0	2.8	1.6	10.1	3.2	3.2	6.7	6.8	9.7	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.4	24.3	16.1	56.8	43.0	20.5	67.5	38.8	39.0	130.2	0.0	30.1
LnGrp LOS	F	C	B	E	D	C	E	D	D	F	A	C
Approach Vol, veh/h		1255			607			618			320	
Approach Delay, s/veh		48.3			37.3			43.2			91.7	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	50.3	13.5	44.0	22.0	40.5	18.0	39.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	44.5	11.0	38.5	18.0	36.5	14.0	35.5
Max Q Clear Time (g_c+I1), s	15.7	29.0	8.7	8.9	20.0	23.5	16.0	17.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.7	0.0	2.2	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D

HCM 6th TWSC
3: Tennessee St & Pennslyvania Ave.

09/21/2022

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	10	7	573	17	11	273
Future Vol, veh/h	10	7	573	17	11	273
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	8	623	18	12	297

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	953	632	0	0	641	0
Stage 1	632	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	290	484	-	-	953	-
Stage 1	534	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	484	-	-	953	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	344	953	-
HCM Lane V/C Ratio	-	-	0.054	0.013	-
HCM Control Delay (s)	-	-	16.1	8.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	55	50	540	84	54	229
Future Vol, veh/h	55	50	540	84	54	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	60	54	587	91	59	249

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1000	633	0	0	678	0
Stage 1	633	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	272	483	-	-	923	-
Stage 1	533	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	252	483	-	-	923	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.9	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	326	923	-
HCM Lane V/C Ratio	-	-	0.35	0.064	-
HCM Control Delay (s)	-	-	21.9	9.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.2	-

HCM 6th Signalized Intersection Summary
5: Tennessee St & Lugonia Ave

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	78	754	458	101	440	141	294	429	277	85	167	15
Future Volume (veh/h)	78	754	458	101	440	141	294	429	277	85	167	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	80	777	472	104	454	145	303	442	286	88	172	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	147	1148	512	141	434	139	265	625	529	137	483	409
Arrive On Green	0.09	0.34	0.34	0.09	0.33	0.33	0.27	0.58	0.58	0.08	0.27	0.27
Sat Flow, veh/h	1619	3420	1525	1619	1307	418	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	80	777	472	104	0	599	303	442	286	88	172	15
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	0	1725	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	5.2	21.5	21.1	6.9	0.0	36.5	18.0	19.2	12.6	5.8	8.5	0.8
Cycle Q Clear(g_c), s	5.2	21.5	21.1	6.9	0.0	36.5	18.0	19.2	12.6	5.8	8.5	0.8
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	1148	512	141	0	572	265	625	529	137	483	409
V/C Ratio(X)	0.54	0.68	0.92	0.74	0.00	1.05	1.14	0.71	0.54	0.64	0.36	0.04
Avail Cap(c_a), veh/h	147	1148	512	147	0	572	265	625	529	147	483	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	31.4	14.6	49.0	0.0	36.8	40.0	19.1	17.7	48.7	32.6	29.7
Incr Delay (d2), s/veh	4.1	3.2	24.5	16.9	0.0	50.4	98.4	6.3	3.7	8.3	2.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	9.1	10.1	3.4	0.0	22.8	13.3	6.7	4.0	2.6	3.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	34.6	39.1	65.9	0.0	87.1	138.4	25.5	21.5	57.0	34.6	29.9
LnGrp LOS	D	C	D	E	A	F	F	C	C	E	C	C
Approach Vol, veh/h		1329			703			1031			275	
Approach Delay, s/veh		37.2			84.0			57.5			41.5	
Approach LOS		D			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	40.9	22.0	33.5	14.0	40.5	13.3	42.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	36.5	18.0	29.5	10.0	36.5	10.0	37.5
Max Q Clear Time (g_c+I1), s	8.9	23.5	20.0	10.5	7.2	38.5	7.8	21.2
Green Ext Time (p_c), s	0.0	5.8	0.0	0.8	0.0	0.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	53.7
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
6: Tennessee St & I-10 WB Ramps

09/21/2022

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↱		↰	↑↱			↑↱	
Traffic Volume (veh/h)	0	0	0	146	8	256	193	837	0	0	640	108
Future Volume (veh/h)	0	0	0	146	8	256	193	837	0	0	640	108
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1700	1800	1800	0	1800	1800
Adj Flow Rate, veh/h				160	9	281	212	920	0	0	703	119
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				331	19	311	450	2475	0	0	1197	202
Arrive On Green				0.20	0.20	0.20	0.56	1.00	0.00	0.00	0.41	0.41
Sat Flow, veh/h				1627	92	1525	1619	3510	0	0	3016	495
Grp Volume(v), veh/h				169	0	281	212	920	0	0	411	411
Grp Sat Flow(s),veh/h/ln				1719	0	1525	1619	1710	0	0	1710	1711
Q Serve(g_s), s				9.6	0.0	19.8	8.7	0.0	0.0	0.0	20.5	20.6
Cycle Q Clear(g_c), s				9.6	0.0	19.8	8.7	0.0	0.0	0.0	20.5	20.6
Prop In Lane				0.95		1.00	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				350	0	311	450	2475	0	0	700	700
V/C Ratio(X)				0.48	0.00	0.90	0.47	0.37	0.00	0.00	0.59	0.59
Avail Cap(c_a), veh/h				375	0	333	450	2475	0	0	700	700
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.49	0.49	0.00	0.00	0.74	0.74
Uniform Delay (d), s/veh				38.7	0.0	42.7	19.5	0.0	0.0	0.0	25.3	25.3
Incr Delay (d2), s/veh				1.0	0.0	25.8	0.4	0.2	0.0	0.0	2.7	2.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.1	0.0	9.6	2.7	0.1	0.0	0.0	8.5	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.7	0.0	68.6	19.9	0.2	0.0	0.0	27.9	28.0
LnGrp LOS				D	A	E	B	A	A	A	C	C
Approach Vol, veh/h					450			1132			822	
Approach Delay, s/veh					57.7			3.9			27.9	
Approach LOS					E			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		83.6			34.6	49.0		26.4				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		78.0			29.0	45.0		24.0				
Max Q Clear Time (g_c+I1), s		2.0			10.7	22.6		21.8				
Green Ext Time (p_c), s		7.6			0.5	5.0		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			22.2
HCM 6th LOS			C

HCM 6th Signalized Intersection Summary
7: Tennessee St & I-10 EB Ramps

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱						↑↱		↰	↑↑	
Traffic Volume (veh/h)	365	363	346	0	0	0	0	665	154	236	550	0
Future Volume (veh/h)	365	363	346	0	0	0	0	665	154	236	550	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1700	1800	0
Adj Flow Rate, veh/h	392	390	372				0	715	166	254	591	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	411	424	428				0	877	203	315	1879	0
Arrive On Green	0.38	0.38	0.38				0.00	0.32	0.32	0.39	1.00	0.00
Sat Flow, veh/h	1088	1123	1131				0	2845	639	1619	3510	0
Grp Volume(v), veh/h	629	0	525				0	444	437	254	591	0
Grp Sat Flow(s),veh/h/ln	1746	0	1596				0	1710	1685	1619	1710	0
Q Serve(g_s), s	38.5	0.0	33.5				0.0	26.3	26.3	15.4	0.0	0.0
Cycle Q Clear(g_c), s	38.5	0.0	33.5				0.0	26.3	26.3	15.4	0.0	0.0
Prop In Lane	0.62		0.71				0.00		0.38	1.00		0.00
Lane Grp Cap(c), veh/h	660	0	603				0	544	536	315	1879	0
V/C Ratio(X)	0.95	0.00	0.87				0.00	0.82	0.82	0.81	0.31	0.00
Avail Cap(c_a), veh/h	667	0	610				0	544	536	315	1879	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.79	0.79	0.86	0.86	0.00
Uniform Delay (d), s/veh	33.3	0.0	31.7				0.0	34.5	34.5	31.7	0.0	0.0
Incr Delay (d2), s/veh	23.8	0.0	12.8				0.0	10.3	10.4	12.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	0.0	14.8				0.0	12.0	11.9	5.7	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	0.0	44.5				0.0	44.8	45.0	44.1	0.4	0.0
LnGrp LOS	E	A	D				A	D	D	D	A	A
Approach Vol, veh/h		1154						881			845	
Approach Delay, s/veh		51.4						44.9			13.5	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.4	39.0		45.6		64.4
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s	21.0	35.0		42.0		60.0
Max Q Clear Time (g_c+I1), s	17.4	28.3		40.5		2.0
Green Ext Time (p_c), s	0.2	2.9		1.0		4.2

Intersection Summary			
HCM 6th Ctrl Delay			38.3
HCM 6th LOS			D

HCM 6th Signalized Intersection Summary
8: Tennessee St & Colton Ave

09/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	155	462	64	55	248	156	64	509	97	223	522	152
Future Volume (veh/h)	155	462	64	55	248	156	64	509	97	223	522	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	170	508	70	60	273	171	70	559	107	245	574	167
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	646	89	124	345	209	130	1143	218	268	1266	367
Arrive On Green	0.12	0.21	0.21	0.08	0.17	0.17	0.08	0.40	0.40	0.33	0.97	0.97
Sat Flow, veh/h	1619	3021	415	1619	2045	1242	1619	2865	547	1619	2615	759
Grp Volume(v), veh/h	170	287	291	60	227	217	70	333	333	245	375	366
Grp Sat Flow(s),veh/h/ln	1619	1710	1725	1619	1710	1577	1619	1710	1702	1619	1710	1663
Q Serve(g_s), s	11.3	17.4	17.6	3.9	14.0	14.6	4.6	16.0	16.1	16.0	1.4	1.4
Cycle Q Clear(g_c), s	11.3	17.4	17.6	3.9	14.0	14.6	4.6	16.0	16.1	16.0	1.4	1.4
Prop In Lane	1.00		0.24	1.00		0.79	1.00		0.32	1.00		0.46
Lane Grp Cap(c), veh/h	197	366	369	124	288	266	130	682	679	268	828	805
V/C Ratio(X)	0.86	0.78	0.79	0.49	0.79	0.82	0.54	0.49	0.49	0.91	0.45	0.45
Avail Cap(c_a), veh/h	235	521	525	147	428	394	147	682	679	324	828	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	0.96	0.96	0.96
Uniform Delay (d), s/veh	47.4	40.8	40.9	48.7	43.8	44.1	48.6	24.7	24.7	36.0	0.9	0.9
Incr Delay (d2), s/veh	23.6	5.0	5.2	2.9	5.7	8.1	2.8	2.0	2.1	25.5	1.7	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	7.7	7.9	1.7	6.3	6.2	1.9	6.6	6.6	6.8	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	45.9	46.1	51.7	49.6	52.2	51.4	26.7	26.8	61.6	2.6	2.7
LnGrp LOS	E	D	D	D	D	D	D	C	C	E	A	A
Approach Vol, veh/h		748			504			736			986	
Approach Delay, s/veh		51.7			51.0			29.1			17.3	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.2	47.9	12.4	27.5	12.8	57.3	17.4	22.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	28.5	10.0	33.5	10.0	40.5	16.0	27.5
Max Q Clear Time (g_c+I1), s	18.0	18.1	5.9	19.6	6.6	3.4	13.3	16.6
Green Ext Time (p_c), s	0.3	2.8	0.0	2.9	0.0	4.9	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			↰↑↱			↰↑↱	
Traffic Volume (veh/h)	48	465	45	36	233	118	41	490	45	147	441	33
Future Volume (veh/h)	48	465	45	36	233	118	41	490	45	147	441	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	52	505	49	39	253	128	45	533	49	160	479	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	105	586	57	94	398	195	83	1023	99	233	739	58
Arrive On Green	0.07	0.19	0.19	0.06	0.18	0.18	0.34	0.34	0.34	0.29	0.29	0.29
Sat Flow, veh/h	1619	3150	305	1619	2224	1090	243	3003	290	798	2530	197
Grp Volume(v), veh/h	52	273	281	39	193	188	331	0	296	353	0	322
Grp Sat Flow(s),veh/h/ln	1619	1710	1745	1619	1710	1604	1788	0	1748	1760	0	1764
Q Serve(g_s), s	4.0	20.1	20.3	3.0	13.6	14.2	19.5	0.0	17.5	23.1	0.0	20.5
Cycle Q Clear(g_c), s	4.0	20.1	20.3	3.0	13.6	14.2	19.5	0.0	17.5	23.1	0.0	20.5
Prop In Lane	1.00		0.17	1.00		0.68	0.14		0.17	0.45		0.11
Lane Grp Cap(c), veh/h	105	318	324	94	306	287	609	0	595	514	0	516
V/C Ratio(X)	0.49	0.86	0.86	0.41	0.63	0.66	0.54	0.00	0.50	0.69	0.00	0.62
Avail Cap(c_a), veh/h	137	395	403	137	395	370	609	0	595	514	0	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.88	0.00	0.88
Uniform Delay (d), s/veh	58.7	51.3	51.3	59.1	49.4	49.7	34.7	0.0	34.0	40.7	0.0	39.8
Incr Delay (d2), s/veh	3.5	14.6	14.9	2.9	2.1	2.7	3.5	0.0	2.9	6.4	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.8	10.1	1.3	5.9	5.8	8.9	0.0	7.8	10.7	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	65.9	66.3	62.0	51.5	52.4	38.2	0.0	37.0	47.2	0.0	44.8
LnGrp LOS	E	E	E	E	D	D	D	A	D	D	A	D
Approach Vol, veh/h		606			420			627			675	
Approach Delay, s/veh		65.8			52.9			37.6			46.0	
Approach LOS		E			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		48.3	11.6	28.2		42.0	12.5	27.3				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		35.0	11.0	30.0		38.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s		21.5	5.0	22.3		25.1	6.0	16.2				
Green Ext Time (p_c), s		3.0	0.0	1.9		3.2	0.0	1.7				

Intersection Summary	
HCM 6th Ctrl Delay	50.1
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
5: Tennessee St & Lugonia Ave

10/12/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	40	245	149	133	434	108	146	291	99	87	143	16
Future Volume (veh/h)	40	245	149	133	434	108	146	291	99	87	143	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	43	261	159	141	462	115	155	310	105	93	152	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	108	1135	506	235	572	142	177	499	423	162	483	409
Arrive On Green	0.07	0.33	0.33	0.15	0.41	0.41	0.11	0.28	0.28	0.10	0.27	0.27
Sat Flow, veh/h	1619	3420	1525	1619	1391	346	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	43	261	159	141	0	577	155	310	105	93	152	17
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	0	1738	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	2.8	6.1	6.2	9.0	0.0	32.2	10.4	16.5	5.9	6.0	7.4	0.9
Cycle Q Clear(g_c), s	2.8	6.1	6.2	9.0	0.0	32.2	10.4	16.5	5.9	6.0	7.4	0.9
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	1135	506	235	0	714	177	499	423	162	483	409
V/C Ratio(X)	0.40	0.23	0.31	0.60	0.00	0.81	0.88	0.62	0.25	0.57	0.31	0.04
Avail Cap(c_a), veh/h	147	1135	506	235	0	714	177	499	423	162	483	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	26.6	14.5	44.0	0.0	28.6	48.3	34.7	30.9	47.3	32.2	29.8
Incr Delay (d2), s/veh	2.4	0.5	1.6	4.1	0.0	9.6	35.5	5.7	1.4	4.9	1.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.5	3.2	3.8	0.0	14.8	5.8	7.8	2.3	2.6	3.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.6	27.1	16.1	48.1	0.0	38.2	83.8	40.4	32.2	52.1	33.9	30.0
LnGrp LOS	D	C	B	D		D	F	D	C	D	C	C
Approach Vol, veh/h		463			718			570			262	
Approach Delay, s/veh		25.6			40.1			50.7			40.1	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	40.5	16.0	33.5	11.3	49.2	15.0	34.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	36.5	12.0	29.5	10.0	42.5	11.0	30.5
Max Q Clear Time (g_c+I1), s	11.0	8.2	12.4	9.4	4.8	34.2	8.0	18.5
Green Ext Time (p_c), s	0.1	2.2	0.0	0.7	0.0	2.4	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	39.8
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
5: Tennessee St & Lugonia Ave

10/12/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations	↰	↑↑	↱	↰	↱		↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	78	754	458	101	440	141	294	429	277	85	167	15
Future Volume (veh/h)	78	754	458	101	440	141	294	429	277	85	167	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	80	777	472	104	454	145	303	442	286	88	172	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	135	1220	544	131	463	148	297	630	534	128	443	375
Arrive On Green	0.08	0.36	0.36	0.08	0.35	0.35	0.18	0.35	0.35	0.08	0.25	0.25
Sat Flow, veh/h	1619	3420	1525	1619	1307	418	1619	1800	1525	1619	1800	1525
Grp Volume(v), veh/h	80	777	472	104	0	599	303	442	286	88	172	15
Grp Sat Flow(s),veh/h/ln	1619	1710	1525	1619	0	1725	1619	1800	1525	1619	1800	1525
Q Serve(g_s), s	5.7	22.7	21.1	7.6	0.0	41.2	22.0	25.4	18.0	6.4	9.6	0.9
Cycle Q Clear(g_c), s	5.7	22.7	21.1	7.6	0.0	41.2	22.0	25.4	18.0	6.4	9.6	0.9
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	1220	544	131	0	611	297	630	534	128	443	375
V/C Ratio(X)	0.59	0.64	0.87	0.80	0.00	0.98	1.02	0.70	0.54	0.69	0.39	0.04
Avail Cap(c_a), veh/h	135	1220	544	148	0	611	297	630	534	135	443	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	32.1	13.4	54.2	0.0	38.3	49.0	33.6	31.2	53.8	37.7	34.5
Incr Delay (d2), s/veh	6.8	2.5	16.9	22.8	0.0	31.9	56.3	6.1	3.6	13.0	2.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.6	9.2	3.9	0.0	22.3	13.3	11.8	7.0	3.0	4.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.8	34.7	30.3	77.0	0.0	70.3	105.3	39.7	34.8	66.8	40.3	34.7
LnGrp LOS	E	C	C	E		E	F	D	C	E	D	C
Approach Vol, veh/h		1329			703			1031			275	
Approach Delay, s/veh		34.6			71.3			57.6			48.5	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	46.8	26.0	33.5	14.0	46.5	13.5	46.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	41.5	22.0	29.5	10.0	42.5	10.0	41.5
Max Q Clear Time (g_c+I1), s	9.6	24.7	24.0	11.6	7.7	43.2	8.4	27.4
Green Ext Time (p_c), s	0.0	6.6	0.0	0.8	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	50.6
HCM 6th LOS	D

This Page Intentionally Left Blank.

TENNESSEE STREET AND LUGONIA AVENUE MIXED-USE

VEHICLE MILES TRAVELED ANALYSIS

MARCH 21, 2024

PREPARED FOR:

Diversified Pacific Communities
10621 Civic Center Drive
Rancho Cucamonga, California
91730

PREPARED BY:

translutions
the transportation solutions company...

translutions, inc.

17632 Irvine Boulevard, Suite 200
Tustin, California 92780
(949) 656-3131

TABLE OF CONTENTS

FIGURES AND TABLES

FIGURES

TABLES

1.0 INTRODUCTION

This report presents the vehicle miles traveled (VMT) analysis for the proposed Tennessee Street and Lugonia Avenue mixed use development project. The project includes the construction of 404 multi-family residences and 17,899 square feet of retail uses. The project site is located on the northeast corner of Tennessee Street and Lugonia Avenue in the City of Redlands (City), San Bernardino County.

1.1 Purpose of the VMT Analysis

The City of Redlands has guidelines for Vehicle Miles Traveled and are in the City of Redlands CEQA Assessment VMT Analysis Guidelines. These guidelines include thresholds, screening criteria, and VMT reduction measures. The purpose of the screening criteria is to determine if a project can be screened out from conducting a detailed project-level VMT assessment. There are three types of screening criteria included in the City guidelines. The VMT screening analysis has been developed consistent with the City's VMT screening criteria. A Focused VMT analysis was conducted based on the San Bernardino County Transportation Authority (SBCTA) VMT Tool.

2.0 PROJECT DESCRIPTION

The proposed project includes Tentative Parcel Map No. 20688, which would include development of 460 new apartment units and approximately 17,899 square feet of commercial space. The project would consist of ten (10) three- and four-story buildings. Eight (8) of the proposed buildings would include only residential uses and two (2) of the proposed buildings would include mixed-uses that incorporate ground-floor commercial space with residential units on the floors above. The residential apartment units would range in size from one-bedroom to three-bedroom units. The project would include six (6) "Live/Work" units that incorporate retail/office uses on the ground floor and a residential unit on the second floor. In addition, approximately 5% of the proposed residential units would be designated as "very low-income" units, which would allow for a 20 percent density bonus in accordance with the "California Density Bonus Law". The very low-income units would be spread throughout the site to create a cohesive project that does not separate the market rate units from the very low-income units. Access to the project will be provided by the Pennsylvania Avenue extension and one full-access driveway on Tennessee Street.

2.1 Project Trip Generation

Trip generation for the project is based on trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition) for Land Use 220 "Multifamily Housing (Low-Rise)", Land Use 221 "Multifamily Housing (Mid-Rise), and Land Use 822 "Strip Retail Plaza (<40k). The project includes a mix of retail and residential uses and therefore, will have trips that are internal to the project (e.g., a trip from the residential use to the retail use). Internal trips were calculated using the ITE internal capture methodologies. In addition, retail uses typically draw some of its trips from the adjacent street traffic. Such trips are not actually "new" trips from the project on the adjacent circulation system. These trips are referred to as "pass-by" trips. By definition, pass-by trips are trips that are on the roadway immediately adjacent to the project which make intermediate stops on the way from an origin to a primary trip destination without route diversion. Table A shows a summary of the project trip generation. As shown in Table A, after accounting for internal and pass-by trips, the project is anticipated to generate 195 net external trips during the a.m. peak hour, 245 net external trips during the p.m. peak hour, and 2,708 net external daily trips.

3.0 VMT SCREENING ANALYSIS

The City VMT guidelines include screening criteria, thresholds of significance, methodologies, and mitigation measures for development projects. The screening criteria enables a variety of projects to be screened out of complicated VMT analyses and therefore a less-than-significant VMT impact. There are three types of screening criteria that can be applied to screen projects from project-level assessment. The screening steps are summarized below:

1) **Transit Priority Area (TPA) Screening:** Projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may not be appropriate if the project:
   (a) Has a floor area ratio of less than 0.75.
   (b) Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking.
   (c) Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization.
   (d) Replaces affordable residential units with a smaller number of moderate or high-income residential units.

   Figure 1 shows the location of the nearest Transit Priority Areas near the project. As shown in Figure 1, the project is not within a Transit Priority Area. Therefore, the Transit Priority Area Screening does not apply to the project.
2) **Low VMT Area Screening:** Residential and office projects within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area.

   The online SBCTA VMT screening tool was updated after the guidelines were adopted. Figure 2 shows the results of the Low VMT Area Screening. The VMT impact threshold is 28.5 (15% below County Baseline), whereas the TAZ VMT is per service population is 33.5. With the updated VMT Screening tool, the project does not screen out of a VMT analysis.
3) **Project Type Screening:** Local serving retail projects with stores less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel. Additional screening for retail projects is discussed below.

   In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:
   - Local-serving K-12 schools.
   - Local parks.
   - Day care centers.
   - Local-serving gas stations.
   - Local-serving banks.
   - Local-serving hotels (e.g. non-destination hotels).
   - Student housing projects on or adjacent to college campuses.
   - Local-serving assembly uses (places of worship, community organizations).
   - Community institutions (Public libraries, fire stations, local government).
   - Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS.
   - Affordable or supportive housing.
   - Assisted living facilities.
   - Senior housing (as defined by HUD).

Table A - Project Trip Generation

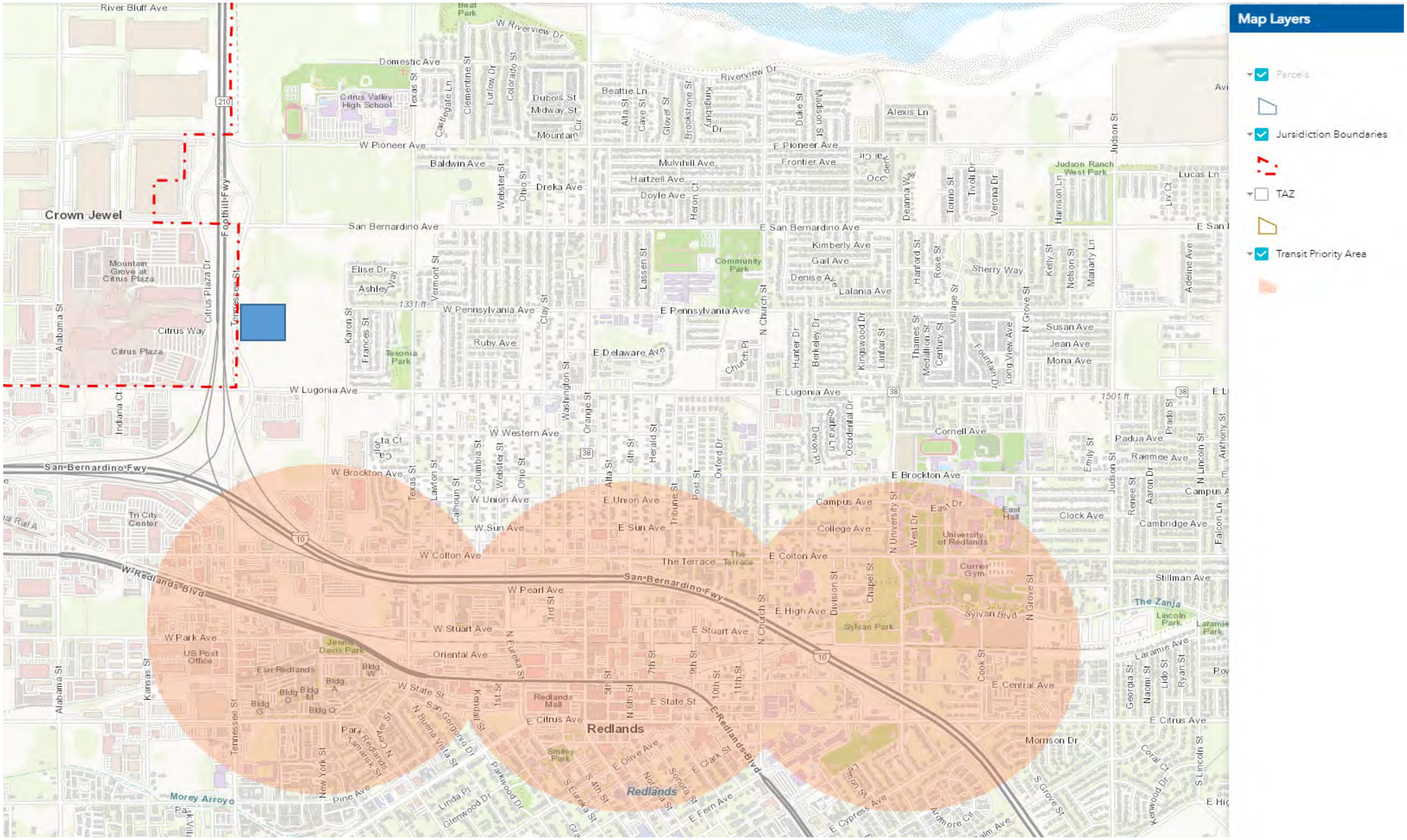
		A.M. Peak Hour			P.M. Peak Hour			
Land Use	Units	In	Out	Total	In	Out	Total	Daily
Residential								
Trip Generation Rates [1]		0.10	0.30	0.40	0.32	0.19	0.51	6.74
Trip Generation	135 DU	13	41	54	43	26	69	910
Internal Trips		(1)	(1)	(2)	(3)	(2)	(5)	(80)
Net Trip Generation		12	40	52	40	24	64	830
Residential								
Trip Generation Rates [2]		0.09	0.28	0.37	0.24	0.15	0.39	4.54
Trip Generation	325 DU	28	92	120	77	50	127	1,476
Internal Trips		(1)	(1)	(2)	(6)	(5)	(11)	(131)
Net Trip Generation		27	91	118	71	45	116	1,345
Retail								
Trip Generation Rates [3]		1.42	0.94	2.36	3.30	3.30	6.59	54.45
Trip Generation	17.899 TSF	25	17	42	59	59	118	975
Internal Trips		0	0	0	(4)	(6)	(10)	(86)
Net Trip Generation		25	17	42	55	53	108	889
Pass By Rate [A]				40%			40%	40%
Pass By Trips		(8)	(9)	(17)	(21)	(22)	(43)	(356)
Net After Pass-By		17	8	25	34	31	65	533
Total Net Trip Generation		56	139	195	145	100	245	2,708

[1] Trip generation based on rates for Land Use 220 - "Multifamily Housing (Low-Rise)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[2] Trip generation based on rates for Land Use 221 - "Multifamily Housing (Mid-Rise)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[3] Trip generation based on rates for Land Use 822 - "Strip Retail Plaza(<40k)" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[A] Daily Pass-by rates for Land Use 822 (Strip Retail Plaza) are based on pass-by rates for Land Use 821 (Shopping Plaza) from ITE Trip Generation (11th Edition). Rates for a.m.peak hour and daily are assumed to be same as p.m. peak hour rate.



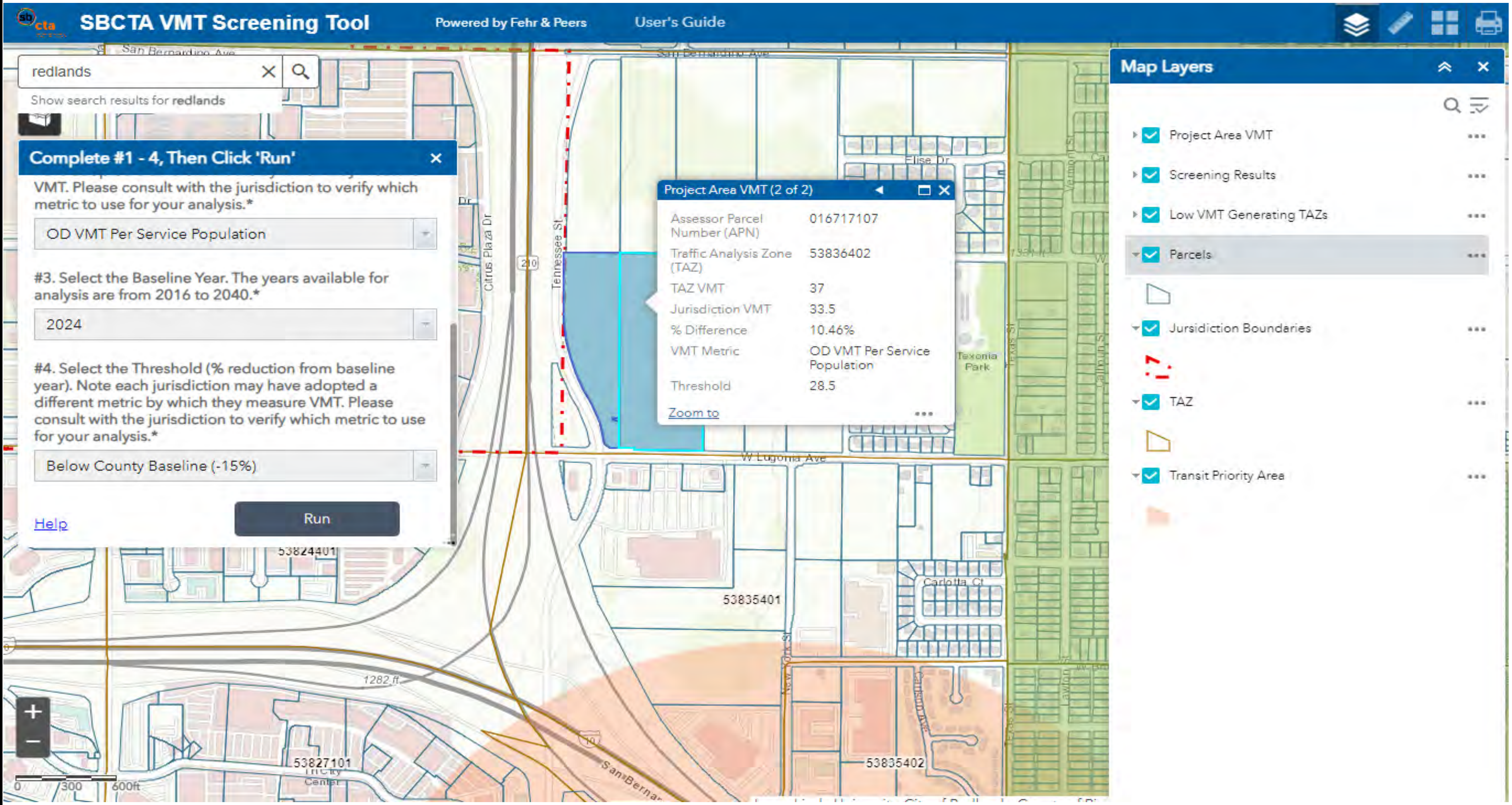
🟦 Project Location

FIGURE 1

Tennessee Street and Lugonia Avenue Mixed Use
SBCTA Transit Priority Areas

translutions
the transportation solutions company...

P:\DP - Redlands Multifamily\VMT Screening Analysis\SBCTA VMT Screening Tool TPA.xlsx (3/19/2024)



redlands

Show search results for redlands

Complete #1 - 4, Then Click 'Run'

VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*

OD VMT Per Service Population

#3. Select the Baseline Year. The years available for analysis are from 2016 to 2040.*

2024

#4. Select the Threshold (% reduction from baseline year). Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*

Below County Baseline (-15%)

Help

Run

Project Area VMT (2 of 2)

Assessor Parcel Number (APN)	016717107
Traffic Analysis Zone (TAZ)	53836402
TAZ VMT	37
Jurisdiction VMT	33.5
% Difference	10.46%
VMT Metric	OD VMT Per Service Population
Threshold	28.5

Zoom to

FIGURE 2

Tennessee Street and Lugonia Avenue Mixed Use
SBCTA Low VMT Area Screening Tool

translutions
the transportation solutions company...

P:\DP - Redlands Multifamily\VMT Screening Analysis\SBCTA VMT Low VMT Screening Tool 3-19-24.xlsx (3/19/2024)

Projects which generate less than 3,000 MT CO2e per year can be presumed to have a less than significant impact on VMT. Projects which generate less than 3,000 MT CO2e per year include the following:

- Single-family residential – 167 dwelling units or fewer.
- Multifamily residential (1-2 stories) – 232 dwelling units or fewer.
- Multifamily residential (3+ stories) – 299 dwelling units or fewer.
- Office – 59,100 square feet or less.
- Local serving retail center – 112,400 square feet of less (no stores larger than 50,000 square feet).
- Warehousing – 463,600 square feet or less.
- Light Industrial – 74,600 square feet or less.

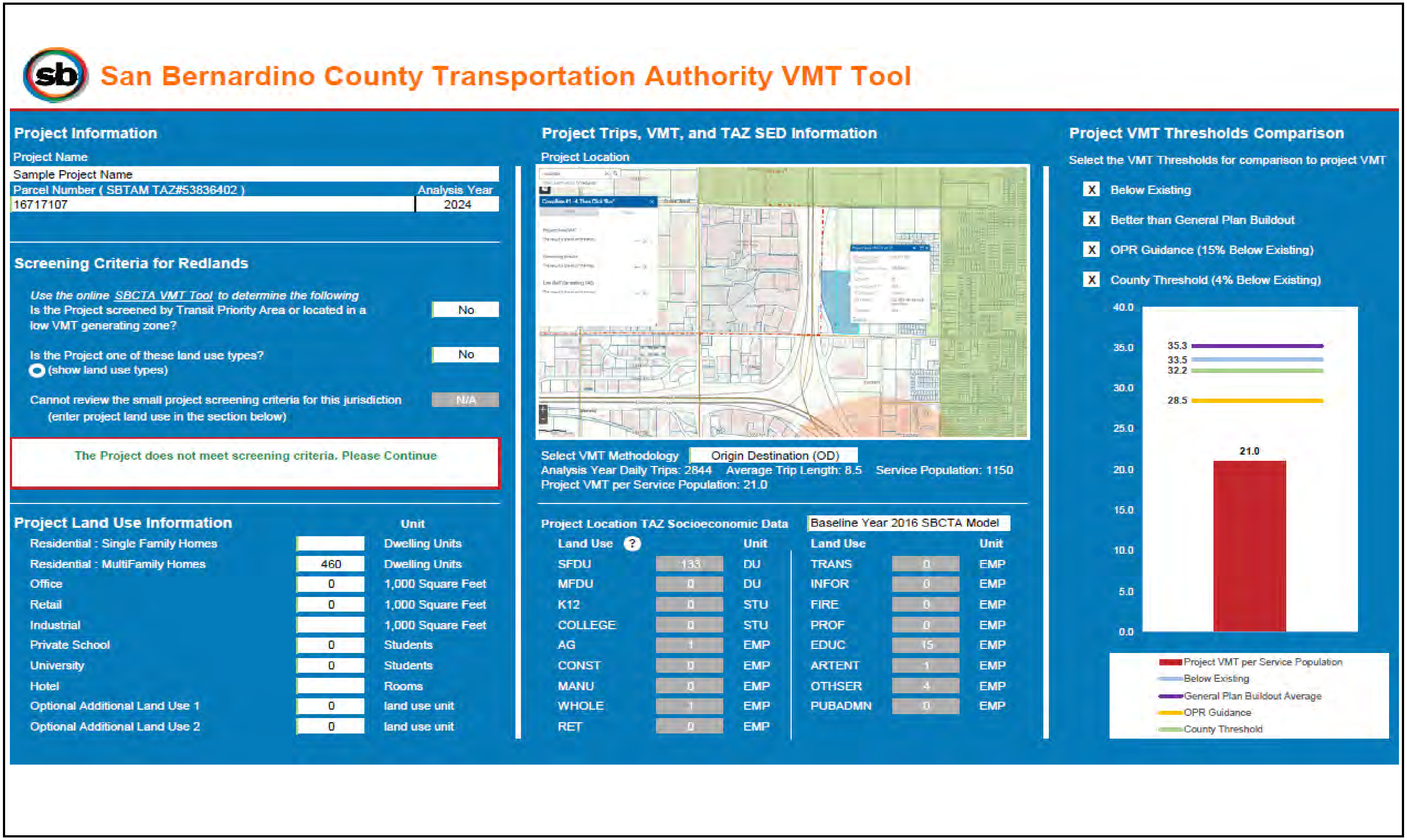
The retail component of the project (17,899 square feet) will screen out based on the size of the project. However, the proposed project will include 460 multifamily dwelling units in buildings 3 to 4 stories tall. The number of residential units is greater than the thresholds; therefore, the Project Type Screening does not apply to the project.

4.0 FOCUSED VMT ANALYSIS

A focused analysis has been conducted using the SBCTA VMT Tool. The VMT Tool uses the project land use information to determine the Project VMT per service population based on the proposed land use type. The SBCTA VMT Tool outputs are shown in Figures 3 and 4. As shown in Figure 3, the Project VMT per service population is forecast to be 21.0 for the residential portion of the project. This reduction from the online screening tool is primarily because the project includes multifamily units whereas the existing uses in the TAZ are all single-family homes. Further, as shown in Figure 4, the Project VMT per service population is forecast to be 24.9 with the retail site. It should be noted that the retail portions of the project screens out of a VMT analysis based on the size of the retail center. The VMT impact threshold is 28.5 (15% below County Baseline), which is higher than the project VMT per service population. Since the Project VMT per service population is less than the City's threshold, the project does not have a significant VMT impact.

5.0 SUMMARY & CONCLUSIONS

As seen above, the project does not screen out of a VMT analysis. Based on the SBCTA VMT Tool, the Project VMT per service population is forecast to be 21.0 for the residential portion of the project. The Project VMT per service population is forecast to be 24.9 for the entire project including the retail site. The VMT impact threshold is 28.5 (15% below County Baseline), which is higher than the project VMT per service population for both cases. Since the Project VMT per service population is less than the City's threshold, the project does not have a significant VMT impact.



San Bernardino County Transportation Authority VMT Tool

Project Information

Project Name

Sample Project Name

Parcel Number (SBTAM TAZ#53836402) | Analysis Year

16717107 | 2024

Screening Criteria for Redlands

Use the online SBCTA VMT Tool to determine the following

Is the Project screened by Transit Priority Area or located in a low VMT generating zone?	No
Is the Project one of these land use types? ○ (show land use types)	No
Cannot review the small project screening criteria for this jurisdiction (enter project land use in the section below)	N/A

The Project does not meet screening criteria. Please Continue

Project Land Use Information

		Unit
Residential : Single Family Homes		Dwelling Units
Residential : MultiFamily Homes	460	Dwelling Units
Office	0	1,000 Square Feet
Retail	0	1,000 Square Feet
Industrial		1,000 Square Feet
Private School	0	Students
University	0	Students
Hotel		Rooms
Optional Additional Land Use 1	0	land use unit
Optional Additional Land Use 2	0	land use unit

Project Trips, VMT, and TAZ SED Information

Project Location

Select VMT Methodology: Origin Destination (OD)

Analysis Year Daily Trips: 2844 Average Trip Length: 8.5 Service Population: 1150

Project VMT per Service Population: 21.0

Project Location TAZ Socioeconomic Data: Baseline Year 2016 SBCTA Model

Land Use ?		Unit	Land Use		Unit
SFDU	133	DU	TRANS	0	EMP
MFDU	0	DU	INFOR	0	EMP
K12	0	STU	FIRE	0	EMP
COLLEGE	0	STU	PROF	0	EMP
AG	1	EMP	EDUC	15	EMP
CONST	0	EMP	ARTENT	1	EMP
MANU	0	EMP	OTHSER	4	EMP
WHOLE	1	EMP	PUBADMN	0	EMP
RET	0	EMP			

Project VMT Thresholds Comparison

Select the VMT Thresholds for comparison to project VMT

☒ Below Existing

☒ Better than General Plan Buildout

☒ OPR Guidance (15% Below Existing)

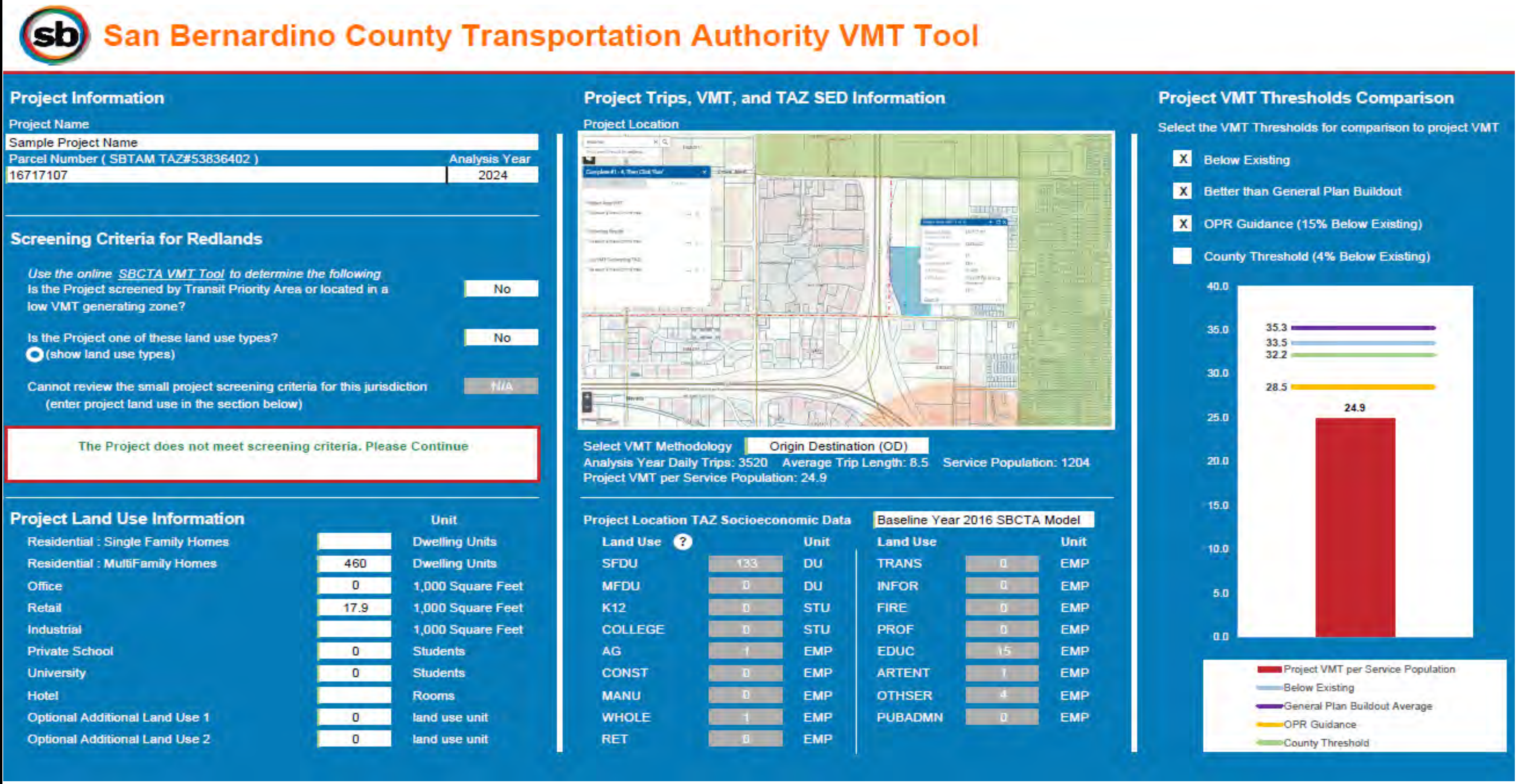
☒ County Threshold (4% Below Existing)

FIGURE 3

Tennessee Street and Lugonia Avenue Mixed Use
SBCTA VMT Tool Outputs (Residential)

translutions
the transportation solutions company...

P:\DP - Redlands Multifamily\VMT Screening Analysis\SBCTA VMT Analysis Tool without Retail 3-19-24.xlsx (3/19/2024)



San Bernardino County Transportation Authority VMT Tool

Project Information

Project Name	Sample Project Name
Parcel Number (SBTAM TAZ#53836402)	16717107
Analysis Year	2024

Screening Criteria for Redlands

Use the online SBCTA VMT Tool to determine the following

Is the Project screened by Transit Priority Area or located in a low VMT generating zone?	No
Is the Project one of these land use types? ○ (show land use types)	No
Cannot review the small project screening criteria for this jurisdiction (enter project land use in the section below)	N/A

The Project does not meet screening criteria. Please Continue

Project Land Use Information

		Unit
Residential : Single Family Homes		Dwelling Units
Residential : MultiFamily Homes	460	Dwelling Units
Office	0	1,000 Square Feet
Retail	17.9	1,000 Square Feet
Industrial		1,000 Square Feet
Private School	0	Students
University	0	Students
Hotel		Rooms
Optional Additional Land Use 1	0	land use unit
Optional Additional Land Use 2	0	land use unit

Project Trips, VMT, and TAZ SED Information

Project Location

Select VMT Methodology: Origin Destination (OD)

Analysis Year Daily Trips: 3520 Average Trip Length: 8.5 Service Population: 1204

Project VMT per Service Population: 24.9

Project Location TAZ Socioeconomic Data Baseline Year 2016 SBCTA Model

Land Use ?		Unit	Land Use		Unit
SFDU	133	DU	TRANS	0	EMP
MFDU	0	DU	INFOR	0	EMP
K12	0	STU	FIRE	0	EMP
COLLEGE	0	STU	PROF	0	EMP
AG	1	EMP	EDUC	15	EMP
CONST	0	EMP	ARTENT	1	EMP
MANU	0	EMP	OTHSER	4	EMP
WHOLE	1	EMP	PUBADMN	0	EMP
RET	0	EMP			

Project VMT Thresholds Comparison

Select the VMT Thresholds for comparison to project VMT

- ☒ Below Existing
- ☒ Better than General Plan Buildout
- ☒ OPR Guidance (15% Below Existing)
- ☐ County Threshold (4% Below Existing)

FIGURE 4

Tennessee Street and Lugonia Avenue Mixed Use
SBCTA VMT Tool Outputs (Entire Project)

translutions
the transportation solutions company...

P:\DP - Redlands Multifamily\VMT Screening Analysis\SBCTA VMT Analysis Tool with Retail 3-19-24.xlsx (3/19/2024)