ADDENDUM

to the
Environmental Impact Report
for the AV Apollo Solar Project

Original Final EIR (SCH# 2017081038) (by Sunbow Solar LLC, Syracuse Solar LLC, and Tours LLC)

Volume 2
Appendix A through J

Gettysburg Solar Project (PP21403)
Gettysburg Solar Farm, LLC

(Willow Springs) Specific Plan Amendment No. 8, Map No. 231-21
(Willow Springs) Specific Plan Amendment No. 9, Map No. 231-21
Zone Change Case No. 5, Map No. 231-21
Conditional Use Permit No. 5, Map No. 231-21
Conditional Use Permit No. 6, Map No. 231-21

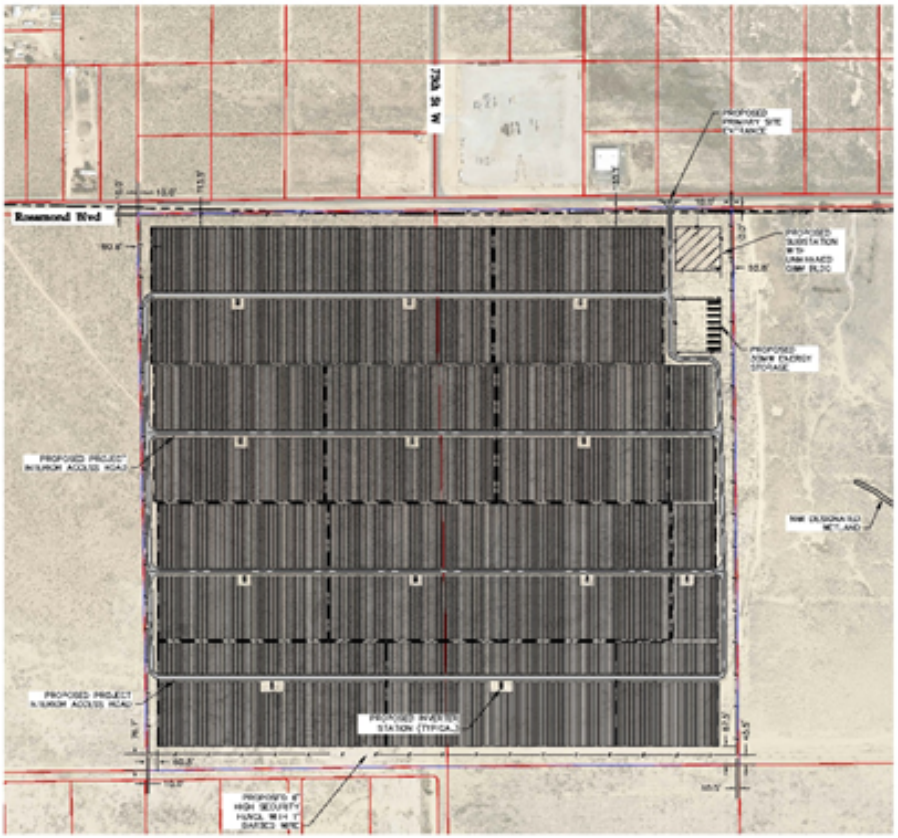
Kern County
Planning and Natural Resources Department
Bakersfield, California

May 2021

APPENDIX A

MODIFIED PROJECT SITE PLAN

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1 **Site Plan**
1" = 250'



2 **Gen-Tie Route**
1" = 500'

LEGEND

- PROJECT BOUNDARY
- PROPOSED PROJECT 20' ACCESS ROAD
- PROPOSED INVERTER STATION
- PROPOSED SOLAR TRACKER
- PROPOSED SECURITY FENCE LINE
- EXISTING ROAD
- EASEMENT LINES
- EXISTING OVERHEAD POWER
- PROPOSED OVERHEAD POWER
- SECTION LINE
- PARCEL LINE

GENERAL NOTES

1. PV FACILITY RATING IS 30MWac.
2. PV FACILITY LOCATED IN KERN COUNTY, CALIFORNIA.
3. PV SYSTEM SHALL BE INSTALLED PER NEC AND ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES OR REGULATIONS.

Designed	MR
Checked	BMS
Drawn	MR
Recent Drawing Revision	

No.	Date	Description

0' 250' 500' 750'

Project Address
Lat: 34.859°
Lon: -118.265°

Gettysburg Solar

Kern County, California

PRELIMINARY
NOT FOR CONSTRUCTION

Sheets printed at 11"x17" are 1x2 scale

Date 2018-05-25
Drawing No Sheet 1 of 1

APPENDIX B

AIR QUALITY IMPACT ANALYSIS AND GREENHOUSE GASES

AIR QUALITY IMPACT ANALYSIS

Gettysburg Solar Project
Eastern Kern County, California

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September 2020

Project 200505.0150

Trinity Consultants

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1. EXECUTIVE SUMMARY

Trinity Consultants Company, has completed an Air Quality Impact Analysis (AQIA) for the Gettysburg Solar Project (Project). The Project would be located in the eastern high desert region of unincorporated Kern County, east of the intersection of Rosamond Boulevard and 80th Street West, 5.5 miles west of State Route (SR) 14. The proposed 160-acre 30-megawatt (MW) Project proposes a gen-tie route along Rosamond Boulevard to connect to the existing Rosamond substation. Power generated by the proposed Project would be transferred directly to Southern California Edison's (SCE) Antelope-Cal Cement-Rosamond 66-kilovolt (kV) electrical distribution line.

The proposed Project's construction and operations would include the following criteria pollutant emissions: reactive organic gases (ROG), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Project operations would generate air pollutant emissions from mobile sources (automobile activity from quarterly facility maintenance). Project construction and operational activities would also generate greenhouse gas (GHG) emissions. Criteria and GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (California Air Pollution Control Officers Association (CAPCOA) 2016), the California EPA's EMFAC2017 Web database (California Air Resources Board (CARB) 2018) and the California Climate Action Registry General Reporting Protocol (Climate Action Registry 2009).

Table 4-3 presents the Project's construction emissions and provides substantial evidence to support a less than significant air quality impact on the Mojave Desert Air Basin (MDAB). **Table 4-4** presents the Project's operations emissions and provides substantial evidence to support a less than significant air quality impact on the MDAB.

A records search of the Kern County GIS Geocortex IMP Map Viewer and information from Kern County was performed to identified other projects within a six-mile radius of the proposed Project. A six-mile radius is established in practice as the geographical requirement for cumulative analyses in Kern County. To date, there are no established, or even suggested, thresholds of significance for cumulative projects. Therefore, evaluation of the cumulative emissions supports a finding that the Project's contribution would not be cumulatively considerable because the proposed Project's incremental emissions would be less than significant.

2. INTRODUCTION

2.1 Purpose

This AQIA was prepared pursuant to the EKAPCD's Rule 210.1 New and Modified Stationary Source Review (NSR) (EKACPD 2000), EKAPCD's Guidelines for Implementation of the California Environmental Quality Act of 1970, EKAPCD Policy, "Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects When Serving As Lead CEQA Agency" (EKAPCD 2012), the Kern County Planning Department's Air Quality Preparation Guidelines (2006), the California Environmental Quality Act (CEQA) (Public Resources Code 21000 to 21177) and CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3, Sections 15000 – 15387).

2.2 General Project Description

The Project would be located in the eastern high desert region of unincorporated Kern County, east of the intersection of Rosamond Boulevard and 80th Street West, 5.5 miles west of State Route (SR) 14. The proposed 160-acre 30-megawatt (MW) Project proposes a gen-tie route along Rosamond Boulevard to connect to the existing Rosamond substation. Power generated by the proposed Project would be transferred directly to Southern California Edison's (SCE) Antelope-Cal Cement-Rosamond 66-kilovolt (kV) electrical distribution line. The Project would consist of approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid pattern over the Project site. Site grading and earthwork is anticipated to begin during or after the first quarter of 2020, with operations beginning in the fourth quarter of 2020 or later. **Figure 2-1** depicts the regional location and **Figure 2-2** depicts an aerial view of the Project location.

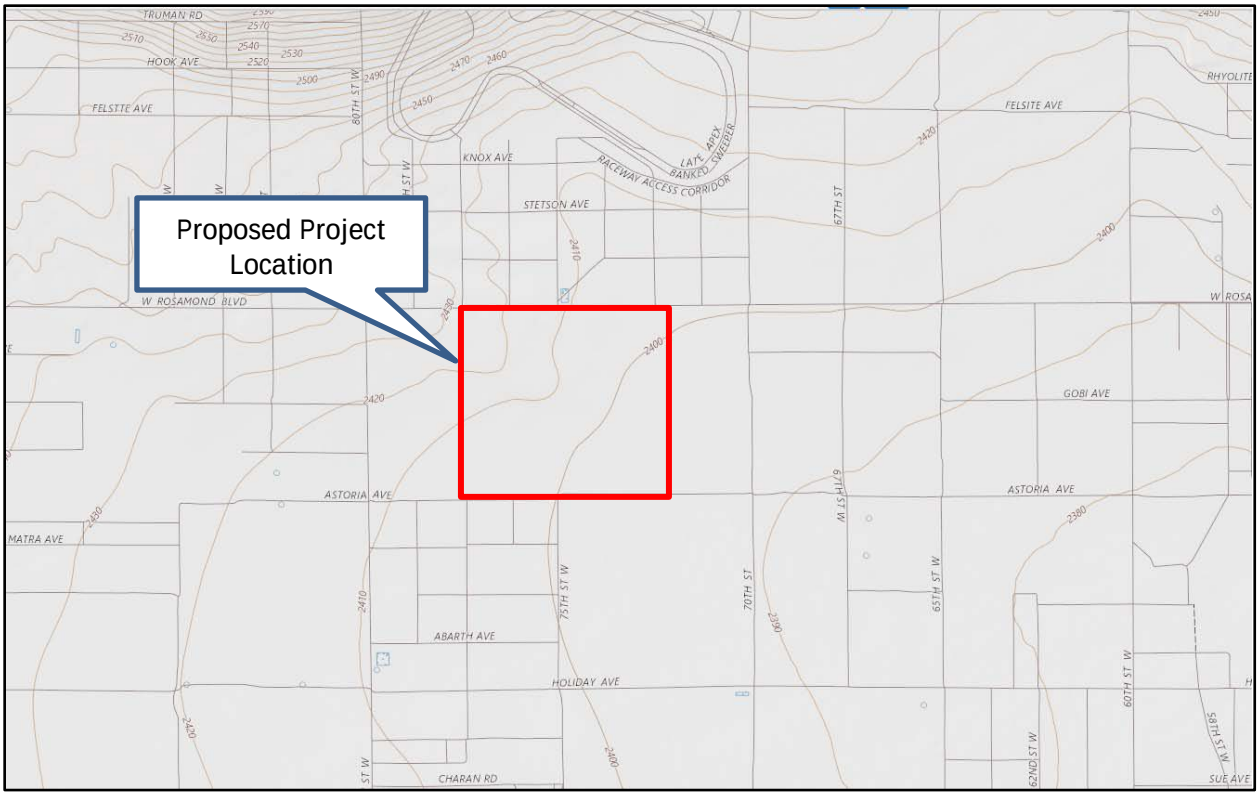
Figure 2-1. Regional Location



Figure 2-2. Project Location

Figure 2-3 depicts the Project site's topography based on United States Geological Survey's (USGS) National Map (USGS 2020). The Project site is located at an elevation of approximately 2,410 feet above mean sea level. Currently, the Project site is essentially an open field.

Figure 2-3. Project Site Topography



3. SETTING

Protection of the public health is maintained through the attainment and maintenance of ambient air quality standards for various atmospheric compounds and the enforcement of emissions limits for individual stationary sources. The Federal Clean Air Act requires that the U.S. Environmental Protection Agency (EPA) establish National Ambient Air Quality Standards (NAAQS) to protect the health, safety, and welfare of the public. NAAQS have been established for ozone (O_3), CO, NO_2, SO_2, PM_{10} and $PM_{2.5}$, and lead (Pb). California has also adopted ambient air quality standards (CAAQS) for these "criteria" air pollutants. CAAQS are more stringent than the corresponding NAAQS and include standards for hydrogen sulfide (H2S), vinyl chloride (chloroethene) and visibility reducing particles. The U.S. Clean Air Act Amendments of 1977 required each state to identify areas that were in non-attainment of the NAAQS and to develop State Implementation Plans (SIP's) containing strategies to bring these non-attainment areas into compliance. NAAQS and CAAQS designation/classification for Kern County are presented in Section 3.1 below.

Responsibility for regulation of air quality in California lies with the California Air Resources Board (CARB) and the 35 local air districts with oversight responsibility held by the EPA. CARB is responsible for regulating mobile source emissions, establishing CAAQS, conducting research, managing regulation development, and providing oversight and coordination of the activities of the 35 air districts. The air districts are primarily responsible for regulating stationary source emissions and monitoring ambient pollutant concentrations. CARB also determines whether air basins, or portions thereof, are “unclassified,” in “attainment” or in “non-attainment” for the NAAQS and CAAQS relying on statewide air quality monitoring data.

3.1 Air Quality Standards

The Project area is located in the northwestern portion of the MDAB for which the EKAPCD has jurisdiction to regulate air pollutant emissions. **Table 3-1** provides the NAAQS and CAAQS for the Project area.

Table 3-1. Federal & California Standards

Pollutant	Averaging Time	NAAQS	CAAQS
		Concentration	
O_3	8-hour	0.070 ppm (137 µg/m^3)[a]	0.070 ppm (137 µg/m^3)
	1-hour		0.09 ppm (180 µg/m^3)
CO	8-hour	9 ppm (10 µg/m^3)	9 ppm (10 µg/m^3)
	1-hour	35 ppm (40 µg/m^3)	20 ppm (23 µg/m^3)
NO_2	Annual Average	53 ppb (100 µg/m^3)	0.030 ppm (57 µg/m^3)
	1-Hour	100 ppb (188.68 µg/m^3)	0.18 ppm (339 µg/m^3)
SO_2	3-Hour	0.5 ppm (1,300 µg/m^3)	
	24 Hour	0.14 ppm (365 µg/m^3)	0.04 ppm (105 µg/m^3)
	1-Hour	75 ppb (196 µg/m^3)	0.25 ppm (655 µg/m^3)
Particulate Matter (PM_{10})	Annual Arithmetic Mean		20 µg/m^3
	24-Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	
Sulfates	24-Hour		25 µg/m^3
Pb[d]	Rolling Three-Month Average	0.15 µg/m^3	
	30 Day Average		1.5 µg/m^3
H_2S	1-Hour		0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24-Hour		0.010 ppm (26 µg/m^3)
Visibility Reducing particles	8 Hour (1000 to 1800 PST)		[b]

ppm = parts per million
ppb = parts per billion
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

Source: CARB 2016/2020

a. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm

b. In 1989, CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Under the provisions of the U.S. Clean Air Act, the Kern County portion of the MDAB has been classified as non-attainment, attainment, unclassified/attainment or unclassified under the established NAAQS and CAAQS for various criteria pollutants. Table 3-2 provides the EKAPCD's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS.

Table 3-2. MDAB Attainment Status

Pollutant	Designation/Classification			
	National Ambient Air Quality Standards (NAAQS)			State Ambient Air Quality Standards
	EKAPCD	Kern River / Cummings Valley[1,2]	Indian Wells Valley[3,4,5]	
Ozone – 1 Hour	Attainment[6,7]	Part of EKAPCD Area	Part of EKAPCD Area	Nonattainment
Ozone – 8 Hour[8]	Serious Nonattainment	Part of EKAPCD Area	Unclassifiable/ Attainment	Nonattainment
PM_{10}	Unclassifiable/ Attainment	Serious Nonattainment	Attainment Maintenance	Nonattainment
$PM_{2.5}$	Unclassifiable/ Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Unclassified
Carbon Monoxide	Unclassifiable/ Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Unclassified
Nitrogen Dioxide	Unclassified	Part of EKAPCD Area	Part of EKAPCD Area	Attainment
Sulfur Dioxide	Unclassified	Part of EKAPCD Area	Part of EKAPCD Area	Attainment
Lead Particulates	Unclassifiable/ Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Attainment

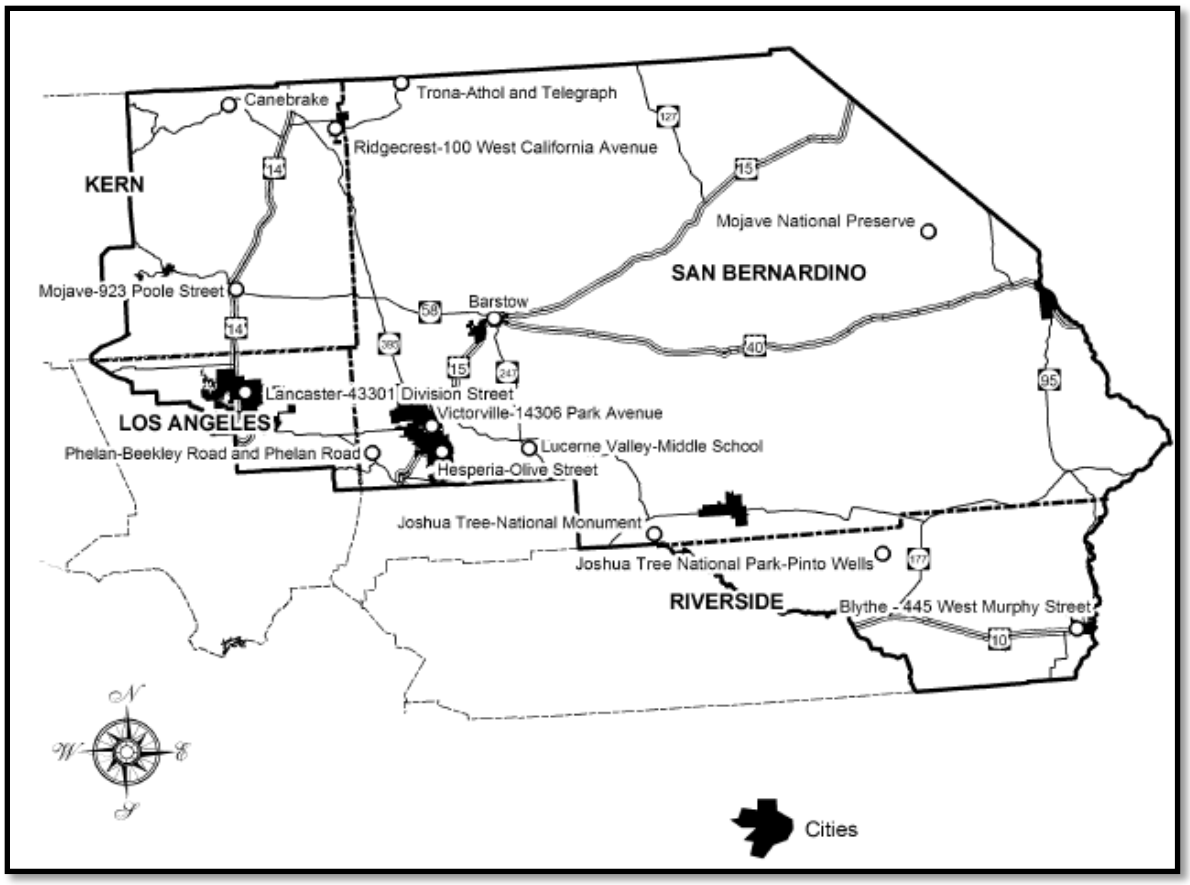
Source: EKAPCD 2018/2020
Notes:
[1] Kern River Valley, Bear Valley, and Cummings Valley were previously included in the federally designated San Joaquin Valley PM10 Serious Nonattainment Area but were made a separate Nonattainment area in 2008.
[2] Kern River Valley, Bear Valley, and Cummings Valley are included in EKAPCD for all NAAQS other than PM10.
[3] Indian Wells Valley is a separate planning area from the rest of EKAPCD for PM10 NAAQS.
[4] Indian Wells Valley is a separate area for the 1997 and 2008 8-hour ozone NAAQS (0.08 & 0.075 ppm).
[5] Indian Wells Valley is included in EKAPCD for all NAAQS other than PM10 and 8-hour ozone.
[6] 1-hour ozone NAAQS was revoked effective June 15, 2004.
[7] EKAPCD was in attainment for 1-hour ozone NAAQS at time of revocation; the proposed Attainment Maintenance designation's effective date was June 21, 20004, therefore it did not become effective
[8] Attainment for 1997 8-hour Ozone NAAQS (0.08 ppm), Serious Nonattainment for 2008 NAAQS (0.075 ppm), and Nonattainment State 8-hour standard (0.070 ppm)

As noted above in **Table 3-2**, the EKAPCD has been designated as unclassifiable/attainment for the NAAQS for CO, PM_{10}, $PM_{2.5}$, and Lead, serious nonattainment for the O_3 eight-hour average standard, attainment for the O_3 one-hour average standard and unclassified for NO_X and SO_X. A federal designation for hydrogen sulfide (H_2S) has not been made.

The EKAPCD has been designated as nonattainment for the state one-hour and eight-hour standards for O_3, and PM10, unclassified $PM_{2.5}$ and CO, and attainment for NO_X, SO_X, and Lead. A state designation for hydrogen sulfide (H2S) has not been made.

The EKACPD along with CARB operates an air quality monitoring network that provides average concentrations of those pollutants for which state or federal agencies have established ambient air quality standards. Information from the various monitoring stations is available from the corresponding agency's websites. A map of the monitoring stations in the MDAB is provided in **Figure 3-1** below.

Figure 3-1. CARB Monitoring Network



3.2 Existing Air Quality

For the purposes of background data and this air quality assessment, this analysis relied on data collected in the last three years for the CARB monitoring stations that are located in the closest proximity to the Project site. **Table 3-3** provides the background concentrations for O_3, particulate matter of 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), CO, NO_2, and H_2S as of 2018 and for Pb as of 2017. Information is provided for the Mojave – Poole Street, Lancaster – Division Street, and Bakersfield – California Avenue monitoring stations for 2016 through 2018. No data is available for SO_2, Vinyl Chloride, or other toxic air contaminants in the MDAB.

Table 3-3. Existing Air Quality Monitoring Data in Project Area

Pollutant and Monitoring Station Location	Maximum Concentration			Days Exceeding Standard		
	2016	2017	2018	2016	2017	2018
O_3 – 1-hour CAAQS (0.09 ppm)						
Mojave – 923 Poole Street	0.104	0.097	0.111	2	1	8
Lancaster – 43301 Division Street	0.108	0.109	0.125	3	10	5
O_3 – 8-hour CAAQS (0.07 ppm)						
Mojave – 923 Poole Street	0.093	0.086	0.095	60	37	56
Lancaster – 43301 Division Street	0.091	0.087	0.105	65	43	49
O_3 – 8-hour NAAQS (0.070 ppm)						
Mojave – 923 Poole Street	0.093	0.085	0.094	52	35	53
Lancaster – 43301 Division Street	0.090	0.087	0.104	60	43	48
PM_{10} – 24-hour CAAQS (50 µg/m^3)						
Mojave – 923 Poole Street	130.3	85.7	86.5	18	10	19
Lancaster – 43301 Division Street	*	*	*	*	*	*
PM_{10} – 24-hour NAAQS (150 µg/m^3)						
Mojave – 923 Poole Street	139.2	93.4	93.1	0	0	0
Lancaster – 43301 Division Street	145.0	82.4	89.3	0	0	0
$PM_{2.5}$ - 24-hour NAAQS (35 µg/m^3)						
Mojave – 923 Poole Street	25.7	26.9	39.0	0	0	2
Lancaster – 43301 Division Street	64.8	26.6	40.4	2	0	1
CO - 8-Hour CAAQS & NAAQS (9.0 ppm)						
No data collected	*	*	*	*	*	*
NO_2 - 1-Hour CAAQS (0.18 ppm)						
Lancaster – 43301 Division Street	0.044	0.046	0.047	0	0	0
NO_2 - 1-Hour NAAQS (0.10 ppm)						
Lancaster – 43301 Division Street	0.045	0.047	0.048	0	0	0
SO_2 – 24-hour Concentration - CAAQS (0.04 ppm) & NAAQS (0.14 ppm)						
No data collected	*	*	*	*	*	*
Pb - Maximum 30-Day Concentration CAAQS (1500 ng/m^3)						
Bakersfield - 5558 California Ave	19.8	12.6	9.3	*	*	*

Source: CARB 2020
Notes: ppm= parts per million
* There was insufficient (or no) data available to determine the value.

The following is a description of criteria air pollutants, typical sources and health effects and the recently documented pollutant levels in the Project vicinity.

3.2.1 Ozone (O_3)

The MDAB has high concentrations of O_3 and these high levels are known to cause eye irritation and impair respiratory functions. High levels of O_3 can also affect plants and materials. Grapes, lettuce, spinach and many types of garden flowers and shrubs are particularly vulnerable to O_3 damage. O_3 is not directly emitted into the atmosphere; it is a secondary pollutant produced from a photochemical interaction between hydrocarbons and nitrogen oxides (NO_X). One to three hours of strong sunlight in a stable atmosphere creates O_3. The "O_3 season" therefore typically spans from April through October. O_3 is a regional pollutant; wind transports and diffuses the precursors while activating the photochemical reaction process. The data presented in **Table 3-3** shows that the Mojave and Lancaster area monitoring stations exceeded the 1-hour average ambient O_3 CAAQS and the 8-hour average ambient O_3 NAAQS and CAAQS between 2016 through 2018.

3.2.2 Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)

Both NAAQS and CAAQS now apply to particulates under 10 microns (PM_{10}). Since the smaller diameter fraction of total suspended particulates are documented to represent the greatest health hazard, EPA has established NAAQS for particulates under 2.5 microns ($PM_{2.5}$). The Project area is classified as unclassifiable/attainment for PM10 and PM2.5 for NAAQS.

Dust and fumes from industrial and agricultural operations generate particulate matter. Natural activities, such as wind-raised dust, fires, and ocean spray, also increase the level of particulates in the atmosphere. The largest source of PM_{10} and $PM_{2.5}$ in Kern County is vehicle movement over paved and unpaved roads from demolition and construction activities and farming operations. PM_{10} and $PM_{2.5}$ are considered regional pollutants with elevated levels typically occurring over a wide geographic area. Concentrations tend to be highest in the winter, during periods of high atmospheric stability and low wind speed. Very small particulates may contain absorbed gases that produce injury to the respiratory tract. Particulates of aerosol size suspended in the air can both scatter and absorb sunlight, producing haze and reducing visibility. They can also damage a wide range of materials. **Table 3-3** shows that PM_{10} levels exceeded the CAAQS during the three-year period from 2016 through 2018, and $PM_{2.5}$ exceeded the NAAQS in 2016 and 2018. Similar levels can be expected to occur in the vicinity of the Project site.

3.2.3 Carbon Monoxide (CO)

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. Wind speed and atmospheric mixing also influence CO concentrations; however, under inversion conditions prevalent in the valley, CO concentrations may be more uniformly distributed over a broad area.

Internal combustion engines, principally in vehicles, produce CO due to incomplete fuel combustion. Various industrial processes also produce CO emissions through incomplete combustion. Gasoline-powered motor vehicles are typically the major source of this contaminant. CO does not irritate the respiratory tract but passes through the lungs directly into the blood stream, and by interfering with the transfer of fresh oxygen to the blood, deprives sensitive tissues of oxygen, thereby aggravate cardiovascular disease, causing fatigue, headaches, and dizziness. CO is not known to have adverse effects on vegetation, visibility, or materials. **Table 3-3** reports insufficient data for the CO monitoring at any monitoring stations during the three-year period from 2016 through 2018.

3.2.4 Nitrogen Dioxide (NO_2) and Hydrocarbons

Eastern Kern County has been designated as an unclassified area for the NAAQS for NO_2. NO_2 is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Mobile sources account for nearly all of the county's NO_X emissions, most of which is emitted as NO_2. Combustion in motor vehicle engines, power plants, refineries and other industrial operations are the primary sources in the air basin. Railroads and aircraft are other potentially significant sources of combustion air contaminants. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of hydrocarbons and sunlight to form NO_2 and O_3. NO_2, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NO_X is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It also reacts in the air to form nitrate particulates.

Motor vehicles are the major source of reactive hydrocarbons in the basin. Other sources include evaporation of organic solvents and petroleum production and refining operations. Certain hydrocarbons can damage plants by inhibiting growth and by causing flowers and leaves to fall. Levels of hydrocarbons currently

measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions, which produce photochemical oxidants. **Table 3-3** shows that the NO_2 NAAQS and CAAQS were not exceeded over the three-year period of 2016 through 2018. Hydrocarbons are not currently monitored.

3.2.5 Sulfur Dioxide

Eastern Kern County has been designated as an unclassified area for the NAAQS for SO_2. SO_2 is the primary combustion product of sulfur, or sulfur-containing fuels. Fuel combustion is the major source of this pollutant, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors. Gaseous fuels (natural gas, propane, etc.) typically have lower percentages of sulfur containing compounds than liquid fuels such as diesel or crude oil. SO_2 levels are generally higher in the winter months. Decreasing levels of SO_2 in the atmosphere reflect the use of natural gas in power plants and boilers.

At high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when respirated in combination with particulates, SO_2 can result in greater harm by injuring lung tissues. Sulfur oxides (SO_X), in combination with moisture and oxygen, results in the formation of sulfuric acid, which can yellow the leaves of plants, dissolve marble, and oxidize iron and steel. SO_X can also react to produce sulfates that reduce visibility and sunlight. **Table 3-3** shows no data has been reported over the three-year period.

3.2.6 Lead (Pb) and Suspended Sulfate

Ambient Pb levels have dropped dramatically due to the increase in the percentage of motor vehicles that run exclusively on unleaded fuel. Ambient Pb levels in Bakersfield (the closest monitoring station to the Project) are well below the ambient standard and are expected to continue to decline; the data reported in **Table 3-3** only shows the highest concentration as the number of days exceeding standards are not reported. Suspended sulfate levels have stabilized to the point where no excesses of the State standard are expected in any given year.

3.3 Climate

Climate of the project area is a continentally modified Mediterranean type, characterized by cool, wet winters and hot, dry summers. Temperatures during the summer drop to the mid to lower 50s and rise to the upper 80s. In winter, the average high temperatures reach into the upper 50s, and the average low temperatures drop into the mid- 30s. The mean annual precipitation in Lancaster, California is 7.38 inches, the bulk of which falls during the period October through March. Snowfall commonly occurs from December through February.

Meteorological data for various monitoring stations is maintained by the Western Regional Climate Center. Meteorological data for the Project site is expected to be similar to the data recorded at the Lancaster, California monitoring station. **Table 3-4** presents average precipitation data recorded at the Lancaster, California monitoring station from April 1974 through June 2016 (the most recent data available).

Table 3-4. Lancaster, California Weather Data

Period of Record Monthly Climate Summary for the Period 04/16/1974 to 6/09/2016													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Maximum Temp (F)	57.9	60.4	65.8	71.7	80.6	89.8	96.5	95.9	89.9	78.6	66.0	57.4	75.9
Avg. Minimum Temp (F)	30.8	34.6	39.4	44.6	53.3	61.0	66.6	64.2	57.0	46.2	35.3	29.1	46.8
Average Total Precipitation (in.)	1.56	1.77	1.18	0.37	0.11	0.04	0.09	0.11	0.18	0.39	0.47	1.11	7.38
Average Snowfall (in.)	1.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.4
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent of possible observations for period of record: Max. Temp.: 97.2% Min. Temp.: 97.2% Precipitation: 97.4% Snowfall: 97.3% Snow Depth: 97.4%													
Source: Western Regional Climate Center, 2020.													

3.4 Climate Change and Greenhouse Gases

3.4.1 Global Climate Change

"Global climate change" refers to change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms, lasting for decades or longer. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred by some scientists and policy makers to "global warming" because it helps convey the notion that in addition to rising temperatures, other changes in global climate may occur. Climate change may result from the following influences:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation); and/or
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, and desertification).

As determined from worldwide meteorological measurements between 1990 and 2005, the primary observed effect of global climate change has been a rise in the average global tropospheric temperature of 0.36 degree Fahrenheit (°F) per decade. Climate change modeling shows that further warming could occur, which could induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns or more energetic aspects of extreme weather (e.g., droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones). Specific effects from climate change in California may include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Sacramento-San Joaquin River Delta.

Human activities, including fossil fuel combustion and land use changes, release carbon dioxide (CO_2) and other compounds cumulatively termed greenhouse gases. GHGs are effective at trapping radiation that would otherwise escape the atmosphere. This trapped radiation warms the atmosphere, the oceans, and the earth's surface (USGCRP 2014). Many scientists believe most of the warming observed over the last 50 years is attributable to human activities" (IPCC 2014). The increased amount of CO_2 and other GHGs in the atmosphere is the alleged primary result of human-induced warming.

GHGs are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include CO_2, methane (CH_4), nitrous oxide (N_2O), and O_3. In the last 200 years, substantial quantities of GHGs have been released into the atmosphere, primarily from fossil fuel combustion. These human-induced emissions are increasing GHG concentrations in the atmosphere, therefore enhancing the natural greenhouse effect. The GHGs resulting from human activity are believed to be causing global climate change. While human-made GHGs include CO_2, CH_4, and N_2O, some (like chlorofluorocarbons [CFCs]) are completely new to the atmosphere. GHGs vary considerably in terms of Global Warming Potential (GWP), the comparative ability of each GHG to trap heat in the atmosphere. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

Natural sources of CO_2 include the respiration (breathing) of animals and plants and evaporation from the oceans. Together, these natural sources release approximately 150 billion metric tons of CO_2 each year, far outweighing the 7 billion metric tons of GHG emissions from fossil fuel burning, waste incineration, deforestation, cement manufacturing, and other human activity. Nevertheless, natural GHG removal processes such as photosynthesis cannot keep pace with the additional output of CO_2 from human activities. Consequently, GHGs are building up in the atmosphere (Enviropedia 2019).

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 production include wetlands, termites, and oceans. Human activity accounts for the majority of the approximately 500 million metric tons of CH_4 emitted annually. These anthropogenic sources include the mining and burning of fossil fuels; digestive processes in ruminant livestock such as cattle; rice cultivation; and the decomposition of waste in landfills. The major removal process for atmospheric CH_4, the chemical breakdown in the atmosphere, cannot keep pace with source emissions; therefore, CH_4 concentrations in the atmosphere are rising.

Worldwide emissions of GHGs in 2008 were 30.1 billion metric tons of CO_2e and have increased considerably since that time (United Nations 2011). It is important to note that the global emissions inventory data are not all from the same year and may vary depending on the source of the data (U.S. EPA 2019). Emissions from the top five emitting countries (China, the United States, India, the Russian Federation, and Japan) and the European Union accounted for approximately 70% of total global GHG emissions in 2014. The United States was the number two producer of GHG emissions, behind China. The primary GHG emitted by human activities was CO_2, representing approximately 76% of total GHG emissions (U.S. EPA 2020).

In 2018, the United States emitted approximately 6.7 billion metric tons of CO_2e. Of the six major sectors nationwide (electric power industry, transportation, industry, agriculture, commercial, and residential), the electric power industry and transportation sectors combined account for approximately 55% of the GHG emissions; the majority of the electrical power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Between 1990 and 2018, total United States GHG emissions rose approximately 3.7% (U.S. EPA 2020).

Worldwide, energy-related CO_2 emissions are expected to increase at an average rate of 0.6% annually between 2018 and 2050, compared with the average growth rate of 1.8% per year from 1990 to 2018. Much of the increase in these emissions is expected to occur in the developing world where emerging economies, such as China and India, fuel economic development with fossil fuel energy. Developing countries' emissions are expected to grow above the world average at a rate of approximately 1% annually between 2018 and 2050 and surpass emissions of industrialized countries around 2025 (U.S. EIA 2020).

CARB is responsible for developing and maintaining the California GHG emissions inventory. This inventory estimates the amount of GHGs emitted into and removed from the atmosphere by human activities within the state of California and supports the Assembly Bill (AB) 32 Climate Change Program. CARB's current GHG emission inventory covers the years 2000 through 2017 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

In 2017, emissions from statewide emitting activities were 424 million metric tons of CO_2 equivalent (MMT CO_2e), which is 5 MMT CO_2e lower than 2016 levels. 2017 emissions have decreased by 14% since peak levels in 2004 and are 7 MMT CO_2e below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 tonnes per person to 10.7 tonnes per person in 2017, a 24% decrease (CARB 2019a).

CARB estimates that transportation was the source of approximately 40% of California's GHG emissions in 2017, followed by electricity generation at 15%. Other sources of GHG emissions were industrial sources at 21%, residential plus commercial activities at 10%, and agriculture at 8% (CARB 2019a).

CARB has projected statewide GHG emissions for the year 2020, which represent the emissions that would be expected to occur with reductions anticipated from Pavley I and the Renewables Portfolio Standard (RPS) (30 MMT CO2e total), will be 509 MMT of CO_2e. GHG emissions from the transportation and electricity sectors as a whole are expected to increase at approximately 36% and 20% of total CO_2e emissions, respectively, as compared to 2009. The industrial sector consists of large stationary sources of GHG emissions and the percentage of the total 2020 emissions is projected to be 18% of total CO_2e emissions. The remaining sources of GHG emissions in 2020 are high global warming potential gases at 6%, residential and commercial activities at 10%, agriculture at 7%, and recycling and waste at 2% (CARB 2014).

3.4.2 Effects of Global Climate Change

Changes in the global climate are assessed using historical records of temperature changes that have occurred in the past. Climate change scientists use this temperature data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from past climate changes in rate and magnitude.

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fifth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, could range from 1.1 degree Celsius (°C) to 6.4 °C (8 to 10.4 °Fahrenheit) (IPCC 2013). Global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2014). The IPCC concluded that global climate change was largely the result of human activity, mainly the burning of fossil fuels. However, the scientific literature is not consistent regarding many of the aspects of climate change, the actual temperature changes during the 20th century, and contributions from human versus non-human activities.

Effects from global climate change may arise from temperature increases, climate sensitive diseases, extreme weather events, and degradation of air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke, drought, etc. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

According to the 2006 California Climate Action Team (CAT) Report, several climate change effects can be expected in California over the course of the next century (CalEPA 2006). These are based on trends established by the IPCC and are summarized below.

- A diminishing Sierra snowpack declining by 70% to 90%, threatening the state's water supply.
- A rise in sea levels, resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Sea level rises of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. (Note: This condition would not affect the Proposed Project area, as it is a significant distance away from coastal areas.)
- An increase in temperature and extreme weather events. Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- Increased risk of large wildfires if rain increases as temperatures rise. Wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30% toward the end of the 21st century because more winter rain will stimulate the growth of more plant fuel available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90% more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- Increasing temperatures from 8 to 10.4 °F under the higher emission scenarios, leading to a 25% to 35% increase in the number of days that ozone pollution levels are exceeded in most urban areas (see below).
- Increased vulnerability of forests due to forest fires, pest infestation, and increased temperatures.
- Reductions in the quality and quantity of certain agricultural products. The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- Exacerbation of air quality problems. If temperatures rise to the medium warming range, there could be 75 to 85% more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- A decrease in the health and productivity of California's forests. Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.
- Increased electricity demand, particularly in the hot summer months.
- Increased ground-level ozone formation due to higher reaction rates of ozone precursors.

3.4.3 Global Climate Change Regulatory Issues

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions, including methane. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete O_3 in the stratosphere (chlorofluorocarbons [CFCs], halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

On September 27, 2006, Assembly Bill 32 (AB32), the California Global Warming Solutions Act of 2006 (the Act) was enacted by the State of California. The legislature stated, "global warming poses a serious threat to

the economic well-being, public health, natural resources, and the environment of California." The Act caps California's GHG emissions at 1990 levels by 2020. The Act defines GHG emissions as all of the following gases: carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

AB32 charges CARB with responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. CARB has adopted a list of discrete early action measures that can be implemented to reduce GHG emissions. CARB has defined the 1990 baseline emissions for California and has adopted that baseline as the 2020 statewide emissions cap. CARB is conducting rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision-making. Even so, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, Center for Biological v. California Department of Fish and Wildlife (November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

1. Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals,
2. Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less that significant, and
3. Lead agencies could also demonstrate compliance with locally adopted climate plans or could apply specific numerical thresholds developed by some local agencies.

As discussed in Section 4.1, Significance Criteria, the EKAPCD, the CEQA Commenting Agency for this Project, has developed a specific numerical threshold to determine significance of a proposed project. According to the Court's ruling, this numerical threshold can be used to demonstrate compliance. This threshold is applied to the subject Project in order to determine significance.

4. IMPACT ASSESSMENT

4.1 Significance Criteria

To determine whether a proposed Project could create a potential CEQA impact, local, state, and federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA.
- Regulations established by air districts, CARB, and EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate, and other permit program requirements (e.g., New Source Review).
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits.
- Regulations applied in areas where severe air quality problems exist.

Summary tables of these emission-based and concentration-based thresholds of significance for each pollutant are provided below along with a discussion of their applicability.

4.1.1 Thresholds Adopted for the Evaluation of Air Quality Impacts under CEQA

In order to maintain consistency with CEQA, the EKACPD adopted guidelines to assist applicants in complying with the various requirements. According to the EKAPCD's Guidelines (EKAPCD 1999), a proposed project does not have significant air quality impacts on the environment, if operation of the project will:

- Emit (from all projects sources subject to EKAPCD Rule 201) less than offsets trigger levels set forth in Subsection III.B.3 of EKAPCD's Rule 210.1 (New and Modified Source Review Rule);
- Emit less than 137 pounds per day (25 tons per year) of NOx or Reactive Organic Compounds from motor vehicle trips (indirect sources only);
- Not cause or contribute to exceeding any California or National Ambient Air Quality Standard;
- Not exceed the District health risk public notification thresholds adopted by the EKAPCD Board; or
- Be consistent with adopted Federal and State Air Quality Attainment Plans.

The guideline thresholds are designed to implement the general criteria for air quality emissions as required in the State CEQA Guidelines, Appendix G, Paragraph III and CEQA (State of California CEQA Guidelines, §15064.7). As such, EKAPCD thresholds provide a means by which the general standards set forth by Appendix G may be used to quantitatively measure the air quality impacts of a specific project. According to the EKAPCD Guidelines and Thresholds of Significance, which apply to a project located within the proposed project area would result in a significant impact if it exceeds any of the thresholds are presented in **Table 4-1**.

Table 4-1. EKAPCD CEQA Thresholds of Significance

Criteria Pollutant	Significance Level	
	Daily (Indirect Mobile Only)	Annual
NOx	137 lbs/day	25 tons/yr
ROG	137 lbs/day	25 tons/yr
SOx	-	27 tons/yr
PM_{10}	-	15 tons/yr
$PM_{2.5}$	-	15 tons/yr

Source: EKAPCD 1999 and EKAPCD 2000.

4.1.2 Threshold for Ambient Air Quality Impacts

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation*" would be considered to create significant impacts on air quality. Therefore, an AQIA should determine whether the emissions from a project would cause or contribute significantly to violations of the NAAQS or CAAQS (presented above in **Table 3-1**) when added to existing ambient concentrations.

The EPA has established the federal Prevention of Significant Deterioration (PSD) program to determine what comprises "significant impact levels" (SIL) to NAAQS attainment areas. A project's impacts are considered less than significant if emissions are below PSD SIL for a particular pollutant. When a SIL is exceeded, an additional "increment analysis" is required. As the Project would not include modification to the stationary source under New Source Review (NSR), it would not be subject to either PSD or NSR review. The PSD SIL thresholds are used with ambient air quality modeling for a CEQA project to address whether the project would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation*." Ambient air quality emissions estimates below the PSD SIL thresholds would result in less than significant ambient air quality impacts on both a project and cumulative CEQA impact analysis. The MDAB is classified as non-attainment/marginal for the 8-hour O_3 NAAQS and, as such, is subject to non-attainment NSR. PSD SILs and increments are more stringent than the CAAQS or NAAQS and represent the most stringent thresholds of significance.

4.1.3 Thresholds for Hazardous Air Pollutants

The EKAPCD's Guidelines state, that a project result in a significant impact if it exceeds that District's health risk notification thresholds presented in **Table 4-2**.

Table 4-2. Measures of Significance - Toxic Air Contaminants

Agency	Level	Description
Significance Thresholds Adopted for the Evaluation of Impacts Under CEQA		
EKAPCD	Carcinogens	Maximally Exposed Individual risk **equals or exceeds** 1 in one million.
	Non-Carcinogens	**Acute**: Hazard Index **equals or exceeds** 0.2 for the Maximally Exposed Individual.
		Chronic: Hazard Index **equals or exceeds** 0.2 for the Maximally Exposed Individual.
Source: EKAPCD 1996/2020		

4.1.4 Global Climate Change Thresholds of Significance

On March 8, 2012, the EKAPCD adopted the *Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects When Serving as Lead CEQA Agency*, which outlined the EKAPCD's Project-Specific CEQA significance thresholds for GHG emissions (EKAPCD 2012):

- If project is exempt from CEQA due to either a statutory or categorical exemption, no further analysis under CEQA is required.
- Project-Specific GHG Emissions must be quantified if the project is not exempt from CEQA.
- Project is considered to have a less than significant impact or not have a cumulatively considerable impact on GHG emissions if it meets one of the following conditions:
  1. Project-Specific GHG emissions are less than 25,000 tons per year (tpy);
  2. Project demonstrates to EKAPCD that it is in compliance with state GHG reduction plan such as AB 32 or future federal GHG reduction plan if it is more stringent than state plan;
  3. Project GHG emissions will be mitigated to a less than significant impact if GHGs can be reduced by at least 20% below Business-As-Usual (BAU) through implementation of one or more of the following strategies:
     a. Compliance with a Best Performance Standard (BPS) as set forth in Section VI of this Policy;
     b. Compliance with GHG Offset as detailed in Section VI of this Policy;
     c. Compliance with an Alternative GHG Reduction Strategy as discussed in Section VII of this Policy.
- If none of the above is met the project will be deemed significant and an Environmental Impact Report (EIR) will be required.

4.2 Project Related Emissions

This document was prepared pursuant to the EKAPCD's *Guidelines for Implementation of the California Environmental Quality Act, July 1, 1999 Revision*. The guidelines do not necessarily require a quantification of construction emissions for all projects. Construction emissions quantification is typically required only at the request of the lead agency. The EKAPCD generally assumes that implementation of any construction-related mitigation measures will result in construction emissions impacts that are *less than significant*.

Project emissions were estimated separately for each emission source. EMFAC model version 2014 and California Emissions Estimator Model (CalEEMod) were used to estimate emissions for both short-term, construction-related, sources as well as long-term, operations-related, sources.

Project emissions were estimated for the following development stages:

- Short-term (Construction and Demolition) – Construction emissions of the proposed Project were estimated in CalEEMod using applicant assumptions for construction schedule for the development of the Project in seven phases.
- Long-term (Operations) – Long term emissions were also estimated using CalEEMod for operations of a residential community with a mix of single family and multi-family housing units using both default and non-default input.

4.2.1 Short-Term Emissions

Short-term emissions are primarily from the construction phase of a project and are recognized to be short in duration and without lasting impacts on air quality. CalEEMod was used to estimate emissions from construction worker vehicles and on-site construction equipment. Construction equipment was estimated using a default construction fleet mix provided by the San Joaquin Valley Air Pollution Control District

(SJVAPCD) for a 20 MW solar project (Yang 2020)[1]; this fleet mix was adjusted by factoring the 20 MW solar project equipment to reflect equipment for a 30 MW project. EMFAC2017 emissions factors were used to estimate emissions from solar panel delivery off-site travel on paved surfaces and AP-42 emission factors were used to calculate fugitive dust emissions from travel on on-site unpaved surfaces.

Solar panels would be delivered from the Port of Long Beach; assuming 540 panels per truck trip, there would be 463 heavy duty truck trips delivering the 125,000 solar panels. Many variables are factored into the calculation of construction emissions including length of the construction period, number of each type of equipment, site characteristics, area climate, and construction personnel activities. All equipment was assumed to be in use for the Project in accordance with the adjusted default SJVAPCD provided hours per day for a 30 MW solar project. CalEEMod default load factors were used for all construction equipment. Adjustment to the CalEEMod default values were as follows:

- Land use lot acreage was adjusted to match the Project description;
- Demolition construction phase was removed as the Project Location is open land;
- The construction schedule was adjusted to match the anticipated schedule for the Project;
- The Project specific construction equipment list described above was used;
- Water exposed area 3 times per day[2]; and
- Reduce vehicle speed to less than 15 miles per hour.

Table 4-3 presents the Project's short-term emissions based on the various emission sources and a 9-month construction period during 2019. The emission calculations based on CalEEMod and emission factors from EMFAC2017 and AP-42 are available in Attachment E.

Table 4-3. Short-Term Project Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Mitigated						
2020	0.23	2.26	1.55	0.005	0.38	0.18
Significance Threshold	25	25	NA	27	15	15
Is Threshold Exceeded for a Single Year After Mitigation?	No	No	No	No	No	No
Source: Insight Environmental Consultants 2020						

As calculated with CalEEMod, the estimated short-term construction-related emissions would *not exceed* EKAPCD significance threshold levels during a given year and would therefore be *less than significant*.

4.2.2 Long-Term Operational Emissions

Long-term emissions are caused by operational mobile, area, and stationary sources. The Projects long-term emissions would be posed by the following equipment:

Water Truck Emissions – Water trucks would clean the solar panels quarterly and would be a source of NOx, Sox, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. The client estimates that water trucks would travel 5.5 miles from the Project site for 240 one-way trips each quarter. EMFAC2017 was used to estimate off-site and on-site

[1] Per G. Stephens, APCO-EKAPCD, the SJVAPCD construction fleet estimate for solar power projects is acceptable for use in determining construction emissions impacts in the EKAPCD; personal communication with R. Hunter (Trinity Consultants), Oct. 2019.

[2] Per EKAPCD's "Suggested Air Pollutant Mitigation Measures for Construction Sites for Eastern Kern APCD".

water truck emissions; the year 2020 was applied (Project operations are anticipated to start in the Year 2021). Additionally, on-site water truck travel is a source of PM_{10} fugitive emissions; fugitive dust from water truck travel over on-site unpaved surfaces was estimated with AP-42 emissions factors (United Stated Environmental Protection Agency (USEPA 2006).

Maintenance Truck Emissions – Quarterly maintenance would include six one-way truck trips per quarter and would be a source of ROG, NOx, SOx, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. EMFAC2017 was used to estimate maintenance truck emissions; the year 2020 was applied (Project operations is anticipated to start in the Year 2021). Additionally, on-site maintenance truck travel is a source of PM_{10} emissions; fugitive dust from maintenance truck travel over on-site unpaved surfaces was estimated with AP-42 emissions factors (USEPA 2006).

Employee Trip Emissions - The Project applicant estimates ten one-way trips per quarter of employee travel to the Project site and would be a source of ROG, NOx, SOx, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. EMFAC2017 was used to estimate employee vehicle emissions; the year 2020 was applied (Project operations is anticipated to start in the Year 2021). As the make of employee vehicles is not known, a 50:50 split of emissions for light duty autos and light duty trucks was applied when estimating emissions. Additionally, on-site employee vehicle travel is a source of PM_{10} emissions; fugitive dust from employee vehicle travel over on-site unpaved surfaces was estimated with AP-42 emissions factors (USEPA 2006).

Long-term emissions would consist of the following components.

4.2.2.1 Fugitive Dust Emissions

Operation of the Project site at full build-out is not expected to present a substantial source of fugitive dust (PM_{10}) emissions. The main source of PM_{10} emissions would be from vehicular traffic associated with Project site maintenance. PM_{10} generated as a part of fugitive dust emissions pose a potentially serious health hazard, alone or in combination with other pollutants. EKAPCD under Rule 402 implements required control measures to assist in further minimizing these emissions.

The Project would comply with applicable EKAPCD Rules and Regulations and the local zoning codes required in this analysis to reduce PM_{10} fugitive dust emissions even further to ensure that the project's emissions remain at a "less than significant" level.

4.2.2.2 Exhaust Emissions

Project-related transportation activities from water trucks, employees, and maintenance would generate mobile source ROG, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$ exhaust emissions. Exhaust emissions would vary substantially from day to day but would average out over the course of an operational year. The variables factored into estimating total Project emissions include level of activity, site characteristics, and weather conditions.

4.2.2.3 Projected Emissions

The proposed project is expected to have long-term air quality impacts as shown in **Table 4-4**. Emission calculations are available in Appendix B. The following mitigation measures were incorporated per the project details.

- Water exposed areas 3 times per day; and
- Reduce vehicle speeds to less than 15 miles per hour.

Table 4-4. Post-Project (Operational) Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mitigated Emissions						
Project Totals	**0.0001**	**0.0032**	**0.0011**	**0.0000**	**0.0274**	**0.0028**
EKAPCD Threshold	25	25	NA	27	15	15
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No

As shown in Table 4-4, operations-related emissions, as calculated in Appendix B, would be less than the EKAPCD significant threshold levels. Therefore, the proposed Project would have a *less than significant impact* during Project operations.

PM_{10} generated as a part of fugitive dust emissions pose a potentially serious health hazard, alone or in combination with other pollutants. EKAPCD under Rule 402 implements required control measures to assist in further minimizing these emissions.

The Project would comply with applicable EKAPCD Rules and Regulations, the local zoning codes, and additional mitigation measures required in this analysis to reduce PM_{10} fugitive dust emissions even further to ensure that the project's emissions remain at a "less than significant" level.

4.3 Potential Impacts on Sensitive Receptors

Sensitive receptors are defined as locations where young children, chronically ill individuals, the elderly, or people who are more sensitive than the general population reside, such as schools, hospitals, nursing homes, and daycare centers. The nearest residential sensitive receptors are approximately 0.17 miles to the northwest and southwest of the proposed Project site. There is one known non-residential sensitive receptor within 2 miles of the Project site as detailed below in **Table 4-5**.

Table 4-5. Non-Residential Sensitive Receptors

Sensitive Receptor Name	Type of Facility	Distance from Project
Tropico Middle School	Public School 6-8	1.77 Mi. E

Based on the criteria pollutant analysis above and the potential visibility, health, and odor impacts analyzed below, the proposed Project is expected to have a *less than significant* impact on any sensitive receptors.

4.4 Potential Impacts to Visibility to Nearby Class 1 Areas

Visibility impact analyses are intended for stationary sources of emissions which are subject to the PSD requirements in 40 CFR Part 60; they are not usually conducted for area sources. Because the Project's PM_{10} emissions increase are predicted to be less than the PSD threshold levels, an impact at any Class 1 area or military/airspace operation within 100 kilometers of the Project (including Edwards Air Force Base, China Lake Naval Weapons Station and the entire R-2508 Airspace Complex, and Death Valley National Monument) is extremely unlikely. Therefore, based on the Project's predicted less-than significant PM_{10} emissions, the Project would be expected to have a *less than significant impact* to visibility at any Class 1 area or military/airspace operation.

4.5 Potential Impacts from Carbon Monoxide

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. CO concentrations are also influenced by wind speed and atmospheric mixing. CO concentrations may be more uniformly distributed when inversion conditions are prevalent in the valley. Under certain meteorological conditions, CO concentrations along a congested roadway or intersection may reach unhealthful levels for sensitive receptors, e.g. children, the elderly, hospital patients, etc. This localized impact can result in elevated levels of CO, or "hotspots" even though concentrations at the closest air quality monitoring station may be below NAAQS and CAAQS.

The localized project impacts depend on whether ambient CO levels in the Project vicinity would be above or below NAAQS. If ambient levels are below the standards, a project is considered to have significant impacts if a project's emissions would exceed of one or more of these standards. If ambient levels already exceed a state standard, a project's emissions are considered significant if they would increase one-hour CO concentrations by 10 ppm or more or eight-hour CO concentrations by 0.45 ppm or more.

There was no traffic study available for this Project at the time this analysis was completed. However, no vehicular traffic other than sporadic maintenance, panel washing trucks, and employees are expected and due to the location of the site, potentially impacted intersections and roadway segments are anticipated to operate at a LOS of C or better during Project operations. Therefore, CO "Hotspot" Modeling was not conducted for this Project and no concentrated excessive CO emissions are expected to be caused once the proposed Project is completed.

4.6 Predicted Health Impacts

Projects are considered for potential health risks wherein a new or modified source of Hazardous Air Pollutants (HAPs) is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to HAPs.

The proposed Project would result in emissions of Hazardous Air Pollutants (HAPs) and would be located near existing residents; therefore, an assessment of the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed Project is required.

To predict the potential health risk to the population attributable to emissions of HAPs from the proposed Project, ambient air concentrations were predicted with dispersion modeling to arrive at a conservative estimate of increased individual carcinogenic risk that might occur as a result of continuous exposure over a 70-year lifetime or operational emissions and over the construction period for construction emissions. Similarly, predicted concentrations were used to calculate non-cancer chronic and acute hazard indices (HIs), which are the ratio of expected exposure to acceptable exposure. The basis for evaluating potential health risk is the identification of sources with increased HAPs. HAP emissions from anticipated on-site construction activities were evaluated.

Health risk is determined using the Hotspots Analysis and Reporting Program (HARP2) software distributed by the CARB; HARP2 requires peak 1-hour emission rates and annual-averaged emission rates for all pollutants for each modeling source. Assumptions used to calculate the emission rates for the proposed Project are outlined below.

The most recent version of EPA's AMS/EPA Regulatory Model - AERMOD (recompiled for the Lakes ISC-AERMOD View 9.4.0 interface) was used to predict the dispersion of emissions from the proposed Project

(Lakes Environmental Software 2017). The analysis employed all of the regulatory default AERMOD model keyword parameters, including elevated terrain options.

Diesel combustion emissions from diesel on-site construction equipment and HHD trucks from panel deliveries were modeled as an area source for on-site construction activity on the property. Diesel particulate matter was calculated using CalEEMod for on-site construction equipment and EMFAC approved emission factors for HHD panel delivery trucks. EMFAC emission factors are provided by the California Air Resources Board (CARB 2014). A unit emission rate of 1 grams/second (g/sec) was input to AERMOD for each source. Operational HHD truck emissions for on-site water truck travel was less than 0.5 pounds per year and is therefor a negligible amount of HAPs and not included in this HRA.

Discrete receptors were placed on scattered agricultural houses and businesses within close proximity of the Project site. A total of 164 discrete off-site receptors were analyzed. Elevated terrain options were employed even though there is not complex terrain in the Project area.

CARB-provided, AERMET processed meteorological datasets for the Mojave monitoring station, calendar years 2009 through 2014 was input to AERMOD (CARB 2020c). This was the most recent available dataset available at the time the modeling was conducted. Rural dispersion parameters were used because the operation and the majority of the land surrounding the facility is considered "rural" under the Auer land use classification method (Auer 1978).

Plot files generated by AERMOD were uploaded to the Air Dispersion Modeling and Risk Assessment Tool (ADMRT) program in the Hotspots Analysis and Reporting Program Version 2 (HARP 2) (CARB 2015). ADMRT post-processing was used to assess the potential for excess cancer risk and chronic and acute non-cancer effects using the most recent health effects data from the California EPA Office of Environmental Health Hazard Assessment (OEHHA). HARP2 site parameters were set for the mandatory minimum pathways of inhalation, soil ingestion, dermal, and mother's milk. Risk reports were generated using the derived OEHHA analysis method for carcinogenic risk and non-carcinogenic chronic and acute risk. Site parameters are included in the HARP2 output files. Total cancer risk was predicted for the inhalation pathway at each receptor. A hazard index was computed for chronic non-cancer health effects for each applicable endpoint and each receptor. A hazard index for acute non-cancer health effects was not computed since DPM does not have a risk exposure level for acute risk.

EKAPCD has set the level of significance for carcinogenic risk at one in one million, which is understood as the possibility of causing one additional cancer case in a population of one million people. The level of significance for chronic non-cancer risk is a hazard index of 0.2. All receptors were modeled with a 1-year exposure for the construction activities.

The carcinogenic risk and the health hazard index (HI) for chronic non-cancer risk at the point of maximum impact (PMI) do not exceed the significance levels of one in one million (1 x 10-6) and 0.2, respectively for the proposed Project. The PMIs, are identified by receptor location and risk, and are provided in **Table 4-6**. The electronic AERMOD and HARP2 output files are provided in Attachment E.

Table 4-6. Potential Maximum Impacts Predicted by HARP

	Value	UTM East	UTM North
Excess Cancer Risk	1.59E-07	383770.15	3857678.93
Chronic Hazard Index	6.86E-04	384650.14	3858705.39

As shown above in **Table 4-6**, the maximum predicted cancer risk for the proposed Project is 1.59E-07. The maximum chronic non-cancer hazard index for the proposed Project is 6.86E-04. Since the PMI remained below the significance threshold for cancer and chronic risk, this Project would not have an adverse effect to any of the surrounding communities.

The potential health risk attributable to the proposed Project is determined to be *less than significant* based on the following conclusions:

1. Potential carcinogenic risk from the proposed Project is below the significance level of one in a million at each of the modeled receptors; and
2. The hazard index for the potential chronic non-cancer risk from the proposed Project is below the significance level of 1.0 at each of the modeled receptors.
3. The hazard index for the potential acute non-cancer risk was not calculated since there is no acute risk associated with DPM emission; therefore, the proposed Project is considered below the significance level.

Therefore, potential risk to the population attributable to emissions of HAPs from the proposed Project would be less than significant.

4.7 Odor Impacts and Mitigation

An evaluation is typically conducted for both of the following situations: 1) a potential source of objectionable odors is proposed for a location near existing sensitive receptors, and 2) sensitive receptors are proposed to be located near an existing source of objectionable odors. The criteria for this evaluation are based on the Lead Agency's determination of the proximity to one another of the proposed project and the sensitive receptors. A sensitive receptor is a location where human populations, especially children, senior citizens and sick persons, are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for ambient air quality standards, i.e. the 24-hour, 8-hour or 1-hour standards. Commercial and industrial sources are not considered sensitive receptors. **Table 4-5** lists seven known sensitive receptors that are in relatively close proximity (within a two-mile radius) to the project area.

The proposed Project is not considered a source of objectionable odors or odorous compounds. Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the project site when it is in operation. As such, the proposed project will not be a source of any odorous compounds nor will it likely be impacted by any odorous source.

4.8 Impacts to Ambient Air Quality

Since the project's long term emissions are considered minimal an ambient air quality analysis was not performed to determine if the proposed project has the potential to impact ambient air quality through a violation of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard. The project is considered *less than significant* for impacts to ambient air quality standards.

4.9 Impacts to Greenhouse Gases and Climate Change

The proposed Project's construction and operational GHG emissions were estimated using the CalEEMod program (version 2016.3.2), EMFAC2017, and the California Climate Action Registry General Reporting Protocol (Version 3.1). **Table 4-7** presents the Project's annual GHG emissions.

Table 4-7. Estimated Annual GHG Emissions (MT/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Emissions				
2020 Construction Emissions	434.10	0.086	0.014	440.60
Operational Emissions				
Project Operations	1.968	0.000	0.000	1.849
Annualized Construction Emissions[1]	*14.470*	*0.003*	*0.000*	*14.687*
GHG Savings from Solar	-23,922.49	-0.182	-0.101	-23,957.54
Project Emissions	**-23906.05**	**-0.179**	**-0.100**	**-23,941.00**
EKAPCD's Significance Threshold	**-**	**-**	**-**	**25,000**
Significance Threshold Exceeded?	**-**	**-**	**-**	**No**
*Note: 0.00 could represent <0.00 1 Per South Coast AQMD's Methodology				

The Project will not result in the emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6), the other gases identified as GHG in AB32. The proposed Project will be subject to any regulations developed under AB32 as determined by CARB. As demonstrated in **Table 4-7**, the Project would have a positive impact on global climate change by reducing the demand for conventional power generation and the rate of global climate change resulting from conventional power generation. Additionally, because the project is a net negative producer of GHGs which results in a savings of 23,941 MT CO_2e per year, it will be significantly less than the EKAPCD's GHG Policy threshold of 25,000 MT of CO_2e per year (EKAPCD 2012). The proposed Project would therefore have a *less than significant* GHG impact.

4.9.1 Feasible and Reasonable Mitigation Relative to Global Warming

CEQA requires that all feasible and reasonable mitigation be applied to the project to reduce the impacts from construction and operations on air quality. The SJVAPCD's "Non-Residential On-Site Mitigation Checklist" was applied in preparing the mitigation measures and evaluating the Project's features as a proxy for EKAPCD. These measures include using controls that limit the exhaust from construction equipment and using alternatives to diesel when possible. Additional reductions would be achieved through the air districts and CARB implementing regulations to reduce diesel engine emissions.

While it is not possible to determine whether the Project individually would have a significant impact on global warming or climate change, the Project would potentially contribute to cumulative GHG emissions reductions in California as well as related health effects. The Project operational emissions would only be a very small fraction of the statewide GHG emissions, and these small increases would be offset by reductions in GHGs that would result in reduced need for fossil-fuel generated power sources. However, without the necessary science and analytical tools, it is not possible to assess, with certainty, whether the Project's contribution would be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130. CEQA, however, does note that the more severe environmental problems the lower the thresholds for treating a project's contribution to cumulative impacts as significant. Given the position of the legislature in AB32 which states that global warming poses serious detrimental effects, and the requirements of CEQA for the lead agency to determine that a project not have a cumulatively considerable contribution, the effect of the Project's CO2 contribution/reduction may would not be considered cumulatively considerable and would be considered less than significant. This determination is based on the lack of clear scientific evidence or other criteria for determining the significance of the Project's contribution or reduction of GHG to the air quality in

the MDAB. The strategies currently being implemented by CARB may help in further reducing the Project's GHG emissions and are summarized in the table below.

Table 4-8. Select CARB GHG Emission Reduction Strategies

Strategy	Description of Strategy
Vehicle Climate Change Standards	AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in Sept. 2004.
Diesel Anti-Idling	In July 2004, CARB adopted a measure to limit diesel-fueled retail motor vehicle idling.
Other Light-Duty Vehicle Technology	New standards would be adopted to phase in beginning in the 2017 model year.
Alternative Fuels: Biodiesel Blends	CARB would develop regulations to require the use of 1% to 4% Biodiesel displacement of California diesel fuel.
Alternative Fuels: Ethanol	Increased use of ethanol fuel.
Heavy-Duty Vehicle Emission Reduction Measures	Increased efficiency in the design of heavy-duty vehicles and an educational program for the heavy-duty vehicle sector.

Not all of these measures are currently appropriate or applicable to the proposed Project. While future legislation could further reduce the Project's GHG footprint, the analysis of this is speculative and in accordance with CEQA Guidelines Section 15145, will not be further evaluated in this AQIA.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Global climate change is this type of issue. The causes and effects may not be just regional or statewide, they may also be worldwide. Given the uncertainties in identifying, let alone quantifying the impact of any single project on global warming and climate change, and the efforts made to reduce emissions of GHGs from the Project through design, in accordance with CEQA Section 15130, any further feasible emissions reductions would be accomplished through CARB regulations adopted pursuant to AB32. The cumulative impacts of the Project to global climate change as demonstrated in **Table 4-7** would be below the GHG thresholds of significance established by the EKAPCD. Therefore, the cumulative impacts to global climate change would be *less than significant*.

5. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The EKAPCD Guidelines for Implementation of CEQA also states that "*Unless otherwise specified in published/adopted thresholds of significance and guidelines, a project's potential contribution to cumulative impacts shall be assessed utilizing the same significance criteria as those for project specific impacts*"[3]. Based on the analysis conducted for this project, it is individually *less than significant*. This AQIA, however, also considered impacts of the proposed project in conjunction with the impacts of other projects previously proposed in the area. The following cumulative impacts were considered:

- Cumulative O_3 Impacts (ROG and NOx) from numerous sources within the region including transport from outside the region. O_3 is formed through chemical reactions of ROG and NOx in the presence of sunlight.
- Cumulative CO Impacts produced primarily by vehicular emissions.
- Cumulative PM_{10} Impacts from within the region and locally from the various projects. Such projects may cumulatively produce a significant amount of PM10 if several projects conduct grading or earthmoving activities at the same time; and
- Hazardous Air Pollutant (HAP) Impacts on sensitive receptors.

The cumulative analysis is based on a quantitative cumulative analysis of projects located within a one-mile radius of the proposed Project. A one-mile radius is for cumulative project analysis is required within the City of Tehachapi.

The cumulative analysis quantifies operational and area impacts proposed by the project as well as all identified projects within close proximity (one-mile) of the project site. The analysis quantifies operational emissions from these other projects to determine the impacts to the air basin posed by these sources with the increases proposed by the subject project. These emissions are then compared to the proposed growth and anticipated emissions increases included in the various regional growth forecasts to determine 1) if they were included in the forecast; 2) if their inclusion can be considered consistent with the attainment plan for air emissions within the air basin; and 3) if these emissions are in conformance with the State Implementation Plan emission budget or baseline emissions for ROG, NO_X, CO, and PM_{10}.

5.1 Cumulative Regional Air Quality Impacts

The most recent, certified MDAB Emission Inventory data available from the EKAPCD is based on data gathered for the 2020 annual inventory. This data will be used to assist the EKAPCD in demonstrating attainment of Federal 1-hour O_3 Standards. **Table 5-1** provides a comparative look at the impacts proposed by the proposed Project to the MDAB Emissions Inventory.

Table 5-1. Comparative Analysis Based on MDAB 2020 Inventory

Emissions Inventory Source	Pollutant (tons/year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Kern County – 2020[2]	3,577	11,315	19,345	3,139	5,913	2,810
MDAB – 2020[2]	20,842	51,246	71,102	4,709	52,378	14,491
Proposed Project	0.0001	0.0032	0.0001	0.0000	0.0274	0.0028

[3] EKAPCD Guidelines for Implementation of CEQA, Page 22

Proposed Project's % of Kern[1]	0.0000	0.0000	0.0000	0.0000	0.0005	0.0001
Proposed Project's % of MDAB[1]	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000

Source: CARB 2020b
Notes: 1) Percentages equaling 0.0000 could represent a percent <0.00005.
2) This is the latest inventory available as of June 2020, excluding Natural Sources.

As shown in **Table 5-1** the proposed Project does not pose a substantial increase to basin emissions, as such basin emissions would be essentially the same if the Project is approved.

Table 5-2, **Table 5-3**, and **Table 5-4** provide CARB Emissions Inventory projections for the year 2025 for both the MDAB and the Kern County portion of the air basin. Looking at the MDAB Emissions predicted by the CARB year 2025 emissions inventory, the Kern County portion of the air basin is a moderate source of the emissions. The proposed Project produces a small portion of the total emissions in both Kern County and the entire MDAB.

Table 5-2. Emission Inventory MDAB 2025 Projection - Tons per Year

	ROG	NO_X	CO	SOx	PM_{10}	$PM_{2.5}$
Total Emissions	20,915	46,282	65,737	5,037	56,429	15,440
Percent Stationary Sources	38.05%	65.85%	18.71%	93.48%	42.95%	51.77%
Percent Area-Wide Sources	29.14%	1.58%	13.83%	0.72%	52.59%	36.64%
Percent Mobile Sources	32.98%	32.65%	67.41%	5.80%	4.46%	11.82%
Total Stationary Source Emissions	7,957	30,478	12,301	4,709	24,236	7,994
Total Area-Wide Source Emissions	6,096	730	9,089	37	29,675	5,658
Total Mobile Source Emissions	6,899	15,111	44,311	292	2,519	1,825

Source: CARB 2020b
Note: Total may not add due to rounding.

Table 5-3. Emission Inventory MDAB - Kern County Portion 2025 Estimate Projection - Tons per Year

	ROG	NO_X	CO	SOx	PM_{10}	$PM_{2.5}$
Total Emissions	3,541	10,841	19,017	3,358	5,986	2,847
Percent Stationary Sources	14.43%	74.75%	22.65%	95.65%	21.34%	28.21%
Percent Area-Wide Sources	27.84%	2.02%	21.31%	0.00%	59.15%	33.33%
Percent Mobile Sources	57.73%	23.23%	56.05%	3.26%	19.51%	38.46%
Total Stationary Source Emissions	511	8,103	4,307	3,212	1,278	803
Total Area-Wide Source Emissions	986	219	4,052	0	3,541	949
Total Mobile Source Emissions	2,044	2,519	10,658	110	1,168	1,095

Source: CARB 2020b
Note: Total may not add due to rounding.

Table 5-4. 2025 Emissions Projections - Proposed Project, Kern County, and MDAB

	ROG	NO_X	PM_{10}
Proposed Project	0.0001	0.0032	0.0274
Kern County	3,541	10,841	5,986
MDAB	20,915	46,282	56,429
Proposed Project Percent of Kern County	0.0000%	0.0000%	0.0005%
Proposed Project Percent of MDAB	0.0000%	0.0000%	0.0000%
Kern County Percent of MDAB	16.93%	23.42%	10.61%

As shown above, the proposed Project would pose no impact on regional O_3 and PM_{10} formation. Because the regional contribution to these cumulative impacts would be negligible, the Project would not be considered cumulatively considerable in its contribution to regional O_3 and PM_{10} impacts.

5.2 Cumulative Local Air Quality Impacts

A cumulative projects list was not provided for the Gettysburg Solar Project. There are other planned developments found within a six-mile radius of the Project based on a review of the Kern County GIS database; however, the Kern County GIS database lacks the necessary details to accurately predict the type of developments for these projects. The cumulative projects are typically listed only as geographical reference to demonstrate the construction activity in a six-mile radius from the proposed Project. The number or size of these projects is of no particular significance since no "cumulative" emissions thresholds have been established by the EKAPCD.

As details regarding the various cumulative projects were not readily available, emissions estimates were not calculated. As these projects are either currently under construction or, at a minimum, approved by the planning department for consistency with applicable regulation, for the purposes of this analysis, it is assumed that they are in conformance with the regional AQAP.

There are no cumulative significance thresholds established by the EKAPCD, CARB or other regulatory authority. Because: 1) the cumulative projects are already approved; 2) it is assumed that these projects are in conformance with the regional AQAP and/or the Kern County General Plan; and 3) the Project's incremental contribution is less-than significant; therefore, the Project's incremental contribution to a cumulative effect is considered less than significant. (CEQA Guidelines Section 15064(h)(3) (EKAPCD 2015).

5.3 Cumulative Hazardous Air Pollutants

Combined HAPs emission impacts from the project and other existing and planned projects are considered cumulatively significant when air quality standards are exceeded. Because the Project would not be a significant source of HAPs, the proposed Project would *also not be expected to pose a significant cumulative HAPs impact*.

5.4 Cumulative Carbon Monoxide (CO) – Mobile Sources

Traffic increases and added congestion caused by a project can combine to cause a CO "Hotspot". There was no traffic study available for this Project at the time this analysis was completed. However, no vehicular traffic other than sporadic maintenance, panel washing trucks, and employees are expected and due to the location of the site, potentially impacted intersections and roadway segments are anticipated to operate at a LOS of C or better during Project operations. Therefore, cumulative CO "Hotspot" Modeling was not conducted for this Project and no concentrated excessive CO emissions are expected to be caused once the proposed Project is completed.

6. CONSISTENCY WITH THE AIR QUALITY ATTAINMENT PLAN

Air quality impacts from proposed projects within the eastern Kern County are controlled through policies and provisions of the EKAPCD and the Kern County General Plan (Kern County 2004). In order to demonstrate that a proposed project would not cause further air quality degradation in either of the EKAPCD's plan to improve air quality within the air basin or federal requirements to meet certain air quality compliance goals, each project should also demonstrate consistency with the EKAPCD's adopted AQAP. The EKAPCD is required to submit a "Rate of Progress" document to the CARB that demonstrates past and planned progress toward reaching attainment for all criteria pollutants. The California Clean Air Act (CCAA) requires the local air districts with severe or extreme air quality problems to provide for a 5 percent reduction in non-attainment emissions per year. The Attainment Plans prepared for the Eastern Kern County by the EKAPCD complies with this requirement. CARB reviews, approves, or amends the document and forwards the plan to the U.S. Environmental Protection Agency (U.S. EPA) for final review and approval within the State Implementation Plan (SIP).

Air pollution sources associated with stationary sources are regulated through the EKAPCD permitting authority under the New and Modified Stationary Source Review Rule (EKAPCD Rule 210.1). Owners of any new or modified equipment that emits, reduces or controls air contaminants, except those specifically exempted by the EKAPCD, are required to apply for an Authority to Construct and Permit to Operate (EKAPCD Rule 201). Additionally, best available control technology (BACT) is required on specific types of stationary equipment and are required to offset both stationary source emission increases along with increases in cargo carrier emissions if the specified threshold levels are exceeded (EKAPCD Rule 210.1, III.B.). Through this mechanism, the EKAPCD would ensure that all stationary sources within a project area would be subject to the standards of the EKAPCD to ensure that new developments do not result in net increases in stationary sources of criteria air pollutants.

6.1 Required Evaluation Guidelines

CEQA Guidelines and the Federal Clean Air Act (Sections 176 and 316) contain specific references on the need to evaluate consistency between a proposed project and the applicable AQAP for the Project site. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQAP:

1. *Determination that an AQAP is being implemented in the area where the project is being proposed*. The SJVAPCD has implemented the current, modified AQAP as approved by CARB.
2. *The proposed project must be consistent with the growth assumptions of the applicable AQAP*. The proposed Project land use type was not anticipated in the current growth assumptions. Therefore, growth assumptions in the Kern County General Plans will be modified with the approval of the proposed Project.
3. *The project must contain in its design all reasonably available and feasible air quality control measures*. The proposed project incorporates various policy and rule-required implementation measures that will reduce related emissions.

The CCAA and AQAP identify transportation control measures as methods to further reduce emissions from mobile sources. Strategies identified to reduce vehicular emissions such as reductions in vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, and traffic congestion, in order to reduce vehicular emissions, can be implemented as control measures under the CCAA as well. Additional measures may also be implemented through the building process such as providing electrical outlets on exterior walls of structures to encourage

use of electrical landscape maintenance equipment or measures such as electrical outlets for electrical systems on diesel trucks to reduce or eliminate idling time.

As the growth represented by the proposed Project was anticipated by the Kern County General Plan and incorporated into the AQAP, conclusions may be drawn from the following criteria:

1. The findings of the analysis conducted using review of TAZ data show that sufficient employment increases are planned for the project area (Table 6-1 below);

2. That, by definition, the proposed emissions from the Project are below the EKAPCD's established emissions impact thresholds; and

3. That the primary source of emissions from the Project would be motor vehicles which would be licensed through the State of California and whose emissions are already incorporated into the CARB's Eastern Kern County's Emissions Inventory.

Based on these factors, the Project *appears to be consistent with the AQAP*.

6.2 Consistency with the Kern Council of Government's Regional Conformity Analysis

The Kern Council of Governments (Kern COG) Regional Conformity Analysis Determination demonstrates that the regional transportation expenditure plans (Destination 2030 Regional Transportation Plan and Federal Transportation Improvement Program) in the Kern County portion of the Mojave Desert air quality attainment areas would not hinder the efforts set out in the CARB's SIP for each area's non-attainment pollutants (CO, O_3 and PM_{10}). The analysis uses an adopted regional growth forecast, governed by both the adopted Kern COG Policy and Procedure Manual and a Memorandum of Understanding between the County of Kern and Kern COG (representing itself and outlying municipal member agencies).

The Kern COG Regional Conformity Analysis considers General Plan Amendments (GPA) and zone changes that were enacted at the time of the analysis as projected growth within the area based on land use designations incorporated within the Kern County General Plan. Land use designations that are altered based on subsequent GPAs that were not included in the Regional Conformity Analysis were not incorporated into the Kern COG analysis. Consequently, if a proposed project is not included in the regional growth forecast using the latest planning assumptions, it may not be said to conform to the regional growth forecast.

Item 2 under Section 3 – Model Maintenance Procedure, of the Kern COG Regional Transportation Modeling Policy and Procedure Manual states "Land Use Data – General Plan land capacity data or "Build -out capacity" is used to distribute the forecasted County totals, and may be updated as new information becomes available, and is revised in regular consultation with local planning departments."

Under the current Kern County Zoning, the Project site is designated as "OS" for open space and "E(2 ½) RS RPF" for estate 2.5 acres, residential combining, floodplain secondary combining and would be included in the regional growth forecast (see **Figure 6-1** and **Table 6-1**).

In addition, a review of Kern COG regional forecast was prepared to evaluate if the Project area growth forecast would be sufficient to account for the Project's projected employment increase. The adopted growth forecasts are assigned to Traffic Analysis Zones (TAZ) (see **Figure 6-2**); a review of the growth forecast one mile from a project presents a conservative assessment of the Project area. The TAZ's included in the one-mile radius from the proposed Project site are: 804, 822, 823, 824, 1607, and 1608.

Figure 6-1. Kern County Zoning

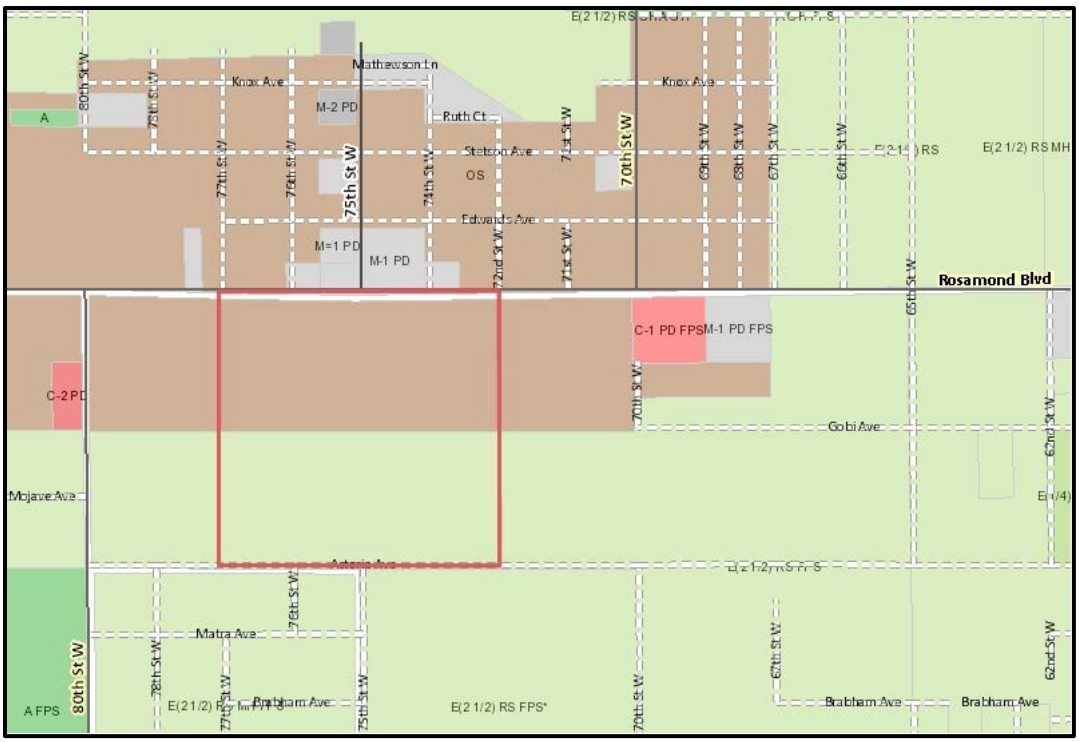


Figure 6-2. 1-Mile TAZ Map

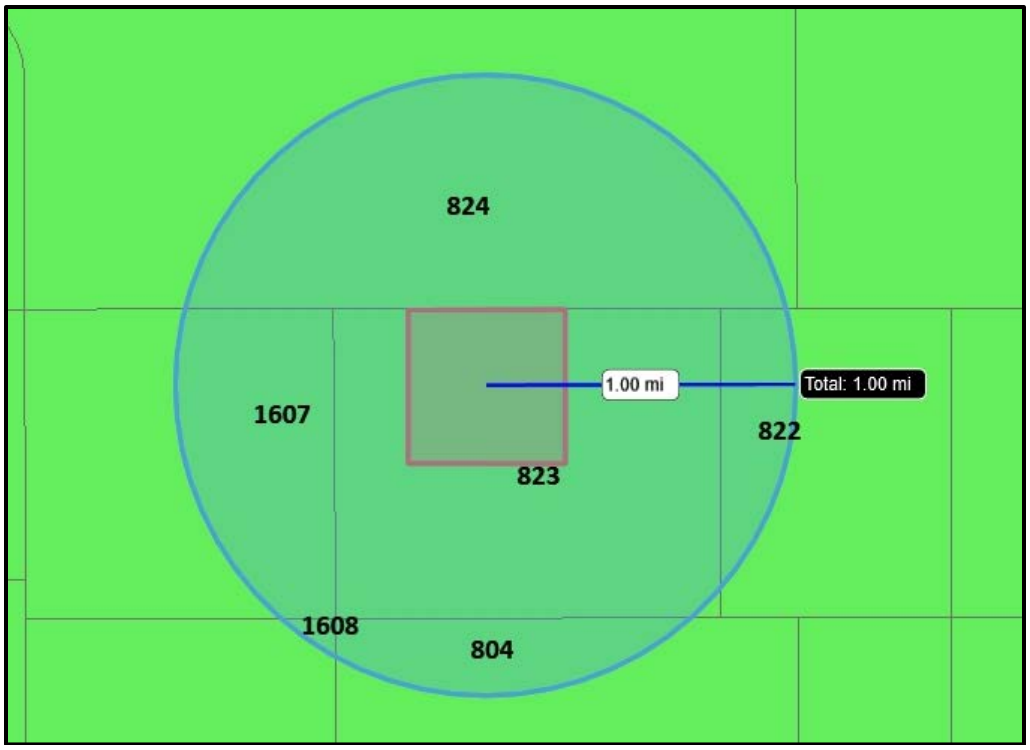


Table 6-1. TAZ Analysis Area Projected Growth Analysis

Years	2017	2020	2030
Population	680	794	1,449
Households	221	258	465
Employment	286	344	545

Table 6-2. Percent Increase/Decrease on TAZ Analysis Area

Years	Percent Increase / Decrease		
	Population	Households	Employment
2017*	0	0	0
2020	17	17	20
2030	82	80	58
*Baseline year of 2017 was valued at "0" to measure net percent increase/decrease.			

Given there is already enough population and households to account for the proposed residential community, the Project is consistent with the regional growth forecast (see **Figure 6-1**, **Table 6-1**, and **Table 6-2**).

7. MITIGATION AND OTHER RECOMMENDED MEASURES

As the estimated construction and operational emissions from the proposed Project would be less than significant, no specific mitigation measures would be required. However, to ensure that Project is in compliance with all applicable EKAPCD rules and regulations and emissions are further reduced, the applicant would be required to implement and comply with a number of measures by regulation and would result in further emission reductions through their inclusion in Project construction and long-term design. The following measures have been applied to the Project as EKAPCD rules and regulations and conditions of approval and through the CalEEMod model analysis.

7.1 Applicable PM_{10} Reduction Measures

As the Project would be completed in compliance with EKAPCD Rules and Regulation, dust control measures would be taken to ensure compliance specifically during grading and the construction phase.

7.1.1 Land Preparation, Excavation, and/or Demolition

The following dust control measures should be implemented:

- All soil excavated or graded should be sufficiently watered to prevent excessive dust. Watering should occur as needed with complete coverage of disturbed soil areas. Watering should be a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.[4]
- All clearing, grading, earth moving, and excavation activities should cease
  - during periods of winds greater than 20 mph (averaged over one hour), if disturbed material is easily windblown, or
  - when dust plumes of 20% or greater opacity impact public roads, occupied structures or neighboring property.
- All fine material transported offsite should be either sufficiently watered or securely covered to prevent excessive dust.
- If more than 5,000 cubic yards of fill material will be imported or exported from the site, then all haul trucks should be required to exit the site via an access point where a gravel pad or grizzly has been installed.
- Areas disturbed by clearing, earth moving, or excavation activities should be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
- Where acceptable to the fire department, weed control should be accomplished by mowing instead of discing, thereby, leaving the ground undisturbed and with a mulch covering.

7.1.2 Building (Structure) Construction

After clearing, grading, earth moving and/or excavating, the following dust control practices should be implemented:

- Once initial leveling has ceased all inactive soil areas within the construction site should either be seeded and watered until plant growth is evident, treated with a dust palliative, or watered twice daily until soil has sufficiently crusted to prevent fugitive dust emission.

[4] This mitigation measure has been implemented in the CalEEMod model as mentioned in Section 4.2.1, and the mitigated emissions in Table 4-3 reflect this mitigation.

- All active disturbed soil areas should be sufficiently watered to prevent excessive dust, but no less than twice per day.

7.1.3 Vehicular Activities

During all phases of construction, the following vehicular control measures should be implemented:

7.1.3.1 Dust

- Onsite vehicle speed should be limited to 15 mph[4].
- All areas with vehicle traffic should be paved, treated with dust palliatives, or watered a minimum of twice daily.
- Streets adjacent to the project site should be kept clean and accumulated silt removed.

Access to the site should be by means of an apron into the project from adjoining surfaced roadways. The apron should be surfaced or treated with dust palliatives. If operating on soils that cling to the wheels of the vehicles, a grizzly or other such device should be used on the road exiting the project, immediately prior to the pavement, in order to remove most of the soil material from the vehicle's tires.

7.1.3.2 Tailpipe Emissions

- Properly maintain and tune all internal combustion engine powered equipment.
- Require employees and subcontractors to comply with California's idling restrictions for compression ignition engines.
- Use low sulfur (CARB) diesel fuel.

7.2 Recommended Measures to Reduce Equipment Exhaust

These measures are recommended to reduce exhaust emissions:

- Maintain all construction equipment as recommended by manufacturer manuals.
- Shut down equipment when not in use for extended periods.
- Construction equipment shall operate no longer than eight (8) cumulative hours per day.
- Use electric equipment for construction whenever possible in lieu of diesel or gasoline powered equipment.
- Curtail use of high-emitting construction equipment during periods of high or excessive ambient pollutant concentrations.
- All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO_x emissions.
- On-Road and Off-Road diesel equipment shall use diesel particulate filters if permitted under manufacturer's guidelines.
- On-Road and Off-Road diesel equipment shall use cooled exhaust gas recirculation (EGR) if permitted under manufacturer's guidelines.
- All construction workers shall be encouraged to shuttle (car-pool) to retail establishments or to remain on-site during lunch breaks.
- All construction activities within the Project area shall be discontinued during the first stage smog alerts.
- Construction and grading activities shall not be allowed during first stage O_3 alerts. First stage O_3 alerts are declared when the O_3 level exceeds 0.20 ppm (1-hour average).

8. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed Project would have short-term air quality impacts due to facility construction activities as well as vehicular emissions. Construction-related short-term emissions would be reduced by implementation of measures required of all projects by EKACPD and *were found to be less than significant* with no mitigation beyond what is required by the EKAPCD.

The proposed Project would result in long-term air quality impacts due to operational-related mobile source emissions. These operational-related long-term emissions would be reduced by implementation of measures required of all projects by EKACPD and *were found to be less than significant* with no mitigation beyond what is required by the EKAPCD.

The proposed Project's incremental contribution to cumulative impacts would be reduced by implementation of measures required of all projects by EKACPD and be below thresholds of significance. Therefore, the Project would not be considered cumulatively considerable because of presumed conformance with the AQAP and/or the Kern County's General Plan. Therefore, the Project's contribution to cumulative impacts *were found to be less than significant*.

The proposed Project in conjunction with other past, present, and foreseeable future projects would result in cumulative long-term impacts to global climate change. The proposed Project's incremental contribution to these impacts will be mitigated to the extent feasible and are considered *less than significant*.

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APPENDIX A. EXISTING AIR QUALITY MONITORING DATA

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

at Lancaster-43301 Division Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Aug 29	48.8	Dec 1	46.5	Sep 20	47.6
Second High:	Sep 16	47.4	Dec 15	44.3	Apr 24	44.3
Third High:	Nov 14	45.8	Nov 12	43.8	Apr 26	42.8
Fourth High:	Oct 6	45.6	Oct 27	43.5	Mar 8	42.4
California:						
First High:	Aug 29	48	Dec 1	46	Sep 20	47
Second High:	Sep 16	47	Dec 15	44	Apr 24	44
Third High:	Oct 6	45	Oct 25	43	Mar 8	42
Fourth High:	Nov 14	45	Oct 27	43	Apr 26	42
National:						
1-Hour Standard Design Value:		*		*		42
1-Hour Standard 98th Percentile:		42.3		42.9		39.7
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		8		8		9
California:						
1-Hour Std Designation Value:		50		50		50
Expected Peak Day Concentration:		48		48		48
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		8		8		8
Annual Average:		8		*		8
Year Coverage:		95		87		97

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Lancaster-43301 Division Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jun 3	0.108	Jul 15	0.109	Aug 7	*0.125*
Second High:	Jun 4	0.095	Jun 20	0.104	Aug 9	0.111
Third High:	Jun 26	0.095	Jun 14	0.103	Aug 4	0.101
Fourth High:	Jun 25	0.093	Jun 16	0.101	Jul 27	0.100
California:						
# Days Above the Standard:	3		10		5	
California Designation Value:	0.11		0.11		0.10	
Expected Peak Day Concentration:	0.112		0.114		0.102	
National:						
# Days Above the Standard:	*0*		*0*		*1*	
3-Year Estimated Expected Number of Exceedance Days:	*0.3*		*0.3*		*0.3*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*1.0*	
Nat'l Standard Design Value:	*0.120*		*0.120*		*0.108*	
Year Coverage:	97		96		93	

Notes:

Hourly ozone measurements and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

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

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

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

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Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

iADAM

at Mojave-923 Poole Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 28	0.104	Jul 14	0.097	Aug 9	0.111
Second High:	Jul 29	0.097	Jul 1	0.089	Aug 1	0.103
Third High:	Jul 26	0.093	Jul 8	0.089	Aug 7	0.103
Fourth High:	Jul 27	0.093	Jun 24	0.088	Jul 30	0.102
California:						
# Days Above the Standard:	2		1		8	
California Designation Value:	0.10		0.09		0.10	
Expected Peak Day Concentration:	0.099		0.092		0.097	
National:						
# Days Above the Standard:	*0*		*0*		*0*	
3-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
Nat'l Standard Design Value:	*0.103*		*0.097*		*0.103*	
Year Coverage:	95		99		99	

Notes:

Hourly ozone measurements and related statistics are available at Mojave-923 Poole Street between 1993 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

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

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

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

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Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Lancaster-43301 Division Street

iADAM

	2016		2017		2018	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 3	0.090	Jul 15	0.087	Aug 7	0.104
Second High:	Jun 26	0.090	Jul 21	0.087	Aug 9	0.094
Third High:	Jun 25	0.084	Jun 16	0.086	Jul 27	0.089
Fourth High:	Aug 4	0.084	Jun 20	0.084	Aug 4	0.087
California Std (0.070 ppm):						
First High:	Jun 3	0.091	Jul 15	0.087	Aug 7	0.105
Second High:	Jun 26	0.091	Jul 21	0.087	Aug 9	0.095
Third High:	Jun 25	0.085	Jun 16	0.086	Jul 27	0.090
Fourth High:	Jul 28	0.084	Jun 20	0.085	Aug 4	0.088
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		60		43		48
Nat'l Standard Design Value:		0.088		0.089		0.085
National Year Coverage:		98		96		94
California Std (0.070 ppm):						
# Days Above the Standard:		65		43		49
California Designation Value:		0.101		0.101		0.091
Expected Peak Day Concentration:		0.101		0.101		0.092
California Year Coverage:		95		96		93

Notes:

Eight-hour ozone averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All averages expressed in parts per million.

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

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

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Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Mojave-923 Poole Street

	2016		2017		2018	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jul 28	0.093	Jul 14	0.085	Aug 7	0.094
Second High:	Jul 29	0.086	Jul 1	0.081	Aug 9	0.093
Third High:	Jul 27	0.085	Jun 23	0.080	Aug 4	0.092
Fourth High:	Jun 20	0.084	Jul 15	0.080	Jul 29	0.091
California Std (0.070 ppm):						
First High:	Jul 28	0.093	Jul 14	0.086	Aug 7	0.095
Second High:	Jul 29	0.086	Jul 1	0.082	Aug 4	0.093
Third High:	Jul 27	0.085	Jul 15	0.081	Aug 9	0.093
Fourth High:	Aug 13	0.085	Jun 23	0.080	Jul 29	0.091
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		52		35		53
Nat'l Standard Design Value:		0.084		0.081		0.085
National Year Coverage:		96		99		99
California Std (0.070 ppm):						
# Days Above the Standard:		60		37		56
California Designation Value:		0.093		0.086		0.091
Expected Peak Day Concentration:		0.094		0.088		0.092
California Year Coverage:		92		99		99

Notes:

Eight-hour ozone averages and related statistics are available at Mojave-923 Poole Street between 1993 and 2018. Some years in this range may not be represented.

All averages expressed in parts per million.

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

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

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

at Lancaster-43301 Division Street

iADAM

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jul 30	145.0	Dec 16	82.4	Sep 20	89.3
Second High:	Jul 24	128.3	Oct 12	74.8	Sep 21	85.2
Third High:	Sep 22	109.0	Oct 19	63.7	Feb 11	81.5
Fourth High:	Jul 25	84.1	Oct 2	62.8	Jun 4	76.2
California:						
First High:		*		*		*
Second High:		*		*		*
Third High:		*		*		*
Fourth High:		*		*		*
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		0.0
Annual Average:		*25.7*		*26.3*		*25.2*
3-Year Average:		*23*		*24*		*26*
California:						
Estimated # Days > 24-Hour Std:		*		*		*
Measured # Days > 24-Hour Std:		*		*		*
Annual Average:		*		*		*
3-Year Maximum Annual Average:		*		*		*
Year Coverage:		0		0		0

Notes:

Daily PM10 averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

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

iADAM

at Mojave-923 Poole Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Sep 22	139.2	Sep 19	93.4	Oct 29	93.1
Second High:	Jul 30	98.5	Oct 11	76.5	Aug 31	89.4
Third High:	Jun 22	96.3	Oct 12	73.4	Jul 10	78.5
Fourth High:	Nov 16	95.5	Oct 19	62.0	Feb 11	77.9
California:						
First High:	Sep 22	130.3	Sep 19	85.7	Oct 29	86.5
Second High:	Nov 16	91.3	Oct 11	70.8	Aug 31	77.5
Third High:	Oct 5	86.7	Oct 12	68.2	Feb 11	74.1
Fourth High:	Jul 30	86.5	Oct 2	56.5	Sep 19	70.3
National:						
Estimated # Days > 24-Hour Std:		0.0		*		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		*		*
Annual Average:		*26.2*		*25.3*		*26.7*
3-Year Average:		*25*		*24*		*26*
California:						
Estimated # Days > 24-Hour Std:		18.9		*		*
Measured # Days > 24-Hour Std:		18		10		19
Annual Average:		23.8		*		*
3-Year Maximum Annual Average:		24		24		24
Year Coverage:		0		0		0

Notes:

Daily PM10 averages and related statistics are available at Mojave-923 Poole Street between 1994 and 2018.
Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.

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

at Lancaster-43301 Division Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jul 24	64.8	Oct 12	26.6	Aug 9	40.4
Second High:	Jul 25	49.1	Dec 16	23.9	Aug 4	30.8
Third High:	Jun 28	33.3	Jul 15	19.5	Aug 7	25.5
Fourth High:	Jul 30	30.1	Sep 2	19.3	Jul 27	20.2
California:						
First High:	Jul 24	64.8	Oct 12	26.6	Aug 9	40.4
Second High:	Jun 28	33.3	Dec 16	23.9	Aug 4	30.8
Third High:	Jul 30	30.1	Jul 15	19.5	Aug 7	25.5
Fourth High:	May 14	23.9	Sep 2	19.3	Jul 27	20.2
National:						
Estimated # Days > 24-Hour Std:		2.0		0.0		1.0
Measured # Days > 24-Hour Std:		2		0		1
24-Hour Standard Design Value:		*		*		18
24-Hour Standard 98th Percentile:		20.5		15.7		16.4
2006 Annual Std Design Value:		*		*		7.4
2013 Annual Std Design Value:		*		*		7.4
Annual Average:		7.6		7.2		7.2
California:						
Annual Std Designation Value:		*		7		7
Annual Average:		*		7.3		7.2
Year Coverage:		98		97		99

Notes:

Daily PM2.5 averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

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

at Mojave-923 Poole Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jul 28	25.7	Jul 14	26.9	Aug 4	39.0
Second High:	Jul 30	23.8	Jul 11	20.1	Aug 7	37.3
Third High:	Nov 16	23.0	Oct 19	18.5	Aug 10	32.1
Fourth High:	Aug 22	22.8	Dec 16	18.0	Aug 9	31.5
California:						
First High:	Jul 28	25.7	Jul 14	26.9	Aug 4	39.0
Second High:	Jul 30	23.8	Jul 11	20.1	Aug 7	37.3
Third High:	Nov 16	23.0	Oct 19	18.5	Aug 10	32.1
Fourth High:	Aug 22	22.8	Dec 16	18.0	Aug 9	31.5
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		2.1
Measured # Days > 24-Hour Std:		0		0		2
24-Hour Standard Design Value:		20		17		21
24-Hour Standard 98th Percentile:		20.6		16.6		25.9
2006 Annual Std Design Value:		6.1		6.0		6.7
2013 Annual Std Design Value:		6.1		6.0		6.7
Annual Average:		7.4		5.5		7.1
California:						
Annual Std Designation Value:		6		*		*
Annual Average:		*		*		*
Year Coverage:		96		95		94

Notes:

Daily PM2.5 averages and related statistics are available at Mojave-923 Poole Street between 1999 and 2018. Some years in this range may not be represented.

Welcome to California

Air Resources Board

View a Different Site
View a Different Substance

Annual Toxics Summary

Bakersfield-5558 California Avenue

Lead

nanograms per cubic meter

iADAM FAQs

Read About New Estimated Risk

Year	Months Present	Minimum	Median	Mean	90th Percentile	Maximum	Standard Deviation	Number of Observations	Detection Limit	Estimated Risk
2018	----------	2.3	*	*	*	9.3	3.00	5	1.3	*
2017	----------	0.65	3.5	*	7.5	12.6	2.60	29	1.3	*
2016	----------	0.65	4.3	*	6.9	19.8	3.57	33	1.3	*
2015	----------	0.65	3.2	3.34	7.6	9.5	2.50	33	1.3	0.1
2014	----------	0.85	3.6	*	8.8	14	3.78	16	1.7	*
2013	----------	0.5	2.9	*	5.3	6.7	1.71	21	1.0	*
2012	----------	1.7	3.4	4.02	8.2	14	2.74	32	1.5	0.1
2011	----------	0.75	4.0	*	9.1	11	2.90	20	1.5	*
2010	----------	0.75	2.5	*	5.7	8.2	2.07	18	1.5	*
2009	----------	1.5	4.5	5.27	11.2	14	3.22	29	1.5	0.2
2008	----------	*	*	*	*	*	*	0	*	*
2007	----------	0.75	7.1	*	11.7	13	3.23	24	1.5	*
2006	----------	*	*	*	*	*	*	0	*	*
2005	----------	*	*	*	*	*	*	0	*	*
2004	----------	*	*	*	*	*	*	0	*	*
2003	----------	4.0	*	*	*	7.0	1.64	5	3.0	*
2002	----------	1.5	7.0	6.78	10	17	3.34	36	3.0	0.2
2001	----------	2	5.0	5.83	9.2	26	4.41	39	4.0	0.2
2000	----------	2	5.0	5.92	14.1	22	4.76	40	4.0	0.2
1999	----------	2	5.0	5.70	11.2	25	4.55	39	4.0	0.2
1998	----------	2	7.0	9.43	14	78	11.8	42	4.0	0.3
1997	----------	2	7.0	7.92	14	20	4.40	34	4.0	0.3
1996	----------	2	7.0	7.69	14.5	35	6.10	36	4.0	0.3
1995	----------	2	8.0	8.68	15.1	21	5.14	30	4.0	0.3
1994	----------	2	10	*	16	39	7.11	25	4.0	*
1993	----------	*	*	*	*	*	*	0	*	*
1992	----------	*	*	*	*	*	*	0	*	*
1991	----------	*	*	*	*	*	*	0	*	*
1990	----------	*	*	*	*	*	*	0	*	*
1989	----------	*	*	*	*	*	*	0	*	*

Graph It!

Toxics Statistics Home

Notes: Values below the Limit of Detection (LoD) assumed to be ½ LoD.
Means and risks shown only for years with data in all 12 months.
"*" means there was insufficient or no data available to determine the value.

Data Descriptions Page

APPENDIX B. PROJECT EMISSION CALCULATIONS

Construction Equipment Operational Hours

District's Default for a 20MW Solar Project[1]			20 MW	
Equipment	Number	Year	HP	Hours Used
Grading (1 month)				
Excavator	1	1997	168	176
Grader	1	1997	174	176
Rubber Tired Dozer	1	1996	357	176
Scraper	2	1996	313	176
Tractor/Loader/ Backhoe	2	1997	108	176
Water Truck	1	1996	189	88
Gravel Roads (1 month)				
Crawler Tractor	1	1997	147	176
Trenching/Electrical (1 month)				
Excavator	1	1997	168	176
Rough Terrain Forklinft	1	1998	93	176
Crawler Tractor	1	1997	147	176
Water Truck	1	1996	189	88
Pile Driving/Panel Assembly (6 months)				
Drill Rig	1	1996	291	1056
Cement Mixer	1	1996	300	1056
Crane	1	1996	250	1056

[1] Equipement type, number, vintage, hp and hours provided by Sharla Yang with the SJVAPCD as a defaul equipment list for 20MW solar projects without exact equipment lists. Information was provided via email on 1/21/16.

QK Gettysburg Solar Project Construction Equipment[2]			30 MW			
Equipment	Number	Year	HP	Hours Used	Hours/Piece of Equipment	hours/day /piece of equipmen t
Grading (1 month)						
Excavator	2	1997	168	264	132	6
Grader	2	1997	174	264	132	6
Rubber Tired Dozer	2	1996	357	264	132	6
Scraper	3	1996	313	264	88	4
Tractor/Loader/ Backhoe	3	1997	108	264	88	4
Water Truck	2	1996	189	132	66	3
Gravel Roads (1 month)						
Crawler Tractor	2	1997	147	264	132	6
Trenching/Electrical (1 month)						
Excavator	2	1997	168	264	132	6
Rough Terrain Forklinft	2	1998	93	264	132	6
Crawler Tractor	2	1997	147	264	132	6
Water Truck	2	1996	189	132	66	3
Pile Driving/Panel Assembly (6 months)						
Drill Rig	2	1996	291	1584	792	6
Cement Mixer	2	1996	300	1584	792	6
Crane	2	1996	250	1584	792	6

[2] Assumed 22 working days/month

Project Solar Panel Delivery T7 Single Exhaust Emissions - EMFAC2017

Based on:

One-way Trips/year:	463	(540 panels per truck delivery)
One -way Miles/Trip:	111	(Distance from Port of Long Beach to Project Site)
Total miles traveled/year:	51,389	

	ROG	NOx	CO	SOX	PM10[1]	PM2.5[1]	CO2	CH4	N2O	CO2e
Em. Factor (grams/mile)	0.24	5.74	0.82	0.01	0.21	0.14	1578.40	1.12E-02	2.48E-01	
Lbs/Mile	5.31E-04	1.27E-02	1.80E-03	3.29E-05	4.60E-04	3.12E-04	3.48E+00	2.47E-05	5.47E-04	
Lbs/Year	27.28	650.23	92.68	1.69	23.65	16.05	178821.55	1.27	28.11	
Tons/year or MT/year	**1.36E-02**	**0.325**	**0.05**	**8.45E-04**	**1.18E-02**	**8.03E-03**	**89.41**	**6.34E-04**	**1.41E-02**	**93.78**

[1] PM accounts for PM from running, tire wear and break wear.

On-Site Project Fugitive Dust from Solar Panel Delivery Emissions

Assumptions:
Surface Material Silt Content: 8.5% (From AP-42 Table 13.2.2-1)
Mean Vehicle Weight: 14 tons

Based on:

2019	
One-way Trips/year:	463
Miles/one-way trip:	0.35
Total miles traveled/year:	162

*Miles based on a diagonal distance to center of the project.

	PM10	PM2.5
Em. Factor (lbs/VMT)[1]	2.20E+00	2.20E-01
Lbs/Year (2019)*	7.78E+01	7.78E+00
Tons/year (2019)	**0.04**	**3.89E-03**

*61% Control for water surpression 3 times daily

*44% Control for reducing speed to less than 15 mph

[1] AP 42 Chapter 13, Section 13.2.2 Equation 1a

Project Construction Equipment and Worker Travel (CalEEMod)

	ROG	NOx	CO	SOX	PM10	PM2.5	CO2	CH4	N2O	CO2e
Tons/year or MT/year	**2.07E-01**	**1.86E+00**	**1.48E+00**	**3.90E-03**	**3.24E-01**	**1.66E-01**	**3.45E+02**	**8.56E-02**	**0.00E+00**	**3.47E+02**

1) Applied SJVAPCD construction equipment list, for 30 MW of project constructed at once with a 9 month project construction schedule starting in 2020.

2) CalEEMod defaults for employee number and trip lengths were applied except 70 employees was used for panel assembly per estimates from similar projects.

Total Project Construction Emissions

	ROG	NOx	CO	SOX	PM10	PM2.5	CO2	CH4	N2O	CO2e
Panel Delivery from POLB	0.014	0.325	0.046	0.001	0.012	0.008	8.9E+01	6.3E-04	1.4E-02	9.38E+01
Panel Delivery - on-site dust					0.039	0.004				
Construction Equipment & Worker Travel	0.207	1.861	1.477	0.004	0.324	0.166	3.45E+02	8.56E-02	0.00E+00	3.47E+02
Tons/year or MT/year	0.221	2.186	1.524	0.005	0.375	0.178	434.09	0.086	0.014	440.60

Project Operational Water Trucks T6 Utility Exhaust Emissions - EMFAC2017

Quarterly panel cleaning - water truck travel to and from site

Based on:

One-way Trips/year:	240	(3 trucks x 10 days per cleaning cycle x 2 for one way trips x 4 cleaning cycles per year)
One-way Miles/Trip:	5.5	(average distance from near-by towns)
Total miles traveled/year:	1,320	

	ROG	NOx	CO	SOX	PM10[1]	PM2.5[1]	CO2	CH4	N2O	CO2e
Em. Factor (grams/mile)	0.03	1.83	0.12	1.01E-02	0.15	0.07	1070.66	1.21E-03	1.68E-01	
Lbs/Mile	5.73E-05	4.03E-03	2.61E-04	2.23E-05	3.32E-04	1.47E-04	2.36E+00	2.66E-06	3.71E-04	
Lbs/Year	0.0756	5.3205	0.3449	0.0294	0.4379	0.1940	3115.7383	0.0035	0.4898	
lbs/day	0.0038	0.2660	0.0172	0.0015	0.0219	0.0097	155.7869	0.0002	0.0245	163.3817
Tons/year	**3.78E-05**	**2.66E-03**	**1.72E-04**	**1.47E-05**	**2.19E-04**	**9.70E-05**	**1.56E+00**	**1.76E-06**	**2.45E-04**	**1.63E+00**

[1] PM accounts for PM from running, tire wear and break wear.

Project Operational Water Trucks T6 Utility On-Site Exhaust Emissions - EMFAC2017

Quarterly panel cleaning - water truck travel on-site

Based on:

On-site miles/cleaning	27.4	(See Note 1)
cleaning per year	4	(Client provided)
Total miles traveled/year:	110	

Note 1: On-site miles per cleaning are estimates made based on numbers from other solar projects. Assumption of 3 on-site miles per 17.5 acres.

	ROG	NOx	CO	SOX	PM10	PM2.5	CO2	CH4	N2O	CO2e
Em. Factor (grams/mile)	0.07	3.44	0.30	1.54E-02	8.11E-03	7.76E-03	1633.96	3.06E-03	2.57E-01	
Lbs/Mile	1.45E-04	7.57E-03	6.52E-04	3.40E-05	1.79E-05	1.71E-05	3.60E+00	6.75E-06	5.66E-04	
Lbs/Year	0.0159	0.8310	0.0715	0.0037	0.0020	0.0019	395.2208	0.0007	0.0621	
lbs/day	0.0040	0.2077	0.0179	0.0009	0.0005	0.0005	98.8052	0.0002	0.0155	103.6236
Tons/year	**7.97E-06**	**4.15E-04**	**3.58E-05**	**1.87E-06**	**9.81E-07**	**9.39E-07**	**1.98E-01**	**3.70E-07**	**3.11E-05**	**0.00E+00**

Project Unpaved Road Travel Fugitive Dust from Water Truck Emissions

Quarterly panel cleaning - water truck on site movement

Assumptions:

Surface Material Silt Content: 8.5% (From AP-42 Table 13.2.2-1)

Mean Vehicle Weight: 12 tons

Based on:

On-site miles/cleaning	27.4	(See Note 1)
cleaning per year	4	(Client provided)
Total miles traveled/year:	110	

Note 1: On-site miles per cleaning are estimates made based on numbers from other solar projects. Assumption of 3 on-site miles per 17.5 acres.

	PM10	**PM2.5**
Em. Factor (lbs/VMT)	2.05E+00	2.05E-01
Lbs/Year (2019)*	49.18	4.92
Tons/year (2019)	**0.0246**	**0.00246**

*61% Control for water surpression 3 times daily

*44% Control for reducing speed to less than 15 mph

AP 42 Chapter 13, Section 13.2.2 Equation 1a

Project Operational Maintenance Trips (LDT1)

Quarterly maintenance trips - travel to and from site

Based on:

One-way Trips/year[1]:	24
One-way Miles/Trip[2]:	9.3
Total miles travelled/year:	223

[1] Based on factors used for another solar project in the area - up to 3 round trips per quarter (6 one-way trips)

[2] trip distance is the average operation trip distance in CalEEMod 2016.3.1

	ROG	NOx	CO	SOX	PM10[1]	PM2.5[1]	CO2	CH4	N2O	CO2e
Em. Factor (grams/mile)**	0.0408	0.1654	1.6634	0.0034	0.0474	0.0202	339.60	0.01	0.01	
Lbs/Mile	0.0001	0.0004	0.0037	0.0000	0.0001	0.0000	7.49E-01	2.00E-05	2.52E-05	
Lbs/Year	0.0201	0.0814	0.8185	0.0017	0.0233	0.0099	1.67E+02	4.46E-03	5.63E-03	
lbs/day	0.0017	0.0068	0.0682	0.0001	0.0019	0.0008	13.9256	0.0004	0.0005	14.08
Tons/year	**0.0000**	**0.0000**	**0.0004**	**0.0000**	**0.0000**	**0.0000**	**8.36E-02**	**2.23E-06**	**2.81E-06**	**8.45E-02**

[1] PM accounts for PM from running, tire wear and break wear.

Project Unpaved Road Travel Fugitive Dust from Maintenance Vehicle Emissions (LDT1)

Quarterly maintenance trips - on site travel fugitive dust

AP 42 Chapter 13, Section 13.2.2 Equation 1a

Assumptions:
Surface Material Silt Content: 8.5% (From AP-42 Table 13.2.2-1)
Mean Vehicle Weight: 3 tons

Based on:

One-way Trips/year:	24
Miles/one-way trip*:	0.35
Total miles travelled/year:	8.4

*Miles based on a diagonal distance to center of the project.

	PM10	PM2.5
Em. Factor (lbs/VMT)	1.10E+00	1.10E-01
Lbs/Year (2019)*	2.02	0.20
Tons/year (2019)	**0.0010**	**0.0001**

*61% Control for water surpression 3 times daily

*44% Control for reducing speed to less than 15 mph

AP 42 Chapter 13, Section 13.2.2 Equation 1a

Project Operational On-Road Employee Trip Exhaust Emissions (LDA & LDT1)

Quarterly employee trips - off-site travel

Based on:

One-way Trips/year[1]:	40
One-way Miles/Trip[2]:	9.3
Total miles traveled/year:	372

[1]Based on another solar project, conservative estimate of 5 round trips per quarter for both owner and security site visits

[2] trip distance is the average operation trip distance in CalEEMod 2016.3.1

	ROG	NOx	CO	SOX	PM10[1]	PM2.5[1]	CO2	CH4	N2O	CO2e
Em. Factor (grams/mile)**	0.03	0.11	1.22	3.12E-03	4.69E-02	1.97E-02	315.70	0.01	0.01	
Lbs/Mile	6.07E-05	2.42E-04	2.68E-03	6.89E-06	1.03E-04	4.35E-05	6.96E-01	1.39E-05	1.87E-05	
Lbs/Year	0.02	0.09	1.00	0.00	0.04	0.02	258.91	0.01	0.01	
Tons/year	**1.13E-05**	**4.50E-05**	**4.98E-04**	**1.28E-06**	**1.92E-05**	**8.09E-06**	**1.29E-01**	**2.58E-06**	**3.48E-06**	**1.31E-01**

**Since employee vehicles are not know, a 50% LDA and 50% LDT1 split was assumed to be conservative

[1] PM accounts for PM from running, tire wear and break wear.

Project Unpaved Road Travel Fugitive Dust from Employee Trip Emissions

Quarterly employee trips - on-site travel fugitive dust

AP 42 Chapter 13, Section 13.2.2 Equation 1a and 2

Assumptions:
Surface Material Silt Content: 8.5% (From AP-42 Table 13.2.2-1)
Mean Vehicle Weight: 2.5 tons

Based on:

One-way Trips/year:	40
Miles/one-way trip*:	0.35
Total miles travelled/year:	14

*Miles based on a diagonal distance to center of the project.

	PM10	PM2.5
Em. Factor (lbs/VMT)	1.01E+00	1.01E-01
Lbs/Year (2017)*	3.10	0.31
Tons/year (2017)	**0.0015**	**0.0002**

*61% Control for water surpression 3 times daily

*44% Control for reducing speed to less than 15 mph

AP 42 Chapter 13, Section 13.2.2 Equation 1a

Operational Exhaust and Fugitive Emissions (Total)

	ROG	NOx	CO	SOX	PM10	PM2.5	CO2	CH4	N2O	CO2e
Water Truck - off-site emissions	0.0000	0.0027	0.0002	0.0000	0.0002	0.0001	1.56E+00	1.76E-06	2.45E-04	1.63E+00
Water Truck - on-site emissions	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	1.98E-01	3.70E-07	3.11E-05	0.00E+00
Water truck - fugitive dust emissions					0.0246	0.0025				
Maintenance Trips - LDA & LDT1 off-site emissions	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	8.36E-02	2.23E-06	2.81E-06	8.45E-02
Maintenance Trips - LDA & LDT1 on-site dust					0.0010	0.0001				
Employee Trips - off-site travel	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.1295	0.0000	0.0000	0.1306
Employee Trips - on-site fugitive dust emissions					0.0015	0.0002				
Operational total emissions (tons/year)	**0.0001**	**0.0032**	**0.0011**	**0.0000**	**0.0274**	**0.0028**	**1.9685**	**0.0000**	**0.0003**	**1.8489**

Reduction In Operational GHG Emissions

	Emission Factor[1]	Electricity Useage2	Conversion	Emissions	Conversion Factor	CO2e Emissions
	lbs/MWh	MWh	lbs/metric ton	metric tons	to CO2e	metric tons
Electricty CO2 Emissions	879	60000	2204.62	23922.490	1	23,922.5
Electricty CH4 Emissions	0.0067	60000	2204.62	0.182	21	3.83
Electricty N2O Emissions	0.0037	60000	2204.62	0.101	310	31.2
					Total CO2e =	23,958

[1]California Climate Action Registry General Reporting Protocol Version 3.1 April 2009

2Industry average for solar panel use is 2,000 hour per MW

Source	CO_2	CH_4	N_2O	CO_2e
Construction GHG Emissions	434.095	0.086	0.014	440.604
Annualized Construction Emissio	14.470	0.003	0.000	14.687
Operations GHG Emissions	1.968	0.000	0.000	1.849
Project emissions	16.438	0.003	0.001	16.536
GHG Savings from Solar	23922.490	0.182	0.101	23,957.54
Net Project Savings	23906.052	0.179	0.100	23941.000

Gettysburg 30 MW Solar contruction

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	160.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Gettysburg 30 MW Solar contruction - Kern-Mojave Desert County, Annual

Project Characteristics - Construction phase

Land Use - Actual acreage of the 30 MW Solar Project

Construction Phase - Project construction description

Off-road Equipment -

Off-road Equipment - project construction equipment for 30 MW project

Off-road Equipment - project construction equipment for 30 MW project

Off-road Equipment - project construction equipment for 30 MW project

Off-road Equipment - project construction equipment for 30 MW project

Trips and VMT - Estimated approximately an average of 70 employees during panel assembly according to PD

Grading - project description

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - construction only

Consumer Products - construction only

Area Coating - construction only

Landscape Equipment - construction only

Energy Use -

Construction Off-road Equipment Mitigation - Standard construction mitigation

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	3,100.00	132.00
tblConstructionPhase	NumDays	310.00	22.00
tblConstructionPhase	NumDays	220.00	22.00
tblConstructionPhase	NumDays	120.00	22.00

Gettysburg 30 MW Solar contruction - Kern-Mojave Desert County, Annual

tblConstructionPhase	PhaseEndDate	7/12/2033	10/5/2020
tblConstructionPhase	PhaseEndDate	8/24/2021	3/3/2020
tblConstructionPhase	PhaseEndDate	5/16/2034	4/2/2020
tblConstructionPhase	PhaseEndDate	6/16/2020	1/30/2020
tblConstructionPhase	PhaseStartDate	8/25/2021	4/3/2020
tblConstructionPhase	PhaseStartDate	6/17/2020	2/1/2020
tblConstructionPhase	PhaseStartDate	7/13/2033	3/4/2020
tblGrading	AcresOfGrading	49.50	112.00
tblGrading	AcresOfGrading	16.50	48.00
tblLandUse	LotAcreage	0.00	160.00
tblOffRoadEquipment	HorsePower	231.00	250.00
tblOffRoadEquipment	HorsePower	158.00	168.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	247.00	357.00
tblOffRoadEquipment	HorsePower	367.00	313.00
tblOffRoadEquipment	HorsePower	97.00	108.00
tblOffRoadEquipment	HorsePower	221.00	291.00
tblOffRoadEquipment	HorsePower	9.00	300.00
tblOffRoadEquipment	HorsePower	212.00	147.00
tblOffRoadEquipment	HorsePower	212.00	147.00
tblOffRoadEquipment	HorsePower	158.00	168.00
tblOffRoadEquipment	HorsePower	402.00	189.00
tblOffRoadEquipment	HorsePower	402.00	189.00
tblOffRoadEquipment	HorsePower	100.00	93.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	PhaseName		Panel Assembly
tblOffRoadEquipment	PhaseName		Panel Assembly
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	PhaseName		Gravel Road
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Trenching and Electrical

tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	0.00	100.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2070	1.8613	1.4773	3.9000e-003	0.4785	0.0791	0.5576	0.1984	0.0728	0.2712	0.0000	344.6842	344.6842	0.0856	0.0000	346.8238
Maximum	**0.2070**	**1.8613**	**1.4773**	**3.9000e-003**	**0.4785**	**0.0791**	**0.5576**	**0.1984**	**0.0728**	**0.2712**	**0.0000**	**344.6842**	**344.6842**	**0.0856**	**0.0000**	**346.8238**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2070	1.8613	1.4773	3.9000e-003	0.2449	0.0791	0.3240	0.0928	0.0728	0.1656	0.0000	344.6839	344.6839	0.0856	0.0000	346.8235
Maximum	**0.2070**	**1.8613**	**1.4773**	**3.9000e-003**	**0.2449**	**0.0791**	**0.3240**	**0.0928**	**0.0728**	**0.1656**	**0.0000**	**344.6839**	**344.6839**	**0.0856**	**0.0000**	**346.8235**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**48.82**	**0.00**	**41.89**	**53.20**	**0.00**	**38.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Gettysburg 30 MW Solar contruction - Kern-Mojave Desert County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.0042	1.0042
2	4-1-2020	6-30-2020	0.5263	0.5263
3	7-1-2020	9-30-2020	0.5373	0.5373
		Highest	1.0042	1.0042

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

3.0 Construction Detail

Construction Phase

Gettysburg 30 MW Solar contruction - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Trenching and Electrical	Site Preparation	1/1/2020	1/30/2020	5	22	
2	Grading	Grading	2/1/2020	3/3/2020	5	22	
3	Panel Assembly	Building Construction	4/3/2020	10/5/2020	5	132	
4	Gravel Road	Paving	3/4/2020	4/2/2020	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112

Acres of Paving: 0

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

OffRoad Equipment

Gettysburg 30 MW Solar contruction - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Trenching and Electrical	Crawler Tractors	2	6.00	147	0.43
Trenching and Electrical	Excavators	2	6.00	168	0.38
Trenching and Electrical	Off-Highway Trucks	2	3.00	189	0.38
Trenching and Electrical	Rough Terrain Forklifts	2	6.00	93	0.40
Grading	Excavators	2	6.00	168	0.38
Grading	Graders	2	6.00	174	0.41
Grading	Off-Highway Trucks	2	3.00	189	0.38
Grading	Rubber Tired Dozers	2	6.00	357	0.40
Grading	Scrapers	3	4.00	313	0.48
Grading	Tractors/Loaders/Backhoes	3	4.00	108	0.37
Panel Assembly	Bore/Drill Rigs	2	6.00	291	0.50
Panel Assembly	Cement and Mortar Mixers	2	6.00	300	0.56
Panel Assembly	Cranes	2	6.00	250	0.29
Gravel Road	Crawler Tractors	2	6.00	147	0.43
Panel Assembly	Forklifts	0	8.00	89	0.20
Panel Assembly	Generator Sets	0	8.00	84	0.74
Gravel Road	Pavers	0	8.00	130	0.42
Gravel Road	Paving Equipment	0	8.00	132	0.36
Gravel Road	Rollers	0	8.00	80	0.38
Trenching and Electrical	Rubber Tired Dozers	0	8.00	247	0.40
Panel Assembly	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Trenching and Electrical	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Panel Assembly	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Trenching and Electrical	15	38.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	14	35.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Panel Assembly	14	100.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Gravel Road	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Trenching and Electrical - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2242	0.0000	0.2242	0.1120	0.0000	0.1120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1847	0.1686	2.8000e-004		9.1900e-003	9.1900e-003		8.4500e-003	8.4500e-003	0.0000	24.9223	24.9223	8.0600e-003	0.0000	25.1238
Total	**0.0180**	**0.1847**	**0.1686**	**2.8000e-004**	**0.2242**	**9.1900e-003**	**0.2334**	**0.1120**	**8.4500e-003**	**0.1204**	**0.0000**	**24.9223**	**24.9223**	**8.0600e-003**	**0.0000**	**25.1238**

3.2 Trenching and Electrical - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2500e-003	1.6100e-003	0.0157	5.0000e-005	5.2400e-003	4.0000e-005	5.2700e-003	1.3900e-003	3.0000e-005	1.4200e-003	0.0000	4.7569	4.7569	1.2000e-004	0.0000	4.7599
Total	**2.2500e-003**	**1.6100e-003**	**0.0157**	**5.0000e-005**	**5.2400e-003**	**4.0000e-005**	**5.2700e-003**	**1.3900e-003**	**3.0000e-005**	**1.4200e-003**	**0.0000**	**4.7569**	**4.7569**	**1.2000e-004**	**0.0000**	**4.7599**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0874	0.0000	0.0874	0.0437	0.0000	0.0437	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1847	0.1686	2.8000e-004		9.1900e-003	9.1900e-003		8.4500e-003	8.4500e-003	0.0000	24.9222	24.9222	8.0600e-003	0.0000	25.1237
Total	**0.0180**	**0.1847**	**0.1686**	**2.8000e-004**	**0.0874**	**9.1900e-003**	**0.0966**	**0.0437**	**8.4500e-003**	**0.0521**	**0.0000**	**24.9222**	**24.9222**	**8.0600e-003**	**0.0000**	**25.1237**

3.2 Trenching and Electrical - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2500e-003	1.6100e-003	0.0157	5.0000e-005	5.2400e-003	4.0000e-005	5.2700e-003	1.3900e-003	3.0000e-005	1.4200e-003	0.0000	4.7569	4.7569	1.2000e-004	0.0000	4.7599
Total	**2.2500e-003**	**1.6100e-003**	**0.0157**	**5.0000e-005**	**5.2400e-003**	**4.0000e-005**	**5.2700e-003**	**1.3900e-003**	**3.0000e-005**	**1.4200e-003**	**0.0000**	**4.7569**	**4.7569**	**1.2000e-004**	**0.0000**	**4.7599**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1588	0.0000	0.1588	0.0610	0.0000	0.0610	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0590	0.6218	0.4772	7.2000e-004		0.0291	0.0291		0.0268	0.0268	0.0000	63.2476	63.2476	0.0205	0.0000	63.7589
Total	**0.0590**	**0.6218**	**0.4772**	**7.2000e-004**	**0.1588**	**0.0291**	**0.1879**	**0.0610**	**0.0268**	**0.0878**	**0.0000**	**63.2476**	**63.2476**	**0.0205**	**0.0000**	**63.7589**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0700e-003	1.4900e-003	0.0145	5.0000e-005	4.8200e-003	3.0000e-005	4.8600e-003	1.2800e-003	3.0000e-005	1.3100e-003	0.0000	4.3814	4.3814	1.1000e-004	0.0000	4.3841
Total	**2.0700e-003**	**1.4900e-003**	**0.0145**	**5.0000e-005**	**4.8200e-003**	**3.0000e-005**	**4.8600e-003**	**1.2800e-003**	**3.0000e-005**	**1.3100e-003**	**0.0000**	**4.3814**	**4.3814**	**1.1000e-004**	**0.0000**	**4.3841**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0619	0.0000	0.0619	0.0238	0.0000	0.0238	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0590	0.6218	0.4772	7.2000e-004		0.0291	0.0291		0.0268	0.0268	0.0000	63.2475	63.2475	0.0205	0.0000	63.7589
Total	**0.0590**	**0.6218**	**0.4772**	**7.2000e-004**	**0.0619**	**0.0291**	**0.0911**	**0.0238**	**0.0268**	**0.0506**	**0.0000**	**63.2475**	**63.2475**	**0.0205**	**0.0000**	**63.7589**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0700e-003	1.4900e-003	0.0145	5.0000e-005	4.8200e-003	3.0000e-005	4.8600e-003	1.2800e-003	3.0000e-005	1.3100e-003	0.0000	4.3814	4.3814	1.1000e-004	0.0000	4.3841
Total	**2.0700e-003**	**1.4900e-003**	**0.0145**	**5.0000e-005**	**4.8200e-003**	**3.0000e-005**	**4.8600e-003**	**1.2800e-003**	**3.0000e-005**	**1.3100e-003**	**0.0000**	**4.3814**	**4.3814**	**1.1000e-004**	**0.0000**	**4.3841**

3.4 Panel Assembly - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0802	0.9357	0.4839	1.8400e-003		0.0351	0.0351		0.0323	0.0323	0.0000	161.9028	161.9028	0.0524	0.0000	163.2119
Total	**0.0802**	**0.9357**	**0.4839**	**1.8400e-003**		**0.0351**	**0.0351**		**0.0323**	**0.0323**	**0.0000**	**161.9028**	**161.9028**	**0.0524**	**0.0000**	**163.2119**

3.4 Panel Assembly - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0356	0.0255	0.2478	8.3000e-004	0.0827	5.6000e-004	0.0833	0.0220	5.2000e-004	0.0225	0.0000	75.1096	75.1096	1.8700e-003	0.0000	75.1563
Total	**0.0356**	**0.0255**	**0.2478**	**8.3000e-004**	**0.0827**	**5.6000e-004**	**0.0833**	**0.0220**	**5.2000e-004**	**0.0225**	**0.0000**	**75.1096**	**75.1096**	**1.8700e-003**	**0.0000**	**75.1563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0802	0.9357	0.4839	1.8400e-003		0.0351	0.0351		0.0323	0.0323	0.0000	161.9026	161.9026	0.0524	0.0000	163.2117
Total	**0.0802**	**0.9357**	**0.4839**	**1.8400e-003**		**0.0351**	**0.0351**		**0.0323**	**0.0323**	**0.0000**	**161.9026**	**161.9026**	**0.0524**	**0.0000**	**163.2117**

3.4 Panel Assembly - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0356	0.0255	0.2478	8.3000e-004	0.0827	5.6000e-004	0.0833	0.0220	5.2000e-004	0.0225	0.0000	75.1096	75.1096	1.8700e-003	0.0000	75.1563
Total	**0.0356**	**0.0255**	**0.2478**	**8.3000e-004**	**0.0827**	**5.6000e-004**	**0.0833**	**0.0220**	**5.2000e-004**	**0.0225**	**0.0000**	**75.1096**	**75.1096**	**1.8700e-003**	**0.0000**	**75.1563**

3.5 Gravel Road - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7600e-003	0.0896	0.0614	9.0000e-005		5.0100e-003	5.0100e-003		4.6100e-003	4.6100e-003	0.0000	7.8600	7.8600	2.5400e-003	0.0000	7.9236
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.7600e-003**	**0.0896**	**0.0614**	**9.0000e-005**		**5.0100e-003**	**5.0100e-003**		**4.6100e-003**	**4.6100e-003**	**0.0000**	**7.8600**	**7.8600**	**2.5400e-003**	**0.0000**	**7.9236**

3.5 Gravel Road - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	8.5000e-004	8.2600e-003	3.0000e-005	2.7600e-003	2.0000e-005	2.7800e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.5037	2.5037	6.0000e-005	0.0000	2.5052
Total	**1.1800e-003**	**8.5000e-004**	**8.2600e-003**	**3.0000e-005**	**2.7600e-003**	**2.0000e-005**	**2.7800e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.5037**	**2.5037**	**6.0000e-005**	**0.0000**	**2.5052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7600e-003	0.0896	0.0614	9.0000e-005		5.0100e-003	5.0100e-003		4.6100e-003	4.6100e-003	0.0000	7.8600	7.8600	2.5400e-003	0.0000	7.9236
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.7600e-003**	**0.0896**	**0.0614**	**9.0000e-005**		**5.0100e-003**	**5.0100e-003**		**4.6100e-003**	**4.6100e-003**	**0.0000**	**7.8600**	**7.8600**	**2.5400e-003**	**0.0000**	**7.9236**

3.5 Gravel Road - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	8.5000e-004	8.2600e-003	3.0000e-005	2.7600e-003	2.0000e-005	2.7800e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.5037	2.5037	6.0000e-005	0.0000	2.5052
Total	**1.1800e-003**	**8.5000e-004**	**8.2600e-003**	**3.0000e-005**	**2.7600e-003**	**2.0000e-005**	**2.7800e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.5037**	**2.5037**	**6.0000e-005**	**0.0000**	**2.5052**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.472669	0.031291	0.166276	0.125679	0.021211	0.006775	0.020722	0.144029	0.001634	0.001785	0.006011	0.000972	0.000946

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C. CARB 2020 AND 2025 ESTIMATED EMISSION INVENTORIES

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

KERN COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

KERN COUNTY COUNTY - MOJAVE DESERT AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	0.5	0.1	0.8	2.4	0.2	0.4	0.4	0.4	0.0
WASTE DISPOSAL	8.4	0.1	0.0	-	0.0	0.0	0.0	0.0	0.1
CLEANING AND SURFACE COATINGS	0.9	0.8	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.1	0.1	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	10.2	18.4	8.1	3.7	2.9	1.7	0.1
*** TOTAL STATIONARY SOURCES**	**10.2**	**1.3**	**11.0**	**20.8**	**8.3**	**4.1**	**3.3**	**2.1**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.6	1.4	-	-	-	-	-	-	1.3
MISCELLANEOUS PROCESSES	3.5	1.2	11.0	0.6	0.0	18.6	9.7	2.6	0.7
*** TOTAL AREAWIDE SOURCES**	**5.0**	**2.6**	**11.0**	**0.6**	**0.0**	**18.6**	**9.7**	**2.6**	**2.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	1.1	1.1	7.2	4.1	0.0	0.3	0.3	0.1	0.1
OTHER MOBILE SOURCES	5.0	4.9	23.8	5.5	0.3	3.0	2.9	2.9	0.0
*** TOTAL MOBILE SOURCES**	**6.2**	**5.9**	**31.0**	**9.6**	**0.3**	**3.3**	**3.2**	**3.0**	**0.1**
TOTAL KERN COUNTY IN MOJAVE DESERT	**21.4**	**9.8**	**53.0**	**31.0**	**8.6**	**26.0**	**16.2**	**7.7**	**2.3**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	12.6	1.8	9.9	7.6	0.7	2.7	2.6	2.5	1.6
WASTE DISPOSAL	224.6	12.2	0.2	0.1	0.0	0.1	0.0	0.0	5.4
CLEANING AND SURFACE COATINGS	3.0	2.7	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	46.2	11.8	0.9	0.3	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	2.4	2.3	0.1	0.1	0.1	3.7	1.6	0.6	0.2

* TOTAL STATIONARY SOURCES	288.8	30.7	11.1	8.0	1.1	6.7	4.4	3.3	7.2
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	10.9	10.0	-	-	-	-	-	-	26.5
MISCELLANEOUS PROCESSES	63.6	9.9	5.2	1.2	0.0	61.8	30.9	5.7	17.1
* TOTAL AREAWIDE SOURCES	74.5	19.9	5.2	1.2	0.0	61.8	30.9	5.7	43.6
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	5.4	4.9	31.4	23.5	0.1	1.7	1.6	0.7	0.8
OTHER MOBILE SOURCES	4.0	3.5	27.2	10.8	0.0	0.6	0.5	0.5	0.0
* TOTAL MOBILE SOURCES	9.4	8.4	58.6	34.2	0.2	2.2	2.2	1.2	0.8
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	372.7	59.0	74.9	43.5	1.4	70.7	37.4	10.2	51.7
GRAND TOTAL FOR KERN COUNTY	394.0	68.8	127.9	74.4	10.0	96.7	53.6	17.9	54.0

Start a new query.

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Secretary for Environmental Protection
Jared Blumenfeld
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Chair, California Air Resources Board
Mary D. Nichols
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ACCESSIBILITY
PRIVACY POLICY
CONDITIONS OF USE
LOCAL AIR DISTRICTS
REGISTER TO VOTE

The California Air Resources Board is one of six boards, departments, and offices under the California Environmental Protection Agency.

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2016 SIP Emission Projection Data

2025 Estimated Annual Average Emissions

KERN COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

KERN COUNTY COUNTY - MOJAVE DESERT AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	0.5	0.1	0.8	2.5	0.2	0.4	0.4	0.4	0.0
WASTE DISPOSAL	9.3	0.1	0.0	-	0.0	0.0	0.0	0.0	0.1
CLEANING AND SURFACE COATINGS	1.0	0.9	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.1	0.1	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	11.0	19.7	8.6	3.9	3.2	1.9	0.1
*** TOTAL STATIONARY SOURCES**	**11.1**	**1.4**	**11.8**	**22.2**	**8.8**	**4.4**	**3.5**	**2.2**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.7	1.5	-	-	-	-	-	-	1.3
MISCELLANEOUS PROCESSES	3.5	1.2	11.1	0.6	0.0	18.5	9.7	2.6	0.7
*** TOTAL AREAWIDE SOURCES**	**5.2**	**2.7**	**11.1**	**0.6**	**0.0**	**18.5**	**9.7**	**2.6**	**2.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	0.9	0.8	5.0	2.3	0.0	0.3	0.3	0.1	0.1
OTHER MOBILE SOURCES	5.0	4.8	24.2	4.6	0.3	3.0	2.9	2.9	0.0
*** TOTAL MOBILE SOURCES**	**5.8**	**5.6**	**29.2**	**6.9**	**0.3**	**3.3**	**3.2**	**3.0**	**0.1**
TOTAL KERN COUNTY IN MOJAVE DESERT	**22.1**	**9.7**	**52.1**	**29.7**	**9.2**	**26.1**	**16.4**	**7.8**	**2.3**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	12.4	1.7	9.6	7.2	0.6	2.6	2.5	2.4	1.7
WASTE DISPOSAL	247.0	13.4	0.2	0.1	0.0	0.1	0.0	0.0	6.0
CLEANING AND SURFACE COATINGS	3.3	3.0	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	45.0	10.8	0.8	0.3	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	2.6	2.4	0.1	0.1	0.1	4.0	1.7	0.6	0.2

* TOTAL STATIONARY SOURCES	310.3	31.3	10.7	7.6	1.1	6.9	4.4	3.2	7.8
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	11.4	10.3	-	-	-	-	-	-	25.1
MISCELLANEOUS PROCESSES	63.7	9.9	5.2	1.2	0.0	61.8	30.9	5.7	17.2
* TOTAL AREAWIDE SOURCES	75.0	20.3	5.2	1.2	0.0	61.8	30.9	5.7	42.3
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	4.3	3.9	23.7	12.7	0.1	1.7	1.7	0.7	0.8
OTHER MOBILE SOURCES	3.5	3.1	28.0	8.1	0.0	0.4	0.4	0.4	0.0
* TOTAL MOBILE SOURCES	7.8	7.0	51.6	20.8	0.2	2.1	2.1	1.1	0.8
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	393.1	58.5	67.6	29.6	1.3	70.8	37.4	10.1	51.0
GRAND TOTAL FOR KERN COUNTY	415.2	68.2	119.7	59.3	10.5	97.0	53.8	17.8	53.2

Start a new query.

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2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

MOJAVE DESERT AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	9.7	1.4	12.0	27.8	1.3	9.9	4.7	2.6	0.2
WASTE DISPOSAL	36.3	0.5	0.1	0.1	0.0	61.6	17.9	1.8	1.8
CLEANING AND SURFACE COATINGS	14.2	9.8	0.0	0.0	-	0.8	0.8	0.8	-
PETROLEUM PRODUCTION AND MARKETING	17.7	6.2	0.0	0.0	-	0.0	0.0	0.0	-
INDUSTRIAL PROCESSES	2.3	2.0	18.3	47.7	10.7	71.5	36.8	14.8	0.1
*** TOTAL STATIONARY SOURCES**	**80.2**	**19.9**	**30.5**	**75.6**	**12.0**	**143.9**	**60.3**	**19.9**	**2.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	11.1	9.6	-	-	-	-	-	-	2.3
MISCELLANEOUS PROCESSES	38.8	5.8	24.7	2.0	0.1	142.5	76.3	14.6	13.4
*** TOTAL AREAWIDE SOURCES**	**49.8**	**15.4**	**24.7**	**2.0**	**0.1**	**142.5**	**76.3**	**14.6**	**15.7**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	10.6	9.6	70.7	31.3	0.2	3.0	2.9	1.3	1.4
OTHER MOBILE SOURCES	13.3	12.3	68.9	31.5	0.5	4.1	4.0	3.8	0.0
*** TOTAL MOBILE SOURCES**	**23.9**	**21.8**	**139.6**	**62.8**	**0.8**	**7.1**	**6.9**	**5.1**	**1.4**
GRAND TOTAL FOR MOJAVE DESERT AIR BASIN	**153.9**	**57.1**	**194.8**	**140.4**	**12.9**	**293.5**	**143.5**	**39.7**	**19.3**

Start a new query.

2016 SIP Emission Projection Data

2025 Estimated Annual Average Emissions

MOJAVE DESERT AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	11.8	1.6	13.8	31.6	1.4	10.8	5.1	2.7	0.2
WASTE DISPOSAL	39.9	0.5	0.1	0.1	0.1	70.8	20.6	2.1	2.0
CLEANING AND SURFACE COATINGS	17.0	11.7	0.0	0.0	-	1.0	1.0	0.9	-
PETROLEUM PRODUCTION AND MARKETING	17.3	5.9	0.0	0.0	-	0.0	0.0	0.0	-
INDUSTRIAL PROCESSES	2.5	2.1	19.8	51.7	11.5	77.0	39.7	16.1	0.2
*** TOTAL STATIONARY SOURCES**	**88.4**	**21.8**	**33.7**	**83.5**	**12.9**	**159.6**	**66.4**	**21.9**	**2.3**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	12.5	10.8	-	-	-	-	-	-	2.2
MISCELLANEOUS PROCESSES	39.0	5.9	24.9	2.0	0.1	152.4	81.3	15.5	13.7
*** TOTAL AREAWIDE SOURCES**	**51.5**	**16.7**	**24.9**	**2.0**	**0.1**	**152.4**	**81.3**	**15.5**	**15.9**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	8.1	7.4	49.4	17.4	0.2	3.2	3.1	1.3	1.3
OTHER MOBILE SOURCES	12.4	11.5	72.0	24.0	0.5	4.0	3.8	3.7	0.0
*** TOTAL MOBILE SOURCES**	**20.5**	**18.9**	**121.4**	**41.4**	**0.8**	**7.1**	**6.9**	**5.0**	**1.4**
GRAND TOTAL FOR MOJAVE DESERT AIR BASIN	**160.4**	**57.3**	**180.1**	**126.8**	**13.8**	**319.1**	**154.6**	**42.3**	**19.6**

Start a new query.

APPENDIX D. HEALTH RISK ASSESSMENT MODELING FILES

(Electronic Files)

APPENDIX C

BIOLOGICAL RESOURCES REPORT

BIOLOGICAL ANALYSIS REPORT

LENDLEASE ENERGY DEVELOPMENT, LLC

GETTYSBURG SOLAR PROJECT



SEPTEMBER 2020

BIOLOGICAL ANALYSIS REPORT

GETTYSBURG SOLAR PROJECT

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September 2020

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ACRONYMS AND ABBREVIATIONS

BAR	Biological Analysis Report
BGEPA	Bald and Golden Eagle Protection Act
BIOS	Biogeography Information and Observation System
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWHR	California Wildlife Habitat Relationships
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
Gen-tie	Generator tie
HCP	Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHV	Off-highway Vehicle
SBBM	San Bernardino Base and Meridian
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

QK prepared this Biological Analysis Report (BAR) to evaluate the potential for sensitive biological resources to be impacted by the construction of the Gettysburg Solar Project (Project) in Kern County, California. The proposed Project is located approximately 5 miles west of Highway 14, 5.7 miles north of Highway 138, and 0.36 mile south of the Willow Springs International Raceway. The Project includes the construction of a 30 megawatt (MW) photovoltaic solar facility and associated infrastructure on approximately 160 acers of undeveloped land. A generation tie-in powerline will also be built from the Project site to Rosamond Boulevard and terminate approximately 1.25 miles east, at SCE's Rosamond Substation. The Project will be approved by the County of Kern through an amendment to the AV Apollo Solar Project's Environmental Impact Report (EIR).

A data base review and site visits to the Project were completed by QK biologists to characterize the existing conditions on-site and determine the potential for special-status species and other sensitive biological resources to occur on-site that may be impacted by the Project.

The Project site is dominated by disturbed Alkali Desert Scrub habitat. No sensitive natural communities or aquatic resources were present on the site. Swainson's hawk (*Buteo swainsoni*), a State Threatened species, and desert kit fox (*Vulpes macrotis arsipus)*, a species protected by the California Fish and Game Code, were observed within the Project area. Two special-status plant species and five additional special-status wildlife species were determined to have a potential to occur on the Project: Alkali mariposa lily (*Calochortus striatus*), recurved larkspur (*Delphinium recurvatum*), western burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), LeConte's thrasher (*Toxostoma lecontei*), Townsend's big-eared bat (*Corynorhinus townsendii*), and American badger (*Taxidea taxus*), and desert kit fox (*Vulpes macrotis arsipus).* Nesting birds protected by the California Fish and Game Code and Migratory Bird Treaty Act were also observed in the vicinity of the Project and have potential to nest on the Project.

Direct and indirect impacts to Swainson's hawk, desert kit fox, and the other special-status species listed above could occur if those species are present, and could include loss of suitable habitat, injury or mortality of individuals, and interference with breeding activities. As an amendment to the AV Apollo Solar Project's EIR, this BAR incorporates the mitigation measures from the certified EIR Final Mitigation Monitoring and Reporting Plan. When implemented, these measures would reduce Project impacts to biological resources to a less than significant level.

SECTION 1 - INTRODUCTION

Quah Knopf, Inc. (QK) prepared this Biological Analysis Report (BAR) to evaluate the potential impacts to sensitive biological resources by the proposed Gettysburg Solar Project (Project). The Project, as proposed by Lendlease Energy Development, LLC, would include the construction and operation of a 30 megawatt (MW) photovoltaic solar PV facility and associated infrastructure on approximately 160 acers of land. The Project will be considered by the County of Kern with an addendum of the certified Environmental Impact Report (EIR) for AV Apollo Solar Project.

1.1 - Project Location

The proposed Project is in California's Antelope Valley in the Mojave Desert, on the border of Kern and Los Angeles Counties, approximately 1-mile northwest of the City of Rosamond (Figures 1-1 and 1-2). It is approximately 5 miles west of State Route 14, 5.7 miles north of State Route 138, and 0.36 mile south of the Willow Springs International Raceway. The Tehachapi Mountain Range occurs north and west of the Project, while the Central Transverse Range is to the south and west.

The Project is within U.S. Geological Survey (USGS) Quadrangle *Little Buttes*. It is within Section 21, Township 9 North, Range 13 West, San Bernardino Base and Meridian (SBBM).

1.2 - Project Description

The Project proponent proposes to develop approximately 160 acres of land into a 30 (MW) photovoltaic energy generating facility. The PV technology that would be used for the Project has not yet been determined.

The Project would include approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid like pattern over the site. Power that is generated by the Project would be transferred directly to Southern California Edison's (SCE) Antelope-Cal Cement-Rosamond 66kV line, located approximately 1.25 miles to the east of the site along the Rosamond Boulevard right-of-way (ROW). Use of this ROW would require a Franchise Agreement with the County of Kern.

The solar PV generating facility would consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts. The solar facilities are intended to operate year-round and would generate electricity during daylight hours when electricity demand is at its peak.

The Project will be constructed in phases over an estimated period of 8 to 10 months. Construction activities are anticipated to begin during the first or second quarter of 2021, with operations beginning in the fourth quarter of 2021. The Project proponents may eventually choose to decommission and remove all or none of the systems from the sites. If the site is decommissioned, it would be converted to another use consistent with the applicable land use regulations in effect at that time.

1.3 - Purpose, Goals, and Objectives

The purpose of this BAR is to identify sensitive biological resources occurring within the Project site, which sensitive resources may occur on the site, determine how those resources may be impacted by the Project, and recommend avoidance, minimization, and mitigation measures to reduce potential impacts to a less than significant level. This BAR has been prepared to support an analysis of biological conditions as required by the California Environmental Quality Act (CEQA) and, if needed, to support regulatory permit applications.

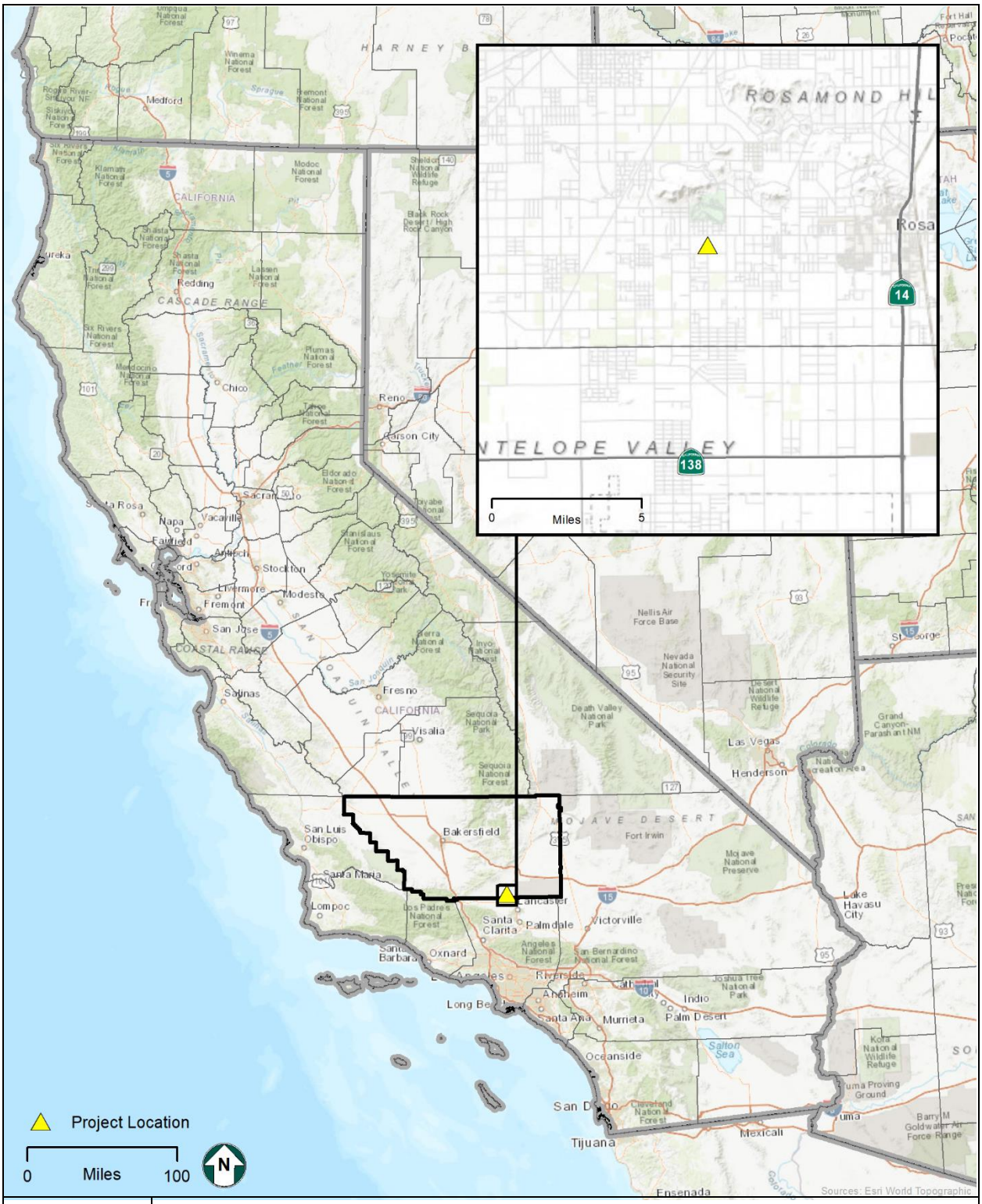


Figure 1-1
Regional Map
Gettysburg Solar Project
Kern County, California

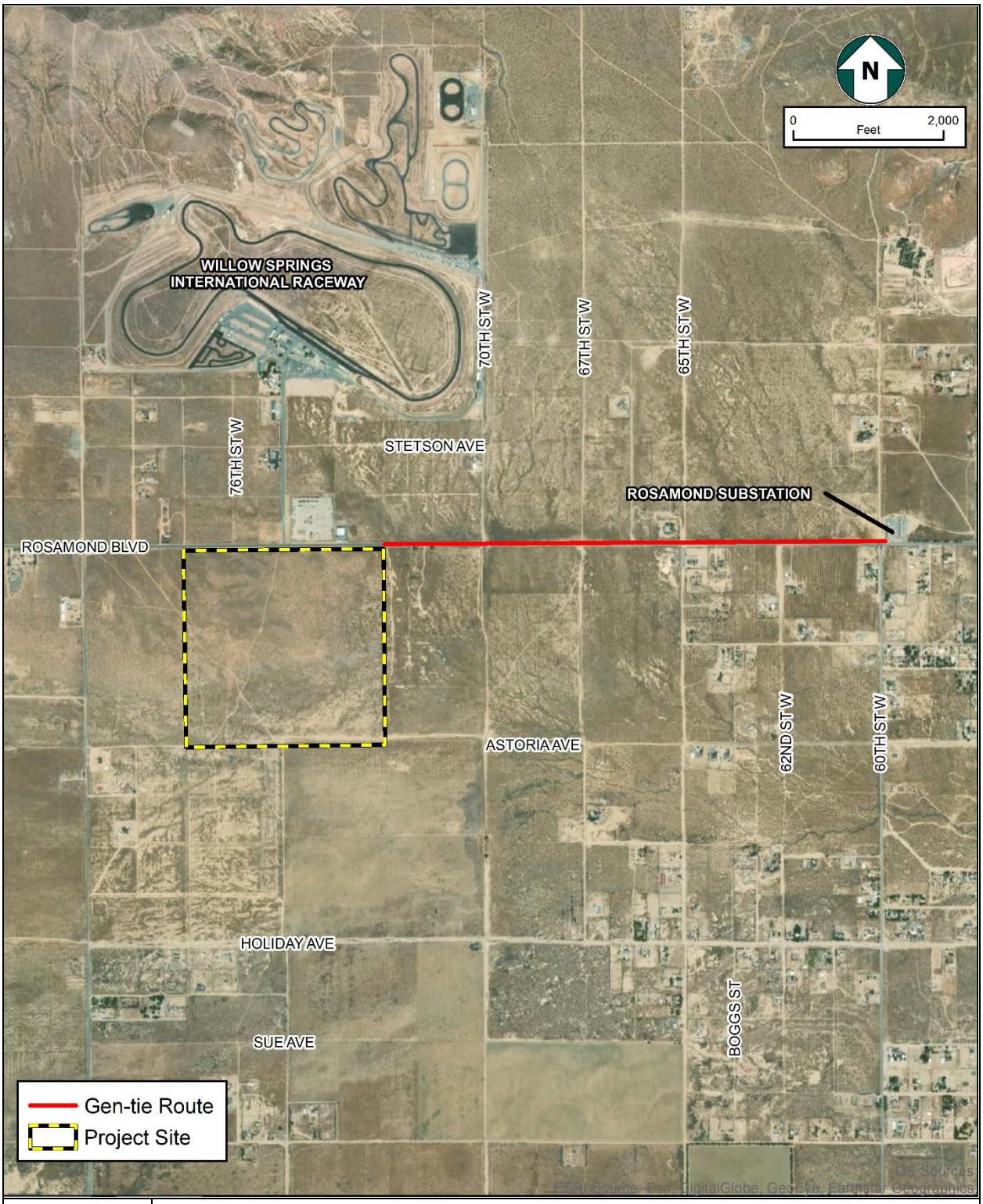


Figure 1-2
Project Location Map
Gettysburg Solar Project
Kern County, California

SECTION 2 - METHODS

2.1 - Definition of Biological Study Area

The Biological Study Area (BSA) used for the Project consists of the Project site and gen tie route and a 250-foot buffer surrounding the Project site (Figure 2-1).

2.2 - Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the Project;
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA);
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW);
- Other species included on the CDFW's Special Animals List;
- Plant species with a California Rare Plant Rank (CRPR) in categories 1 or 2; and
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- No: Habitat on and adjacent to the site was clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present.
- Yes: Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration). Negative survey results do not exclude the potential for a species to occur.
- Present. Species or diagnostic sign of the species was observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

2.3 - Literature Review and Database Analysis

The following sources were reviewed for information on special-status biological resources in the project vicinity:

- CDFW's California Natural Diversity Database (CNDDB; CDFW 2020a)
- CDFW's Biogeographic Information and Observation System (BIOS; CDFW 2020b)
- CDFW's Special Animals List (CDFW 2020c)
- CDFW's California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988)

- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2020)
- Calflora (Calflora 2020)
- USFWS Critical Habitat Mapper (USFWS 2020a)
- U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2020b)
- USFWS National Wetlands Inventory (NWI; USFWS 2020c)
- United States Geological Survey (USGS) National Hydrography Dataset (NHD; USGS 2020a)
- Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2020)
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2020a)
- NRCS Lists of Hydric Soils (NRCS 2020b)
- Current and historical aerial imagery from Google Earth (Google LLC 2020); and
- Topographic maps (USGS 2020b).

The data search was focused on the *Little Buttes, California* USGS 7.5-minute quadrangle in which the Project is located, plus the surrounding eight quadrangles: *Tylerhorse Canyon, Willow Springs, Soledad Mtn. Fairmont Butte, Rosamond, Lake Hughes, Del Sur, and Lancaster West.* A ten-mile search radius was used for acquiring information from the CNDDB.

The CNDDB provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database and Calflora provides similar information as the CNDDB, but at a much lower spatial resolution. Much of the information in these databases is obtained opportunistically and is often focused on protected lands or on lands where development has been proposed. Neither database represents a comprehensive survey for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status resource could be present. The IPaC and CDFW's special animals list provide only lists of species which could occur in the region, with no specific records of occurrence. The National Wetlands Inventory (NWI), National Hydrology Dataset (NHD), and Web Soil Survey provide comprehensive spatial data, but at a low resolution that requires confirmation in the field.



Figure 2-1
Biological Study Area
Gettysburg Solar Project
Kern County, California

The results of the database inquiries were reviewed to develop a comprehensive list of special-status resources that may be present within the vicinity of the Project (see Table A-1 in Appendix A). The resources were then evaluated against existing conditions observed during the site visits and floristic surveys performed within the BSA to determine which special-status resources have potential to occur, and then the potential for the Project to impact those resources was assessed.

2.4 - Field Surveys

2.4.1 - Biological Reconnaissance Surveys

Biological reconnaissance surveys of the BSA were conducted by QK Biologists in 2017, and subsequently on June 6 and July 17, 2020. Table 2-1 summarizes the reconnaissance survey dates, participants, areas surveyed, and other survey conditions. Surveys consisted of walking north-south meandering pedestrian transects within the BSA. Areas where access was not available were examined using binoculars from accessible areas. Pedestrian transects were spaced 50 to 100 feet apart to achieve 100 percent visual coverage of the Project footprint.

General tasks completed during the survey included developing an inventory of plant and wildlife species observed, characterizing vegetation associations and habitat conditions within the BSA, assessing the potential for federally and State-listed and special-status plant and wildlife species to occur on and near the Project, and assessing the presence of migratory birds and raptors to nest on and near the Project. All locational data were recorded using ESRI Collector for ArcGIS software installed on an iPad and site conditions were documented with representative photographs.

Table 2-1
Reconnaissance Survey Personnel and Timing

Date	Personnel*	Time	Weather Conditions	Temperature
June 28, 2017	BP, EM. MC	0810 – 1046	Sunny, clear, windy	78 – 87 °F
June 16, 2020	SG, KD, EM, EP, LS	0800 – 1018	Sunny, clear, windy	71 – 78 °F
July 16, 2020	EP, LS	0915 – 0955	Sunny, clear, windy	80 – 86 °F

* BP – Belen Perez; EM - Eric Madueno; EP - Erica Pena; KD - Karissa Denney; LS - Laura Schneider; MP – Mitchell Coleman; SG - Shannon Gleason

2.4.2 - Floristic Surveys

The Project is within the known distributional range of numerous special-status plants and provides habitat that could support two special status plant species. Floristic surveys were conducted to coincide with the variable blooming periods of different species. Table 2-2 summarizes the floristic survey dates and associated information.

The Project was evaluated for the presence of special-status plant species using standard methods described in the CDFW Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). The

surveys consisted of walking north-south meandering pedestrian transects spaced 30 to 100 feet apart over the entire BSA where there was access. Surveys were conducted on three separate days (Table 2-2). One hundred percent visual coverage of the Project footprint was achieved during each survey period. The intent of the surveys was to identify and record all plant communities and all plant species encountered. Collections of any species that could not be identified were placed in plastic bags to be later identified using a dichotomous key (The Jepson Manual 2012). Locations of special-status species were documented using ESRI Collector for ArcGIS and the species was photographed.

Table 2-2
Floristics Survey Personnel and Timing

Date	Personnel*	Time	Weather Conditions	Temperature
April 16, 2018	MC, DD, LS	0430 – 1216	Clear, sunny	60 – 72 °F
May 21, 2018	DD, KD, EM	0950 – 1215	Clear, windy	62 – 68 °F
July 27, 2018	DD, KD, LS	0930 – 1300	Clear, sunny	82 – 93°F

* DD - Dave Dayton; EM - Eric Madueno; KD - Karissa Denney; LS - Laura Schneider; MC - Mitchell Coleman

2.4.3 - SWAINSON'S HAWK SURVEYS

QK conducted windshield surveys for Swainson's hawk (*Buteo swainsoni*) on February 20 and 24, 2018, and June 16, 2020 (Table 2-3). Surveys followed standard methods described in *Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California* (CDFW 2010). Surveys conducted in February coincided with Survey Period I (pre-arrival; adults returning from their wintering grounds), while the survey conducted in June coincided with Survey Period IV (fledging).

Surveys were conducted in all areas within 5 miles of the Project to look for existing Swainson's hawk nests, individuals, and habitat with potential to support nesting hawks. Locations of all Swainson's hawks and bird nests observed were documented using ESRI Collector for ArcGIS.

Table 2-3
Swainson's Hawk Survey Personnel and Timing

Date	Personnel*	Time	Weather Conditions	Temperature
February 20, 2018	EM, KD	0815 - 1320	Clear, breezy	62 – 68 °F
February 24, 2018	DD	0830 - 1330	Sunny, windy	64 – 66 °F
June 16, 2020	EM, EP, KD, LS, SG	1030 - 1610	Clear, windy	79 – 89°F

* DD – Dave Dayton; EM - Eric Madueno; EP - Erica Pena; KD - Karissa Denney; LS - Laura Schneider; SG - Shannon Gleason

SECTION 3 - REGULATORY SETTING

Regulated or sensitive resources that were studied and analyzed include sensitive plant communities and special-status plant species, special-status animal species, nesting birds and raptors, jurisdictional waters and wetlands, wildlife movement areas, and locally protected resources such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the Kern County General Plan).

Potential impacts to biological resources were analyzed based on the following list of statutes. Summaries of these statues are provided in Appendix B.

- CEQA
- FESA
- CESA
- Federal Clean Water Act
- California Fish and Game Code
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act (BGEPA)
- Porter-Cologne Water Quality Control Act
- Kern County General Plan
- Draft West Mojave Habitat Conservation Plan
- Desert Renewable Energy Conservation Plan

SECTION 4 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project and describes existing baseline conditions. The environmental setting of the BSA was obtained from various sources of literature, databases, and aerial photographs. Site conditions were verified and refined based upon information obtained during site visits conducted by QK Environmental Scientists (see Table 2-1 and 2-2).

4.1 - Physical Characteristics

The BSA is within the Mojave Desert, approximately 15 miles southeast of the Tehachapi Mountains and 15 miles north of the Central Transverse Range. The Project is situated on the western perimeter of the Mojave Desert, a region that is a mixture of desert habitat, solar arrays, agriculture, and urban development. Physical characteristics of the Project site are described below. Representative photographs of the BSA are included in Appendix C.

4.1.1 - TOPOGRAPHY

The BSA is on the western floor of the Mojave Desert in the eastern portion of Kern County. The topography of the BSA is relatively flat with an elevation of about 2,425 feet above sea level in the northwest corner to 2,400 feet AMSL in the southeast corner. Along the central northern boundary of the Project site there is a slight increase in elevation from an existing hill.

4.1.2 - CLIMATE

The BSA is within an area that has a Mediterranean climate of hot summers and mild, wet winters. Average high temperatures range from 57.8˚F in January to 97.6˚F in July, with daily temperatures often exceeding 100 several days in the summer (WRCC 2020). Average low temperatures range from 32.9˚F in December and 69.7˚F in July. Precipitation occurs primarily as rain, most of which falls from November to April. The Project is in the rainshadow of the Sierra Nevada Mountains and receives an average of 5.93 inches of rainfall per year.

4.1.3 - LAND USE

The Project is located on undeveloped land that has been disturbed in the past by off-highway vehicles (OHVs) and illegal trash dumping. The site contains a matrix of native and non-native vegetation. Surrounding parcels exhibit similar conditions or have been completely disturbed through agricultural practices or urban development. Dirt and paved roads run along the edges of the BSA, which are used by nearby residents for access to their private properties.

The land surrounding the Project is a mostly a mix of native and non-native vegetation, with undeveloped land or scattered residential development. The Tehachapi Willow Springs Raceway is located to the north of the BSA. Rosamond, a census-designated place, shares its

western border with the eastern end of the Project, although the majority of its population resides about three miles east of the Project. OHV use is a common recreational activity in the region and is evident on the Project site.

In the vicinity, there are several solar projects currently under construction or that have been completed. The closest solar projects are the RE Rosamond Two solar project and the Willow Springs Solar Array. The RE Rosamond Two solar site is approximately 2.5 miles north of the BSA and the Willow Springs Solar Array site is approximately 3.5 miles west and southwest of the BSA.

4.1.4 - SOILS

The BSA is underlain by four soil types including Adelanto loamy sand, Adelanto coarse sandy loam, Rosamond fine sandy loam, and Rosamond silty clay loam (Figure 4-1; NRCS 2020a).

Adelanto loamy sand and Adelanto coarse sandy loam, both with 2 to 5 percent slopes, are part of the Adelanto series. This soil series consists of very deep, well drained soils that formed in granitic parent material on alluvial fans and plains (NRCS 2020a). These soils are found on nearly level to gently sloping alluvial fans and plains at elevations between 2,000 to 2,900 feet. Mean annual precipitation is 4 to 9 inches and mean air temperature ranges between is 44 to 82 °F. Adelanto soils are used for desert range or, with irrigation, used for growing alfalfa. Native vegetation consists of creosote bush, annual grasses and forbs, perennial grasses, and sometimes Joshua or juniper trees. Both soils are nonhydric (NRCS 2020b).

Rosamond find sandy loam and Rosamond silty clay loam are Rosamond series soils. This soil series consists of deep, well drained soils that formed mainly from granitic alluvium (NRCS 2020a). These soils are found on the margins of alluvial fans on slopes less than 2 percent and at elevations between 2,200 and 2,900 feet. Rosamond soils are extensively distributed in the high desert of Los Angeles and adjacent counties. This series is found in areas with an arid climate, with winter rains and occasionally snow, and infrequent summer thunderstorms. Annual precipitation is 3 to 6 inches and mean annual temperature is between 61 and 65°F. Rosamond soils are used for irrigated and row crops such as alfalfa, although they are often left as large tracts of desert habitat. Native vegetation is typically rabbitbrush (*Ericameria* sp.), big sagebrush (*Artemesia tridentata*), saltbush (*Atriplex* sp.), and some annual and perennial grasses and forbs. Both soils are predominately nonhydric (NRCS 2020b).

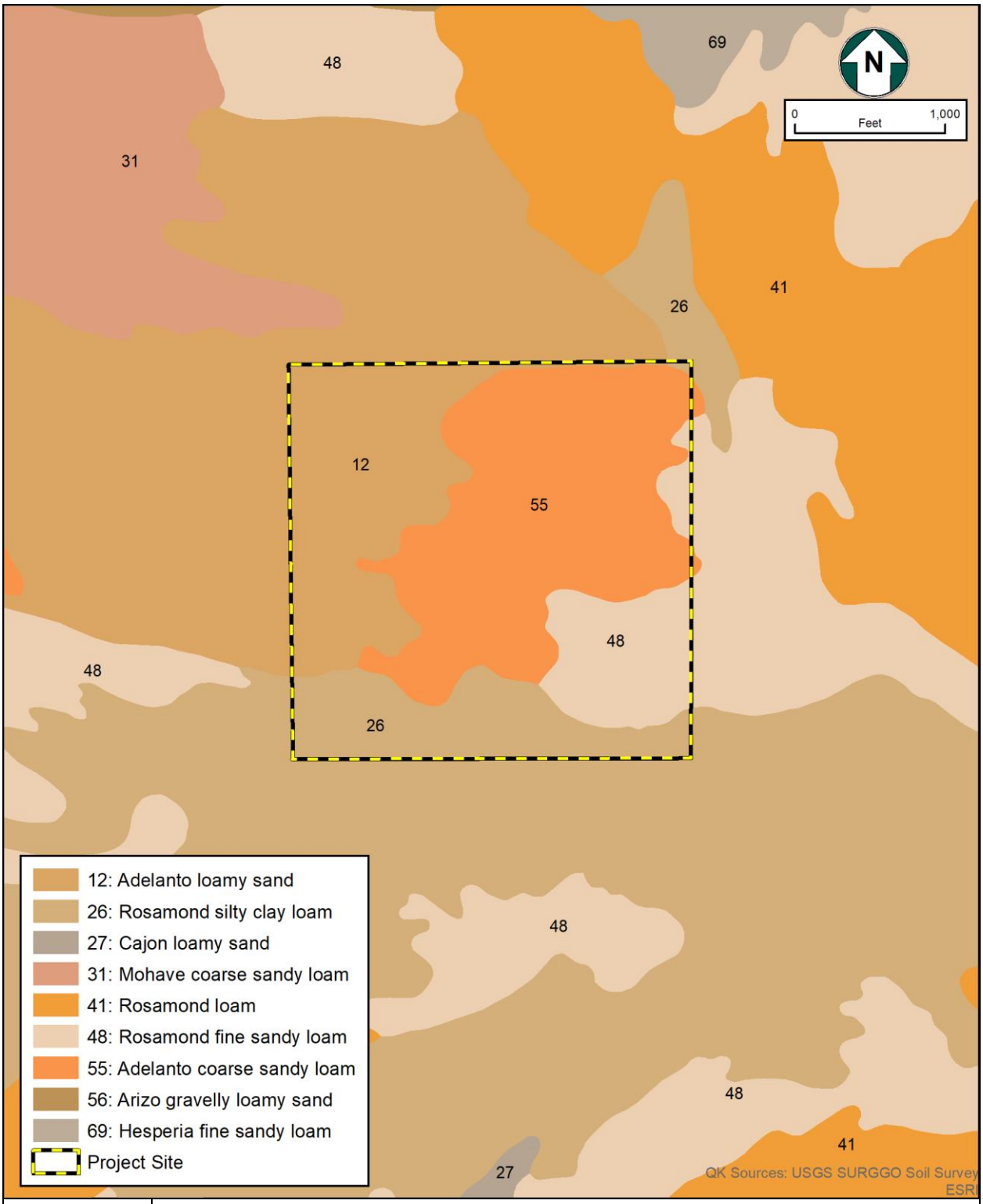


Figure 4-1
Soils occurring within the Project Site
Gettysburg Solar Project
Kern County, California

4.1.5 - HYDROLOGY

The NWI and NHD database queries did not yield any documented jurisdictional waters or wetlands within the BSA (USGS 2020; USFWS 2020c). No wetlands or waterways were found during on-site examinations. The nearest jurisdictional water source is a natural ravine that terminates approximately 560 feet east of the Project site (Figure 4-2). This jurisdictional water resource is classified as "R4SBJ" by the NWI, which describes a riverine system of a natural or artificial streambed that periodically contains moving water and can be intermittently flooded during major rain events.

The southern half of the BSA is in an area of 1% Annual Chance Flood Hazard and the northern half of the BSA is an Area of Minimal Flood Hazard as designated by FEMA (FEMA 2020, Figure 4-3).

4.2 - Vegetation and Other Land Cover

Two habitat types were observed within the BSA, as described in the context of *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988): Alkali Desert Scrub and Urban (Figure 4-4). Habitat type acreages within the BSA and within the Project footprint are provided in Table 4-1. A complete list of plant species observed during the surveys are included in Appendix D,

Table 4-1
Habitat Acreages Observed On-Site

Habitat Type	Acreages	
	BSA	Project Footprint
Desert Scrub	58.28	160.0
Urban	6.9	0

4.2.1 - ALKALI DESERT SCRUB

This habitat includes alkali scrub plant assemblages that can be subdivided into two phases: xerophytic and halophytic. Species composition in Alkali Desert Scrub habitats differ based on the two types of phases: xerophytic and halophytic. Primary perennial plant species of the xerophytic phase include various species of shrubby saltbushes, allscale saltbush, desert holly (*Atriplex hymenelytra*), fourwing saltbush (*A. canescens*), Nuttall's saltbush (*A. nuttalli*), and other species tolerant of alkali conditions. Primary perennial shrub and subshrub species of the halophytic phase include greasewood (*Sarcobatus* sp.), alkali goldenbush (*Isocoma acradenia*), rubber rabbitbrush, etc. Common wildlife species that inhabit Alkali Scrub habitats in the Mojave Desert are the white-tailed antelope squirrel (*Ammospermophilus leucurus*), zebra-tailed lizard (*Callisaurus draconoides*), long-nosed leopard lizard (*Gambelia wislizenii*), black-tailed jackrabbit (*Lepus californicus*), coyote, and desert kit fox. Alkali Scrub vegetation occurs in California throughout the Mojave Desert, portions of the Colorado Desert, portions of northeastern California within the Great Basin, and in the southern San Joaquin Valley.

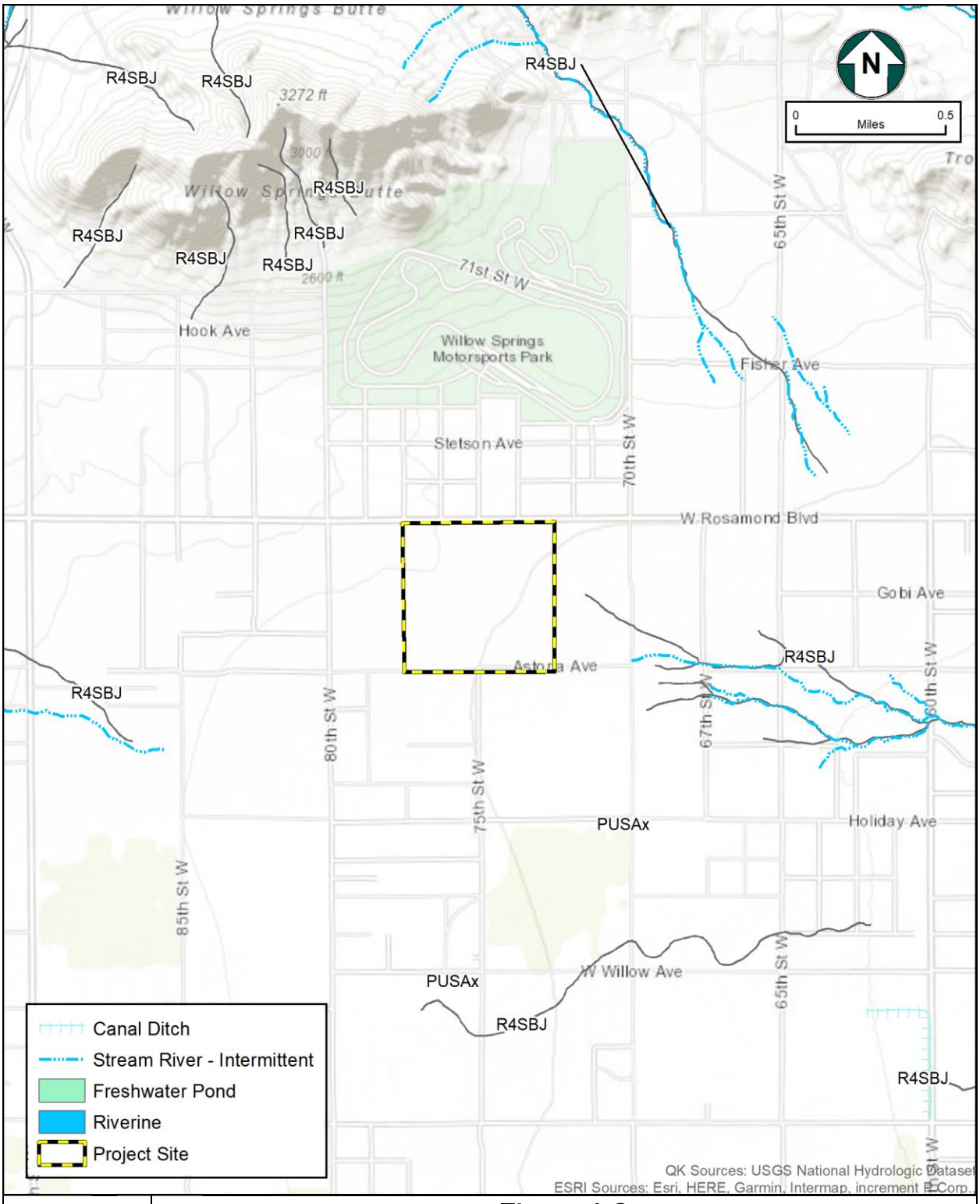


Figure 4-2
NWI and NHD Records of Aquatic Resources,
Gettysburg Solar Project,
Kern County, California

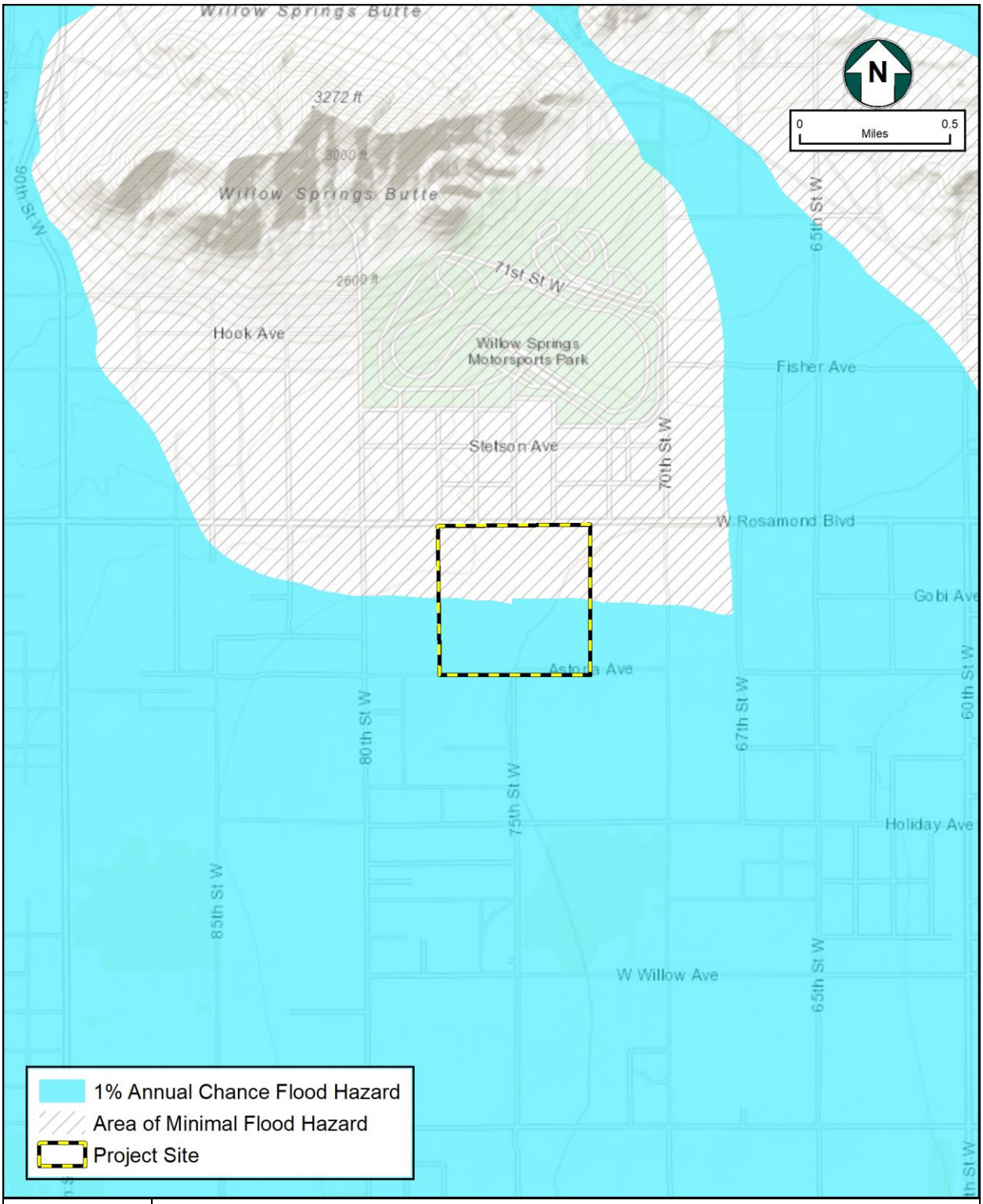


Figure 4-3
FEMA Flood Zone Map
Gettysburg Solar Project
Kern County, California

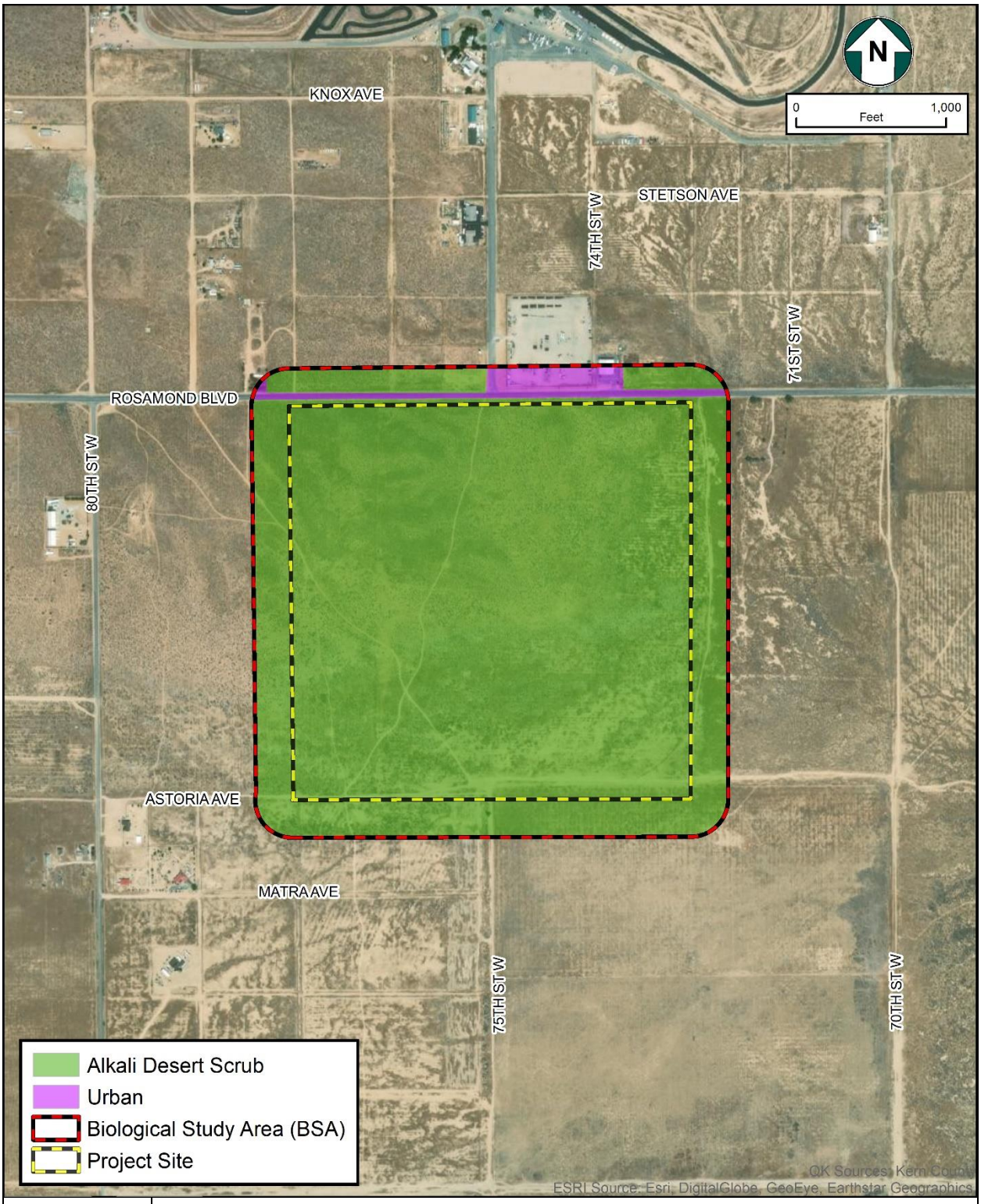


Figure 4-4
Vegetation Communities within the Project
Gettysburg Solar Project
Kern County, California

The majority of the BSA consists of Alkali Desert Scrub (Figure 4-4). The soil in this habitat is fairly compacted and forms a hardpan in some areas. Regularly dispersed native shrubs occur throughout the Project site, mostly consisting of allscale saltbush, rubber rabbitbrush (*Ericameria nauseosa*), and burro bush (*Ambrosia dumosa*). With the presence of these species, the Project site can be classified as an Alkali Desert Scrub predominate throughout the site, with a higher density of saltbush in the southwest corner of the Project. Invasive annual grasses and forbs are common throughout the Project site, including black mustard (*Brassica nigra*) *Bromus* species, Russian thistle (*Salsola tragus*), and redstem filaree (*Erodium cicutarium*).

The Alkali Desert Scrub habitat was moderately disturbed. OHV and other vehicle tracks were visible over much of the BSA, and trash dumps were also observed. Rosamond Boulevard, the northern border of the Project, experiences high-volume vehicular traffic as well as low-volume pedestrian traffic and it is likely that people traverse the BSA on a semifrequent basis.

4.2.2 - URBAN

Urban habitats include five types of vegetative structure which includes tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Species composition in urban habitats varies with planting design and climate. Monoculture is commonly found in tree groves and street tree strips. Three urban categories relevant to wildlife are classified as downtown, urban residential, and suburbia. There is a progression of decreasing development and increasing vegetative cover, species abundance, and diversity from downtown to suburbia types. Urban habitats are not limited to any particular physical setting.

Portions of the north side of the BSA, outside of the Project limits, consist of urban habitat (Figure 4-4). The active commercial development and West Rosamond Boulevard located north of the Project site are both urban. These areas include paved roads and commercial development. Vegetation commonly associated with urban habitat includes ornamental herbs (grass lawns, weeds, and flowers), shrubs, hedges, and trees, as well as ruderal species.

4.3 - General Wildlife Observations

Wildlife observed in the BSA is typical for urban and alkali desert scrub habitats (Appendix D). Bird species observed included Swainson's hawk (*Buteo swainsoni*), lark sparrow (*Chondestes grammacus*), common raven (*Corvus corax*), and horned lark (*Eremophila alpestris*), and others. The Swainson's hawk was observed overflying the BSA and was seen within the 5-mile buffer surrounding the site. Mammal species observed were the white-tailed antelope squirrel, black-tailed jackrabbit, and a deceased desert kit fox pup.

SECTION 5 - SENSITIVE RESOURCES

Local, State, and federal agencies regulate special-status species and other sensitive biological resources and require an assessment of their presence or potential for presence to be on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed within the BSA and evaluates the potential for the BSA to support additional sensitive biological resources. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB, IPaC, and CNPS, species occurrence records from other sites in the vicinity of the BSA, previous reports for the project site, and the results of the surveys conducted on the BSA.

5.1 - Special-Status Species

Table 5-1 presents the list of special-status species determined to have potential to occur on-site and identifies if the Project may affect the species and threaten the viability of the species population. The complete list of species compiled from literature and database searches evaluated for this Project are included in Appendix A. Based upon habitat requirements, known ranges of the species and other environmental criteria from this search, it was determined that nine species have potential to occur on the BSA. Each of these species are further discussed in the subsections below.

Table 5-1
Special-Status Species with Potential to Occur On-Site

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Potentially Affected Yes/No	Viability Threat? Yes/No
Plants			
Calochortus striatus *Alkali mariposa lily*	-/- 1B.2/-	Yes	No
Delphinium recurvatum Recurved larkspur	-/- 1B.2/-	Yes	No
Birds			
Athene cunicularia western burrowing owl	BCC/- -/SSC	Yes	No
Buteo swainsoni Swainson's hawk	-/ST -/-	Yes	No
Lanius ludovicianus loggerhead shrike	-/- -/SSC	Yes	No
Toxostoma lecontei LeConte's thrasher	BCC/- -/SSC	Yes	No
Mammals			
Corynorhinus townsendii Townsend's big-eared bat	-/- -/SSC	Yes	No
Taxidea taxus American badger	-/- -/SSC	Yes	No
Vulpes macrotis arsipus Desert kit fox	-/- -/-	Yes	No

CRPR (California Rare Plant Rank):
- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:
- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Fairly endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened)

FE	Federally Endangered
FT	Federally Threatened
FC	Federal Candidate Species
FS	Federally Sensitive
SE	State Endangered
ST	State Threatened
SC	State Candidate
SS	State Sensitive
SSC	State Species of Special Concern
SFP	State Fully Protected
SR	State Rare
BCCWL	Watch List Federal Bird of Conservation Concern

5.1.1 - SPECIAL-STATUS PLANT SPECIES

The literature and database review identified 15 special-status plant species known to occur or with potential to occur within the vicinity of the Project (see evaluation table in Appendix A). Two of these special-status species have potential to occur on-site because suitable habitat conditions to support these species is present and because the BSA is located within the species' known range.

Alkali mariposa lily

CALOCHORTUS STRIATUS

Status: CRPR 1B.2

The alkali Mariposa lily is a perennial bulbiferous herb with an erect stem 0.4 to 2.0 inches tall. Its flowers have three rounded petals which may be slightly toothed. Each petal is 0.8 to 1.2 inches long and varies from light to very dark pink or purplish with darker pink or purple veining or mottling. The cup of the flower is somewhat hairy with anthers bright to dull pink; its pollen is pink. Each flower has pointed sepals around its base (Fiedler 2012). The alkali mariposa lily occurs in chaparral, chenopod scrub, Mojave Desert scrub, and meadows and seeps in alkaline and mesic soils at elevations between 200 and 5,300 feet. It blooms between April and June (CNPS 2020). In California, it occurs in the Sierra Nevada foothills and western Mojave Desert, including Kern, Inyo, Tulare, Los Angeles, and San Bernardino counties (CNPS 2020).

The nearest recorded CNDDB occurrence for alkali mariposa lily is approximately 0.5 miles northeast of the BSA, where several populations were observed near the roadside on alkali sink flats (EONDX 85124; CDFW 2020a). QK biologists also incidentally observed the species in May 2020 approximately 2.7 miles southwest of the BSA, in both Alkali Sink Scrub and Annual Grassland habitats. No alkali mariposa lily was observed on the Project during any of the QK surveys between 2017 and 2020.

No alkali mariposa lilies were observed within the BSA during QK surveys. However, there are nearby (less than 5 miles from Project) observations, the species is a perennial bulb than

can persist for several years, and the Project provides suitable habitat. There is potential for this species to occur onsite.

Recurved larkspur

DELPHINIUM RECURVATUM

Status: CRPR 1B.2

The recurved larkspur is a perennial herb up to about 19 inches tall. It has deeply lobed leaves, many of which are basal. The leaves located further up the dark purple stem are much smaller. Its flowers are generally blue, with its sepals and lower petals darker than its upper petals. Its sepals are usually curved back, the trait which gives the plant its name (Koontz and Warnock 2012). This species occurs in chenopod scrubs, cismontane woodlands, and grassland habitats at elevations to 2,600 feet. The blooming period of this species is from March to June (CNPS 2020). The recurved larkspur is endemic to California and is historically known to occur in California's Great Valley, ranging from Butte County to Kern County. Most of the known occurrences of this species are in Kern, Tulare, and San Luis Obispo counties.

The nearest recorded CNDDB occurrence (EONDX 87537) is approximately 8.2 miles northeast of the BSA (CDFW 2020a) where two populations were observed on both sides of a highway and were often seen emerging from Ephedra (*Ephedra nevadensis)* plants.

Based on site conditions during the 2017, 2018, and 2020 surveys, less than optimal habitat existed for this species within the BSA. All surveys but one of the floristics surveys were conducted during the blooming period of this species. No recurved larkspur was observed during any of the on-site examinations or focused floristics surveys.

5.1.2 - SPECIAL-STATUS ANIMAL SPECIES

The literature and database review identified 33 special-status animal species known to occur or with a potential to occur in the vicinity of the Project (see evaluation table in Appendix A). Of those species, seven were determined to have a potential to occur on-site (see Table 5-1). These are further analyzed and discussed below.

Western burrowing owl

ATHENE CUNICULARIA

Status: CDFW Species of Special Concern

The burrowing owl is a broadly distributed, small ground-dwelling owl that can be found throughout western North America, Florida, Central and South America, Hispaniola, Cuba, and northern Lesser Antilles, and the Bahamas (Shuford and Gardali 2008). The western burrowing owl confined to the western part of North America and Central and South America. Typically, this species can be found in a variety of habitat types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Rodewald 2015).

Burrowing owls utilize earthen burrows, typically relying on other fossorial mammals to construct their burrows such as prairie dog (*Cynomys* ssp.) or American badger (USFWS 1998). In Florida, burrowing owls are capable of digging their own burrows (Poulin 2011). In California, they are associated with California ground squirrels (Winchell 1994). They use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they have been documented using atypical burrows such as pipes, culvers, and other man-made structures as burrows, most often as shelter (Shuford and Gardali 2008). Burrowing owls can have several burrows close to one other that they may use frequently to avoid predators.

The nearest recorded CNDDB occurrence (EONDX 82042) is located approximately 0.7 mile northwest of the Project site. This 2007 record was for an incidental observation of two adults and one juvenile burrowing owl. The site where this observation was recorded has been converted to a portion of the Willow Springs Motorsports Park and is this species is now highly unlikely to occur at that location.

No burrowing owl individuals or any diagnostic sign of the species was observed within the BSA during QK surveys. However, the Project provides suitable foraging habitat, and unoccupied desert kit fox and coyote dens could potentially be used by burrowing owls. Burrowing owl may become established within the BSA or pass through as a transient at any time.

Swainson's hawk

BUTEO SWAINSONI

Status: State Threatened

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Bechard et al. 2010, Zeiner et al. 1990). Some hawks may be resident, especially in the southern portion of their range, while others may migrate between wintering habitat in Central and South America and summer habitats in North America. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging; They have been known to nest in large eucalyptus trees along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity at successful nest sites.

The nearest recorded CNDDB occurrence (EONDX 84480) is located approximately 3.0 miles west of the Project site. This record was for a Swainson's hawk nest that was monitored between 2009 and 2011. In 2009 two adults and 2 chicks were observed, in 2010 a successful nest was observed, and in 2011 an active nest was observed with 4 young fledging at the end of the breeding season. Based on aerial imagery the location of the sighting has not been disturbed and could still potentially support the species.

During the 2017 survey, no Swainson's hawks or potential nests were observed. One Swainson's hawk adult was soaring over the Project during the February 24, 2018 survey,

and there were two sightings 1.7 and 2.3 miles northwest of the Project (Figures 5-1 and 5-2). During the June 16, 2020 survey, a Swainson's hawk was observed sitting on a nest approximately 1.9 miles southwest of the BSA, and a pair of Swainson's hawks was perched in a transmission tower 3.2 miles southwest of the BSA (see Figure 5-2). During the July 16, 2020 reconnaissance survey, a juvenile Swainson's hawk was perched near that nest. QK biologists also observed adult Swainson's hawks at a neighboring proposed project in 2020, more than 4.8 miles west of the Project (see Figure 5-1).

The BSA supports suitable foraging habitat for Swainson's hawk and there are suitable nesting trees in the vicinity. This species may be present on the Project at any time as a forager or transient and may breed in the vicinity.

Townsend's big-eared bat

CORYNORHINUS TOWNSENDII

Status: CDFW Species of Special Concern

The Townsend's big-eared bat can occur throughout California in all alpine and subalpine habitats and may be found during any season. Suitable foraging habitat for Townsend's big-eared bats will likely be a heterogeneous a mosaic of forested and edge habitats, including riparian zones, which are also used for commuting and drinking (Fellers and Pierson 2002). In California, both males and females foraged along the edges of riparian vegetation dominated by Douglas-fir, California bay, and willow species, but they also avoided open grasslands both when traveling and foraging (Fellers and Pierson 2002). Townsend's big-eared bat is roosting habitat unequivocally associated with areas containing consists of caves and cave-analogs like structures for roosting habitat. Beyond the constraint for cavernous roosts, habitat associations become less well defined.

The nearest recorded CNDDB occurrence (EONDX 93183) is located approximately 2.1 miles east of the Project site. That 1942 record was for two females that were collected.

During the 2017, 2018, and 2020 surveys no Townsend's big-eared bat or diagnostic sign of Townsend's big-eared bat was observed within the BSA during the survey. Based on current site conditions There is no suitable roosting habitat present on the site but the BSA and surrounding land can provide suitable potential foraging habitat.

Loggerhead shrike

LANIUS LUDOVICIANUS

Status: CDFW Species of Special Concern

Loggerhead shrikes occur throughout North America, extending up into Canada during the breeding season and as far south as Central America during the non-breeding season (Yosef 1996). Shrikes who primarily occupy southern regions reside year-round, usually living in pairs on permanent territories. Loggerhead shrikes that occupy southern California are primarily residents and breed between January and July (Shuford and Gardali 2008).

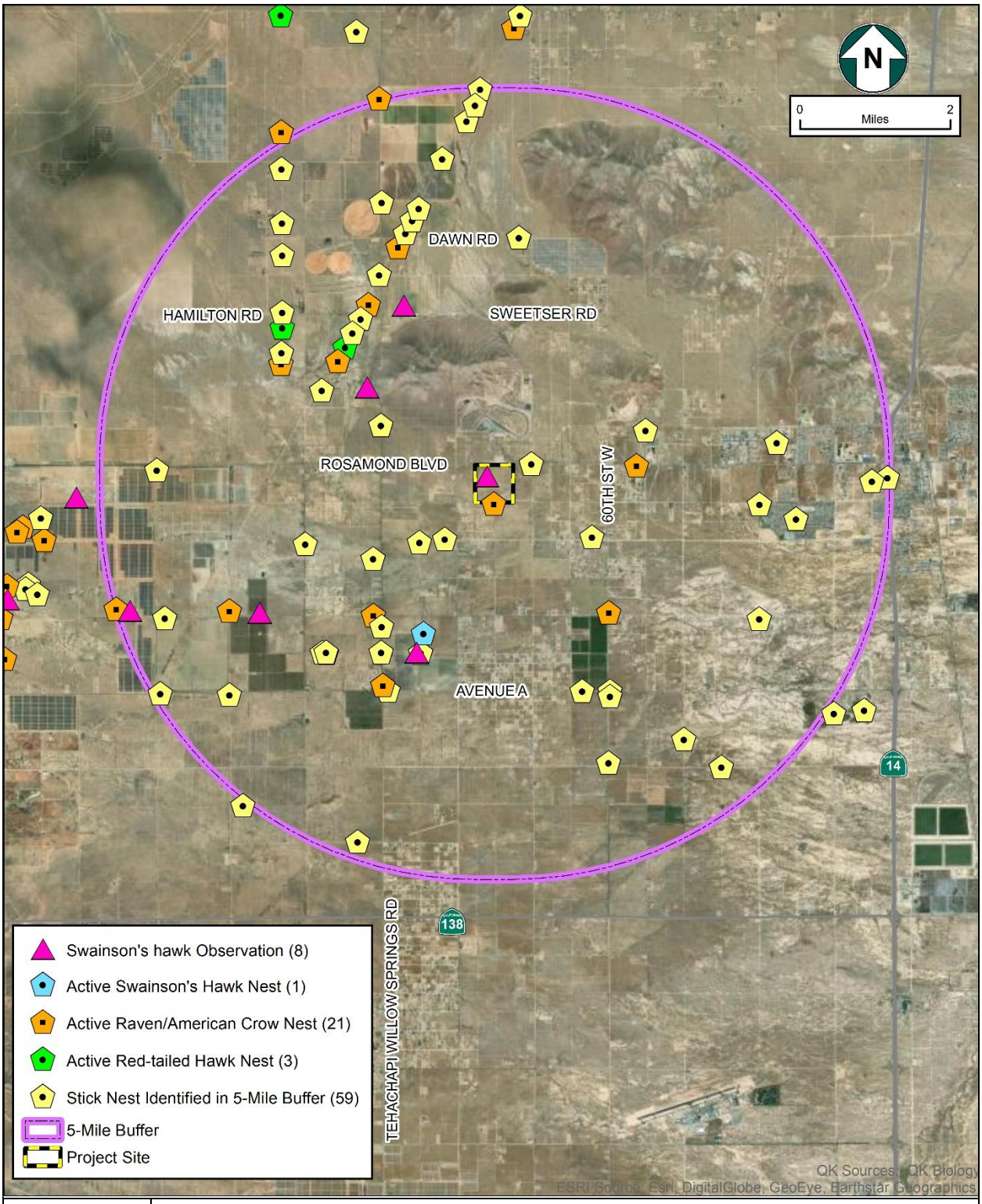


Figure 5-1
Swainson's Hawk and Bird Nest Observations
Gettysburg Solar Project
Kern County, California

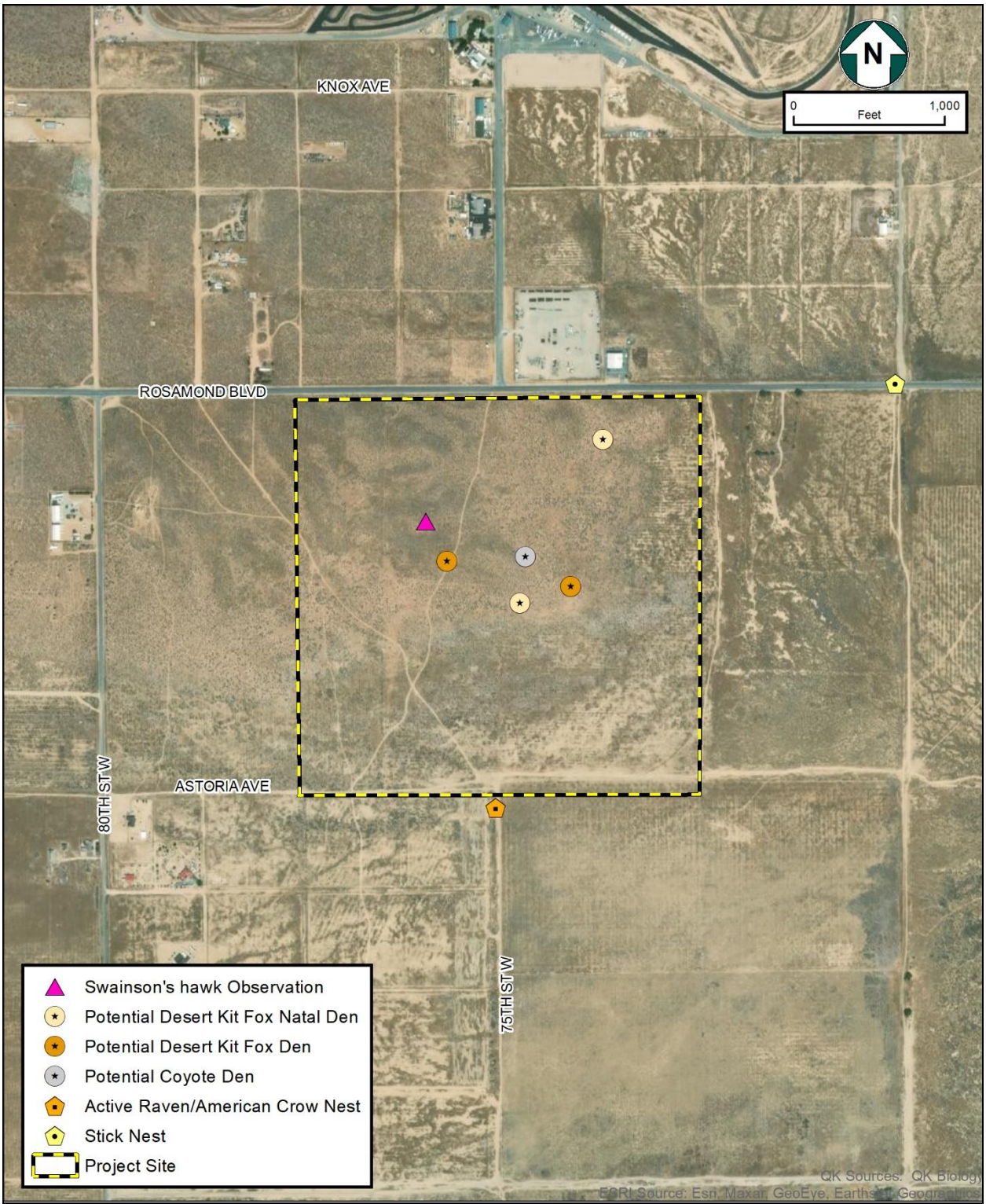


Figure 5-2
Sensitive Biological Resource Observations
Gettysburg Solar Project
Kern County, California

Ecological requirements include tall shrubs or trees for use as hunting perches, areas with short grass cover and bare ground for hunting, and large shrubs or trees for nest placement. They also need impaling sites for prey manipulation or storage.

The nearest recorded CNDDB occurrence (EONDX 82062) is approximately 4.6-miles southwest of the Project site. This 2009 record was for an observation of a brood of loggerhead shrikes. Based on aerial imagery the location of the sighting remains intact and could still potentially support the species.

No loggerhead shrike or their diagnostic sign was observed within the BSA. The alkali desert scrub habitat on the Project site could potentially support foraging loggerhead shrikes. Prey abundance for the species is present within the BSA and the species could nest in the larger saltbush shrubs present on-site or other suitable trees and shrubs outside the BSA. This species could be on-site at any time.

American badger

TAXIDEA TAXUS

Status: CDFW Species of Special Concern

The American badger is an uncommon permanent resident throughout California except in alpine habitats and in the northern North Coast (CDFG 1995). They can be found in grasslands, deserts, and drier habitats. Badgers are generally nocturnal and hunt or forage at night while spending daylight hours below ground. Normally, they have a single den entrance that is approximately 8 to 12 inches in width, in an elliptical or half-moon shape, similar to their body shape. Dens are usually found in friable soils, which are easier to dig in. American badgers spend most of their time near a den, and they may have multiple dens in an area that can be used interchangeably. American badgers are known to be able to dig a new den each night. During cooler nights the entrance to the den may be partially plugged with soil to help regulate temperatures.

American badgers primarily feed on small mammals that they capture from digging out the prey's burrows. Such prey may include pocket gophers, mice, chipmunks, and ground squirrels (CDFG 1995). Other prey may include birds, bird eggs, reptiles, invertebrates, and carrion.

The nearest CNDDB occurrence (EONDX 57489) is approximately 1.3 miles northwest of the Project site. No badgers or badger dens were observed during surveys, but the species is historically known to occur in the area and the BSA provides suitable denning and foraging habitat. American badger may become established within the BSA or pass through as a transient at any time.

LeConte's thrasher

TOXOSTOMA LECONTEI

Status: CDFW Species of Special Concern, USFWS Bird of Conservation Concern

The LeConte's thrasher is a local resident in southern California deserts, primarily in desert wash, desert scrub, and desert succulent shrub habitats (Zeiner et al. 1990). They forge on the ground, feeding on a variety of insects, arthropods, seeds, small lizards, and other small vertebrates. They nest in shrubs or cacti in desert wash habitat. The LeConte's thrasher is not migratory, and it mates in pairs for life (USFWS 1998). Their nest building begins in late December to January in dense, well-formed saltbush or other dense, thorny shrubs or trees. This species lays three to four eggs and can have up to three broods per year.

Only the San Joaquin Valley population of LeConte's thrasher is considered a State Species of Special Concern, but the species is tracked in the CNDDB regardless of population. The species is considered a federal Bird of Conservation Concern.

No LeConte's thrasher was observed within the BSA. The alkali desert scrub habitat within the BSA could potentially support foraging LeConte's thrasher. Prey abundance for the species is present in the BSA and the species could forage in this habitat. The species could nest in the larger saltbush shrubs present on-site or other suitable trees and shrubs outside the BSA. It is possible for the species to be on-site at any time.

Desert kit fox

VULPES MACROTIS ARSIPUS

Status: None

Although this species is not a protected species, it is considered to be fully protected by the CDFW because of a clause prohibiting the "take" of this species in the California Fish and Game Code (§460) relating to issuance of permits for trapping furbearers. Desert kit foxes are found in the southeastern deserts of California and occur most often in open desert, creosote bush flats, and sand dunes (NPS 2019). Desert kit foxes use subterranean dens year-round for shelter and pup-rearing. They are nocturnal but may be visible above ground near their dens during the day. They are well adapted to desert life, seldom needing to drink water, getting all their water from their diet. They feed primarily on Merriam's kangaroo rats (*Dypodomys merriami*), but also feed on black-tailed jackrabbits (*Lepus californicus*), desert cottontails (*Sylvilagus audubonii*), and various birds, lizards, and insects. Coyotes appear to be their only natural predator, although many suffer mortality due to vehicular strikes.

This species not tracked by the CNDDB, and so there are no records from near the Project site, although it is known to occur in the region. The BSA and surrounding area provide potential denning and foraging habitat. A deceased desert kit fox pup, two potential natal dens, and two potential dens were observed within the BSA (Figure 5-2). This species is relatively wide-ranging and could potentially be present within the BSA as a transient forager and as a temporary or permanent resident.

5.1.3 - OTHER PROTECTED SPECIES

Nesting Migratory Birds and Raptors

Habitat within the BSA supports nesting native bird species, which are protected by the federal MBTA and the California Fish and Game Code. All on-site surveys were conducted during the nesting bird season (February 1st to September 15th). Various species of migratory birds will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. No nesting birds were observed within the BSA but because the Project site supports several types of habitats suitable for nesting birds, it is likely that some species of migratory birds nest on the site.

There are no suitable nesting substrates for raptors on the site, except for the western burrowing owl, which has been previously discussed. Raptors may nest in the vicinity of the BSA in larger trees at rural residences and in electrical transmission structures.

Wintering Migratory Birds and Raptors

Habitat within the BSA could support winter migratory bird and raptor species, which are protected by the federal MBTA and the California Fish and Game Code. All on-site surveys were conducted outside of the wintering season, but winter foraging birds and raptors are known to be present in the vicinity. Potentially occurring winter migratory birds include long-billed curlew (*Numenius americanus*), whimbrel (*Numenius phaeopus*), white-faced ibis (*Plegadis chihi*), among others. Potentially occurring winter foraging raptors include ferruginous hawk (*Buteo regalis*), merlin (*Falco columbarius*), prairie falcon (*Falco mexicanus*), and others. Because the Project site could provide foraging opportunities for these species it is likely that these and other raptors may be present from time to time as transient foragers during the winter migratory period.

5.2 - Sensitive Natural Communities

5.2.1 - SENSITIVE PLANT COMMUNITIES

The database and literature review identified two sensitive plant communities occurring within 10-miles of the Project site; Valley Needlegrass Grassland and Wildflower Field. The nearest CNDDB occurrence for Valley Needlegrass Grassland (EONDX 13582) and Wildflower Field (EONDX 7494) is approximately 10 miles southwest of the Project. These occurrences are recorded within the Antelope Valley California Poppy Reserve. Grass species present within the BSA are non-native *Hordeum* and *Bromus* species and while wildflower species do occur in scattered patches within the BSA they do not occur in an uninterrupted plain that would be classified as a sensitive natural community. No sensitive plant community occurs within the BSA and the BSA has been historically disturbed by OHVs and pedestrian traffic.

5.2.2 - CRITICAL HABITATS

The Project does not overlap with any federally designated critical habitats (Figure 5-3; USFWS 2020b). Critical habitat for California condor (*Gymnogyps californianus*) is approximately 15 miles west of the Project site in the Sierra Nevada Mountains and the Transverse Range.

5.3 - Jurisdictional Aquatic Resources

A formal delineation of waters of the U.S. and waters of the State was not conducted for this Project because a delineation was not warranted. A search of the NHD and NWI databases showed that there are no jurisdictional waterways or wetlands within the BSA (Figure 4-2, USGS 2020a, USFWS 2020c). No temporary or permanent bodies of water or waterways were found during the on-site field examinations and do not occur within the BSA.

5.4 - Wildlife Movement

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site lies just east of a recognized wildlife connectivity area as mapped by the California Essential Habitat Connectivity Project (Spencer et al. 2010, Figure 5-4). This corridor is not based upon any specific wildlife species but instead has been added as an overall essential pathway to ensure connectivity throughout California. The corridor in its entirety is approximately 24 miles wide and connects the Tehachapi Mountains in the north to the San Gabriel Mountains to the south.

The project site is within the vicinity of the Pacific Flyway, a significant avian migration route. The presence of migratory bird species within the vicinity of the project site is recognized due to the proximity to the Pacific Flyway (QK, 2020).

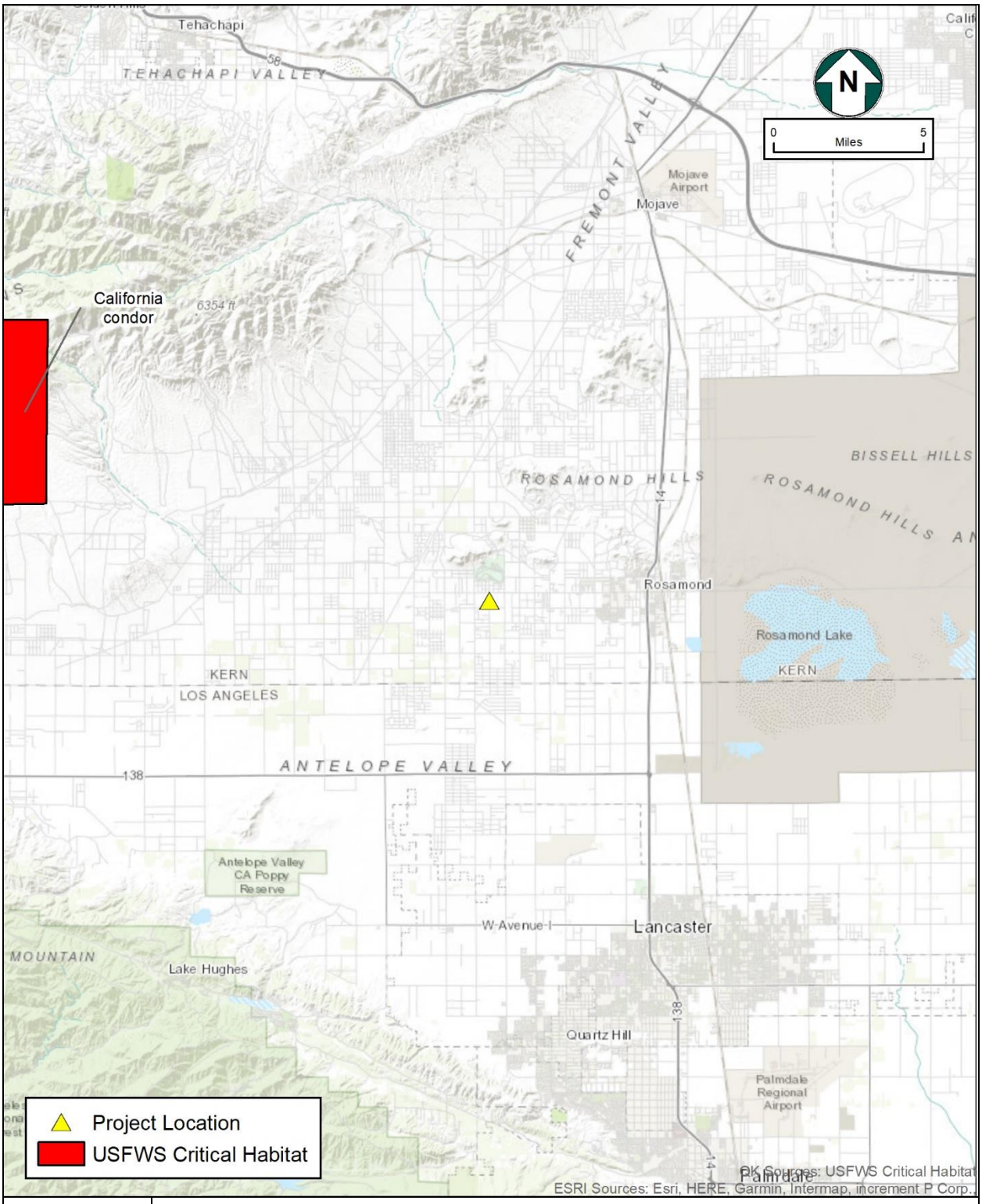


Figure 5-3
Critical Habitat in the Project Vicinity
Gettysburg Solar Project
Kern County, California

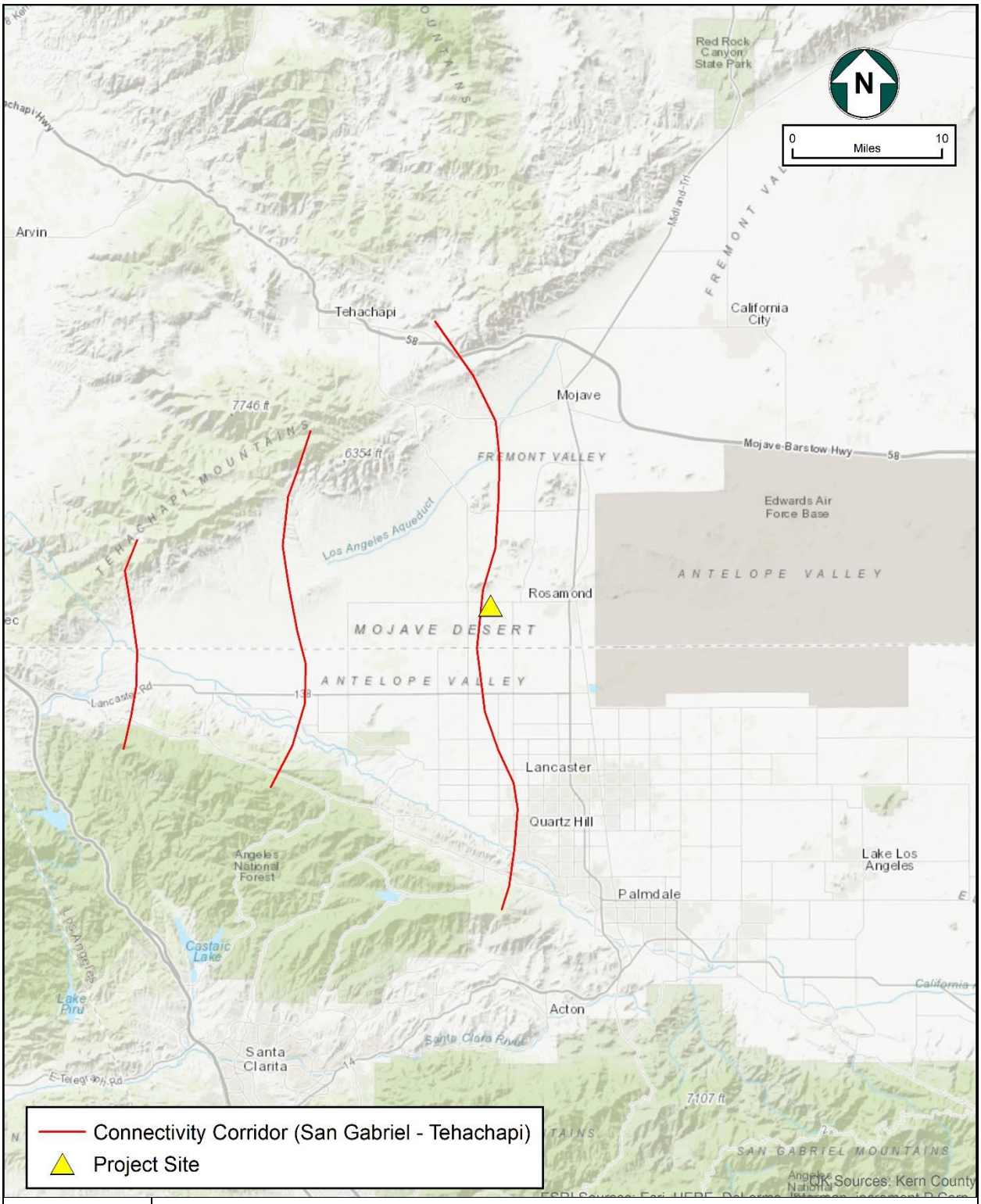


Figure 5-4
Linkages and Corridors in the Project Vicinity
Gettysburg Solar Project
Kern County, California

5.5 - Resources Protected by Local Policies and Ordinances

The Kern County General Plan contain policies aimed at the preservation of biological resources and promotes coordination with federal and State resource agencies (Kern County 2009). These policies are listed in Appendix B. The Kern County General Plan also outlines implementation measures by which to uphold these policies, including a biological resource review for proposed projects and cooperation with wildlife agencies regarding these projects.

5.6 - Habitat Conservation Plans

The Project is not within the boundaries of any Habitat Conservation Plan (HCP).

SECTION 6 - IMPACT ANALYSIS AND AVOIDANCE AND MINIMIZATION MEASURES

This section provides an analysis of the potential for sensitive biological resources to be impacted by the Project. The analysis was developed using the CEQA Appendix G questions, but also provides enough information to support National Environmental Policy Act (NEPA) documentation if needed. This section contains species-specific avoidance and minimization measures applicable to the protection of species and other biological resources. Because this project will be approved through an amendment to the AV Apollo Solar Project, measures are adopted from that Project's Final Mitigation Monitoring and Reporting Plan (MMRP) and are not detailed in this BAR. Although some measures in that plan are not specified below because they do not apply to individual resources (e.g., Mitigation Measure MM 4.4-9 – Raven Management Plan), all measures in the MMRP are understood to be incorporated as needed. With all measures adopted and implemented, any impacts resulting from this Project would not exceed those anticipated to occur from the AV Apollo Solar Project.

6.1 - Special-Status Species

The proposed project would have a significant effect on biological resources if it would:

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.*

6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

No special-status plant species were found to occur on the Project site or within the BSA, but two special-status plant species have potential to occur within the BSA; the alkali mariposa lily and recurved larkspur. These species are discussed below.

Alkali Mariposa Lily

Alkali mariposa lily was not found to occur on the Project site or within the BSA and it is unlikely to occur because of the high levels of disturbance that have occurred. Nonetheless, there is a slight possibility that there could be isolated individuals of this species present. If present, direct impacts could include the destruction or injury of individuals of the plant species. Spread of dust during construction could also cause an impact to individuals outside of the Project footprint but within the BSA. Indirect impacts could occur through the spread of invasive, non-native species, but such species are already prevalent within the Project footprint. Implementation of Mitigation Measure MM 4.4-1, MM 4.4-4, and MM 4.4-6 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, with Mitigation Measures MM 4.4-1 and MM 4.4-6 expanded to include the alkali mariposa lily, would reduce any impacts to the species to a less than significant level.

Recurved Larkspur

The recurved larkspur was not found to occur on the Project site or within the BSA and it is unlikely to occur because of the high levels of disturbance that has occurred. Nonetheless, there is a slight possibility that there could be isolated individuals of this species present. If present, direct impacts could include the destruction or injury of individuals of the plant species. Spread of dust during construction could also cause an impact to individuals off the project footprint but within the BSA. Indirect impacts could occur through the spread of invasive, non-native species, but such species are already prevalent within the Project footprint. Implementation of Mitigation Measure MM 4.4-1, MM 4.4-4, and MM 4.4-6 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, with Mitigation Measures MM 4.4-1 and MM 4.4-6 expanded to include the recurved larkspur, would reduce any impacts to the species to a less than significant level.

6.1.2 - PROJECT IMPACTS TO SPECIAL-STATUS ANIMAL SPECIES

No special-status species were found to occur on the Project site or within the BSA during the on-site survey, but seven special-status wildlife species have potential to occur within the BSA from time to time including the western burrowing owl, Swainson's hawk, Townsend's big-eared bat, loggerhead shrike, American badger, LeConte's thrasher, and desert kit fox. These species are discussed below.

Western Burrowing Owl

There is no evidence that the western burrowing owl is present within the BSA. There were only a few potential small mammal burrows present, indicating a low potential for nesting and foraging. The Alkali desert scrub and urban habitat types provide some foraging habitat but there is no evidence that those areas are being used by the burrowing owl. Because the species is present in the region year-round it is possible for a transient burrowing owl to occur on-site at any time and it is possible that a burrowing owl burrow could be created onsite or within the BSA. Potential direct impacts to the burrowing owl could include crushing or destroying a burrow with a burrowing owl inside, altering the daily behaviors of individual owls and effect foraging activities or rearing of young caused by noise and vibration from the Project construction activities. Similar indirect impacts could occur to owls residing near the Project footprint within the BSA. Implementation of Mitigation Measures MM 4.4-5, MM 4.4-6, MM 4.4-7, MM 4.4-8, and MM 4.4-10, in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to the species to a less than significant level.

Swainson's Hawk

The BSA does not contain suitable nesting habitat for Swainson's hawk and with only a few small mammal burrows onsite, there is minimal foraging opportunities. Nesting Swainson's hawks are present approximately 1.9 miles southwest of the BSA, but they are far enough away that construction activities would not likely alter their normal behaviors. Implementation of Mitigation Measures MM 4.4-5, MM 4.4-6, MM 4.4-7, MM 4.4-8, and MM

4.4-12, in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to the species to a less than significant level.

Townsend's big-eared bat

There is no evidence that the Townsend's big-eared bat is present within the BSA, but potential foraging habitat exists in the vicinity of the BSA. Because this species is highly mobile, this species may be present on the site as a transient forager. This species is extremely sensitive to human disturbance but because there is no suitable roosting habitat direct impacts to individuals are not expected and indirect impacts would not be substantial. No measures are warranted.

Loggerhead shrike

There is no evidence that the loggerhead shrike is present within the BSA. However, the alkali desert scrub habitat could, from time to time, potentially support foraging loggerhead shrikes. Prey abundance for the species is present within the BSA and potential nesting habitat located outside of the BSA. Direct impacts could include loss of foraging habitat and interruption of nesting behavior, although the species is not expected to nest on the Project site. Implementation of Mitigation Measures MM 4.4-5, MM4.4-6, MM4.4-12, and MM 4.4-13 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to the species to a less than significant level.

American Badger

There is no evidence that the American badger is present within the BSA, but potential denning and foraging habitat exists in the vicinity of the BSA. Because this species is highly mobile, it could be present on the site as a transient forager at any time. Direct impacts could include injury or death of individuals, entrapment in trenches or pipes, and loss of foraging and denning habitat. Construction activities could result in crushing or destroying a den with a badger inside. If badgers are present during construction, noise, vibration, and the presence of construction workers could alter normal behaviors and affect reproductive success. Implementation of Mitigation Measures MM 4.4-5, MM 4.4-6, MM 4.4-7, MM 4.4-8, and MM 4.4-11 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to the species to a less than significant level.

LeConte's Thrasher

There is no evidence that the LeConte's Thrasher is present within the BSA, however the alkali desert scrub habitat occurring on the Project site could potentially support foraging loggerhead shrikes. Prey abundance for the species is present within the BSA. Direct impacts could include loss of foraging habitat and interruption of nesting behavior. Implementation of Mitigation Measures MM 4.4-5, MM 4.4-6, MM 4.4-12, and MM 4.4-13 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to the species to a less than significant level.

Desert Kit Fox

There is positive evidence that the desert kit fox can occur within the BSA. The BSA provides suitable denning and foraging habitat and this species could be present at any time. Direct impacts resulting in injury, death, or entrapment in trenches or pipes could occur if a fox travels into the construction area. Construction activities could result in crushing or destroying a den with a kit fox inside. Noise, vibration, and the presence of construction workers may alter normal behaviors, which could affect reproductive success. Implementation of Mitigation Measures MM 4.4-5, MM 4.4-6, 4.4-7, 4.4-8, and 4.4-11 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to the species to a less than significant level.

Nesting Migratory Birds and Raptors

The BSA contains suitable habitat for a wide variety of nesting native bird species. Several bird species were observed on or in the vicinity of the Project site. Various species of migratory birds will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. Because the Project supports several types of habitat suitable for nesting birds, it is likely that migratory birds will nest on the Project. There were no suitable nesting sites for raptors present on the Project site. Although there were no nests observed on the Project site during the survey, Project activities adjacent to nesting birds could result in direct impacts to nests from noise and vibration caused by construction activities. Altered behaviors in nesting adults could result from construction activities and increased human presence which could lead to nest failure. Implementation of Mitigation Measures 4.4-5, 4.4-6, 4.4-12, and 4.4-13 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to nesting migratory bird and raptor species to a less than significant level.

Wintering Migratory Birds and Raptors

The BSA contains suitable foraging habitat for a wide variety of wintering migratory birds and raptors. Because the Project site could provide foraging opportunities for these species it is likely that these migratory birds and raptors may be present from time to time as transient foragers during the winter migratory period. Project activities could result in direct impacts in foraging behavior from noise and vibration caused by construction activities. Implementation of Mitigation Measures MM 4.4-5, MM 4.4-6, MM 4.4-12, and MM 4.4-13 in Exhibit C: Final Mitigation Monitoring and Reporting Plan (MMRP) for the AV Apollo Solar Project, would reduce any impacts to wintering migratory bird and raptor species to a less than significant level.

6.2 - Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

The Project site does not support any riparian or other sensitive natural communities, nor does it overlap with any designated critical habitat. The Project would have no impacts to these resources and no measures are warranted.

6.3 - Jurisdictional Aquatic Resources

The proposed project would have a significant effect on biological resources if it would:

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.

There are no wetlands or water features on or in the vicinity of the Project. The Project would have no impacts to jurisdictional aquatic resources and no measures are warranted.

6.4 - Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors or impede the use of wildlife nursery sites.

The project lies just outside of the easternmost portion of an identified wildlife movement corridor. The project site and surrounding area, especially to the west where the corridor is located, contain expanses of open habitat with little development. The Project would not block or substantially alter the ability of species to use the corridor. On a more local level, the most likely areas for wildlife movements would be within larger drainages, uninterrupted spans of native vegetation. The project would not result in significant impacts to localized movements of species because of extensive habitat existing within the surrounding area. The Project would not have any impacts to wildlife movement corridors and no measures are warranted.

6.5 - Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

The Project does not conflict with the Kern County General Plan and is not subject to any local ordinances protecting biological resources. Therefore, there are no impacts would occur and no measures are warranted.

6.6 - Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

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

The Project is not subject to any HCP or NCCP that is adopted within the Project boundaries, so there will be no impacts and no measures are warranted.

SECTION 7 - LIMITATIONS, ASSUMPTIONS, AND USE RELIANCE

This Biological Analysis Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are based on findings derived from on-site biological examinations, jurisdictional areas, and specified historical and literature sources. The biological investigation is limited by the scope of work performed. Biological surveys for certain taxa conducted as part of this assessment may not have been performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and would not be discovered in the future within the site. In particular, mobile animal species could occupy the site on a transient basis or re-establish populations in the future. No other guarantees or warranties, expressed or implied, are provided.

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APPENDIX A

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS FOR THE GETTYSBURG SOLAR PROJECT

Table A-1
Special-Status Species in the Regional Vicinity of the Project Site,
Gettysburg Solar Project, Kern County, California

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Sensitive Natural Communities				
Valley Needlegrass Grassland	G3 S3.1	This community consists of is a mid-height (2 feet) grassland dominated by *Nasella pulchra*, a perennial, tussock-forming grass. Native and introduced annuals occur between the bunchgrasses, and this community is usually found on fine-textured soils, moist or even waterlogged in winter, but very dry in summer.	No	No needlegrass (*Nasella pulchra*) was observed during the surveys. Most grasses on-site are non-native *Hordeum* and *Bromus* species. Nearest CNDDB occurrence (EONDX 13582) is approximately 10 miles southwest of the Project, within the Antelope Valley California Poppy Reserve.
Wildflower Field	G2 S2.2	Wildflower field.	No	Wildflower species do occur on-site but not in any sort of uninterrupted plain. Nearest CNDDB occurrence (EONDX 7494) is approximately 10 miles southwest of the Project, within the Antelope Valley California Poppy Reserve.
Plants				
Astragalus hornii var. *hornii* Horn's milk-vetch	-/- 1B.1/-	Found in meadows and seeps, playas, or lake margins. Prefers alkaline soils. Occurs between 200 and 2,790 feet. Blooms between May and October.	No	Suitable habitat absent and the species was not observed during surveys. The nearest CNDDB occurrence is approximately 1.4-miles northwest of the Project (EONDX 70405), from 1931.
Astragalus preussii var. *laxiflorus* Lancaster milk-vetch	-/- 1B.1/-	This perennial herb is found in chenopod scrub; elevation range has not been established because, so few specimens have been reported. Blooms between March and May.	No	Suitable habitat present in the less disturbed areas of the Project, but this perennial species was not observed during surveys. There are no CNDDB records within 10 miles of the Project.

Calochortus clavatus var. *gracilis* slender mariposa lily	-/- 1B.2/-	Perennial herb (bulb) that is found in chaparral, coastal scrub, and valley and foothill grassland. Occurs at elevations between 950 and 2,295 feet and blooms between March and June.	No	Suitable habitat absent and the species was not observed during surveys. There are no CNDDB records within 10 miles of the Project or in the Mojave Desert.
Calochortus striatus alkali mariposa lily	-/- 1B.2/-	Perennial herb found in alkaline meadows and ephemeral washes within chaparral, chenopod scrub, and Mojavean desert scrub. Occurs between 230 and 5,230 feet. Blooms between April and June.	Yes	There is suitable habitat for the species. The nearest CNDDB occurrence is from 2017 about 0.5-mile northeast of the Project (EONDX 85124). QK biologists observed the species in May 2020 approximately 2.7 miles southwest of the Project.
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	FC/CE 1B.1/-	This annual herb is found in sandy coastal scrub and valley and foothill grasslands at elevations between 490 and 4,000 feet. Most historical habitat has been urbanized. It blooms between April and July.	No	Suitable habitat absent and this species was not observed during surveys. There are no CNDDB records within 10 miles of the Project.
Chorizanthe parryi var. parryi Parry's spineflower	-/- 1B.1/-	Annual herb found on sandy or rocky soils in openings in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Occurs at elevations between 1,640 and 2,165 feet and blooms from April to June.	No	Suitable habitat absent and this species was not observed during surveys. There are no CNDDB records within 10 miles of the Project.
Cryptanthe clokeyi Clokey's cryptantha	-/- 1B.2/-	Occurs in rocky, sandy, or gravelly soils in Mojavean desert scrub in the northwestern Mojave Desert. Occurs between 1,970 to 4,265 feet. Blooms in April.	No	Suitable habitat present, although no *Cryptantha* species were observed during surveys. The nearest CNDDB occurrence is approximately 9.6 miles southwest miles south of the Project, within the California Antelope Valley Poppy Reserve (EONDX 79495).
Delphinium recurvatum recurved larkspur	-/- 1B.2/-	This perennial plant is commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland. It is most common on sandy or clay alkaline soils. It flowers from	Yes	Suitable habitat present. The nearest CNDDB occurrence is approximately 8.2 miles northeast of the Project from 2011 (EONDX 87537).

		March to May, and it ranges in elevation from 10 to 2,590 feet.		
Eriastrum rosamondense Rosamond eriastrum	-/- 1B.1/-	This annual herb occurs in alkaline hummocks, often sandy. Around Chenopod scrub openings and vernal pool edges. The blooming period is between April and May and it ranges in elevation from 2,296 to 2,345 feet.	No	Suitable habitat absent, only one *Eriastrum* species, *E. eremicum*, was observed on the Project, Nearest CNDDB occurrence is approximately 6.2 miles southeast of the Project (EONDX 93857).
Loeflingia squarossa var. *artemisiarum* sagebrush loeflingia	-/- 2B.2/-	Found in desert dunes, Great Basin scrub, and sandy Sonoran Desert scrub. Occurs between 2,295 and 5,300 feet. Blooms between April and May.	No	Suitable habitat absent. The nearest CNDDB record is from 1932, approximately 7,1 miles southeast of the Project (EONDX 29334).
Monardella linoides ssp. *oblonga* Tehachapi monardella	-/- 1B.3/-	Found in upper and lower montane coniferous forest, pinyon and juniper woodland. Occurs between 2,950 and 8,105 feet. Blooms between June and August.	No	Suitable habitat absent. There are no CNDDB records within 10 miles of the Project.
Navarretia fossalis spreading navarretia	FT/- 1B.1/-	This annual herb is found in chenopod scrub, marshes and swamps, playas and vernal pools. It occurs at elevations between 100 and 2,150 feet, and blooms between April and June.	No	Suitable habitat absent. There are no CNDDB records within 10 miles of the Project.
Opuntia basilaris var. *brachyclada* short-joint beavertail	-/- 1B.2/-	This perennial plant succulent is found in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Occurs at elevations between 1,395 and 5,905 feet and blooms between April and June, sometimes as late as August.	No	Suitable habitat absent, this species is conspicuous year-round, and no beavertail cacti were observed during the surveys. There are no CNDDB records within 10 miles of the Project.
Sidalcea neomexicana salt spring checkerbloom	-/- 2B.2/-	This perennial plant is commonly found in alkali springs, marshes and mesic habitats within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. It flowers from March to May, and it ranges in elevation from 50 to 5,020 feet.	No	Suitable habitat absent. There are no CNDDB records within 10 miles of the Project.

Streptanthus campestris southern jewelflower	-/- 1B.3/-	This perennial plant is found on rocky soils in chaparral, lower montane coniferous forest, and pinyon and juniper woodland. It occurs at elevations between 2,955and 7,545 feet and blooms between May and July.	No	Suitable habitat absent and the Project is outside of the typical elevation range for the species. There are no CNDDB records within 10 miles of the Project.
Invertebrates				
Bombus crotchii Crotch bumblebee	-/SC -/-	This bee occurs in relatively warm and dry sites, including the inner Coast Range of California and the margins of the Mojave Desert. It can be found in open grassland and scrub habitats. Nesting occurs underground. This species is classified as a short-tongued species, whose food plants include *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia*.	No	Suitable habitat absent. There are no CNDDB records within 10 miles of the Project.
Helminthoglypta greggi Mohave shoulderband	-/- -/-	This terrestrial snail is found on talus slopes, rock outcrops, and rock slide areas in the vicinity of Soledad Mountain in the western Mojave Desert.	No	Suitable habitat is absent. Nearest CNDDB occurrence is 6.3 miles north of the Project (EONDX 106607).
Reptiles				
Anniella pulchra northern legless lizard	-/- -/SSC	This species occurs in moist warm loose soils with vegetative cover. Is found in beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces. This species requires moisture in the soil.	No	Suitable habitat is absent. The nearest CNDDB occurrence is approximately 7.1 miles southeast of the Project (EONDX 112347).
Gopherus agassizii desert tortoise	FT/ST -/-	Prefers creosote bush habitat with annual wildflower blooms. Requires friable soils for burrow and nest construction. Occurs in most desert habitats.	No	Suitable habitat absent No sign observed during surveys. Nearest CNDDB occurrence is approximately 6.1 miles north of the Project (EONDX 76006).
Phrynosoma blanvillii coast horned lizard	-/- -/SSC	Prefers sandy/loose soils in grassland, forests, woodlands, and open chaparral; often found along sand washes and dirt roads with scattered	No	Suitable habitat and prey sources absent, no sign was observed during the survey. No CNDDB occurrences within 10 miles of the Project.

		shrubs for refuge; specialized in consuming ants; distribution includes coastal California from Baja California north to the Bay Area, southeastern desert regions, southern Central Valley flats and foothills and surrounding mounts on drier, warmer slopes; threatened by habitat loss/fragmentation and spread of invasive ant species displacing native prey; elevation from sea level to 8,000 feet.		
Birds				
Agelaius tricolor *tricolored blackbird*	-/ST -/SSC	Colonial breeder that prefers freshwater, emergent wetlands with tall, dense cattails or tules, but also thickets of willow, blackberry, wild rose, and tall herbs; breeding colonies are minimum ~50 pairs; forages in pastures, grain fields, and similar habitats near breeding areas. Occurs in densely vegetation valley and foothill grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes; favors native grasslands with a mix of grasses, forbs and scattered shrubs; loosely colonial when nesting; summer resident and breeding in west of Cascade-Sierra Nevada crest from Mendocino to Trinity counties, south to San Diego County; largely insectivorous.	No	Suitable habitat is absent. Nearest CNDDB occurrence is approximately 3.5 miles southeast of the Project (EONDX 101011).
Aquila chrysaetos golden eagle	-/- -/FP	Species typically nests in canyons on cliffs and large trees in open habitats, although it has been observed nesting on transmission towers in the Central Valley. Forages for mammalian prey in grasslands and over open areas.	Yes: foraging No: nesting	Foraging habitat present. The nearest CNDDB occurrence is approximately 2.5 miles west of the Project (EONDX 88699).

Athene cunicularia burrowing owl	BCC/- -/SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Yes	Suitable nesting and foraging habitat present. Nearest CNDDB occurrence is approximately 0.7-mile northwest of the Project (EONDX 82042).
Buteo regalis ferruginous hawk	BCC/- -/WL	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, and agricultural areas; requires adjacent suitable foraging habitat such as grasslands, alfalfa or grain fields supporting rodent populations.	Yes: winter foraging No: nesting	Suitable foraging habitat present but this species does not nest in Southern California. Nearest CNDDB occurrence is approximately 2.8 miles north of the Project (EONDX 84500).
Buteo swainsoni Swainson's hawk	-/ST -/-	Occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley; hawks may be resident or migrant; breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; also observed breeding in large eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture; may nest on ground if no suitable trees are available; nests are platform of sticks, bark, and fresh leaves at or near top of trees; breeds from late March to late August; forages in grassland, open scrub, and grain fields, primarily for rodents.	Yes	Suitable foraging habitat present, an individual was observed during the 2018 survey, and an active nest was observed approximately 1.9 miles southwest of the Project during the 2020 survey. There is no nesting habitat on-site. The nearest CNDDB occurrence documents a nest approximately 3 miles west of the Project in 2011 (EONDX 84480).
Charadrius alexandrines nivosus western snowy plover	FT/- -/SSC	This species occurs along sandy beaches, salt pond levees and shores of large alkali lakes. Frequent habitats include standing waters in the Great Basin, sandy beach shores, and wetlands. It needs sandy, gravelly or friable soils for nesting.	No	Suitable habitat absent. The nearest CNDDB occurrence is approximately 8.5 miles east of the Project (EONDX 5474) at Rosamond Lake.
Charadrius montanus mountain plover	BCC/- -/-	Species occurs in short grasslands, freshly plowed fields, newly sprouting grain fields and sod farms. Prefers	No	Suitable habitat absent. The nearest CNDDB occurrence is approximately

		short vegetation, bare ground, flat topography, grazed areas, and areas with burrowing rodents. The species does not breed in California		3.1 miles southwest of the Project (EONDX 85833).
Falco columbarius merlin	-/- -/WL	Species typically nests in forests adjacent to open habitats. Occurs within California primarily as a migrant. Typically forages in open forests and grasslands.	Yes: winter forager No: nesting	The species does not breed in California, but the Project supports suitable foraging habitat and the species may occur as a transient. The nearest CNDDB occurrence is approximately 5.3 miles southeast of the Project (EONDX 66818).
Falco mexicanus prairie falcon	-/- -/WL	Occurs in open plains, grasslands, shrub-steppe, deserts, and other open areas of the West. In winter, may forage in cultivated fields and desert scrub. Usually nests on cliffs, though trees, or transmission line support structures may be used.	Yes: foraging No: nesting	Suitable foraging habitat present in the Project area, and nests could potentially be built on transmission towers or trees on or near the Project. The nearest CNDDB occurrence is 1.3 miles northeast of the Project, from 1978 (EONDX 26021).
Gymnogyps californianus California condor	FE/SE -/FP	Species inhabits rocky shrublands, coniferous forests, and oak savannas, often near cliffs or large trees, used as nesting sites. Forages in open grasslands, potentially far from nesting sites. Nests in cliff cavities and large trees, typically at elevations between 2,000 and 6,500 feet in elevation.	Yes: foraging No: nesting	May disperse through the Project area but there is no suitable nesting habitat. No CNDDB records within 10 miles of the Project.
Haliaeetus leucocephalus Bald eagle	-/SE -/FP	This species typically nests in forested areas adjacent to large bodies of water, staying away from heavily developed areas when possible. It may congregate for feeding around fish processing plants, dumps, and below dams where fish concentrate. For perching, it prefers tall, mature coniferous or deciduous trees that afford a wide view of the surroundings. It nests in tall, sturdy conifers that protrude	No	May disperse through the Project area but no suitable foraging or nesting habitat. No CNDDB records within 10 miles.

		above the forest canopy, providing easy flight access and good visibility.		
Lanius ludovicianus loggerhead shrike	-/- -/SSC	Common resident in lowlands and foothills throughout California; prefers open grassland/pasture habitats with scattered trees, fence posts, utility lines, shrubs, and other perches; primarily consumes large insects but will predator other small animals; nests in densely-foliaged shrub or tree less than 50 feet above ground.	Yes	Suitable foraging and nesting habitat present in the Project area. Nearest CNDDB record is approximately 4.6 mile southwest of the Project (EONDX 82062).
Limosa fedoa Marbled godwit	BCC/- -/-	This migratory species is a rare winter visitor to inland California, typically remaining on the coasts and associated riverine systems. They will occasionally roost at salt ponds during migration and in overwintering range.	No	Suitable habitat is absent from the Project. This species does not breed in California. The CNDDB does not track this species.
Numenius americanus Long-billed curlew	BCC/- -/-	Winter visitor to coastal California, Central Valley, Imperial Valley, and other scattered areas in the state. Breeds in shortgrass or mixed grass prairie and winters on sandy beaches, coastal mudflats, estuaries, inland wetlands, grasslands, flooded row crop fields, and large ponds. Feeds on invertebrates, fish or bird eggs, and nestlings.	No	Suitable habitat is absent from the Project. Individuals observed flocking over east end of Project during early April survey. The CNDDB does not track this species.
Numenius phaeopus whimbrel	BCC/- -/-	Winter visitor to coastal California and may migrate through interior California in the spring. During migration, will stopover and forage in meadows, fields, sandy beaches, estuaries, etc., typically roosting at night in shallow water. Overwintering habitat typically consists of tidal mudflats and more terrestrial habitats during high tide. Main foods are	No	Suitable habitat is absent from the Project. The CNDDB does not track this species.

		aquatic invertebrates, fish, some insects and berries.		
Plegadis chihi white-faced ibis	-/- -/WL	Migratory wading bird that does not regularly breed in California any longer and is more often an uncommon summer resident at some Southern California localities. Is more widespread during migration. Forages in emergent wetlands, wet meadows, and flooded pastures and croplands. Nests colonially in dense fresh emergent wetland.	No	Suitable habitat is absent from the Project. The nearest CNDDB occurrence is at some ponds approximately 9.2 miles southeast of the Project in August 1998 (EONDX 65966).
Selasphorus rufus rufous hummingbird	BCC/- -/-	This species migrates through California between its wintering grounds in Mexico and breeding grounds in the Pacific northwest. Found in a wide variety of habitats that provide nectar-producing flowers, including valley foothill woodlands, riparian, chaparral, and planted gardens.	No	Suitable foraging habitat is absent from the Project, the species does not breed in Southern California. The CNDDB does not track this species.
Spinus lawrencei Lawrence's goldfinch	BCC/- -/-	Semi-migratory in California, in the foothills surrounding the Central Valley and along the southern Coast Range. Preferred habitat is open oak or other arid woodland and chaparral near a water source. Will also use riparian woodland, chaparral, and rural residential areas near weedy fields and water sources. Nests are built in forks of oaks, conifers, or other deciduous trees. Diet consists almost exclusively of seeds and grains.	No	Habitat to support this species is absent from the Project site. The CNDDB does not track this species.
Toxostoma lecontei LeConte's thrasher	BCC/- -/SSC	Non-migratory species that occurs in the southwestern U.S. and northwestern Mexico; has been observed in the Central Valley from Fresno to Kern County and west to San	Yes	Suitable habitat for nesting and foraging is present in the Project area. The nearest CNDDB occurrence is 3.6 miles northwest of the Project (EONDX 65727).

		Luis Obispo County, but range largely restricted to Kern County by land development. Typical habitat is desert scrub, alkali desert scrub, and desert washes, and nests are built in dense spiny shrubs or branched cacti.		
Vireo belli pusillus least Bell's vireo	FE/SE -/ -	Migratory songbird that breeds in riparian areas, primarily in Southern California and northern Baja California. Typical habitat includes willow-dominated woodland or scrub that exist next to a stream or river. Nests are built in forks trees or shrubs. Diet consists almost exclusively of insects and spiders.	No	Suitable habitat is absent from the Project. No CNDDB records within 10 miles.
Mammals				
Corynorhinus townsendii Townsend's big-eared bat	-/- -/SSC	Species utilizes a wide variety of habitats including desert scrub. Most common in mesic habitats. Roosts in mines, caves, hollow trees, or abandoned buildings. Extremely sensitive to roost disturbance.	Yes	The species may forage on the Project but there is no suitable roosting habitat. Nearest CNDDB occurrence is from a mine approximately 2.1 miles east of the Project (EONDX 93183).
Lasiurus cinereus hoary bat	-/- -/-	Can be found anywhere in California from sea level to 13,200 feet; winters on coast and in southern California; breeds inland and north of winter range; bear young in woodlands and forests; feeds primarily on moths; roosts in dense foliage of medium-large trees; requires water; prefer open habits or habitat mosaics; maternity season from mid-May through early July; forages with other bat species; high incidence of rabies	No	The species may forage on the Project but there is no suitable roosting habitat. No CNDDB records within 10 miles.
Onychomys torridus tularensis Tulare grasshopper mouse	-/- -/SSC	This species occurs in hot, arid valleys and scrub deserts in the southern San Joaquin Valley, typically in shrubland communities. This includes blue oak	No	Suitable habitat is absent from the Project. Nearest CNDDB occurrence is approximately 8.5 miles

		woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations, and grasslands associations on the margins of the San Joaquin Valley and Carrizo Plain region. Its diet is almost exclusively composed of arthropods, so habitat must supply an abundance of insects.		northwest of the Project (EONDX 94163).
Perognathus alticola inexpectatus Tehachapi pocket mouse	-/- -/SSC	Species is not well studied. Species generally found in grasslands, chaparral and sage scrub, Joshua tree woodland, and pinyon-juniper woodland from the Tehachapi pass and westward toward Mount Pinos, south to Quail Lake, at elevations between 3,400 and 6,000 feet.	No	Suitable habitat present but the Project is outside of the recognized geographic and elevation range for the species. Nearest CNDDB occurrence is approximately 7.3 miles northwest of the Project (EONDX 93838).
Perognathus inornatus San Joaquin pocket mouse	-/- -/-	Occurs in dry, open grasslands or scrublands on fine-textured soils in the Central (mostly west side) and Salinas valleys; elevation from 1,100 to 2,000 feet; feeds primarily on seeds; digs burrows for cover and breeding; nocturnal.	No	Project site is out of the species occurrence range. Nearest CNDDB occurrence is approximately 7.3 miles northwest of the Project (EONDX 93993).
Taxidea taxus American badger	-/- -/SSC	Occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils; feeds mostly on fossorial rodents; digs burrows for cover and reproduction; can dig new den each night; litters born mostly in March and April; somewhat tolerant of human activities but avoids cultivated agricultural habitats.	Yes	Suitable habitat is present on the Project. Nearest CNDDB occurrence is approximately 1.3 miles northwest of the Project (EONDX 57489).
Vulpes macrotis arsipus desert kit fox	-/- -/-	This species occurs on open desert, creosote bush flats, and sand dunes. Species preys on kangaroo rats, black-tailed jackrabbits, birds, reptiles, and insects. They are nocturnal and will forage near the den during the evening.	Yes	There is suitable habitat on the Project and several potential dens were found during the survey. The CNDDB does not track this species.

Xerospermophilus mohavensis Mohave ground squirrel	-/ST -/-	Endemic to the Mojave desert, this species inhabits open desert scrub, alkali scrub, and Joshua tree woodland, and annual grassland. Prefers sandy to gravelly soils, where it digs burrow systems at the base of shrubs for cover. Active during the day in the spring and early summer and aestivates for the remainder of the year. Preferred food sources include Joshua trees, shrubs of Chenopodaciacae, and native forbs. Populations west of State Route 14 appear to be extirpated.	No	Project site is out of the species occurrence range. Nearest CNDDB occurrence is approximately 5.6 miles east of the Project (EONDX 7874).

CRPR (California Rare Plant Rank):
- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:
- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Fairly endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened)

FE	Federally Endangered
FT	Federally Threatened
FC	Federal Candidate Species
BCC	Federal Bird of Conservation Concern
SE	State Endangered
ST	State Threatened
SC	State Candidate
SS	State Sensitive
SSC	State Species of Special Concern
SFP	State Fully Protected
WL	Watch List

APPENDIX B

REGULATORY SETTING
GETTYSBURG SOLAR PROJECT

Regulatory Setting

Federal Laws and Regulations

Federal Endangered Species Act of 1973 (USC, Title 16, Sections 1531 -1543)

The federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend (USFWS 1973). The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, 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 of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and

biological features) essential to the conservation of the species, thus warranting special management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

MIGRATORY BIRD TREATY ACT (USC, TITLE 16, SECTIONS 703 - 711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

Bald and Golden Eagle Protection Act of 1940 (USC, Title 16, Section *668)*

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucoephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

FEDERAL CLEAN WATER ACT (USC, TITLE 33, SECTIONS 1521 - 1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Applicable State Laws and Regulations

California Environmental Quality Act (California Public Resources Code, Sections 21000 - 21178, and Title 14 CCR, Section 753, and Chapter 3, Sections *15000 - 15387)*

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposed of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the "fully mitigate" standard of CESA, and other applicable conditions.

Porter-Cologne Water Quality Control Act

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss

of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

VARIOUS SECTIONS OF THE CALIFORNIA STATE AND FISH AND GAME CODE

Section 460 and Sections 4000-4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

Sections 1600 through 1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports of has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

Sections 3511, 4700, 5050, and 5515

The protection of fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statues prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

Sections 1900 through 1913 - Native Plant Protection Act

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local and Regional Laws, Regulations, and Policies

COUNTY OF KERN GENERAL PLAN

The County of Kern General Plan identifies the federal, State, and local statutes, ordinances, and policies that govern the conservation of biological resources that must be considered by Kern County during the decision-making process for any Project that could affect biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that the element provides for a variety of land uses for future economic growth while also ensuring the conservation of the County's agricultural, natural, and resource attributes. Section 1.10, "General Provisions," provides goals, policies, and implementation measures that apply to all types of discretionary Projects. In addition, the Kern County General Plan includes specific policies for threatened and endangered species.

Table 1
Chapter 1 – Land Use, Open Space, and Conservation Element

Goal	
Goal 1:	Ensure that the County can accommodate anticipated growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.
Policies	
Policy 27:	Threatened or endangered plant and wildlife species should be protected in accordance with State and Federal laws. Threatened or endangered plant and wildlife species should be protected in accordance with State and Federal laws.
Policy 28:	The County should work closely with State and Federal agencies to assure that discretionary Projects avoid or minimize impacts on fish, wildlife, and botanical resources.
Policy 29:	The County will seek cooperative efforts with local, State, and Federal agencies to protect listed threatened and

	endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.
Policy 30:	The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and Federal programs concerning endangered species conservation issues.
Policy 31:	Under the provision of CEQA, the County, as leady agency, will solicit comments from the CDFW and USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.
Policy 32:	Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological recreational, and other beneficial uses while acknowledging existing land use patterns.
Implementation Measures	
Measure Q:	Discretionary Project shall consider effects to biological resources as required by CEQA.
Measure R:	Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary Project subject to CEQA. Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary Project subject to CEQA.
Measure S:	Pursue the development and implementation of conservation programs with State and federal wildlife agencies for property owners desiring streamlines endangered species mitigation programs.
1.10.5 Threatened and Endangered Species	
Policy COS. 27:	Threatened or endangered plant and wildlife species should be protected in accordance with state and federal laws.
Policy COS. 28:	The County should work closely with state and federal agencies to assume that discretionary Projects avoid or minimize impacts on fish, wildlife, and botanical resources.
Policy COS. 29	The County will seek cooperative efforts with local, state, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.
Policy COS. 30:	The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and federal

	programs concerning endangered species conservation issues.
Policy COS. 31:	Under the provisions of CEQA, the County, as lead agency, will solicite comments from the CDFG and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or EIR) is prepared.
Policy COS. 32:	Riparian areas will be managed in accordance with the USACE and the CDFG rules and regulations to enhance the drainage, flood control, biological recreational, and other beneficial uses while acknowledging existing land use patterns.
Implementation Measures	
Measure Q:	Discretionary Projects shall consider effects to biological resources as required by CEQA.
Measure R:	Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary Project subject to CEQA.

Source: (Kern County, 2009)

DRAFT WEST MOJAVE HABITAT CONSERVATION PLAN

The Gettysburg Project is within the planning area of the West Mojave Habitat Conservation Plan (WMP), which drives land use decisions on Bureau of Land Management (BLM) land in the Mojave Desert even though the plan has not yet been officially adopted. The Gettysburg Project is located on private land and is not subject to the jurisdiction of the BLM or the West Mojave Plan.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

The California Energy Commission (CEC), CDFW, BLM, and USFWS prepared the Desert Renewable Energy Conservation Plan (DRECP), which was finalized in 2016. The DRECP plan area encompasses the Mojave and Colorado Desert regions in California, including all or a portion of Kern, Los Angeles, San Bernardino, Inyo, Riverside, Imperial, and San Diego counties.

The DRECP is a joint State and federal NCCP and part of one or more HCPs that are intended to provide for effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy Projects. It is anticipated to provide long-term endangered species permit assurances to renewable energy developers and provide a process for conservation funding to implement the DRECP. It would also serve as the basis for one or more HCPs under the FESA. The final plan is still in the development stage and has not been adopted by any agency.

APPENDIX C

REPRESENTATIVE PHOTOGRAPHS OF THE *GETTYSBURG SOLAR PROJECT SITE*



Photograph 1: Southeast corner of Project site, facing north.
GPS Coordinates: 34.856782˚N, -118.260190˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 2: Northeast corner of Project site, facing southwest towards the center.
GPS Coordinates: 34.863493˚N, -118.260020˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 3: Northwest corner of Project site, facing southeast towards the center.
GPS Coordinates: 35.863447˚N, -118.268964˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 4: Southwest corner of Project site, facing northeast towards the center.
GPS Coordinates: 35. 856363˚N, -118.268766˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 5: Center of Project site, facing north.
GPS Coordinates: 35.859777˚N, -118.263132˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 6: Center of Project site, facing east.
GPS Coordinates: 35.859777˚N, -118.263132˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 7: Center of Project site, facing south.
GPS Coordinates: 35.859777˚N, -118.263132˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 8: Center of Project site, facing west.
GPS Coordinates: 35.859777˚N, -118.263132˚W.
Photograph taken by Shannon Gleason on June 16, 2020.



Photograph 9: Potential desert kit fox natal den, with six entrances (one of six).
GPS Coordinates: 35.859777˚N, -118.264076˚W.
Photograph taken by Erica Pena on June 16, 2020.



Photograph 10: Potential desert kit fox tracks outside of potential den.
GPS Coordinates: 35.859777˚N, -118.264076˚W.
Photograph taken by Erica Pena on June 16, 2020.



Photograph 11: Potential coyote den with four entrances (one of four).
GPS Coordinates: 35.860606˚N, -118.263934˚W.
Photograph taken by Erica Pena on June 16, 2020.



Photograph 12: Deceased desert kit fox pup
GPS Coordinates: 35.859777˚N, -118.264076˚W.
Photograph taken by Erica Pena on June 16, 2020.

APPENDIX D

PLANT AND ANIMAL SPECIES OBSERVED WITHIN THE BIOLOGICAL STUDY AREA
GETTYSBURG SOLAR PROJECT

Table D-1
Plant Species Observed within the Biological Study Area.
Gettysburg Solar Project, Kern County, California

Scientific Name	Common Name	Native or Introduced	Year
Shrubs			
Ambrosia dumosa	burro bush	Native	2017, 2018, 2020
Ambrosia salsola	cheese brush	Native	2018
Artemisia spinescens	budsage	Native	2017, 2018
Atriplex polycarpa	Allscale saltbush	Native	2017, 2018, 2020
Ericameria nauseosa	rubber rabbitbrush	Native	2017, 2018, 2020
Eriogonum fasciculatum	California buckwheat	Native	2017
Larrea tridentata	creosote bush	Native	2017, 2018, 2020
Herbs			
Amsinckia intermedia	common fiddleneck	Native	2017, 2018, 2020
Astragalus lentiginosus	Freckled milk vetch	Native	2018, 2020
Brassica nigra	black mustard	Introduced	2017, 2018, 2020
Chenopodium album	Lamb's quarters	Introduced	2017, 2020
Croton setiger	turkey-mullein	Native	2017, 2018, 2020
Cryptantha sp.	cryptantha	Native	2018
Datura wrightii	Jimsonweed	Native	2017, 2018, 2020
Descurainia sophia	flixweed	Introduced	2020
Eriastrum densifolium	Giant woollystar	Native	2020
Eriogonum reniforme	Kidney leaf buckwheat	Native	2017, 2018, 2020
Eriogonum sp.	buckwheat	Native	2020
Erodium cicutarium	red-stemmed filaree	Introduced	2017, 2018, 2020
Euphorbia albomarginata	Rattlesnake weed	Native	2017, 2018, 2020
Lactuca serriola	prickly lettuce	Introduced	2020
Lasthenia gracilis	Needle goldfields	Native	2017, 2018
Malacothrix glabrata	Desert dandelion	Native	2018, 2020
Mentzelia congesta	clustered blazing star	Native	2018
Salsola tragus	Russian thistle	Introduced	2017, 2018, 2020
Sisymbrium irio	London rocket	Introduced	2018
Stephanomeria pauciflora	wire lettuce	Native	2018, 2020
Tribulus terrestris	puncture vine	Introduced	2018
Grasses			
Bromus diandrus	ripgut brome	Introduced	2017, 2018
Bromus madridentis ssp. *rubens*	red brome	Introduced	2017, 2018, 2020
Bromus tectorum	downy brome	Introduced	2020
Cynodon dactylon	Bermuda grass	Introduced	2020
Distichlis spicata	saltgrass	Native	2017, 2018, 2020
Festuca sp.	fescue	Native	2018
Hordeum murinum ssp. leporinum	Foxtail barley	Introduced	2017, 2018, 2020
Schismus arabicus	Mediterranean grass	Introduced	2017, 2018, 2020
Stipa hymenoides	Indian rice grass	Native	2017, 2018, 2020
Stipa speciosa	Desert needle grass	Native	2020

Table D-2
Animal Species Observed within the Biological Study Area.
Gettysburg Solar Park Project, Kern County, California

Scientific Name	Common Name	Native or Introduced	Year
Amphibians and Reptiles			
Aspedoscelis tigris	western whiptail	Native	2017, 2018, 2020
Masticophis flagellum piceus	red racer	Native	2020
Uta stansburiana	side-blotched lizard	Native	2018, 2020
Birds			
Buteo jamaicensis	red-tailed hawk	Native	2018
Buteo lineatus	red-shouldered hawk	Native	2020
Buteo swainsoni	Swainson's hawk	Native	2020
Chondestes grammacus	lark sparrow	Native	2020
Corvus corax	common raven	Native	2017, 2018, 2020
Eremophila alpestris	horned lark	Native	2018, 2020
Sturnella neglecta	western meadowlark	Native	2020
Zenaida macroura	mourning dove	Native	2017
Mammals			
Ammospermophilus leucurus	white-tailed antelope squirrel	Native	2017, 2020
Canis latrans	coyote*	Native	2020
Dipodomys meriami.	Meriam's kangaroo rat*	Native	2017
Lepus californicus	black-tailed jackrabbit	Native	2017, 2018, 2020
Ovis aries	domestic sheep*	Introduced	2017
Sylvilagus audobonii	desert cottontail	Native	2017
Vulpes macrotis arsipus	desert kit fox*	Native	2017, 2020

* *Indicates that only sign (e.g., dens or burrows, scat, prey remains, tracks) of the species was observed*

APPENDIX D

PHASE I AND PHASE II CULTURAL RESOURCES SURVEY

PHASE I SURVEY, GETTYSBURG SOLAR PROJECT, KERN COUNTY, CALIFORNIA

Prepared for:

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July 2018
PN 30140

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MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for the Gettysburg Solar Project study area, Kern County, California. This study was conducted by ASM Affiliates, Inc., with David S. Whitley, Ph.D., RPA, serving as principal investigator. Background studies and fieldwork for the survey were completed in April and May of 2018. The study was undertaken to assist with compliance with the California Environmental Quality Act (CEQA).

A records search of site files and maps was completed on April 20th, 2018, at the Southern San Joaquin Valley Information Center (SSJVIC), California State University, Bakersfield. These investigations determined that one previous survey had covered most of the study area and no cultural resources where known to exist within it. Additionally, 16 previous reports had been completed within 0.5-miles (mi) of the study area, with one previously recorded cultural resource known to exist within that same radius.

A Sacred Lands File Request was also completed by the Native American Heritage Commission (NAHC) on May 11th, 2018 and no specific concerns were identified.

The Phase I survey fieldwork was conducted on the 24th and 25th of May 2018, with parallel transects spaced at 15-meter (m) intervals walked across the study area. The total study area survey was approximately 160-acres (ac).

Six prehistoric sites were identified during the field survey and given the temporary designations GETTY-SITE-1, GETTY-SITE-2, GETTY-SITE-3, GETTY-SITE-4, GETTY-SITE-5, and GETTY-SITE-6. All six sites are sparse lithic scatters in good condition.

Four prehistoric isolates were also identified during the survey and given the temporary designations GETTY-ISO-1, GETTY-ISO-2, GETTY-ISO-3, and GETTY-ISO-4. All isolates are singular flakes, with the exception of GETTY-ISO-3, which is two flakes.

It is recommended that the identified prehistoric sites be preserved or that Phase II test excavations and determinations of significance be conducted to determine whether they are eligible for the California Register of Historical Places.

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1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates was retained by Quad Knopf, Inc., to conduct an intensive Phase I cultural resources survey for the Gettysburg Solar Project study area, Kern County, California. The purpose of this investigation was to assist with compliance with the California Environmental Quality Act (CEQA).

This current investigation included:

- A background records search and literature review to determine if any known archaeological sites were present in the project zone and/or whether the study area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

This study was conducted by ASM Affiliates, Inc., of Tehachapi, California, in April – May 2016. David S. Whitley, Ph.D., RPA, served as principal investigator, and ASM Associate Archaeologist Robert Azpitarte, B.A., served as crew chief, with assistant in the field from ASM Assistant Archaeologists Stacey Escamilla, B.A., Steven Teteak, B.A., and Sandy Speas, B.A.

This manuscript constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 STUDY AREA LOCATION AND DESCRIPTION

The 160-ac Gettysburg Solar study area is located on the open flats of the Antelope Valley, a western extension of the Mojave Desert, less than 4-mi west of the City of Rosamond. The study area is bordered on the north by Rosamond Boulevard, and includes the eastern half of the northwest quarter and the western half of the northeast quarter of Section 21, in Township 9 North, Range 13 West (T9N/R13W), San Bernardino Base and Meridian (SBBM). The study area slopes slightly from northwest to southeast, with an elevation of 2,425-feet (ft) above mean sea level (amsl) at the northwest corner, and an elevation of 2,392-ft amsl at the southeast corner.

1.2 PROJECT DESCRIPTION

The proposed project includes the development of a 30MWac photovoltaic (PV) energy generation facility. Associated infrastructure will be located adjacent to the proposed facility. Approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid pattern would be utilized for the project. The solar PV generating facilities would consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts and are intended to operate year-round, generating electricity during daylight hours at peak demand.

Power generated by the proposed solar facility would be transferred directly to Southern California Edison's (SCE) Antelope-Cal Cement-Rosamond 66kV line by way of associated gen-tie transmission lines, which are proposed to follow the Rosamond Boulevard right-of-way. The lines will terminate approximately 1.25-mi east of the project area at SCE's Rosamond Substation.

1.3 REGULATORY CONTEXT

1.3.1 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

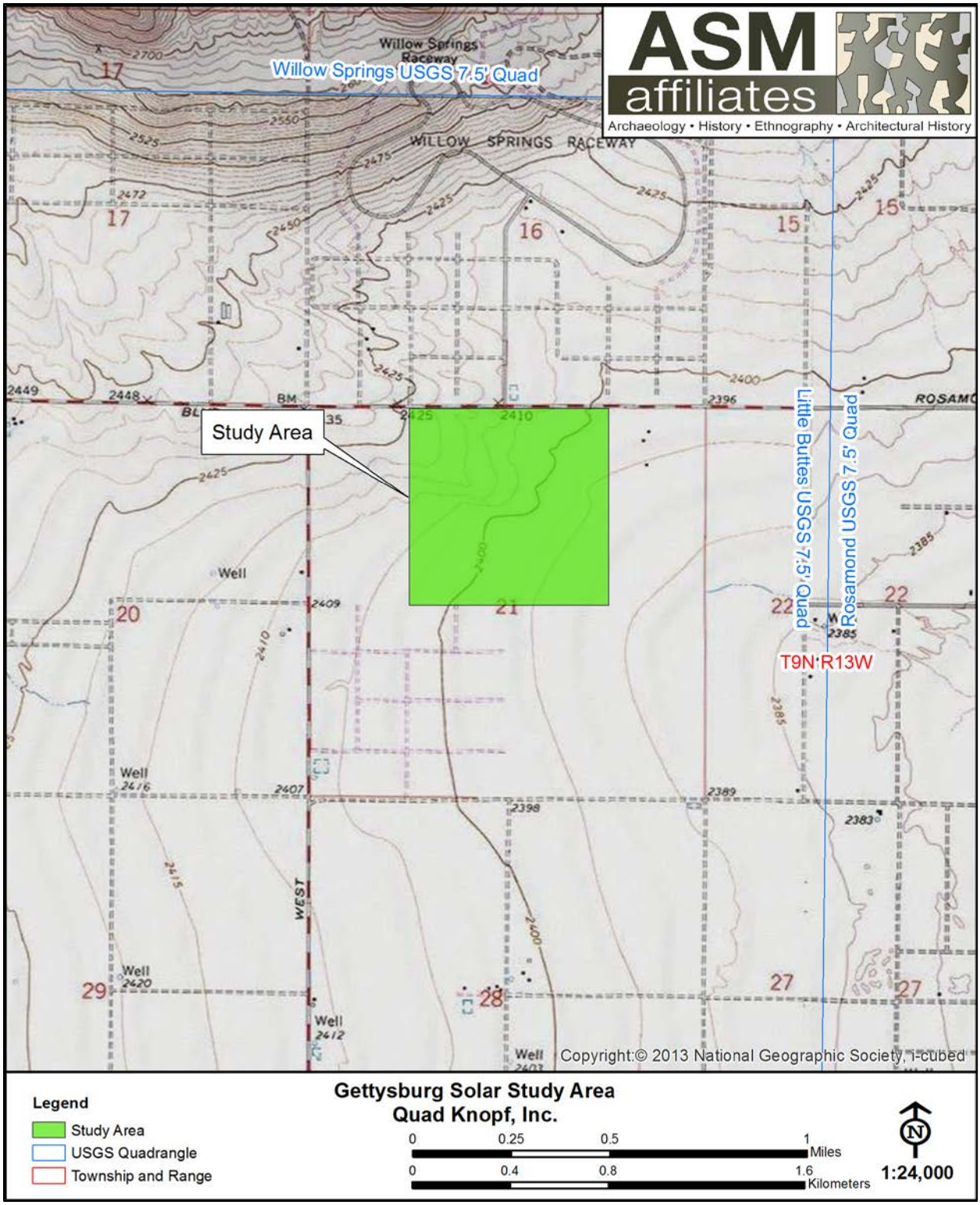


Figure 1. Location of the Gettysburg Solar Project study area, Kern County, California.

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2. ENVIRONMENTAL AND CULTUAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

The study area consists of undeveloped though disturbed land. Evidence of disking is apparent at the eastern end of the study area, where vegetation is sparsest, and the entire study area has likely been disked in the past. Vegetation currently consists of introduced grasses, shadscale, winter fat, and hopsage (Figures 2 and 3). Prior to historical/recent disturbance, both study areas most likely would have supported shadscale scrub plant communities (cf. Schoenherr 1992).

2.2 ETHNOGRAPHIC BACKGROUND

The western Mojave Desert and environs were poorly reported in the early ethnographic summaries (cf. Kroeber 1925). More recently, Earle (1990, 2003, 2005), in particular, has provided a synthesis for the region, and a summary of his recent ethnohistorical conclusions provide an appropriate overview for the aboriginal history of the region.

According to Earle's reconstruction, the western Mojave was inhabited during the Historic/Protohistoric period by three distinct language-speakers, one group of whom could be further subdivided into two (and perhaps three) fairly distinctive dialects. The most significant linguistic division existed between the Kawaiisu speakers, who lived in Tehachapi Valley, through the southern Sierra Nevada and eastward across Fremont Valley towards Red Mountain and into southern Panamint Valley, and the groups to the south and west in Antelope Valley, per se. The Kawaiisu language is a member of the Numic branch of the Uto-Aztecan language family, and is thereby most closely related to the Shoshone and Paiute languages of the Great Basin.

South and westward of the Kawaiisu were two other members of the Uto-Aztecan language family, but in this instance both were distinct languages belonging to the Takic (as opposed to Numic) branch, specifically to the Serran Takic branch. Along the south westernmost side of the Antelope Valley, including the northern foothills of the Liebre Mountains and the southern side of the Sierra Pelona, were the Tataviam. Related to them linguistically, but speaking a distinct language, were the Kitanemuk, who occupied the westernmost Antelope Valley and the Tehachapi Mountains west of Tehachapi Pass. Living to the east of the Kitanemuk, who extended to approximately the current location of Highway 14 where it heads north across the Antelope Valley, were a group of closely related peoples that Earle (1990) has identified as the Haminat. Apparently, Haminat and Kitanemuk represent dialects of the Serrano language, which also included Serrano proper and Vanyume (or Beñemé).

According to Earle's analysis, there was a linguistic continuum along the northern side of the San Gabriel Mountains in the Western Mojave Desert, from the Serrano on the east through the Vanyume and Haminat to the Kitanemuk, at the western end. Haminat, apparently, was more closely linked with Vanyume/Serrano proper than Kitanemuk, although it was still simply a dialectical variant of it.



Figure 2. Gettysburg Solar Project study area overview, looking southeast.



Figure 3. Gen-tie route along Rosamond Boulevard, looking east.

The study area thus falls in a slightly ambiguous zone near the Kawaiisu, Kitanemuk and Haminat boundaries. Despite this uncertainty, these groups were culturally similar. All three, for example, were foragers, with food sources derived principally from gathering. The exact plant species exploited was dependent on seasonal availability as well as precise geographical/environmental location. In the higher montane portions of the region (e.g., towards the Tehachapis), acorn-bearing oak and pinyon nuts were staples. In the lower lying more desertic zones, including the study area, mesquite, yucca and a variety of other edible plants were emphasized. Hunting also contributed meat protein, and principally emphasized small game, such as hares, rabbits and rodents.

Religious beliefs and practices were based on shamanism. This is predicated upon perceived direct and personal interactions between an individual and the supernatural world, with this interaction founded on entering an altered state of consciousness. Shamans, per se, were ritual specialists who exercised an unusual degree of interaction with the supernatural world, and thereby acquired a high degree of supernatural power. Although formal rituals and ceremonies were limited in number and elaboration, the shamans served as the ritual officers for these. Further, the shamans also were responsible for painting and pecking the rock art that is found in this region: rock art sites served as their vision quest locales, where the shamans entered trances to have visions and thereby acquire supernatural power. And, the art depicted at these sites displayed the visions and spirits they saw in their altered states of consciousness (Whitley 2000).

Following general California patterns, there were also a number of similarities in social and political organization across the Antelope Valley. Earle (1990) has suggested that the Haminat may have been organized into exogamous clans and moieties, whereas the western groups might have lacked these, and in this sense the Haminat could have been more like the southern California Desert groups like the Serrano and Cahuilla, with the other groups more similar to the south-central California culture of the Chumash and related peoples. What is apparent, however, is that the region as a whole lacked any political organization beyond that of the tribelet, or what Earle has identified in the Spanish records as *naciones*. These were autonomous land-owning groups, focused on a principal village and led by a headman or chief, and probably comprising a lineage system or clan. In this sense, the Antelope Valley can be said to follow the political organizational pattern found throughout most of Native California. This, of course, further links it with Californian, as opposed to Great Basin, cultural patterns.

In general terms, major historical villages were located at well-watered spots, such as springs. Most of these are, for this reason, are located in the San Andreas Rift Zone, along the south side of the Antelope Valley, which is unusually well-watered. The only known village in the general project vicinity is *Punakavea* (also called *SeSevjek*), at Willow Springs, and this may have been occupied by the Haminat (Earle 1990).

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

Recent regional summaries of western Mojave Desert prehistory have been published by Sutton (1988a, 1988b), with syntheses of the related Coso area immediately to the north published by Whitley et al. (1988) and Whitley (1994, 1998). Based on these studies, as well as the more wide-ranging cultural historical frameworks for eastern California provided by Hester (1973), Bettinger and Taylor (1974), Elston (1982), and Warren (1984), regional prehistory can be discussed in terms

of a series of cultural historical periods, starting with the earliest evidence for human occupation in the western hemisphere.

In needs be noted, however, that this cultural historical record is profitably viewed in the context of the changing environmental and climatic conditions which have characterized this portion of the Mojave Desert during the prehistoric past. We begin, accordingly, with a brief paleoenvironmental summary.

Paleoenvironments in the western Mojave Desert

Pertinent reconstructions of paleoenvironmental conditions have been provided by Elston (1982), Weide (1982), and Grayson (2011), among others. Most relevant to the study area, however, is a recent synthesis and precipitation model developed for Edwards A.F.B. area by Ramirez and Bryson (1996). Based on their analysis and review, Ramirez and Bryson outline the major transitions from the last glacial maximum during the Pleistocene, at 18,000 YBP (years before present), to modern conditions. Overall, this period witnessed a reduction in annual rainfall of about 55% at Edwards AFB, representing an absolute loss of 194 mm (~7.5 inches) of precipitation to the current annual mean of about 147 mm (~6 inches). Equally importantly, this reduction in rainfall also occurred to different degrees in the nearby Tehachapi and San Gabriel Mountains, which are the sources for much of the groundwater in the western Mojave. For the Tehachapis, the proportional reduction was 57%, but this represents an absolute loss estimated at 323 mm (~13 inches) of rain annually, whereas for the San Gabriels it was even more extreme. There the reduction over 18,000 years was fully 76% of the Pleistocene estimate, translating to -850 mm or about -34 inches annually. As is immediately clear, the transition from the Pleistocene has involved a major desiccation overall in this portion of the west.

In general terms the late Pleistocene (18,000 - 11,000 YBP) was not as severe in the western Mojave Desert as is sometimes assumed, nor was the transition to modern conditions as regular as once believed. Winters were probably slightly milder than they currently are, with summers somewhat cooler. Subalpine coniferous woodlands probably covered most valley floors with bristlecone, pinyon and limber pines. Ramirez and Bryson (ibid) have however identified two major tendencies during the late Pleistocene, based on their precipitation modeling. From about 17,750 to 14,750 YBP, they posit a dramatic reduction of about 10% in rainfall. Allowing for standard errors in chronological measurements, potential lag times in response rates and minor regional variations, this period corresponds reasonably well with the history of Pleistocene Lake Searles, north of Barstow near Trona, which is thought to have reached its maximum high-stand at about 16,000 YBP, and then to have gone into negative hydrological conditions until about 13,000 YBP. The period from about 14,750 to 12,100 YBP according to these researchers is, in contrast, marked by greater climatic variability; overall desiccation is estimated at only 3%.

Conditions change dramatically between 12,100 and 10,100 YBP, during the so-called terminal Pleistocene. Ramirez and Bryson (ibid) estimate a significant drought during this period, representing a 31% reduction in precipitation. This corresponds to what archaeologists have termed the “Clovis drought” (Haynes 1991; discussed below). In the Mojave Desert, all Pleistocene megafauna were probably extinct by the end of this time period.

The early Holocene, from about 10,100 to 8,100 YBP, in contrast, is much more moderate, with comparatively mild oscillations and a reduction of only 5% in precipitation. However, minimally by 8,100 YBP the Pleistocene vegetation regime can be (conservatively) assumed to have retreated, with woodlands restricted to higher elevations and therefore much more limited in overall extent.

Conditions deteriorated markedly thereafter, during the middle Holocene, within which Ramirez and Bryson (ibid) identify two periods. From about 8,100 to 6,700 YBP a significant decline in rainfall occurred, with a reduction estimated at 16%. From this point to about 4,300 YBP conditions continued to decline, but less dramatically so. Loss in precipitation during this 3,400 years stretch is only estimated at about 9%. These data correlate closely with Bach's (1995) independent analysis of dune activity in the western Mojave. He estimated that Holocene dune building peaked between about 8,000 and 5,000 YBP.

This middle Holocene period corresponds generally to a posited dry and hot period called the Altithermal (below). Although the existence and/or nature of the Altithermal is debated and in some cases is even denied for the southern Great Basin (e.g., Weide 1982), in general terms Ramirez and Bryson's (1996) precipitation model supports its continued relevance in local archaeological reconstructions.

This point is further emphasized by the next climatic phase, from about 4,300 to 1,900 YBP, where precipitation conditions reversed and an estimated 17% *increase* in rainfall is seen as occurring. Notably, and based on archaeological evidence, Whitley (1994, 1998, 2000; Whitley et al. 1988) has argued that improved environmental conditions immediately after the Altithermal -- which is to say during this period -- resulted in a major human demographic increase and adaptive radiation into new environments throughout south-central California.

At about 1,900 years ago, however, conditions are thought to have returned to what they were at 4,300 YBP, and to have stayed in this same general range ever since. The modern vegetation regime can be confidently assumed to have been in place at this point. However, the lowest precipitation level is estimated to have occurred only about 300 YBP, during what is essentially the Protohistoric Period (Ramirez and Bryson ibid). Although it is then easy to characterize the changing environmental conditions over the last 18,000 years as involving major desiccation, this more detailed exposition shows that this long-term tendency involved significant oscillations, and these oscillations were of such magnitude that they probably had significant impacts on prehistoric human populations.

Another important issue in regional paleoenvironmental reconstruction is the prehistory of the local lake basins. Sutton (1988c) has observed that the Antelope Valley, to the west, is a closed hydrological system based on Pleistocene Lake Thompson, which now comprises three mud playas: Rogers, Rosamond and Buckhorn dry lakes. He suggests that the level of Lake Thompson had to reach 2350 feet in elevation before overflowing into the deeper Fremont Valley, and then to breech 2485 feet before dumping into Harper dry lake, closer to Barstow in the western Mojave proper. If such events occurred, this would imply that elevations at or below about 2485-ft elevation would have, at certain times during the Pleistocene, been underwater.

More recently, Meek (1999) has outlined aspects of the complexity of the central Mojave Desert lake basin prehistory, emphasizing the importance of the Mojave River in understanding this prehistoric record. Instead of filling from Fremont Valley, Meek argues instead that the Harper basin (which has a highest shoreline of 2155 feet) filled from the Mojave River in a series of episodes, all of which occurred prior to ~21,500 YBP. Subsequently the Mojave River emptied into various different basins as a result of changing geomorphological conditions, including Coyote, Cronese, Troy and Afton basins, and Soda and Silver Lakes. No single basin, then, contains a complete paleoclimatic history for the region, and the rising and declining water levels in these basins may not be a result of simultaneous paleoclimatic changes.

The highest currently known Pleistocene shoreline in the Antelope Valley is located at the north end of Rosamond dry lake, and this sits at 2375 feet in elevation (Ramirez and Bryson 1996). This indicates that Lake Thompson did at one point overflow into the Fremont Valley. Unfortunately this high-stand is undated, although it is widely agreed that it predates 8,000 YBP (ibid), when dated archaeological sites are known to exist at lower elevations. However, inasmuch as the Antelope Valley basin is isolated from the different events and processes related to the changing course of the Mojave River, outlined by Meek (1999), which influenced the other basins in the Mojave Desert, it can be assumed that the Antelope Valley basin would have more closely reflected regional paleoclimatic changes. This being so, a provisional suggestion of roughly 16,000 YBP for the Lake Thompson high-stand can be proposed, correlating with the Searles Lake high-stand which was dependent on changing conditions in the Sierra Nevada rather than the vagaries of the geomorphological conditions in the Mojave River and central Mojave Desert which Meek (ibid) outlines so clearly.

With this overview of regional paleoclimate, it is then appropriate to turn to the regional prehistoric record.

Pre-Clovis (earlier than 11,200 YBP)

Perhaps the most long-lived problem in New World prehistory has been the question of the antiquity of first human occupation, with two positions dividing the discipline: the Pre-Clovis or long chronology, which posits a late Pleistocene first-migration at some undetermined point prior to 11,200 YBP; and the Clovis-first, or short chronology hypothesis, which argues for an initial migration at the immediate end of the Pleistocene, now set at 11,200 YBP. Historically, the Mojave Desert region has played an important role in this debate due to the presence of putative early sites in Panamint Valley and around Pleistocene Lake China -- the Coso Range region to the north of the study area, in the Ridgecrest and Trona region. E.L. Davis (e.g., 1978), in particular, argued for the presence of Pre-Clovis sites in this region based on three lines of evidence:

(1) typological similarities between surface lithic tool assemblages in this region and well-dated typologies in the Old World;

(2) the locational context of certain surface sites on well-dated Pleistocene lake terraces and sediments; and

(3) the association between surface cultural artifacts and dated paleontological remains.

Because Davis' evidence consisted of surface finds that were largely based on typological comparisons which were never directly dated using chronometric techniques, her conclusions were

not widely accepted in the profession. More recently developed evidence (Dorn et al. 1986; Whitley and Dorn 1988, 1993; Whitley et al. 1999a, 1999b; Whitley 1999, 2000), however, suggests an occupation of the region at least as early as 15,500 YBP. These dates were obtained from the direct dating of the rock varnish coating petroglyphs and surface lithic tools, using two independent chronometric techniques: cation-ratio dating, which provides calibrated ages; and the analysis of varnish micro-stratigraphy, which provides relative age control and has independently confirmed the cation-ratio dates.

Based on these techniques, Whitley and Dorn have obtained a suite of five Pre-Clovis age petroglyphs from the Coso area alone (in addition to a number of Holocene-dated specimens). These range in age from 16,500 $\pm$ 1000 RYBP (radiocarbon years before present) to 12,000 $\pm$ 600 RYBP. In addition, in the Rodman Mountains, southeast of Barstow, a petroglyph independently identified by a paleontologist as a possible late Pleistocene camelid has been dated by these same techniques to about 12,000 RYBP; these animals were extinct in the Mojave Desert by about 10,000 years ago (Whitley 1999). Most recently, advancements in the analysis of varnish micro-stratigraphy allow for the identification of diagnostic temporal signals in SEM varnish thin-sections. Key micro-stratigraphic signals are present in the varnish thin-sections at the Pleistocene-Holocene transition, and at approximately 14,000 and 21,000 YBP. Coso petroglyphs older than 14,000 years based on cation-ratio dating display the 14,000 micro-stratigraphic diagnostic but not the 21,000 YBP signal, thus demonstrating that this chronometric technique is correctly placing them in the proper part of the Pleistocene.

The best example of multiple lines of evidence supporting the validity of these Pre-Clovis ages is provided by a spiral motif from the Little Lake site, located on the western edge of the Coso range, near Highway 395 (Whitley et al. 1996). The cation-ratio age for this petroglyph is 14,500 $\pm$ 1300 RYBP. The petroglyph exhibits the 14,000 but not the 20,000 years micro-stratigraphic signature. Equally importantly, this petroglyph is located on a talus scree slope which rests on the Pleistocene channel of the Owens River, and thus the petroglyph must post-date the age of this river. The dating of this river channel, which occurred after the petroglyph had been dated, indicates that it stopped flowing at approximately 16,200 RYBP (Cerling and Craig 1994). The combination of the micro-lamination evidence and this geomorphological data brackets the age of the petroglyph between 14,000 and 16,200 years, an age range which corresponds correctly with the CR age of 14,500 RYBP.

Although there is controversy concerning these early dates from the Cosos and other parts of the Mojave Desert, there is increasing evidence that they are probably correct. This evidence includes the replication of these two techniques by a variety of labs and researchers worldwide. Moreover, there are a certain related circumstances that greatly bolster the Pre-Clovis position more generally (Whitley and Dorn 1993). First, attention to the geomorphology and paleoclimatology of the latest Pleistocene indicates that the Pre-Clovis period was one of net erosional degradation. Lowered eustatic sea-levels combined with a series of major flood events resulted in the stripping of sediments in major portions of North America, rather than the gentle forms of deposition that are required for archaeological site preservation. A general exception to this pattern occurred however in the Basin and Range Province, which includes the study area, where a variety of geomorphological contexts preserve late Pleistocene surfaces. Boulders and cliff faces containing rock art are one of these, as these contexts were not subjected to this erosional destruction. There

are, thus, few extant geomorphological contexts within which Pre-Clovis finds could be expected to be found in North America, albeit those that might exist are most likely to be found in the Great Basin.

Second, changes in this net erosional or depositional regime explain why there is a sudden "explosion" of later Clovis age sites and a relative dearth of Pre-Clovis sites in the archaeological record: The Clovis sites appear at exactly the point when the geomorphological conditions change to favor site preservation.

Third, archaeological evidence from South America has included a number of well-dated Paleoindian sites falling between 10,000 and 11,200 YBP. As pointed out recently (Whitley and Dorn 1993), it would have been physically impossible for first migrants to have entered North America sometime after 12,000 YBP and to have colonized South America within 1000 years. This would require rates of population growth unheard-of for human beings, and migration speeds that are manifestly implausible. Thus, even the South American Paleoindian evidence tends to discount the likelihood of the short chronology for the peopling of the New World.

Finally, there is now also compelling evidence for an immediately Pre-Clovis site in South America: Monte Verde, Chile (Dillehay 1997), dated to around 12,000 -13,000 RYBP. This site and its widespread acceptance by the archaeological community makes entirely implausible the argument that humans only arrived in the Americas 11,200 years ago.

Although the evidence, accordingly, is mounting for the Pre-Clovis occupation of eastern California, *per se*, at this point there is relatively little that can be said about this occupation, beyond the simple argument for its presence. Until additional evidence is presented, we will not be able to determine whether Pre-Clovis peoples were sedentary or mobile, or big-game hunters versus foragers.

Paleoindian (11,200 - 9000 YBP)

Although the initial occupation of the continent is controversial, there is widespread agreement on the subsequent Paleoindian period, which is typically viewed as pertaining to mobile big-game hunters who exploited Pleistocene megafauna. The hallmarks of the Paleoindian period are the fluted, collaterally-flaked and basally-thinned and -ground Clovis and Folsom spear points, during the earlier portions of the period, followed by a series of large, well-flaked but unfluted lanceolate points towards the end of the period, some of which are stemmed. Some scenarios suggest that the big-game hunting practiced by these Paleoindian peoples may be responsible for the extinction of the Pleistocene megafauna, such as Imperial Mammoth, *Bison antiquus,* and the North American horse. Aside from this so-called Pleistocene overkill problem, the image of Paleoindians as specialized big-game hunters has become pervasive for North America though it is far from proven in all parts of the continent. Recent evidence, however, indicates that the earlier portions of the Paleoindian period comprised a lengthy and severe drought, thus demonstrating that the large mammal herds were already under extreme environmental stress, regardless of the effects of human predation (Haynes 1991). As noted above, paleoclimatic reconstruction in the vicinity of the study area indicates that a drought also occurred in this specific region (Ramirez and Bryson

1996), further supporting the notion that all Mojave Desert populations – human and animal – existed in stressed conditions at that time.

Very substantial although sometimes overlooked evidence of Paleoindian use of eastern California has been found in a number of areas, including Pilot Knob Valley, northeast of the study area; on the shores of Pleistocene Lake China and within the Coso Range, per se; in Fort Irwin, northeast of Barstow; at Boron, to the west; in the El Paso Mountains, north of the study area; and in the Tehachapi Mountains, further to the northwest (e.g., Glennan 1971, 1987a, 1987b; Davis 1978; Warren and Phagan 1988; Yohe 1992b). According to Warren and Phagan, writing in 1988, only seven fluted points had been found in the Mojave Desert, although their tabulation apparently excludes the region north of the Garlock Fault, and thus the Coso - Panamint - Death Valley area. To this list, however, we can add four Paleoindian points from the Coso Range and Rose Valley; three from Pilot Knob Valley; and another basally-thinned point which is on display at the Death Valley National Monument Visitor Center which apparently was found within the monument. And to these can also be added four fluted point bases from the Edwards Air Force Base area (Mark Campbell, personal communication, 2000) and a fluted point base and approximately 10,000 YBP radiocarbon date from Boron. Even more importantly, *49* fluted points were recovered by Davis (1978) around China Lake, substantially bolstering the evidence of Paleoindian use of this general region. Clearly, there was very substantial Paleoindian occupation of this area.

Typically, the Paleoindian evidence consists of isolated (in some cases reused) Paleoindian projectile points, although there is also evidence for Paleoindian petroglyph manufacture in the Cosos (Whitley and Dorn 1987, 1988; Whitley et al. 1999a, 1999b). Furthermore, an obsidian Paleoindian point from the central Mojave Desert (Sutton and Wilke 1984) and another from the Rose Spring site (Yohe 1992b) have been sourced to the Coso Sugarloaf Quarry. When combined with the large number of points collected by Davis (1978) around China Lake, it is clear that this area was very important for these early occupants.

Although it is likely that Paleoindian habitation sites are somewhere preserved in the region, they have yet to be found and a better understanding of the Paleoindian period in this portion of eastern California will only be obtained when such sites are discovered and investigated (cf. Warren and Phagan 1988). In the meantime, growing evidence for Paleoindian occupation on the off-shore Channel Islands (e.g., Morris and Erlandson 1993), with the maritime adaptation this implies, suggests that the monolithic interpretation of all North American Paleoindian period sites as necessarily a product of specialized big-game hunting may be incorrect, and that more regional subsistence variation may emerge once better evidence from the far west has been discovered and analyzed (cf. Willig and Aikens 1988).

Early Archaic (9000 - 6000 YBP)

The Early Archaic period, or so-called Western Pluvial Lakes Tradition, represents the early Holocene in paleoenvironmental terms. Its hallmark is generally considered to be the widely dispersed but ambiguously-dated Western Stemmed Tradition projectile points. These include the local variants known as Lake Mohave and Silver Lake points, which may in fact actually date between 10,500 and 7,500 YBP and thus be partly coeval with fluted points. Combined with studies of the lithic technologies of Early Archaic and Paleoindian sites, this chronological overlap

suggests that the Western Stemmed Tradition may have been an in-situ development out of the earlier Paleoindian tradition (Willig and Aikens 1988).

Early Archaic sites are most commonly found on the lowest terraces above latest Pleistocene and early Holocene lake basins and stream deltas. (Notably, fluted points are also sometimes found at these same sites and geomorphological locations, contributing to the chronological ambiguity of both point types). Early Archaic sites are, accordingly, widely regarded as part of a lacustrine-focussed adaptive strategy. Although a number of authors have cautioned against too simplistic an interpretation of these associations, pointing to the fact that Early Archaic sites are also found in other environments, it nonetheless is apparent that, in eastern California at least, this environmental association and its inferred subsistence implications maintain some verity. Indeed, it can be noted that recent research in the Great Basin has exactly emphasized the general importance of lacustrine adaptations in general terms, in contrast to Jennings' (1957) earlier model of a long-lived "desert culture" tradition.

Be these controversies as they may, Davis (1978; Davis et al. 1969) has identified and discussed the importance of a number of putative Early Archaic sites in the Panamint region. These are located in both the China Lake Basin and the Panamint Valley in former lacustrine environments, and are indicative of the fact that some lakeshore use if not occupation did occur during the early Holocene in this region. However, this must be matched against the fact that Western Stemmed Tradition points have also been recovered as isolates in upland environments in the Cosos (Elston et al. 1983). Thus, although lakeshore exploitation may have been an emphasis during the Early Archaic in this portion of eastern California, this period apparently also included mobile hunting in other environments as well.

Middle Archaic (6000 to 4000 YBP)

Be this early evidence as it may, what is incontrovertible is that, regardless of date of *initial* occupation, *substantial* inhabitation did not occur until much later, with the start of the Middle Archaic or Pinto Period, at about 6000 years B.P. This lasted until approximately 4000 years B.P. A number of sites from this time period are known from the Rosamond area, specifically associated with the prehistoric shoreline of Rosamond Lake. Notably, sites dating to this time period apparently emphasize the use of rhyolite as a lithic resource, almost to the exclusion of crypto-crystallates such as chert and jasper (Sutton 1988a, 1988b).

The Middle Archaic, however, corresponds essentially to the Altithermal paleoenvironmental period, and is a controversial topic in Mojave Desert prehistory due to its cultural and chronological ambiguity. That is, aside from the controversy concerning the nature of the *paleoclimate* during this period, as discussed above. Much of the *archaeological* ambiguity instead stems from the uncertainty in the chronological placement of the Pinto series projectile points. Seemingly, there are as many chronological scenarios for the placement of Pinto points as there are archaeologists working on the problem (cf. Meighan 1981; Jenkins and Warren 1984). What this ultimately may suggest is that much more regional variation existed during certain periods of the prehistoric past than is currently being recognized.

In the Coso area to the north, but not necessarily elsewhere in eastern California, there is little if any evidence for Middle Archaic occupation, at least if Meighan's (1981) obsidian hydration date revisions for the Pinto series points from the Little Lake site are accepted. That is, existing evidence could be interpreted to signal a diminution in occupation, if not an outright abandonment, in this region, apparently corresponding to the hot and dry climatological conditions of the Altithermal. However, it is also possible that local inhabitants may have adopted a subsistence strategy and settlement pattern with little archaeological visibility on the landscape during this period; e.g., a highly mobile pattern. Although this alternative interpretation of the apparent dearth of Middle Archaic sites must be acknowledged, it seems implausible in light of the fact that extremely dry conditions would be more commonly predicted to result in a stronger form of "tethered nomadism", and thus greater archaeological visibility, around water sources. Moreover, there is very clear evidence for Middle Archaic settlements in the Fort Irwin area (e.g., Jenkins and Warren 1984), to the east of Barstow, suggesting that not all portions of eastern California were abandoned at this time; again, emphasizing the possibility of more regional variability than heretofore acknowledged.

Late Archaic (4000 to 1500 YBP)

Much less controversy surrounds the subsequent Late Archaic period, or Elko Period, lasting from about 4000 to 1500 years B.P., which correlates with improved and wetter environmental conditions across the far west -- including within the study area, as Ramirez and Bryson's (1996) reconstruction indicates. Although sites from this time period are sometimes considered rare in the Mojave Desert, it is notable that many of the subsequent Rose Spring Period villages (see below) were first occupied during this earlier phase. That is, as has been noted by a number of authors, there seems to be a strong continuity between the Elko Period and subsequent times, with the latter period materials masking or burying the Elko remains. In the Antelope Valley region this begins with a major increase in population beginning about 3000 years B.P. (Sutton 1988b:23).

Similar patterns have been noted in surrounding regions. For example, the start of the Late Archaic in the Coso Range region, to the north, is posited to represent the initial establishment of the primary settlement and subsistence systems that are currently archaeological visible (Whitley 1994, 1998), while this same period has been recognized as experiencing a major, far western North American-wide expansion of settlements into new environments and increases in population, stretching from the Great Basin of eastern California, through the southern Sierra Nevada, across the Transverse Ranges, and down to the coast (Whitley et al. n.d.). The primary temporal diagnostics for the Late Archaic are Elko and Gypsum series projectile points.

In the Coso Range, the Late Archaic is signaled by the establishment of major winter villages, typically at springs, in valley bottoms on the western and wetter side of the range. Analyses of paleoethnobotanical and faunal remains suggest a generalized foraging strategy, emphasizing all available resources (e.g., Gumerman 1985), including buckwheat stands around small mud-playas (Whitley et al. 1988). This evidence is complemented by an extensive but seemingly non-logistically organized use of all upland environments. Included here is a significant quantity of isolated projectile points in the uplands, suggesting mobile hunting patterns (Elston et al. 1983). Furthermore, the Late Archaic witnessed the beginning of the intensive exploitation of the Coso

Sugarloaf obsidian quarry, an event that apparently correlates with the beginning of the inland-to-coastal obsidian trade in south-central California (Whitley et al. n.d.).

Rose Spring (1500 - 800 YBP)

The Rose Spring Period is differentiated from the earlier Late Archaic/Elko Period by the introduction of the bow and arrow and a change from spear points to arrow points at circa AD 500 (cf. Yohe 1992a). This transition is, in technical terms, dramatic. In fact, the introduction of this new weaponry technology probably did not have any immediate major impacts on social or cultural systems. At least initially, the settlement and subsistence systems were stable, and lithic technology and production did not noticeably change (Allen 1986).

Moreover, and as implied above, in all other respects Rose Spring times appear to have been a continuum from the earlier patterns, so that the change in hunting technology was probably less important than we might otherwise presume. Within the Antelope Valley area, Desert Village Complexes, representing a major change in magnitude of settlements, were founded at least by Rose Spring times, and perhaps towards the end of the earlier Elko phase. Two of these have been identified by Sutton (1988a, 1988b) in the foothills of the Antelope Valley, with a third between Rosamond and Rogers Dry Lake, and a possible fourth at Koehn Lake. It is possible, if not likely, that these represent the founding of the tribelet system of political organization in the region.

At approximately AD 1000 - 1200, however, a shift in settlement and subsistence practices began that, ultimately, culminated in the protohistoric/ethnographic patterns referred to as the Later Prehistoric or Numic Period (discussed below). This involved the abandonment of some winter villages (or at least a reduction in the intensity of their use); the establishment of logistical base camps around springs in the upland environments; an increasing emphasis on a relatively specialized diet focused on seeds and the pinyon nut; and a great increase in the production of petroglyphs (Whitley 1994). That is, settlement patterns became more organized and focused, while subsistence was increasingly specialized, and ritual became more common.

The causes for this transition are not yet fully understood. Bettinger and Baumhoff (1982), for example, have accepted it as an empirical fact, with the subsistence change then linked to the putative spread of Numic peoples out of eastern California at about this time. They have then taken the position that the phenomenon to be explained is not the cause of the subsistence change, but the reasons why such a change was adaptively more successful, and how it can then be used to account for the historical distribution of Numic languages. The implicit assumption in such an approach is that evolutionary transitions are to be expected due to the inherent tendency for greater fitness to emerge in populations.

While this last tendency may or may not be so, it overlooks pertinent related evidence; namely, that this same time period experienced a major drought that effected all portions of western North America, from northern Mexico through the Southwest, across the Great Basin, and even into the Channel Islands. Moreover, the environmental stress engendered by this drought has been cited as a causal factor in the abandonment of Anasazi pueblos in the Southwest, as well as the southward retreat of Mesoamerican civilization with the collapse of Tula. Perhaps more to the point, Arnold (1993) has noted the influence of this drought in creating resource stress that was a contributing

factor to the appearance of a simple chiefdom in the Chumash region near Santa Barbara. Similarly, Whitley (1994, 1998) has argued that this transition in eastern California represents the first appearance of Numic bands and headmen; specifically, that it was the increasing perceived need for ritual specialists in the form of rain shamans during this period of environmental degradation that led to the establishment of bands and the creation of headmen. In this interpretation, the accelerated production of Coso petroglyphs (which are known ethnographically to have been tied to rain shamanism) is taken as a reflection of the growing number of ritual specialists, with the appearance of a logistically-oriented settlement pattern a sign of increasing sociopolitical control and organization.

Late Prehistoric (800 - 140 YBP)

The Late Prehistoric (or, in some areas, Numic) Period, from 800 years B.P. to the Historic Period, represents a continued growth in local population, with numbers of people apparently quite high. It is distinguished from previous Rose Spring times by the introduction of brownware ceramics and a change in projectile point types: from Rose Springs types to Desert Side-Notched and Cottonwood Triangular. Sutton (1988a, 1988b) notes that a boundary of some sort developed during this period: Desert Side-Notched points, brownware ceramics and obsidian are all common from the Fremont Valley northward; south of this area, in the Antelope Valley proper, ceramics and obsidian are rare, and Cottonwood Triangular points are the predominant projectile point type. This apparently correlates with similar patterns further towards the coast: at about 800-1000 years ago the desert-to-coast obsidian trade dried up, and Rose Spring-like projectile points were replaced by Cottonwood-like points, with Desert Side-Notched points rare.

The Protohistoric/Historic phase of the Late Prehistoric, representing the last 300 years, is apparently marked by a major disruption in indigenous settlement, and a corresponding paucity of sites. According to Earle (1990), missionization pulled many of the region's inhabitants away. Note, however, that ~300 YBP also represents a brief period of extreme drought, as indicated by Ramirez and Bryson’s (1996) paleoclimatic model. Hence deteriorating environmental conditions may have contributed to social disruptions combined with the introduction of new diseases, all of which would have had detrimental effects on the local population. Subsequently, the Antelope Valley area was used as a staging ground for rustlers and other miscreants, who were raiding the missions' livestock. The result was that the area became somewhat of a no-man's land which, no doubt, has also contributed to the paucity of ethnographic information on it.

2.4 HISTORICAL BACKGROUND

Perhaps because of the use of the Antelope Valley as a staging area for Indian raids on the *estancias* and missions closer to the coast, Euro-American settlement and development of the area was a little later dating than in other parts of southern California. As a result, the history of the Antelope Valley to about the 1860s principally involved various explorers who traversed it: for example, Pedro Fages crossed the southern valley in 1772; Fr. Garcés crossed the west end and went through Willow Springs, west of the study area, in 1776; Jedediah Smith, similarly, went across the western valley in 1827 and also visited Willow Springs, as did John C. Fremónt and his guide Kit Carson in 1844. The Rogers and Manly party - the Jayhawkers or Death Valley '49ers - camped at Willow Springs towards the end of their dramatic 1849 expedition across the Mojave Desert, as well. And

Lt. Edward Beale, at the lead of a caravan of camels, came across the southern side of the valley in his 1857 trip to Fort Tejon (Bancroft 1963; Settle 1963:61; Boyd et al. 1982).

It was not until the 1860s that the first settlers moved into this region, settling mostly in the Elizabeth Lake region and the southern foothills of the Tehachapi Mountains, and involved principally in ranching. With the development in 1868 of the Cerro Gordo silver mine in Inyo County, however, the Antelope Valley became a major thoroughfare for the movement of bullion and goods between Los Angeles and the Owens Valley (Chalfant 1933); indeed, efforts to wrestle control over the Inyo silver trade away from Los Angeles became a major theme of California economic history in the 1870s (Nadeau 1965). Los Angeles managed to maintain its monopolization of this trade, nonetheless, with Remi Nadeau's freight-line playing a major part in the transshipment of goods and ore across the valley. Willow Springs and its adobe tavern served as a major stop on this route, with the stage line then essentially heading south (on the route that would eventually be adopted by the railroad), for a 28-mile stretch through Cow Hole to Barrel Springs, at the mouth of Soledad Canyon, and subsequently through the canyon for the uphill climb through the San Gabriel Mountains. Old Nadeau Road, which parallels Pearblossom Highway near the Vincent Hills, is apparently a remnant of this original freight-line route, which proved so instrumental in the growth of Los Angeles as the economic center of southern California. It is a few miles east of the study area.

Shortly after the establishment of the first permanent school in the region, in 1869 at Elizabeth Lake, a number of settlers' colonies sprang-up within the valley, including Wicks, Manzana, Chicago, Kingsbury, John Brown, Old Palmdale and Almondale (Settle 1963). However, the major impetus to settlement resulted with the completion of the Southern Pacific railway through the valley in 1876, fostering the establishment of Rosamond, Lancaster and Palmdale by 1882.

The Southern Pacific Railroad arrived in Mojave on August 8, 1876. The location of the current depot, on the west side of Highway 14, was the location of the original depot site, although the existing depot building is a later construction. A freight depot was added on August 20 of the same year and, before long, the town turned into a division point for the rail line. With the railhead at Mojave, the San Bernardino Borax Company began hauling its borax to the town on mule teams; the Baldheaded Eagle Borax Company began using the town as its railhead a few years later, in 1881. The Santa Fe Railroad arrived in 1884, as did the famous “20 Mule Teams” of the Pacific Borax Company, truly making the town a transportation hub for the region. The Pacific Borax Company continued with its mule team loads to the railhead until 1889, when a spur line reached their mining operations (Deaver 1967).

The original town site of Mojave was laid-out by the Southern Pacific at the time that the rail went through. Initially it was simply a residential camp for railroad employees consisting of a few wooden shacks, but it was of sufficient importance that a post office was opened in October, 1876. Because of its position as a transportation hub, Mojave quickly attracted additional residents but was not filed as a subdivision until 1905 (ibid). Growth at and after that point was spurred by two early twentieth century developments. The first was the increasingly important mining activities at Standard Hill and Soledad Mountain, south of town. The second was the construction of the Los Angeles Aqueduct, built between 1907 and 1913, which brought literally thousands of workers into the region. In addition to its function as a transport hub, Mojave served as the “watering hole”

for the mine and aqueduct crews, and was widely renowned for its saloons and brothels, which were said to outnumber the churches in town by 10 to one.

Rosamond was also a Southern Pacific depot originally named Sand Creek but was given its current name in honor of a daughter of a rail official. A post office opened here in 1885 and the Butterworth Ranch was homesteaded, for cattle, in 1888, six miles west of Rosamond. The origin of the town proper is somewhat later. The town site was purchased by C.C. Calkins in 1907 who sold the mortgage to Charles M. Stinson. Stinson in turn donated the mortgage to the Union Rescue Mission of Los Angeles, who foreclosed on the property in 1916. In 1935 the Mission began selling lots in the town site, initiating its residential development (Bailey 1967; Settle 1967; DeWitt 1989).

Rosamond's history is also tied to early mining in the region; specifically the development of Tropico which began in the 1870s and, for over two decades, solely involved clay mining, for Ezra Hamilton's brickworks and pottery in Los Angeles. Hamilton purchased the mining property in the 1890s. Recognizing the presence of gold dust in the clay, he prospected the area, finally discovering a profitable load in 1896. By 1907 his Lida mines had yielded more than 8000 tons of ore averaging 1.2 ounces of gold and 7.5 ounces of silver per ton (Troxel and Morton 1962). Hamilton sold his mines in 1908, with the property eventually becoming the Tropico Mining and Milling Company (Settle 1967). Mining and custom milling continued until 1956 when the operation was shut down.

Willow Springs, a short distance west of Rosamond, figured in much of the early history of the region (as noted above), serving as a watering stop on the main trail through the area. Fages, in 1772, Garces, in 1776, and Fremont, in 1844, are all thought to have stopped at the spring. Stage routes from Los Angeles to both Havilah and Inyo ran through the spring, starting in the 1860s, with Remi Nadeau (responsible for the Los Angeles to Inyo freight route) building a corral at the spring. Because they were running livestock in the Antelope Valley, the Tejon Ranch purchased the spring at about this same time. The spring was subsequently purchased around 1900 by Ezra Hamilton, after his discovery of gold in the area, who was responsible for constructing most of the existing stone buildings at this location (Bailey 1967; Boyd et al. 1982; Settle 1967).

According to an account by Hamilton himself, written in 1913, he made about $200,000 from the Lida Mine (Settle 1963). He paid $3500 to the Beale estate for Willow Springs and 160 acres of surrounding land, and created a farm and health resort. Hamilton claimed that, in 1913, there were 27 stone houses, a hotel, bath-house, public hall, dance hall, school, and auto and blacksmith shops. The school was the first in the area (ibid.).

Being outside of Rosamond proper and not located immediately adjacent to any known springs, the Gettysburg Solar Project study area is not located in areas of particular historical activities.

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3. ARCHIVAL RECORDS SEARCH

An archival records search was conducted at the California State University, Bakersfield, Southern San Joaquin Valley Information Center (IC), by AIC staff members to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study area; (ii) if the study area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. The results of this archival records search are summarized here.

The records search at the IC indicated that one previous survey had been completed which covered much of the study area (Table 1). Sixteen previous studies had been completed within a half-mile radius of the study area (Table 2), and one previously recorded resource was known to exist in the same radius (P-15-011586; Willow Springs International Raceway). Results of the records search are presented in Confidential Appendix B.

In addition to the records search, a Sacred Lands File Request was completed by the Native American Heritage Commission. No specific concerns were identified as a result of the request. Results of the request are presented in Confidential Appendix B.

Table 1. Survey Reports within the Study Area

Report No.	Year	Author/Affiliation	Title
KE-01010	1991	R.W. Robinson/Individual Consultant	Regional Overview of the Cultural Resources of the Willow Springs Specific Plan Update, Southern Kern County, California
KE-01010A	1991	Robert Bein/ William Frost & Associates	Environmental Impact Report Draft, Willow Springs Specific Plan Update

Table 2. Survey Reports within 0.5-Miles of the Study Area

Report No.	Year	Author/Affiliation	Title
KE-00822	1990	Robert E. Parr/ Cultural Resources Facility, CSUB	An Archaeological Assessment of 320 Acres of Land South of Willow Springs, Kern County, California
KE-00899	1989	Catherine Lewis Pruett/ Cultural Resources Facility, CSUB	Environmental Impact Evaluation: An Archaeological Survey of Approximately 240 Acres West of Rosamond, Kern County
KE-00901	1989	Catherine Lewis Pruett/ Cultural Resources Facility, CSUB	Environmental Impact Evaluation: An Archaeological Survey of Approximately 320 Acres West of Rosamond, Kern County
KE-00927	1989	Catherine Lewis Pruett/ Cultural Resources Facility, CSUB	Environmental Impact Evaluation: An Archaeological Survey of Approximately 160 Acres Southeast of Willow Springs, Kern County
KE-01009	1991	R.W. Robinson/Individual Consultant	A Cultural Resources Investigation of Approximately Ten Acres Located Near Willow Springs in Southern Kern County, California
KE-01327	1989	Robert A. Schiffman/ Bakersfield College	Archaeological Investigation of Parcel Map No. 8445, Kern County, California
KE-01435	1992	Robert A. Schiffman/ Bakersfield College	Archaeological Investigation of Lots 1 & 32 of Tract #2085 Section 16, T.9N, R.13W.

KE-01452	2011	Robert A. Schiffman/ Bakersfield College	Archaeological Investigation for Lot 16 of Tract #2085 Section 16, T.9N, R.13W.
KE-01458	2010	Robert A. Schiffman/ Bakersfield College	Archaeological Investigation for Parcel map #10127
KE-02845	2003	Robert E. Parr/ Center for Archaeological Research, CSUB	A Cultural Resources Assessment of 2.29 Acres of Land on the North Side of Rosamond Boulevard, City of Rosamond, Kern County, California
KE-03212	2006	John Romani/ Compass Rose Archaeological, Inc.	Archaeological Survey Report: Rosamond Boulevard from SR 14 to 90th Street West, Rosamond, Kern Co., CA
KE-03317	2005	Scott Hudlow/ Hudlow Cultural Resource Associates	A Phase I Cultural Resource Survey for Lots 9 and 10, Survey Tract 2085, Rosamond, Kern County, CA
KE-03710	2008	James J. Schmidt/ Compass Rose Archaeological, Inc.	SCE Tehachapi Renewable Transmission Project, Racetrack Marshalling Yard, West Rosamond Boulevard and 75th Street West, Rosamond Area, Kern County, California
KE-03994	2010	Hubert Switalski/ AMEC Earth and Environmental, Inc.	Archaeological Survey Report for the Southern California Edison Company's Replacement of Four Deteriorated Power Pole Structures on the Huron, Tenneco, and Willow Springs 12kV Distribution Circuits (6036-4800, 0-4891, 0-4898, 0-4899, J-4803), Frazier Park and Rosamond, Kern County, California
KE-04156	2010	Wayne H. Bonner/ Michael Brandman Associates	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate SV12516-B (APE Monopole), 7347 West Rosamond Boulevard, Rosamond, Kern County, California
KE-04225	2010	T. Jackson et al./ Pacific Legacy	Cultural Resources Inventory of the Southern California Edison company Whirlwind to Rosamond to Windhub Telecommunication Line, Kern County, California

Due to the age of the previous study conducted within the study are, re-survey was necessary to satisfy CEQA data requirements. Based on the results of the records search, the study area is predicted to have low archaeological sensitivity.

4. METHODS AND RESULTS

The 160-ac study area was surveyed on the 24th and 25th of May 2018 by ASM Associate Archaeologist Robert Azpitarte, B.A., with assistance from ASM Assistant Archaeologists Stacey Escamilla, B.A., Steve Teteak, B.A., and Sandy Speas, B.A.

The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites, in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. Survey transects were spaced at 15-meter intervals.

Field conditions during the survey were excellent, with minimal ground cover and therefore good surface visibility.

4.1 SURVEY RESULTS

As a result of the survey, ten cultural resources (six sites and four isolates) were identified during the survey. The sites were given the temporary designations GETTY-SITE-1, GETTY-SITE-2, GETTY-SITE-3, GETTY-SITE-4, GETTY-SITE-5, and GETTY-SITE-6; and the isolates were given the temporary designations GETTY-ISO-1, GETTY-ISO-2, GETTY-ISO-3, and GETTY-ISO-4. All six sites are sparse prehistoric lithic scatters, and all four isolates are prehistoric lithic flakes. A GIS resource location map was created for the newly identified cultural resources (Figure 4, Confidential Appendix A) and GIS sketch maps were created for the six identified prehistoric sites (Figures 6, 8, 10, 12, 15, and 17, Confidential Appendix A). DPR Forms for all recorded resources are provided in Confidential Appendix C. Site and isolate descriptions are presented below.

Conditions at all cultural resources were virtually the same. Vegetation and the soil matrix within the study area, and thus at the cultural resources, is homogenous at the sites and consists of seasonal introduced grasses, shadscale, winter fat, and hopsage. The site soil matrix is comprised of yellowish brown alluvium with dispersed igneous and metamorphic rocks.

4.1.1 Newly Recorded Sites

GETTY-SITE-1

GETTY-SITE-1 is a small lithic scatter consisting of approximately 23 early reduction surface flakes (65% rhyolite, 45% chert). The site is located on open flats less than four miles east of Rosamond and approximately 100-meters west of an unnamed dirt road. One artifact, a multidirectional rhyolite core measuring 7.7 by 7.0 by 4.6-centimeters (cm), was identified at the

site (Figure 5). A GIS sketch map was created for the site and is presented in Confidential Appendix A (Figure 6). The site is in good condition

GETTY-SITE-2

GETTY-SITE-2 is a small lithic scatter with three identified surface flakes including one primary and two secondary rhyolite flakes. The site is located on open flats less than four miles east of Rosamond (Figure 7). A GIS sketch map was created for the site and is presented in Confidential Appendix A (Figure 8). The site is in good condition.

GETTY-SITE-3

GETTY-SITE-3 is a small lithic scatter with four identified surface flakes including shatter and primary rhyolite flakes. The site is located on open flats less than four miles east of Rosamond (Figure 9). A GIS sketch map was created for the site and is presented in Confidential Appendix A (Figure 10). The site is in good condition

GETTY-SITE-4

GETTY-SITE-4 is a small lithic scatter with nine identified surface flakes (77% rhyolite, 23% chert), all early reduction. The site is located on open flats less than four miles east of Rosamond (Figure 11). A GIS sketch map was created for the site and is presented in Confidential Appendix A (Figure 12). The site is in good condition.



Figure 5. Artifact 1 at site GETTY-SITE-1, planview.



Figure 7. Site GETTY-SITE-2 overview, looking north-northeast.



Figure 9. Site GETTY-SITE-3 overview, looking northeast.



Figure 11. Site GETTY-SITE-3 overview, looking north.

GETTY-SITE-5

GETTY-SITE-5 is a sparse lithic scatter with approximately 13 identified surface flakes (84% rhyolite, 16% chert), all early reduction. Two lithic artifacts (Figures 13 and 14) were also identified on site and recorded (Table 3). The site is located on open flats less than four miles east of Rosamond. A GIS sketch map was created for the site and is presented in Confidential Appendix A (Figure 15). The site is in good condition.

Table 3. GETTY-SITE-5 Artifact Designation, Dimensions, and Description

Artifact #	Dimensions, LxWxT (cm)	Description
Artifact 1	7.2 x 5.6 x 3.4	Multidirectional rhyolite core with approximately 10 visible flake scars and about 15 percent cortex
Artifact 2	4.9 x 3.2 x 2.6	Multidirectional rhyolite core with approximately 5 visible flakes scars and about 30 percent cortex

GETTY-SITE-6

GETTY-SITE-6 is a small lithic scatter with four identified rhyolite surface flakes, all early reduction. The site is located on open flats less than four miles east of Rosamond and immediately west of an unnamed northeast-southwest trending two-track dirt road (Figure 16). A GIS sketch map was created for the site and is presented in Confidential Appendix A (Figure 17). The site is in good condition.



Figure 13. Artifact 1 at GETTY-SITE-5, planview.



Figure 14. Artifact 2 at GETTY-SITE-5, planview.



Figure 16. Site GETTY-SITE-6 overview, looking north-northeast.

4.1.2. Newly Record Isolates

GETTY-ISO-1

The isolate consists of a single secondary rhyolite flake that measures 4.4 x 2.9 x 1.3-cm. The isolate is in good condition.

GETTY-ISO-2

The isolate consists of two secondary chert flakes measuring 3.4 x 3.7 x .5-cm and 2.3 x 2.2 x .9-cm. The isolate is in good condition.

GETTY-ISO-3

The isolate consists of one primary and one secondary rhyolite flake. The flakes measure 8.2 x 5.7 x 2.2-cm and 5.8 x 3.5 x 1-cm, respectively. The isolate is in good condition.

GETTY-ISO-4

The isolate consists of a single secondary chert flake with less than 5 percent cortex. The flake measures 2.5 x 1.9 x .9-cm. The isolate is in good condition.

5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I archaeological survey was conducted for the Gettysburg Solar Project study area, Kern County, California. A records search of site files and maps was completed at the Southern San Joaquin Valley Information Center, California State University, Bakersfield. This records search indicated that one previous survey had been completed which covered much of the study area. Sixteen previous studies had been completed within a half-mile radius of the study area, and one previously recorded resource was known to exist in the same radius. Additionally, a Sacred Lands File Request was completed by the Native American Heritage Commission for the project and no concerns were identified.

The Phase I survey fieldwork was conducted on the 24th and 25th of May 2018, with parallel transects spaced at 15-meter intervals walked across the study area. The total study area surveyed was approximately160-ac. A total of 10 cultural resources (6 sites and 4 isolates) were identified as a result of the survey. The newly recorded sites are all prehistoric lithic scatters and were given the temporary designations GETTY-SITE-1, GETTY-SITE-2, GETTY-SITE-3, GETTY-SITE-4, GETTY-SITE-5, and GETTY-SITE-6. The newly recorded isolated finds are all prehistoric flakes and were given the temporary designations GETTY-ISO-1, GETTY-ISO-2, GETTY-ISO-3, and GETTY-ISO-4.

Based on the number and nature of the identified cultural resources, the study area appears to have been used prehistorically for lithic reduction (tool manufacture). This activity appears to have been sporadic and opportunistic, likely using lithic materials that are available in the local region, and perhaps conducted as an adjunct to other activities, such as plant food gathering.

5.1 RECOMMENDATIONS

An archival records search, background studies, and an intensive, on-foot surface survey of the Gettysburg Solar Project study area, Kern County, California, were completed. Six prehistoric archaeological sites, temporary designations GETTY-SITE-1, GETTY-SITE-2, GETTY-SITE-3, GETTY-SITE-4, GETTY-SITE-5, and GETTY-SITE-6, were identified and recorded within the study area. All six sites consist of sparse lithic scatters

The proposed Gettysburg Solar Project has the potential to result in adverse impacts to the six identified archaeological sites. It is therefore recommended that these sites either be preserved in place, or that Phase II test excavations and determinations of significance be conducted at each of them, from which determinations of CRHR eligibility can be made and a final assessment of impacts can be established.

Four prehistoric isolated finds were also identified and recorded, and given the temporary designations GETTY-ISO-1, GETTY-ISO-2, GETTY-ISO-3, and GETTY-ISO-4 within the Gettysburg Solar Project study area. The recording of these isolates, which are categorically not significant or unique under CEQA, has served to mitigate any adverse impacts that might accrue to them, and no additional archaeological work is recommended.

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CONFIDENTIAL APPENDICES

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PHASE II TEST EXCAVATIONS AND DETERMINATIONS OF SIGNIFICANCE, GETTYSBURG SOLAR PROJECT KERN COUNTY, CALIFORNIA

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MANAGEMENT SUMMARY

This report documents Phase II test excavations and determinations of significance/California Register of Historical Resources (CRHR) eligibility evaluations for six prehistoric/Native American archaeological sites within the proposed footprint of the Gettysburg Solar facility, Kern County, California. These sites are P-15-019836, P-15-019837, P-15-019838, P-15-019839, P-15-019840, and P-15-019841. Phase II testing including mapping each site's boundaries, diagnostic artifacts, surface features and collection units; controlled collection of all identified surface artifacts and archaeological specimens; hand excavation to determine whether subsurface cultural deposits are present at these sites and, if so, the nature and significance of any such deposit; artifact washing, laboratory analysis and preparation for curation. David S. Whitley, Ph.D., served as Principal Investigator; Peter Carey, M.A., RPA, was Field Director; and Rob Azpitarte, B.A, was crew chief, with the fieldwork conducted during October and November 2020. Gloria Morgan, representing the Tejon Indian Tribe, served as tribal monitor.

Five of the sites (P-15-019837, P-15-019838, P-15-019839, P-15-019840, and P-15-019841) were determined to be small surface lithics scatters resulting from stone tool production and/or maintenance. These five sites lack subsurface artifacts and deposits with their archaeological assemblages systematically collected during the study. They are recommended as not CRHR eligible or unique, due to the small size of their recovered artifact assemblages, the limited variety of artifacts these contain (almost all entirely lithic debitage or waste flakes) and the absence of subsurface deposits. The collection of all artifacts from these five sites, furthermore, has served to mitigate any adverse impacts to these five cultural resources that would result from the construction of the solar project.

Site P-15-019836, in contrast, contains a subsurface archaeological deposit that extends to approximately 40-centimters (cm) below the ground surface. The quantity of artifacts recovered from this site, including the presence of formal tools and burnt animal bone, indicates that this site was likely a small camp. It has the potential to provide additional information about prehistory and is thus recommended as CRHR eligible under Criterion 4, research potential. It is further recommended that adverse impacts to this site be mitigated by its preservation in place, or that a data recovery (salvage) excavation be conducted at the site to reduce adverse impacts to a less than significant level.

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1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates was retained by Quad Knopf, Inc., to conduct a Phase II Test Excavations and Determinations of Significance for six prehistoric archaeological sites located within the proposed footprint of the Gettysburg Solar Facility, near Willow Springs, Kern County, California. The purpose of the Phase II study is to evaluate these cultural resources for eligibility to the California Register of Historical Resources (CRHR), in order to provide data to support the County environmental review pursuant to the California Environmental Quality Act (CEQA, as amended January 1, 2015), Public Resources Code (PRC), Division 13 (Environmental Quality), Chapters 2.6 §21083.2 (Archaeological Resources) and 2.6 §21084.1 (Historical Resources); and the State CEQA Guidelines (as amended December 1, 2013), California Code of Regulations (CCR) Title 14, Chapter 3, Article 5 §15064.5 (Determining the Significance of Impacts on Historical and Unique Archaeological Resources). This assessment has also been prepared in accordance with the Kern County General Plan.

The Phase II investigation was conducted by ASM Affiliates, Inc., with David S. Whitley, Ph.D., RPA, serving as Principal Investigator; Peter Carey, M.A., RPA, as Field Director; and Rob Azpitarte, B.A., as Crew Chief. Gloria Morgan, representing the Tejon Indian Tribe, served as Tribal Monitor. Fieldwork for this study was conducted in October – November 2020, with laboratory processing and artifact analysis completed in December 2020.

This Phase II study augments an earlier intensive Phase I cultural resource survey for the Gettysburg Solar Project (ASM Affiliates 2018). The archaeological sites evaluated during this study were first identified and recorded during that 2018 survey, and they represent all of the cultural resources observed within the facility footprint. All 6 sites are located roughly 1 to 1.5-miles (mi) south of Willow Springs Raceway on the open flats of the Antelope Valley at elevations ranging from approximately 2390 to 2420-feet (ft) above mean sea level (amsl). The six sites were described as follows:

- **P-15-019836 /CA-KER-010843 (Temporary Designation GETTY-SITE 1)**

This site was recorded in 2018 as a small and low-density scatter of about two dozen lithic flakes and at least one tool.

- **P-15-019837 /CA-KER-010844 (Temporary Designation GETTY-SITE 2)**

Site P-15-019836 was recorded in 2018 as a sparse lithic scatter containing three pieces of lithic debitage.

- **P-15-019838 /CA-KER-010845 (Temporary Designation GETTY-SITE 3**)

This site was recorded in 2018 as a sparse lithic scatter containing four pieces of lithic debitage.

- **P-15-019839 /CA-KER-010846 (Temporary Designation GETTY-SITE 4)**

P-15-019839 is a sparse lithic scatter containing 9 pieces of debitage.

- **P-15-019840/ /CA-KER-010847 (Temporary Designation GETTY-SITE 5)**

Site P-15-019840 was recorded in 2018 as a small lithic scatter with over a dozen pieces of lithic debitage and two cores.

- **P-15-019841/ /CA-KER-010848 (Temporary Designation GETTY-SITE 6)**

The last site tested was recorded as a sparse lithic scatter containing four pieces of debitage.

All six of these sites are located within the proposed Gettysburg Solar Facility footprint. A map (Figure 1) with locations of these sites is provided in Confidential Appendix A. This manuscript constitutes a report on the Phase II test excavations and determinations of significance. The following sections provide background to the investigation, including historic context studies; a summary of the test excavation techniques employed; and the results of the fieldwork. We conclude with management recommendations for the ten archaeological sites based on our results.

1.1 GETTYSBURG FACILITY DESCRIPTION AND LOCATION

The proposed Gettysburg solar project involves the development of a 30MWac photovoltaic (PV) energy generation facility. Associated infrastructure will be located adjacent to the proposed facility. Approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid pattern would be utilized for the project. The solar PV generating facilities would consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts and are intended to operate year-round, generating electricity during daylight hours at peak demand.

Power generated by the proposed solar facility would be transferred directly to Southern California Edison's (SCE) Antelope-Cal Cement-Rosamond 66kV line by way of associated gen-tie transmission lines, which are proposed to follow the Rosamond Boulevard right-of-way. The lines will terminate approximately 1.25-mi east of the project area at SCE's Rosamond Substation.

The 160-ac Gettysburg Solar project is located on the open flats of the Antelope Valley, a western extension of the Mojave Desert, roughly 4-mi west of the City of Rosamond and 1-mi south of the Willow Springs Butte. The study area is bordered on the north by Rosamond Boulevard, and includes the eastern half of the northwest quarter and the western half of the northeast quarter of Section 21, in Township 9 North, Range 13 West (T9N/R13W), San Bernardino Base and Meridian (SBBM).

1.2 REGULATORY CONTEXT

1.2.1 CEQA

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A *historical resource* is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be *historically significant* (State CEQA Guidelines, Section 15064.5[a][1-3]). A resource shall be considered *historically significant* if it:

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; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project would cause damage to a *unique archaeological resource*, the lead agency may require reasonable efforts to permit any or all of these resources to be preserved in place or left in an undisturbed state. See PRC, Section 21083.2(b). To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b], and [c]).PRC, Section 21083.2(g) defines a *unique archaeological resource* as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2) Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA further states that a significant adverse change to the significance of an historical resource is a significant effect on the environment. This occurs when a historical resource, including archaeological sites, are physically demolished, destroyed or altered (State CEQA Guidelines, Section 15064.5[b][c]).

1.2.2 Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan that pertain to cultural resources are provided below.

Archaeological, Paleontological, Cultural, and Historical Preservation (General Provisions in the Land Use, Open Space, and Conservation Element)

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

- **Measure K:** Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.
- **Measure L:** The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.
- **Measure M:** In areas of known paleontological resources, the County should address the preservation of these resources where feasible.
- **Measure N:** The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
- **Measure O:** On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

2. ENVIRONMENTAL AND CULTUAL BACKGROUND

2.1 ENVIRONMENTAL SETTING

The Project would be located in southeastern Kern County, California, about 55-mi southeast of the City of Bakersfield and about 4-mi west of Rosamond, in the western portion of the Antelope Valley. The Antelope Valley is within the west Mojave Desert and is bounded by the Tehachapi Mountains to the northwest and the San Gabriel Mountains to the southwest. The Antelope Valley and Project area land uses include undeveloped desert (i.e., Mojave Basins; Griffith et al. 2016), fallow and active agriculture, low-density residences, and renewable energy (e.g., solar and wind).

The study area slopes slightly from northwest to southeast, with an elevation of 2,425-feet (ft) above mean sea level (amsl) at the northwest corner, and an elevation of 2,392-ft amsl at the southeast corner. Annual average precipitation in the town of Mojave is approximately 6 inches (in), with January, February, and March receiving nearly half the annual rainfall (Western Regional Climate Center 2017). The average low temperature is 32 degrees Fahrenheit (°F) in December, and the average high temperature is 97°F in July.

The Antelope Valley is within the South Lahontan Basin, which is considered an isolated watershed (i.e., it is not hydrologically connected to other wetlands or water bodies). Soils in the Project area are generally well drained sandy loams and loamy sands with negligible to moderate runoff rates. The Project area comprises a mix of desert scrub communities, dominated by creosote scrub supporting a variety of wildlife species. The Project region has experienced considerable growth in renewable energy projects in recent years. Large-scale wind and solar projects have become interspersed with desert scrub and agricultural land uses (WEST 2019).

The project footprint consists of undeveloped though disturbed land. Evidence of disking is apparent at the eastern end of the project area, where vegetation is sparsest, and the entire footprint has likely been disked in the past. Vegetation currently consists of introduced grasses, shadscale, winter fat, and hopsage (cf. Schoenherr 1992).

2.2 ETHNOGRAPHIC BACKGROUND

Though the western Mojave Desert and environs were poorly reported in the early ethnographic summaries, Earle (e.g., 2003, 2005) has provided a synthesis for the region. A summary of his recent ethnohistorical conclusions provide an appropriate overview for the aboriginal history of the region.

According to Earle's reconstruction, the western Mojave was inhabited during the Historic/Protohistoric period by three distinct language-speakers, one group of whom could be further subdivided into two (and perhaps three) fairly distinctive dialects. The most significant linguistic division existed between the Kawaiisu speakers, who lived in Tehachapi Valley through the southern Sierra Nevada and eastward across Fremont Valley towards Red Mountain and into

southern Panamint Valley, and the groups to the south and west in Antelope Valley, per se. The Kawaiisu language is a member of the Numic branch of the Uto-Aztecan language family and is thereby most closely related to the Shoshone and Paiute languages of the Great Basin.

South and westward of the Kawaiisu were two other members of the Uto-Aztecan language family but, in this instance, both were distinct languages belonging to the Takic (as opposed to Numic) branch, specifically to the Serran Takic branch. Along the south westernmost side of the Antelope Valley, including the northern foothills of the Liebre Mountains and the southern side of the Sierra Pelona, were the Tataviam. Related to them linguistically, but speaking a distinct language, were the Kitanemuk, who occupied the westernmost Antelope Valley and the Tehachapi Mountains west of Tehachapi Pass. Living to the east of the Kitanemuk, who extended to approximately the current location of Highway 14 where it heads north across the Antelope Valley, were a Serrano clan labeled the Haminat by Erale. According to Earle's analysis, there was a linguistic continuum along the northern side of the San Gabriel Mountains in the Western Mojave Desert, from the Serrano on the east to the Kitanemuk, at the western end.

The study area thus falls in a slightly ambiguous zone near the Kawaiisu, Kitanemuk and Serrano boundaries. Despite this uncertainty, these groups were culturally similar. All three, for example, were foragers, with food sources derived principally from gathering. The exact plant species exploited was dependent on seasonal availability as well as precise geographical/environmental location. In the higher montane portions of the region (e.g., towards the Tehachapis), acorn-bearing oak and pinyon nuts were staples. In the lower lying more desertic zones, including the study area, mesquite, yucca and a variety of other edible plants were emphasized. Hunting also contributed meat protein, and principally emphasized small game, such as hares, rabbits and rodents.

Following general California patterns, there were also a number of similarities in social and political organization across the Antelope Valley. The Haminat may have been organized into exogamous clans and moieties, whereas the western groups might have lacked these, and in this sense the Haminat could have been more like the southern California Desert groups like the Desert Serrano and Cahuilla, with the other groups more similar to the south-central California culture of the Chumash and related peoples. Although there is debate about their prehistoric origins (e.g., Sutton 2017), it appears that the region as a whole lacked any political organization beyond that of the tribelet, or what Earle has identified in the Spanish records as *naciones*. These were autonomous land-owning groups, focused on a principal village and led by a headman or chief, and probably comprising a lineage system or clan. In this sense, the Antelope Valley can be said to follow the political organizational pattern found throughout most of Native California. This, of course, further links it with Californian, as opposed to Great Basin, cultural patterns.

In general terms, major historical villages were located at well-watered spots, such as springs. Most of these, for this reason, are located in the San Andreas Rift Zone, along the south side of the Antelope Valley, which is unusually well-watered. The only known village in the general project vicinity is Willow Springs (CA-KER-129), located at the east end of the Willow Springs fault scarp, roughly 2-mi northwest of the Gettysburg Solar Facility. Indigenous names in Serrano (*Chibubit* or *Punakavea*), Kawaiisu (*SeSevjek*) and Kitanemuk (*šeševiyək*) are known for this village; according to the Kawaiisu informant Andy Greene, it was a Kitanemuk village (site record for P-15-000129).

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The following summary of regional archaeology is derived from Gardner (2009), Glennan (1971), Scharlotta (2014), Sutton (1996, 2017), Way and Jackson (2009), Whitley (1994, 1998, 2000), and Whitley et al. (2006).

Pre-Clovis (earlier than 12,000 YBP)

The initial occupation of North America is still a topic of research and debate, with the date of initial human entry onto the continent not yet known, and little understood about the lifeways of the earliest occupants. This Late Pleistocene occupation is generally referred to as the Pre-Clovis (cultural) Period, dated at earlier than 12,000 years before present (YBP). During this period, many of the valley floors of the Mojave Desert and the Great Basin where filled with a large lake system, including Lake Thompson in the Antelope Valley. Although a number of claims have been made for Pre-Clovis sites in the Mojave Desert generally, these have either been disproven or remain controversial and uncertain. Possible Pre-Clovis petroglyph dates for the Coso Range have been proposed by Whitley (2013), but still require verification by additional tests.

Paleoindian (12,000 - 9000 YBP)

Although the initial occupation of the continent is controversial, there is widespread agreement on the subsequent Paleoindian period, which is typically viewed as pertaining to mobile big-game hunters who exploited Pleistocene megafauna. The hallmarks of the Paleoindian period are the fluted, collaterally-flaked and basally-thinned and -ground Clovis and Folsom spear points, during the earlier portions of the period, followed by a series of large, well-flaked but unfluted lanceolate points towards the end of the period, some of which are stemmed. Some scenarios suggest that the big-game hunting practiced by these Paleoindian peoples may be responsible for the extinction of the Pleistocene megafauna, such as Imperial Mammoth, *Bison antiquus*, and the North American horse. Aside from this so-called Pleistocene overkill problem, the image of Paleoindians as specialized big-game hunters has become pervasive for North America though it is far from proven in all parts of the continent. Recent evidence, however, indicates that the earlier portions of the Paleoindian period comprised a lengthy and severe drought, thus demonstrating that the large mammal herds were already under extreme environmental stress, regardless of the effects of human predation. Paleoclimatic reconstruction in the vicinity of the study area indicates that a drought also occurred in this specific region, further supporting the notion that all Mojave Desert populations – human and animal – existed in stressed conditions at that time.

Very substantial although sometimes overlooked evidence of Paleoindian use of eastern California has been found in a number of areas, including Pilot Knob Valley, northeast of the study area; on the shores of Pleistocene Lake China and within the Coso Range, again to the northeast; in Fort Irwin, northeast of Barstow; at Boron, to the west; in the El Paso Mountains, northeast of the study area; on Edwards Air Force Base, to the east; and in the Tehachapi Mountains, to the north. Typically, the Paleoindian evidence consists of isolated (in some cases reused) Paleoindian projectile points, although there is also evidence for Paleoindian petroglyph manufacture in the Cosos. Although it is likely that Paleoindian habitation sites are somewhere preserved in the

region, they have yet to be found and a better understanding of the Paleoindian period in this portion of eastern California will only be obtained when such sites are discovered and investigated

Early Archaic (9000 - 6000 YBP)

The Early Archaic period, or so-called Western Pluvial Lakes Tradition, represents the early Holocene in paleoenvironmental terms. Its hallmark is generally considered to be the widely dispersed but ambiguously-dated Western Stemmed Tradition projectile points. These include the local variants known as Lake Mohave and Silver Lake points, which may in fact actually date between 10,500 and 7,500 YBP and thus be partly coeval with fluted points. Combined with studies of the lithic technologies of Early Archaic and Paleoindian sites, this chronological overlap suggests that the Western Stemmed Tradition may have been an in-situ development out of the earlier Paleoindian tradition.

Early Archaic sites are most commonly found on the lowest terraces above latest Pleistocene and early Holocene lake basins and stream deltas. (Notably, fluted points are also sometimes found at these same sites and geomorphological locations, contributing to the chronological ambiguity of both point types). Early Archaic sites are, accordingly, widely regarded as part of a lacustrine-focused adaptive strategy. Although a number of authors have cautioned against too simplistic an interpretation of these associations, pointing to the fact that Early Archaic sites are also found in other environments (e.g., Way and Jackson 2009), it nonetheless is apparent that, in eastern California at least, this environmental association and its inferred subsistence implications maintain some verity. Indeed, it can be noted that recent research in the Great Basin has emphasized the general importance of lacustrine adaptations in general terms. Although lakeshore exploitation may have been practiced during the Early Archaic in this portion of eastern California, this period apparently also included mobile hunting in other environments as well.

Middle Archaic (6000 to 4000 YBP)

Be this early evidence as it may, what is incontrovertible is that, regardless of date of *initial* occupation, *substantial* inhabitation did not occur until much later, with the start of the Middle Archaic or Pinto Period, at about 6000 YBP. This lasted until approximately 4000 YBP. A number of sites from this time period are known from the Rosamond area, specifically associated with the prehistoric shoreline of Rosamond Lake.

The Middle Archaic, however, corresponds essentially to the Altithermal paleoenvironmental period, a hot and dry climatic regime. In the Coso area to the north, but not necessarily elsewhere in eastern California, there is little if any evidence for Middle Archaic occupation. Existing evidence could be interpreted to signal a diminution in occupation, if not an outright abandonment, in this region, apparently corresponding to the hot and dry climatological conditions of the Altithermal. It is also possible, however, that local inhabitants may have adopted a subsistence strategy and settlement pattern with little archaeological visibility on the landscape during this period; e.g., a highly mobile pattern. Although this alternative interpretation of the apparent dearth of Middle Archaic sites must be acknowledged, it seems implausible in light of the fact that extremely dry conditions would be more commonly predicted to result in a stronger form of "tethered nomadism", and thus greater archaeological visibility, around water sources. Moreover,

there is very clear evidence for Middle Archaic settlements in the Fort Irwin area, to the east of Barstow, suggesting that not all portions of eastern California were abandoned at this time; emphasizing the possibility of more regional variability than heretofore acknowledged.

Late Archaic (4000 to 1500 YBP)

Much less controversy surrounds the subsequent Late Archaic period, or Elko Period, lasting from about 4000 to 1500 years B.P., which correlates with improved and wetter environmental conditions across the far west, including within the study area. Although sites from this time period are sometimes considered rare in the Mojave Desert, it is notable that many of the subsequent Rose Spring Period villages (see below) were first occupied during this earlier phase. That is, as has been noted by a number of authors, there seems to be a strong continuity between the Elko Period and subsequent times, with the latter period materials masking or burying the Elko remains. In the Antelope Valley region, this begins with a major increase in population by at least about 3000 YBP.

Similar patterns have been noted in surrounding regions. For example, the start of the Late Archaic in the Coso Range region, to the north, is posited to represent the initial establishment of the primary settlement and subsistence systems that are currently archaeologically visible, while this same period has been recognized as experiencing a major, far western North American-wide expansion of settlements into new environments and increases in population, stretching from the Great Basin of eastern California, through the southern Sierra Nevada, across the Transverse Ranges, and down to the coast. The primary temporal diagnostics for the Late Archaic are Elko and Gypsum series projectile points.

In the Coso Range, the Late Archaic is signaled by the establishment of major winter villages, typically at springs, in valley bottoms on the western and wetter side of the range. Analyses of paleoethnobotanical and faunal remains suggest a generalized foraging strategy, emphasizing all available resources, including buckwheat stands around small mud-playas. This evidence is complemented by an extensive but seemingly non-logistically organized use of all upland environments. Included here is a significant quantity of isolated projectile points in the uplands, suggesting mobile hunting patterns. Furthermore, the Late Archaic witnessed the beginning of the intensive exploitation of the Coso Sugarloaf obsidian quarry, an event that apparently correlates with the beginning of the inland-to-coastal obsidian trade in south-central California.

Rose Spring (1500 - 800 YBP)

The Rose Spring Period is differentiated from the earlier Late Archaic/Elko Period by the introduction of the bow and arrow and a change from spear points to arrow points at circa AD 500. This transition is, in technical terms, dramatic. In fact, the introduction of this new weaponry technology probably did not have any immediate major impacts on social or cultural systems. At least initially, the settlement and subsistence systems were stable, and lithic technology and production did not noticeably change.

Moreover, and as implied above, in all other respects Rose Spring times appear to have been a continuum from the earlier patterns, so that the change in hunting technology was probably less

important than we might otherwise presume. Within the Antelope Valley area, Desert Village Complexes, representing a major change in magnitude of settlements, were founded at least by Rose Spring times, and perhaps towards the end of the earlier Elko phase. Two of these have been identified in the foothills of the Antelope Valley, with a third between Rosamond and Rogers Dry Lake, a fourth at Koehn Lake. It is possible, if not likely, that these represent the founding of the tribelet system of political organization in the region. It is also likely that a fifth Desert Village Complex is present at Willow Springs.

At approximately AD 1000 - 1200, however, a shift in settlement and subsistence practices began that, ultimately, culminated in the protohistoric/ethnographic patterns referred to as the Later Prehistoric or Numic Period (discussed below). This involved the abandonment of some winter villages (or at least a reduction in the intensity of their use); the establishment of logistical base camps around springs in the upland environments; an increasing emphasis on a relatively specialized diet focused on seeds and the pinyon nut; and a great increase in the production of petroglyphs. That is, settlement patterns became more organized and focused, while subsistence was increasingly specialized, and ritual became more common. The causes for this transition are still debated and not yet fully understood.

Late Prehistoric (800 - 140 YBP)

The Late Prehistoric (or, in some areas, Numic) Period, from 800 YBP to the Historic Period, represents a continued growth in local population, with numbers of people apparently quite high. It is distinguished from previous Rose Spring times by the introduction of brownware ceramics and a change in projectile point types: from Rose Springs types to Desert Side-Notched and Cottonwood Triangular. A boundary of some sort may have developed during this period, with Desert Side-Notched points, brownware ceramics and obsidian common from the Fremont Valley northward. South of this area, in the Antelope Valley proper, ceramics and obsidian are rare, and Cottonwood Triangular points are the predominant projectile point type. This apparently correlates with similar patterns further towards the coast: at about 800-1000 years ago the desert-to-coast obsidian trade dried up, and Rose Spring-like projectile points were replaced by Cottonwood-like points, with Desert Side-Notched points rare.

The Protohistoric/Historic phase of the Late Prehistoric, representing the last 300 years, is apparently marked by a major disruption in indigenous settlement, and a corresponding paucity of sites. Missionization pulled many of the region's inhabitants away. Note, however, that ~300 YBP also represents a brief period of extreme drought. Hence deteriorating environmental conditions may have contributed to social disruptions combined with the introduction of new diseases, all of which would have had detrimental effects on the local population. Subsequently, the Antelope Valley area was used as a staging ground for rustlers and other miscreants, who were raiding the missions' livestock. The result was that the area became somewhat of a no-man's land which, no doubt, has also contributed to the paucity of ethnographic information on it.

2.4 HISTORICAL BACKGROUND

Perhaps because of the use of the Antelope Valley as a staging area for Indian raids on the *estancias* and missions closer to the coast, Euro-American settlement and development of the area was a

little later dating than in other parts of southern California. As a result, the history of the Antelope Valley to about the 1860s principally involved various explorers who traversed it: for example, Pedro Fages crossed the southern valley in 1772; Fr. Garcés crossed the west end and went through Willow Springs in 1776; Jedediah Smith, similarly, went across the western valley in 1827 and also visited Willow Springs, as did John C. Fremónt and his guide Kit Carson in 1844. The Rogers and Manly party - the Jayhawkers or Death Valley '49ers - camped at Willow Springs towards the end of their dramatic 1849 expedition across the Mojave Desert, as well. And Lt. Edward Beale, at the lead of a caravan of camels, came across the southern side of the valley in his 1857 trip to Fort Tejon (Starr 1988; Settle 1963).

It was not until the 1860s that the first settlers moved into this region, settling mostly in the Elizabeth Lake region and the southern foothills of the Tehachapi Mountains, and involved principally in ranching. With the development in 1868 of the Cerro Gordo silver mine in Inyo County, however, the Antelope Valley became a major thoroughfare for the movement of bullion and goods between Los Angeles and the Owens Valley; indeed, efforts to wrestle control over the Inyo silver trade away from Los Angeles became a major theme of California economic history in the 1870s. Los Angeles managed to maintain its monopolization of this trade, nonetheless, with Remi Nadeau's freight-line playing a major part in the transshipment of goods and ore across the valley. Willow Springs and its adobe tavern served as a major stop on this route, with the stage line then essentially heading south (on the route that would eventually be adopted by the railroad), for a 28-mile stretch through Cow Hole to Barrel Springs, at the mouth of Soledad Canyon, and subsequently through the canyon for the uphill climb through the San Gabriel Mountains. Old Nadeau Road, which parallels Pearblossom Highway near the Vincent Hills, is apparently a remnant of this original freight-line route, which proved so instrumental in the growth of Los Angeles as the economic center of southern California. The freight-line route is a few miles west of the Gettysburg project area (Starr 1988).

Shortly after the establishment of the first permanent school in the region, in 1869 at Elizabeth Lake, a number of settlers' colonies sprang-up within the valley, including Wicks, Manzana, Chicago, Kingsbury, John Brown, Old Palmdale and Almondale (Settle 1963). However, the major impetus to settlement resulted with the completion of the Southern Pacific railway through the valley in 1876, fostering the establishment of Rosamond, Lancaster and Palmdale by 1882.

The Southern Pacific Railroad arrived in Mojave on August 8, 1876. The location of the current depot, on the west side of Highway 14, was the location of the original depot site, although the existing depot building is a later construction. A freight depot was added on August 20 of the same year and, before long, the town turned into a division point for the rail line. With the railhead at Mojave, the San Bernardino Borax Company began hauling its borax to the town on mule teams; the Baldheaded Eagle Borax Company began using the town as its railhead a few years later, in 1881. The Santa Fe Railroad arrived in 1884, as did the famous “20 Mule Teams” of the Pacific Borax Company, truly making the town a transportation hub for the region. The Pacific Borax Company continued with its mule team loads to the railhead until 1889, when a spur line reached their mining operations (Deaver 1967).

The original town site of Mojave was laid-out by the Southern Pacific at the time that the rail went through. Initially it was simply a residential camp for railroad employees consisting of a few

wooden shacks, but it was of sufficient importance that a post office was opened in October 1876. Because of its position as a transportation hub, Mojave quickly attracted additional residents but was not filed as a subdivision until 1905 (ibid). Growth at and after that point was spurred by two early twentieth century developments. The first was the increasingly important mining activities at Standard Hill and Soledad Mountain, south of town. The second was the construction of the Los Angeles Aqueduct, built between 1907 and 1913, which brought literally thousands of workers into the region. In addition to its function as a transport hub, Mojave served as the "watering hole" for the mine and aqueduct crews, and was widely renowned for its saloons and brothels, which were said to outnumber the churches in town by 10 to one.

Rosamond was also a Southern Pacific depot originally named Sand Creek but was given its current name in honor of a daughter of a rail official. A post office opened here in 1885 and the Butterworth Ranch was homesteaded, for cattle, in 1888, six miles west of Rosamond. The origin of the town proper is somewhat later. The town site was purchased by C.C. Calkins in 1907 who sold the mortgage to Charles M. Stinson. Stinson in turn donated the mortgage to the Union Rescue Mission of Los Angeles, who foreclosed on the property in 1916. In 1935 the Mission began selling lots in the town site, initiating its residential development (Settle 1967; DeWitt 1989).

Rosamond's history is also tied to early mining in the region; specifically, the development of Tropico Mine which began in the 1870s and, for over two decades, solely involved clay mining, for Ezra Hamilton's brickworks and pottery in Los Angeles. Hamilton purchased the mining property in the 1890s. Recognizing the presence of gold dust in the clay, he prospected the area, finally discovering a profitable load in 1896. By 1907 his Lida mines had yielded more than 8000 tons of ore averaging 1.2 ounces of gold and 7.5 ounces of silver per ton. Hamilton sold his mines in 1908, with the property eventually becoming the Tropico Mining and Milling Company (Settle 1967). Mining and custom milling continued until 1956 when the operation was shut down. The Tropico Mine was located a few miles northeast of the Gettysburg facility.

Willow Springs (California Historical Landmark 130), a short distance west of Rosamond, figured in much of the early history of the region (as noted above), serving as a watering stop on the main trail through the area. Fages, in 1772, Garces, in 1776, and Fremont, in 1844, are all thought to have stopped at the spring. Stage routes from Los Angeles to both Havilah and Inyo ran through the spring, starting in the 1860s, with Remi Nadeau (responsible for the Los Angeles to Inyo freight route) building a corral at the spring. Because they were running livestock in the Antelope Valley, the Tejon Ranch purchased the spring at about this same time. The spring was subsequently purchased around 1900 by Ezra Hamilton, after his discovery of gold in the area, who was responsible for constructing most of the existing stone buildings at this location (Starr 1988; Settle 1967).

According to an account by Hamilton himself, written in 1913, he made about $200,000 from the Lida Mine (Settle 1963). He paid $3500 to the Beale estate for Willow Springs and 160 acres of surrounding land, and created a farm and health resort. Hamilton claimed that, in 1913, there were 27 stone houses, a hotel, bath-house, public hall, dance hall, school, and auto and blacksmith shops. The school was the first in the area (ibid.). Willow Springs was connected to Los Angeles by a paved highway in 1921, when the Mint Canyon Highway (later renamed Sierra Highway) was

completed, greatly facilitating the location as a tourist resort (Way and Jackson 2009). Despite this fact, Willow Springs is only mentioned in passing in *Thompson's Routes to Watering Places in the Mohave Desert Region*, published in 1921, indicating that it was not a major destination.

Historical use of the Gettysburg Project area, as a result, primarily has resulted from mid-twentieth century farming in the region.

2.5 GEOARCHAEOLOGICAL BACKGROUND

The Project area consists of the open flats of the Antelope Valley. A Caltrans geoarchaeological study that included the Project area classified this location as having Very Low to Moderate sensitivity for subsurface sites (Meyer et al. 2010). This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in Kern County and the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in 7 ordinal classes for sensitivity for buried soils, from Very Low to Very High. Based on this analysis, the sites within the Gettysburg Solar Facility potentially could include subsurface deposits.

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3 METHODS AND RESULTS

3.1 PHASE II TESTING

Phase II archaeological fieldwork at the 6 study sites in the proposed Gettysburg Solar Facility footprint was intended to establish the nature and significance of each cultural resource, and to thereby provide baseline data from which a determination of the ultimate disposition of these cultural resources could be made. This required the collection of a representative sample of artifacts and archaeological indicators from each of these cultural resources, the establishment of the vertical and horizontal boundaries of each cultural deposit, and an analysis of the recovered artifact assemblage from these archaeological localities.

Procedures followed in the collection of data useful for establishing the nature and significance of the sites included mapping using a Trimble GeoExplorer 6000 Series GeoXH GPS unit, providing decimeter-accuracy placement, photographic documentation, surface collecting of artifacts and archaeological specimens lying on the ground-surface, as well as mapping of surface features, and the excavation of test pits to establish the presence or absence of a subsurface archaeological deposit, as well as to characterize such a deposit if found to be present on the sites considered in this study. Existing site records were also updated (Confidential Appendix B). Though these procedures were systematized so that the recovered data would be comparable between each site as well as with previous studies in the region, the magnitude of effort varied between the sites, reflecting the field conditions specific to each locale. We discuss each of these field methods below, with details on the level of effort expended at each site provided subsequently.

3.1.1 Surface Collection

In order to determine the maximum areal extent of each site, the initial field procedure was to locate, map and collect all surface remains present on the ground surface. In order to identify all such remains, the general area of each site was walked by crew-members using 2-m transects. Identified artifacts and archaeological indicators were then marked with flagging tape. A high-precision Trimble Geoexplorer GPS unit, with sub-meter accuracy, was used to map all artifacts, which were numbered and collected by these provenience points.

3.1.2 Test Excavations

Two methods were employed to test for the presence of subsurface deposits: hand excavated test units (TU), 1 x 0.5-m in size, and shovel test pits (STP). Employing a procedure used at all sites tested during this Phase II project, the number and location of the test pits placed on each site were predicated on an evaluation of localized geomorphological conditions and visible site contents and size. Specifically, test pits were placed in areas on the prehistoric sites where the probability of deposition was deemed highest, including in areas of surface artifact concentrations, with subsequent pits located to delineate any such discovered deposits.

Excavation units dug on each site were designated numerically. Each unit was dug with pick, shovel and trowel in arbitrary 10-cm spits or levels. Spoils from each of these levels were screened

through 1/8th-inch mesh. All artifacts and archaeological indicators were collected and bagged by unit level. All excavation was continued through two culturally sterile levels (i.e., 20-cm), or until sterile parent soil or decomposing bedrock was encountered. The highest corner of each test unit was used as that unit's datum, when TUs were not on level ground, for subsurface measurements. These were recorded as centimeters below datum (cmbd).

STPs were approximately 30-cm in diameter. These were dug in approximate 20-cm levels, with all removed soils screened through 1/8th-inch mesh. A 3" diameter soil auger core was excavated in the middle of the TUs or STPs to extend the depth of excavation, in certain cases. Spoils from the soil auger were also screened through 1/8th-inch mesh.

All surface archaeological specimens were mapped, numbered and collected. Subsurface artifacts and specimens were collected by unit and excavation level for laboratory processing and analysis.

The numbers of TUs and STPs per site are provided in Table 1.

Table 1. Test Excavation TUs and STPs

Primary/Trinomial	0.5x1-m	STPs
P-15-019836/ CA-KER-010843	2	15
P-15-019837 /CA-KER-010844	0	3
P-15-019838/ CA-KER-010845	0	3
P-15-019839/ CA-KER-010846	0	3
P-15-019840/ CA-KER-010847	0	6
P-15-019841/ CA-KER-010848	0	3

3.1.3 Laboratory Procedures

Following the completion of the Phase II fieldwork, the recovered artifact assemblages were taken to the ASM Affiliates laboratory for washing, processing and analysis. After each specimen was washed and labeled, metrical and typological analyses were performed. We provide measurements and weights for the various artifacts and archaeological indicators in each site's discussion below.

3.2 FIELD RESULTS

3.2.1 Test Excavation Results

The results of the test excavations are provided below. Soils in this area consisted of sand/sandy loam with few lithic clasts. As noted above, this area was flat with minimal topographical relief. Updated site photographs and a catalog of collected items for all tested sites are included in site record update forms in Confidential Appendix B.

3.2.2 P-15-019836/CA-KER-010843

The site is a lithic scatter with a subsurface component located on open flats of the Antelope Valley south of the Willows Springs Butte. An unnamed dirt road is located approximately 35-meters west of the site. The site is in good condition.

The site was originally recorded in 2018 by ASM as a small lithic scatter. A total of 53 surface flakes and two formal tools, a rhyolite core and uniface scraper (Artifact 1, Artifact 13,) were identified and subsequently collected (Table 2) during the current Phase II testing study. The large majority of the site artifact assemblage is debitage, or lithic waste flakes. The site is 47-m (NE-SW) x 45-m (NW-SE). No surface features of any kind, including clear debitage concentrations or "chipping stations, were identified within the site.

Table 2. Site P-15-019836 Surface Collection

Artifact #:	Description:	Dimensions (CM):	Weight (G):	Provenience (mE/mN):
A1	Multidirectional rhyolite core	7.7 x 7 x 4.6	363.29	384788, 3858243
A2	Rhyolite secondary flake	4.6 x 3.1 x 1.2	14.71	384791, 3858238
A3	Rhyolite shatter	3.8 x 2.5 x 2.3	11.12	384793, 3858226
A4	Rhyolite secondary flake	3.7 x 2.6 x 0.8	7.31	384783, 3858228
A5	Rhyolite secondary flake	4.1 x 2.3 x 1.1	7.74	384782, 3858235
A6	Rhyolite secondary flake	2.7 x 1.7 x 0.4	1.77	384782, 3858236
A7	Rhyolite shatter	4.0 x 3.3 x 3.1	21.38	384768, 3858233
A8	Rhyolite shatter	4.5 x 4.3 x 2.9	47.63	384769, 3858232
A9	Rhyolite shatter	6.6 x 6.5 x 4.8	119.93	384768, 3858247
A10	Rhyolite secondary flake	2.8 x 1.8 x 0.4	2.88	384773, 3858253
A11	Rhyolite secondary flake	2.1 x 2.1 x 0.5	1.59	384776, 3858255
A12	Rhyolite tertiary flake	1.1 x 1.0 x 0.1	0.16	384778, 3858258
A13	Rhyolite flake tool/scraper	4.4 x 2.5 x 0.6	8.51	384780, 3858255
A14	Rhyolite secondary flake	4.1 x 1.4 x 0.4	2.69	384781, 3858254
A15	Rhyolite tertiary flake	1.7 x 0.7 x 0.2	0.47	384780, 3858250
A16	Rhyolite tertiary flake	1.6 x 1.0 x 0.2	0.31	384779, 3858246

A17	Rhyolite secondary flake	3.4 x 2.3 x 0.7	5.73	384787, 3858235
A18	Rhyolite primary flake	5.3 x 3.6 x 1.7	18.70	384783, 3858248
A19	Rhyolite secondary flake	3.4 x 2.7 x 0.5	4.56	384782, 3858250
A20	Rhyolite secondary flake	2.2 x 1.4 x 0.4	0.97	384783, 3858251
A21	Rhyolite shatter	5.6 x 4.4 x 2.6	41.46	384782, 3858257
A22	CCS secondary flake	3.6 x 2.4 x 0.3	4.63	384781, 3858263
A23	Rhyolite secondary flake	4.2 x 3.2 x 1.0	12.78	384788, 3858268
A24	Rhyolite secondary flake	1.4 x 0.3 x 0.3	0.21	384784, 3858249
A25	Rhyolite shatter	4.8 x 3.5 x 2.2	16.74	384785, 3858249
A26	Rhyolite secondary flake	4.7 x 3.5 x 1.4	15.73	384784, 3858250
A27	Rhyolite shatter	3.6 x 3.5 x 2.2	15.51	384785, 3858249
A28	Rhyolite secondary flake	2.3 x 1.6 x 0.4	1.75	384788, 3858244
A29	Rhyolite tertiary flake	1.4 x 1.0 x 0.1	0.28	384790, 3858247
A30	Rhyolite secondary flake	3.3 x 3.3 x 1.5	9.85	384793, 3858251
A31	Rhyolite secondary flake	3.0 x 2.2 x 0.2	3.38	384792, 3858251
A32	Rhyolite secondary flake	2.5 x 1.6 x 0.2	1.03	384792, 3858251
A33	CCS secondary flake	2.5 x 2.0 x 0.4	1.95	384788, 3858252
A34	Rhyolite secondary flake	3.5 x 2.5 x 0.7	5.63	384786, 3858253
A35	Rhyolite secondary flake	2.5 x 1.7 x 0.4	0.94	384787, 3858253
A36	Rhyolite secondary flake	3.8 x 2.4 x 0.4	3.11	384788, 3858256
A37	Rhyolite secondary flake	4.0 x 4.6 x 1.3	30.92	384788, 3858257
A38	Rhyolite shatter	5.5 x 5.3 x 3.4	59.15	384792, 3858260
A39	Rhyolite secondary flake	3.7 x 2.5 x 1.0	6.45	384780, 3858247
A40	Rhyolite tertiary flake	1.4 x 1.4 x 0.4	0.70	384780, 3858246
A41	Rhyolite shatter	4.0 x 3.5 x 2.5	30.77	384785, 3858250
A42	Rhyolite secondary flake	2.6 x 2.1 x 0.5	2.17	384808, 3858256
A43	Rhyolite tertiary flake	1.5 x 0.9 x 0.2	0.29	384808, 3858255
A44	Rhyolite secondary flake	3.4 x 2.0 x 0.4	2.68	384781, 3858240
A45	Rhyolite shatter	5.5 x 4.7 x 2.8	54.19	384770, 3858230
A46	Rhyolite primary flake	6.5 x 5.5 x 3.2	127.28	384773, 3858225
A47	Rhyolite secondary flake	2.2 x 1.7 x 0.3	1.26	384797, 3858236
A48	Rhyolite secondary flake	3.9 x 2.7 x 0.7	6.42	384799, 3858240
A49	Rhyolite tertiary flake	1.8 x 1.3 x 0.2	0.32	384801, 3858243
A50	Rhyolite secondary flake	3.5 x 3.0 x 1.0	14.28	384769, 3858244
A51	Rhyolite secondary flake	2.8 x 1.9 x 0.5	3.03	384811, 3858249
A52	Rhyolite secondary flake	4.3 x 2.3 x 0.6	5.00	384816, 3858245
A53	Rhyolite secondary flake	4.1 x 2.0 x 1.4	8.52	384781, 3858264

A total of 53 lithic specimens were collected from the surface of the site. Fully 51 of these are rhyolite, with only two cryptocrystalline (CCS: chert, chalcedony or jasper) examples. Two of these are formal artifacts: a multidirectional core and a uniface/scraper edge. Secondary flakes account for over half of the surface assemblage, indicating mid-stage tool production.

Two 0.5x1-m TUs (#1 and 2) and 10 STPs (#1 – 10) were excavated on the site to determine whether a subsurface component was present. TU-1, which contained subsurface artifacts, was hand excavated to a depth of 50-cmbd, with the soil auger used to extend the excavation to 70-cmbd. TU-2, which proved to be culturally sterile, was hand excavated to 20-cmbd. An additional STP was then dug in the approximate middle of the unit to extend the excavation to 40-cmbd, to ensure that deeper evidence for a subsurface deposit was not present.

STP-1, -2, -3, -4, -5, -9 and -10 were excavated through two sterile levels to a maximum depth of 40-cmbd. An auger was utilized after 60-cm in STP-6, and 50-cm, in STP-7 and -8, to extend excavation depth to a maximum of 100-cm for STP-6 and 70-cm for both STP-7 and -8.

Soil conditions varied with depth across the site. The top 30 – 50 cmbd, depending upon location, consisted of an A Horizon of brown (Munsell 10YR 5/3) loamy sand with loose, single grains, ~15 percent subangular to subrounded gravels, massive structure and moderate bulk density. An indurated, cambic B Horizon was encountered below that variable-depth contact. This consisted of light brownish gray (Munsell 10YR 6/2) silty loam with loose, single grains, ~15 percent subangular to subrounded gravels, moderate ped structure and high bulk density.

TU-1 and STP-6, -7 and -8 revealed evidence of a small, low density subsurface archaeological deposit. This is restricted to the A Horizon and is approximately 40-cmbd in maximum depth. It is estimated to be approximately 10-m in diameter. TU-2 and the remaining STPs were all culturally sterile.

A total of 21 archaeological specimens, including 16 flakes and eight faunal fragments, five of which are cultural, were identified in TU-1 (Table 3). STP-6, -7 and -8 had 10 specimens total that include nine flakes and one non-cultural faunal fragment (Table 4). A total of 25 pieces of debitage and 5 faunal fragments were then recovered during the subsurface excavation as a whole. The debitage, notably, consisted entirely of rhyolite tertiary flakes. Given the very small size of these, it is possible that many of them have migrated down the stratigraphic column over time, due to natural soil formation processes.

Table 3. Site P-15-019836 - Test Unit - 1

Test Unit:	Excavation Level (CMBS):	Debitage:	Faunal Bone:	
			Cultural:	Non-cultural:
TU-1	Level 1 (0-10)	5 Rhyolite tertiary flakes	—	—
	Level 2 (10-20)	6 Rhyolite tertiary flakes	—	—
	Level 3 (20-30)	—	1	—
	Level 4 (30-40)	5 Rhyolite tertiary flakes	4	3
	Level 5 (40-50)	—	—	—
	Level 6 (Auger 1) (50-70)	—	—	—

Table 4. Site P-15-019836 – Shovel Test Pits

Test Unit:	Excavation Level (CMBS):	Debitage:	Faunal Bone:	
			Cultural:	Non-cultural:
STP-6	Level 1 (0-20)	3 Rhyolite tertiary flakes	—	—
	Level 2 (20-40)	2 Rhyolite tertiary flakes	—	—
	Level 3 (40-60)	1 Rhyolite tertiary flakes	—	1
	Level 4 (Auger 1) (60-80)	—	—	—
	Level 5 (Auger 1) (80-100)	—	—	—
STP-7	Level 1 (0-20)	—	—	—
	Level 2 (20-40)	2 Rhyolite secondary flakes	—	—
	Level 3 (40-50)	—	—	—
	Level 4 (Auger 1) (50-70)	—	—	—
STP-8	Level 1 (0-20)	—	—	—
	Level 2 (20-40)	1 Rhyolite tertiary flake	—	—
	Level 3 (40-50)	—	—	—
	Level 4 (Auger 1) (50-70)	—	—	—

We distinguished cultural versus non-cultural faunal remains based on the presence or absence of burning, and whether the specimens were obviously green bone or not. The 5 cultural specimens are all small mammal fragments (rodent or small lagomorph in size). Their fragmentation likely reflects processing by pounding for marrow extraction, as was common prehistorically in the region, and they are not identifiable by species as a result.

The emphasis on rhyolite as the dominant lithic material as seen at this site is characteristic of all 6 sites within the Gettysburg project footprint (discussed below) and reflects locally available lithic sources. Secondary flakes are the most common debitage type at this site which suggests mid-stage tool production. Tertiary flakes, resulting from tool finishing and maintenance, are also present, however, especially in the subsurface deposit. These are most commonly associated with habitation sites or campsites, as are burnt faunal remains. This lithic assemblage at P-15-019836 is very limited in its variety, with just one uniface edge/scraper and one core present. These facts and circumstances suggest that the site served as a repeatedly used but small camp oriented towards rhyolite tool production. The age of the site is unknown given the absence of temporal diagnostics.

3.2.3 P-15-019837/CA-KER-010844

The site is a sparse lithic scatter located on the open flats of the Antelope Valley approximately 1-mi south of Willow Springs Butte. An unnamed dirt road is located 45-meters northeast of the site The site is in good condition.

The site was originally recorded in 2018 by ASM as a sparse lithic scatter. Three surface rhyolite flakes were identified and subsequently collected during the current study (Table 5). The site measures 12-m (E-W) x 5-m (N-S). No surface features of any kind were identified within the site.

Table 5. Site P-15-019837 Surface Collection

Artifact #:	Description:	Dimensions (CM):	Weight (G):	Provenience (mE/mN):
A1	Rhyolite secondary flake	4.2 x 2.4 x 0.7	6.95	384625, 3858247
A2	Rhyolite shatter	4.2 x 3.2 x 3.5	40.89	384626, 3858249
A3	Rhyolite secondary flake	4.5 x 3.8 x 1.5	14.06	384618, 3858250

Three shovel test pits (STP 1 – 3) were excavated on the site to determine whether a subsurface deposit was present. All three STPs were excavated down two sterile levels to a maximum depth of 40-cmbd. All three STPs were negative for subsurface artifacts. Soil conditions were uniform across the site, consisting of consisting of an A Horizon of brown (Munsell 10YR 5/3) loamy sand with loose, single grains, ~15 percent subangular to subrounded gravels, massive structure and moderate bulk density. No subsurface component was identified at this site.

P-15-019837 is a sparse lithic scatter most likely representing a single incident of lithic reduction. The age of the site is unknown given the absence of temporal diagnostics.

3.2.4 P-15-019838/CA-KER-010845

The site is a sparse lithic scatter located on the open flats of the Antelope Valley about 1-mi south of Willow Springs Butte. The site is in good condition.

The site was originally recorded in 2018 by ASM as a sparse lithic scatter. Five surface rhyolite flakes were located, mapped and collected on the site (Table 6). The site measures 20-m (NW-SE) x 9-m (NE-SW). No surface features of any kind were identified within the site.

Table 6. Site P-15-019838 Surface Collection

Artifact #:	Description:	Dimensions (CM):	Weight (G):	Provenience (mE/mN):
A1	Rhyolite primary flake	5.5 x 4.8 x 1.5	26.43	384433, 3858029
A2	Rhyolite secondary flake	4.1 X 2.2 X 1.1	9.15	384432, 3858028

A3	Rhyolite secondary flake	2.5 X 2.4 X 0.4	2.22	384431, 3858021
A4	Rhyolite shatter	5.8 X 3.5 X 2.5	52.39	384447, 3858017
A5	Rhyolite secondary flake	5.3 X 4.1 X 1.5	20.39	384447, 3858018

Three STPs (#1 – 3) were excavated on the site to determine whether a subsurface deposit was present. All three STPs were excavated down two sterile levels to a maximum depth of 40-cmbd. All three STPs were negative for subsurface artifacts. Soil conditions were uniform across the site, consisting of an A Horizon of brown (Munsell 10YR 5/3) loamy sand with loose, single grains, ~15 percent subangular to subrounded gravels, massive structure and moderate bulk density.

P-15-019838 is a sparse lithic scatter that most likely resulted from a single lithic reduction incident. Its age is unknown due to the absence of temporally diagnostic artifacts.

3.2.5 P-15-019839/CA-KER-010846

The site is a sparse lithic scatter located on the open flats of the Antelope Valley about 1-mi south of Willow Springs Butte. The intersection of two unnamed dirt roads is located 145-meters southwest of the site The site is in good condition.

The site was originally recorded in 2018 by ASM affiliates as a sparse lithic scatter. Seven surface rhyolite flakes were identified and collected during the current study (Table 7). The site measures 22-m (NW-SE) x 10-m (NE-SW). No surface features of any kind were identified within the site.

Table 7. Site P-15-019839 Surface Collection

Artifact #:	Description:	Dimensions (CM):	Weight (G):	Provenience (mE/mN):
A1	Rhyolite secondary flake	2.2 x 1.4 x 0.3	0.87	384374, 3858139
A2	Rhyolite secondary flake	2.1 x 2.2 x 0.8	2.84	384367, 3858136
A3	Rhyolite secondary flake	1.7 x 1.1 x 0.5	0.77	384363, 3858137
A4	Rhyolite secondary flake	1.9 x 1.1 x 0.5	0.54	384362, 3858139
A5	Rhyolite secondary flake	1.7 x 1.2 x 0.6	1.91	384358, 3858145
A6	Rhyolite shatter	1.7 x 1.5 x 0.8	1.68	384354, 3858147
A7	Rhyolite primary flake	6.8 x 5.5 x 2.5	137.02	384353, 3858139

Three STPs (#1 – 3) were excavated on site in order to determine whether a subsurface deposit was present. All 3 STPs were excavated down two sterile levels to a maximum depth of 40-cmbd. All three STPs were negative for subsurface artifacts. Soil conditions were uniform across the site, consisting of an A Horizon of brown (Munsell 10YR 5/3) loamy sand with loose, single grains, ~15 percent subangular to subrounded gravels, massive structure and moderate bulk density. No subsurface component was identified.

Site P-15-019839 is a sparse lithic scatter of unknown age that most likely represents a single incident of lithic reduction.

3.2.6 P-15-019840/CA-KER-010847

The site is a small lithic scatter located on the open flats of the Antelope Valley about 1-mi south of Willow Springs Butte. The intersection of two unnamed dirt roads is located 45-meters northeast of the site The site is in good condition.

The site was originally recorded in 2018 by ASM as a small lithic scatter. Nineteen surface flakes and two formal tools (rhyolite cores designated Artifacts-1 and -2) were identified and subsequently collected during the current study (Table 8). The site boundary measures 28-m (NE-SW) x 28-m (NW-SE). No surface features of any kind were identified within the site.

Table 8. Site P-15-019840 Surface Collection

Artifact #:	Description:	Dimensions (CM):	Weight (G):	Provenience (mE/mN):
A1	Multidirectional rhyolite core	4.9 x 3.2 x 2.6	41.07	384202, 3858000
A2	Multidirectional rhyolite core	7.2 x 5.6 x 3.4	131.41	384197, 3858001
A3	Rhyolite secondary flake	1.9 x 0.8 x 0.2	0.67	384209, 3858007
A4	CCS secondary flake	3.3 x 2.4 x 1.4	13.70	384209, 3858006
A5	Rhyolite tertiary flake	1.1 x 0.7 x 0.1	0.22	384210, 3858005
A6	Rhyolite shatter	3.5 x 3.0 x 2.9	44.06	384207, 3858006
A7	Rhyolite secondary flake	2.8 x 1.9 x 0.7	4.73	384200, 3858008
A8	Rhyolite secondary flake	0.9 x 1.0 x 0.6	0.88	384188, 3858011
A9	Rhyolite shatter	3.1 x 2.5 x 1.5	12.12	384200, 3858007
A10	Rhyolite secondary flake	2.3 x 1.8 x 0.3	2.41	384201, 3858005
A11	Rhyolite secondary flake	1.7 x 1.4 x 0.3	1.18	384201, 3858006
A12	Rhyolite secondary flake	4.5 x 2.7 x 1.6	29.08	384193, 3858006
A13	Rhyolite primary flake	7.0 x 5.2 x 1.8	41.57	384192, 3858004
A14	Rhyolite shatter	2.7 x 1.5 x 1.1	7.63	384193, 3858004
A15	Rhyolite secondary flake	6.0 x 4.1 x 2.2	54.93	384185, 3857998
A16	Rhyolite secondary flake	2.6 x 1.7 x 0.2	1.94	384197, 3857996
A17	Rhyolite tertiary flake	1.8 x 1.9 x 0.2	0.46	384198, 3857994
A18	Rhyolite shatter	4.0 x 3.1 x 3.0	29.32	384203, 3858001
A19	Rhyolite secondary flake	3.1 x 1.6 x 0.9	3.33	384205, 3858001
A20	Rhyolite secondary flake	2.0 x 1.9 x 0.9	1.92	384206, 3857992
A21	Rhyolite secondary flake	3.0 x 1.9 x 0.9	3.11	384191, 3858000

Six STPs (#1 – 6) were excavated on site in order to determine whether a subsurface deposit was present. Five of the six STPs were excavated down two levels to a maximum depth of 40-cmbd. STP #2 was however terminated at 20-cmbd, where an indurated cambic B Horizon was encountered. Soil conditions then varied slightly with depth across the site. The A Horizon, extending between 20 to 40-cmbd, was brown (Munsell 10YR 5/3) loamy sand with loose, single grains, ~15 percent subangular to subrounded gravels, massive structure and moderate bulk

density. The cambic B horizon was present in STP #2 at 20-cmbd. This consisted of light brownish gray (Munsell 10YR 6/2) silty loam with loose, single grains, ~15 percent subangular to subrounded gravels, moderate ped structure and high bulk density. One non-cultural faunal specimen was recovered from the first level of STP-6 (0-20-cm). All other STPs were negative for archaeological materials and a subsurface archaeological deposit is not present at this site.
The site assemblage then consists of 20 surface rhyolite specimens, two of which are cores and the remainder pieces of debitage, and one piece of CCS debitage. The rhyolite debitage is again predominated by secondary flakes, indicating mid-stage lithic reduction. The two cores and single primary flake suggest at least some primary reduction. The limited number (just 2) of tertiary flakes indicates that little tool finishing or maintenance occurred on site.

P-15-019840 represents a small lithic workshop, possibly used on more than one occasion and/or created by more than a single individual. Its age is unknown given the absence of temporal diagnostics.

3.2.7 P-15-019841/CA-KER-010848

The site is a sparse lithic scatter located on the open flats of the Antelope Valley about 1-mi south of Willow Springs Butte. An unnamed northeast-southwest trending two-track dirt road is immediately east of the site. The site is in good condition.

The site was originally recorded in 2018 by ASM as a sparse lithic scatter. Five rhyolite surface flakes were identified, mapped and collected during the current study (Table 9). The site boundary measures 12-m (E-W) x 5-m (N-S). No surface features of any kind were identified within the site.

Table 9. Site P-15-019841 Surface Collection

Artifact #:	Description:	Dimensions (CM):	Weight (G):	Provenience (mE/mN):
A1	Rhyolite secondary flake	1.9 X 1.2 X 0.2	0.92	384271, 3858236
A2	Rhyolite secondary flake	2.0 X 0.9 X 0.4	0.65	384266, 3858235
A3	Rhyolite secondary flake	3.1 X 2.5 X 1.6	10.07	384264, 3858235
A4	Rhyolite secondary flake	1.8 X 1.6 X 0.3	1.71	384262, 3858236
A5	Rhyolite secondary flake	2.8 X 1.7 X 0.4	1.93	384263, 3858237

Three STPs (#1 – 3) were excavated at P-15-019841 to determine whether a subsurface deposit is present. All three were excavated down two sterile levels to a maximum depth of 40-cm. All three STPs were negative for subsurface artifacts. Soil conditions were uniform across the site, consisting of consisting of an A Horizon of brown (Munsell 10YR 5/3) loamy sand with loose, single grains, ~15 percent subangular to subrounded gravels, massive structure and moderate bulk density. No subsurface component was identified.

Site P-15-019841 is a small and sparse lithic scatter representing a single incident of lithic reduction. Its age is unknown given the absence of temporal diagnostics on the site.

3.3 DISCUSSION

The six sites within the Gettysburg Solar Project footprint represent four "sparse lithic scatters," as defined by the OHP (1988), one small surface lithic scatter, and a campsite with a small subsurface deposit. The nature, size and locations of all six sites reflect sporadic and casual use of this general location and fit well into the regional settlement pattern. This has been outlined by Sutton (1996) who first suggested that there were six village complexes in the western Mojave Desert/Antelope Valley. The Bean Spring – Willow Springs locality, northwest of the Gettysburg Solar Project, represents an additional such complex, increasing the inferred prehistoric population density of this portion of the desert (ASM Affiliates 2020). Sutton (2017) has subsequently proposed a settlement and subsistence system predicated on the idea that, during the Late Holocene (circa 4000 YBP to contact), the Mojave Desert was a "large common pool resource zone wherein a large number of research patches were utilized by uplands- or river-oriented groups living along the edges of the desert" (ibid:1). A component of his model involves the notion that permanent or semi-permanent base camps only existed on the Mojave Desert margin, with Sutton's previously identified Antelope Valley village complexes being examples of this phenomenon. The central portions of the western Mojave Desert were, thus, only used seasonally, by smaller groups during the dispersal phase of the yearly subsistence round.

Although the village in the Willow Springs – Bean Springs area, which Sutton was not aware of, complicates his model slightly, the general pattern still holds with larger aggregation phase villages located at permanent water sources, typically on the desert periphery, and the central Antelope Valley used much less intensively, by smaller groups, for shorter periods. The small size and limited nature of these six sites thus meet our expectations based on previous archaeological research in the region. They are thus representative of the regional settlement pattern as a whole.

The chronology of the six sites is unfortunately not known, given the absence of temporal diagnostics and dateable materials. Although an early Archaic rhyolite tool industry in the Antelope Valley was once hypothesized (Glennan 1971), subsequent research indicates that rhyolite alone is not a useful temporal indicator (Sutton 1982; Scharlotta 2014). More pertinent, given the dominance of rhyolite in the 6 site assemblages, is evidence for at least two significant rhyolite sources in the region: Rosamond Hills and Fairmont Buttes (Scharlotta 2014). The Rosamond Hills source is closest to the 6 sites (roughly 6 miles northeast) and is the most likely origin for their tool stone. Rhyolite, in fact, is the most common lithic material at many of the small sites in this immediate region. Table 10 lists the debitage assemblages from a small series of sites in general Willow Springs vicinity.

Table 10. Lithic Debitage Assemblages from Local Small Sites

Site (P-15-)	Rhyolite	CCS	Other
13846*	11	1	0
19553*	9	0	0
19556*	19	33	0
19557*	8	1	0
19559*	292	6	11
19836	74	2	0
19840	17	2	0
19837	3	0	0
19838	5	0	0
19839	7	0	0
19840	18	2	0
19841	5	0	0
*Source: ASM Affiliates 2020			

Only one of these site assemblages included more CCS debitage than rhyolite, P-15-019556, and this site is a camp with a subsurface deposit rather than a surface lithic scatter. Its assemblage included groundstone artifacts, indicative of plant processing, and shell beads, dating from roughly AD 1200 – 1750 (ASM Affiliates 2020), thus signaling a wider range of activities than at any of the 6 six sites included in this current study. The closest source for CCS is in the Boron area, about 30-mi to the northeast. This could suggest that CCS material and tools, acquired from more distant sources, was valued and curated, and not typically employed during dispersal phase activities characteristic of the 6 six sites within the Gettysburg Solar Project footprint.

4. SUMMARY AND RECOMMENDATIONS

4.1 SUMMARY

Phase II test excavations and determinations of significance/CRHR eligibility evaluations were conducted at 6 prehistoric archaeological sites within the proposed footprint of the Gettysburg Solar Facility, Kern County, California. Phase II testing included site boundary, diagnostic artifact and feature mapping; collection of all surface artifacts and archaeological specimens; excavation of 0.5x1-m hand-dug test pits and approximately 30-cm diameter shovel test pits; and artifact processing, washing and laboratory analysis. Results of this study, by site, are summarized below:

- **P-15-019836 /CA-KER-010843 (Temporary Designation GETTY-SITE 1)**

This site measures 47x45-m in size with a subsurface deposit that is about 10-m in diameter and that averages 40-cm in depth. Fifty-three waste flakes and 2 stone tools were recovered from the surface of the site and 21 archaeological specimens, including 5 pieces of burnt animal bone, were found in the subsurface deposit. The site represents a small habitation or campsite. Its age is unknown.

- **P-15-019837 /CA-KER-010844 (Temporary Designation GETTY-SITE 2)**

Site P-15-019836 is a sparse lithic scatter consisting of 3 pieces of lithic debitage in a 12x5-m area. No subsurface deposit is present at this site and its age is unknown.

- **P-15-019838 /CA-KER-010845 (Temporary Designation GETTY-SITE 3**)

This site is a sparse lithic scatter that contained 5 pieces of debitage in a 20x9-m area. No subsurface deposit is present and its age is unknown.

- **P-15-019839 /CA-KER-010846 (Temporary Designation GETTY-SITE 4)**

P-15-019839 is a sparse lithic scatter containing 7 pieces of debitage in a 22x10-m area, without a subsurface deposit. Its age is unknown.

- **P-15-019840/ /CA-KER-010847 (Temporary Designation GETTY-SITE 5)**

Site P-15-019840 is a small lithic scatter with 19 pieces of lithic debitage and two cores in a 28-m diameter area. No subsurface deposit is present at this site and its age is unknown.

- **P-15-019841/ /CA-KER-010848 (Temporary Designation GETTY-SITE 6)**

This site is a sparse lithic scatter containing 5 pieces of debitage in a 12x5-m area. No subsurface deposit is present at this site and its age is unknown.

4.2 RECOMMENDATIONS

Sites P-15-019837, P-15-019838, P-15-019839 and P-15-019841, consisting of surface artifact scatters with less than 7 pieces of lithic debitage each, qualify as "sparse lithic scatters." According to the California OHP, "Once a resource has been identified as a sparse lithic scatter and recorded/collected accordingly, the resource will be considered ineligible for the National Register" (OHP 1988:11). Based on this criterion, we recommend these four sites as also not CRHR eligible, and therefore not significant or unique historical resources. No additional archaeological work or treatment is recommended for these four resources.

Site P-15-019840 is a small lithic scatter containing 19 pieces of lithic debitage and two cores, with no subsurface deposit present. This site is recommended as not CRHR eligible due to its small size, the limited nature of its artifact assemblage and its lack of associative context based on the absence of temporal diagnostics or dateable archaeological materials. Phase II testing, furthermore, has resulted in the collection of all archaeological specimens at this site, yielding scientifically consequential information from and about this resource. This has served to mitigate any adverse impacts that might accrue to this site as a result of project construction and use. No additional archaeological work or treatment is recommended for this cultural resource.

Site P-15-019836 is a small habitation site of currently unknown age. We recommend this site as CRHR eligible under Criterion 4, research potential, based on the presence of a subsurface deposit and the variety of archaeological materials that are present. We further recommend that potential adverse impacts to this site be mitigated by preservation in place, or that a Phase III data recovery (salvage excavation) be conducted on this site to recover the scientific information that it contains.

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CONFIDENTIAL APPENDICES

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APPENDIX E

ENERGY CONSUMPTION TECHNICAL MEMORANDUM

MEMO

Date: November 10, 2020 **Project No.:** 150447.15

To: Audrey Copeland, Development Manager
LendLease Energy Development

From: Jaymie Brauer, Principal Planner

Subject: Gettysburg Solar Project - Energy Consumption Technical Memorandum

cc: File

Introduction

This memorandum assesses possible construction and operational energy demand impacts by the development of the Gettysburg Solar Project (Project), which includes approximately 160 acres of undeveloped land.

Project Description

The proposed Gettysburg Solar Project is a 30 MW photovoltaic electric generating solar PV facility including approximately 30 MW of battery energy storage, on approximately 160 acres in the eastern high desert region of unincorporated Kern County. The proposed Project is located just east of the intersection of Rosamond Boulevard (Blvd) and 80th Street W, 5.5 miles west of State Route (SR) 14.

The proposed Project would consist of approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid pattern over the project. The route for associated gen-tie transmission lines for the Project is along the Rosamond Boulevard right-of-way and power generated by would be transferred directly to SCE's Antelope-Cal Cement-Rosamond 66kV line. The Project also would include an unmanned operations and maintenance building measuring approximately 30 feet x 30 feet, an unmanned communications building measuring approximately 20 feet x 30 feet, and a gravel parking area of approximately 2,000 square feet in size.

A 8-10 month construction period is anticipated to develop the entire 160-acre site.

Fuel Consumption Standards of Significance

The 2020 CEQA Guidelines Appendix G includes Section VI- *Energy*, which is an analysis of potential impacts of a project related to the consumption of energy resources. The thresholds as written in the Guidelines are:

- Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

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While no quantitative thresholds related to energy are included the Guidelines states as follows:

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

1. decreasing overall per capita energy consumption,
2. decreasing reliance on natural gas and oil, and
3. increasing reliance on renewable energy resources.

Fuel Consumption Impact Analysis

Methodology

QK estimated energy consumption for both construction and operation of the Project using California Emission Estimator Model version 2016.3.1 (CalEEMod). CalEEMod is a Statewide program designed to calculate pollutant emissions for development projects in California using land use data. Analysis of the project is also based on research of typical construction phase fuel consumption conducted by Ramboll US Corporation in their preparation of an Energy Use Assessment for the Magee Preserve residential development project in Danville, California (Ramboll US Corp, 2018) as well as the *Air Quality Impact Analysis* (Insight, 2020) prepared for the Project.

Construction Phase

Energy demand during the construction phase would result from the transportation of materials, construction equipment, and employee vehicle trips. The solar panels would be delivered from the Port of Long Beach via heavy duty trucks, 111 miles to the Project site and would require approximately 463 trips. Using a typical fuel efficiency of 5.85 miles per gallon, the delivery of the solar panels is expected to require approximately 18,000 gallons of diesel (Geotab, 2017). Total fuel used by construction workers is expected to be approximately 26 gallons. Construction equipment includes but is not limited to bore/drill rigs, cement and mortar mixers, cranes, excavators, graders, off-highway trucks, rubber-tired dozers, scrapers, tractors, and forklifts. According to calculations in CalEEMod and construction equipment data provided by the Project proponent, the construction of the solar panels is expected to consume approximately 40,000 gallons of diesel fuel. The construction phase of the proposed Project, including the delivery of solar panels, is expected to require a total of approximately 58,000 gallons of diesel fuel (Appendix A, Tables 3). The Project will not use natural gas during the construction phase. Fuel efficiency standards for medium- and heavy-duty trucks apply to trucks used during construction of the Project, per CAFE standards. Minimal electrical usage is anticipated during construction.

Based on data from the California Board of Equalization QK analyzed the total amount of gasoline consumed during construction and calculated that the Project would represent only .000005% of all gasoline sold in Kern County in 2018. The diesel consumed during construction of the Project would represent only .0004% of all diesel sold in the county during the same period. In addition, there are no unusual project characteristics that would cause the use of construction equipment to be less energy efficient compared with other similar construction sites in other parts of the State. Thus, construction-related fuel consumption at the project would not result in inefficient, wasteful, or unnecessary energy use.

Operational Phase

Energy demand during the operational phase would result from maintenance equipment and employee vehicle trips. Water trucks would clean the solar panels quarterly and result in a total of approximately

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1,320 miles traveled per year. According to calculations in CalEEMod and construction equipment data provided by the Project applicant, the water trucks would require approximately 300 gallons of diesel per year; no electricity will be used during panel cleaning activities. General maintenance trucks would add 231.4 total miles traveled per year, which would require approximately 10 gallons of gasoline year. Finally, employee light auto/light truck trips would add another 386 miles traveled per year and approximately 16 gallons of gasoline per year. In total, the operation phase of the proposed Project is anticipated to require approximately 300 gallons of diesel and approximately 26 gallons of gasoline on an annual basis (Appendix A, Tables 7). The Project will not use natural gas during the operation phase.

Potential Changes in Electricity Usage

No major changes in electricity usage are anticipated throughout the construction and operation of the proposed Project. The Project would generate 125 gWh of electricity over a 30-year life span and this production is anticipated to remain relatively constant throughout the operation of the proposed Project. Additionally, the electricity required to construct and operate the Project is anticipated to be negligible compared to the amount of electricity generated by the Project. Activities involved with the decommissioning of the solar facility would be similar to those involved with construction but would be expected to result in lower fuel demand, as technology improves, and equipment becomes more fuel efficient.

Compliance with State and Local Renewable Energy Plans

Executive Order S-14-08

Executive Order S-14-08 was established by California Governor Schwarzenegger in November 2008. The order establishes a Renewables Portfolio Standard (RPS) for all retail sellers of electricity. The specifics of this executive order included the following:

- Requires retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020;
- Requires various state agencies to streamline processes for the approval of new renewable energy facilities and determine priority renewable energy zones; and
- Establishes the requirement for the creation/adoption of the Desert Renewable Energy Conservation Plan (DRECP) process for the Mojave and Colorado Desert regions.

Climate Change Scoping Plan/ California's Renewable Portfolio Standard (RPS) Program
In December of 2008, CARB released a Scoping Plan outlining the state's strategy to achieve the 2020 GHG emissions limit. California's Renewable Portfolio Standard (RPS) Program. (In October 2015, Governor Brown signed into law Senate Bill 350, which establishes a new RPS for all electricity retailers in the state. Electricity retailers must adopt the new RPS goals of 50% of retail sales from renewables by the end of 2030).

(See also Section 4-8 *Greenhouse Gas Emissions* of this EIR for additional State bills and orders related to greenhouse gases emission reduction requirements.)

Senate Bill No. 100

Senate Bill No. 100 was approved by the California Governor on September 10, 2018.
(a.) This act shall be known as the 100 Percent Clean Energy Act of 2018.

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(b.) The Legislature finds and declares that the Public Utilities Commission (PUC), State Energy Resources Conservation and Development Commission, and State Air Resources Board should plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045.

(c.) It is the intent of the legislature in enacting this act and expand policies established pursuant to the California Renewables Portfolio Standard Program (Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1 of Division 1 of the Public Utilities Code), and to codify the policies established pursuant to Section 454.53 of the Public Utilities Code, and that both be incorporated in long-term planning.

Kern County General Plan

Chapter 5: Energy Element

Solar Energy Development

Goal
Encourage safe and orderly commercial solar development.
Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

As a renewable energy project, the AV Apollo solar project will help generate electricity to the utility grid to meet the established RPS standard. In addition to the inherent energy savings that would result from the construction of the proposed Project, additional strategies would be implemented where possible to further reduce the Project's energy consumption, specifically during the construction phase. Strategies being implemented include those recommended by CARB that may reduce the Project's energy consumption, including diesel anti-idling measures, light-duty vehicle technology, usage of alternative fuels such as biodiesel blends, and heavy-duty vehicle design measures to reduce energy consumption. Additionally, the Project includes recommendations to reduce energy consumption such as shutting down equipment when not in use for extended periods, limiting the usage of construction equipment to eight (8) cumulative hours per day, usage of electric equipment for construction whenever possible in lieu of diesel or gasoline powered equipment, and encouragement of employees to carpool to retail establishments or to remain on-site during lunch breaks.

Energy Saving Measures Included in Project

The construction of the proposed Project would result in the annual generation of 125 gWh of electricity over a 30-year life span. Because the Project is intended to generate electricity from a renewable source of energy, operation of the Project would displace energy production that would otherwise be generated by non-renewable energy facilities using either natural gas or coal.

Approximately 23,941 $MTCO_2e$ of greenhouse gases annually would be displaced by the implementation of the Project. Including displacement emissions, the proposed project would result in a net decrease in GHG emissions of between 23,957.54 MTCO2e annually (without decommissioning emissions). Over the

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lifetime of the project, the total displaced emissions would be approximately 838,513 MTCO2e which would assist in the attainment of the State's goal to reduce GHG emissions to 1990 levels by 2020.

Conclusion

The construction phase of the proposed Project would result in the consumption of approximately 58,000 gallons of diesel, while the operation phase would result in a yearly consumption of approximately 300 gallons of diesel and 26 gallons of gasoline. Once operational, the Project will generate up to approximately 125 gWh of renewable electrical energy over its lifespan.

The Project would therefore not result in potentially significant impacts due to wasteful, inefficient or unnecessary consumption of energy resources. In addition, the Project will be consistent and not conflict with or obstruct a State or local plan for renewable energy. Impacts would be less than significant.

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APPENDIX

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Appendix A:
CalEEMod Calculations and Fuel Consumption Estimates

Table 1: Solar Panel Delivery Fuel Consumption Estimate

Heavy Duty Truck Trips	Miles per Trip	Miles per Gallon	**Total (gal of diesel)**
463	222	5.85	17570.26

Table 2: Site Construction and Installation Fuel Consumption Estimate

Phase Name	Offroad Equipment Type	total hours	Amount	Usage Hours	Horse Power	Load Factor	HP-Hour	Fuel Consumption (gal)	Total per phase per day	days	total gallons per phase
Panel Assembly	Bore/Drill Rigs	12	2	6.00	291	0.74	2584.08	132.304896			
Panel Assembly	Cement and Mortar Mixers	12	2	6.00	300	0.20	720	36.864			
Panel Assembly	Cranes	12	2	6.00	250	0.29	870	44.544	213.7129	132	28210.102
Grading	Excavators	12	2	6.00	168	0.38	766.08	39.223296			
Grading	Graders	12	2	6.00	174	0.41	856.08	43.831296			
Grading	Off-Highway Trucks	6	2	3.00	189	0.38	430.92	22.063104			
Grading	Rubber Tired Dozers	12	2	6.00	357	0.40	1713.6	87.73632			
Grading	Scrapers	12	3	4.00	313	0.48	1802.88	92.307456			
Grading	Tractors/Loaders/ Backhoes	12	3	4.00	108	0.37	479.52	24.551424	309.7129	22	6813.6837
Gravel Road	Crawler Tractors	12	2	6.00	147	0.42	740.88	37.933056	75.86611	22	1669.0544
Trenching and Electrical	Crawler Tractors	12	2	6.00	147	0.43	758.52	38.836224			
Trenching and Electrical	Excavators	12	2	6.00	168	0.40	806.4	41.28768			
Trenching and Electrical	Off-Highway Trucks	6	2	3.00	189	0.38	430.92	22.063104			
Trenching and Electrical	Rough Terrain Forklifts	12	2	6.00	93	0.37	412.92	21.141504	123.32851	22	2713.2273
HP-Hour = Load Factor x Total Hours x Horsepower				Fuel Consumption = HP-Hour x .0512						**Total**	39406.07

Table 3: Total Construction Phase Fuel Consumption Estimate

Solar Panel Delivery (gal)	Site Construction and Installation (gal)	**Total Diesel Consumption (gal)**
17570.26	39,406.07	56976.33

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Table 4: Operational Water Truck Fuel Consumption Estimate

	One way Trips per year	One-way miles per trip	Total Miles Traveled per year	**Total annual miles**	Miles per Gallon	**Fuel Consumption** (Gallons/year)
To and From Site	240	5.5	1,320	**1,540**	5.85	**263.25**
On-site Truck Travel	4	27.4	110			
On-site Truck Travel	4	27.4	110			

Table 5: Operational Maintenance Fuel Consumption Estimate

	One way Trips per year	One-way miles per trip	Total Miles Traveled per year	**Total annual miles**	Miles per Gallon	**Fuel Consumption** (Gallons/year)
To and From Site	24	9.3	223	**231.4**	24.5	**9.44**
On-site Travel	24	0.35	8.4			

Table 6: Operational Employee Trip Fuel Consumption Estimate

	One way Trips per year	One-way miles per trip	Total Miles Traveled per year	**Total annual miles**	Miles per Gallon	**Fuel Consumption** (Gallons/year)
Off-site Travel	40	9.3	372	**386.0**	24.5	**15.76**
On-site Travel	40	0.35	14.0			

Table 7: Total Operational Phase Fuel Consumption Estimate

Cleaning (gal of diesel/year)	**Total Diesel Consumption (gal/year)**	General Maintenance (gal of gas/year)	Employee Trip (gal of gas/year)	**Total Gasoline Consumption (gal/year)**
263.25	**263.25**	9.44	15.76	**25.20**

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APPENDIX F

GEOTECHNICAL REPORT

PRELIMINARY GEOTECHNICAL EVALUATION
PROPOSED GETTYSBURG SOLAR PROJECT
ROSAMOND AREA, KERN COUNTY, CALIFORNIA

BSK PROJECT G18-049-10B

PREPARED FOR:

QUAD KNOPF, INC.
P.O. BOX 3699
VISALIA, CA 93278

March 23, 2018

PRELIMINARY GEOTECHNICAL EVALUATION
PROPOSED GETTYSBURG SOLAR PROJECT
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Prepared for:

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Bakersfield Project: G18-049-10B

March 23, 2018

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1.0 INTRODUCTION

This revised report presents the results of a preliminary geotechnical evaluation for the Proposed Gettysburg Project site (Site), in the Rosamond Area, Kern County, California. The project consists of approximately 160 acres. The Site is located along the south side of Rosamond Boulevard northwest of Rosamond, in unincorporated Kern County, California as shown on the Site Vicinity Map, Figure 1.

BSK performed Site reconnaissance on March 12, 2018 to observe Site features and soil conditions as related to a geotechnical evaluation. This report provides a preliminary geotechnical evaluation for use in the planning phase subject project. In the event that changes occur in the design of the project, the project engineer of record may make additional recommendations.

1.1 Planned Construction

The proposed Project includes the development of a 30 MWac photovoltaic energy generation facilities and associated infrastructure located adjacent to one another. At this time, the PV technology that would be used for the proposed project has not been determined. The solar PV generating facilities would consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts. The proposed solar facilities are intended to operate year-round, and would generate electricity during daylight hours when electricity demand is at its peak.

1.2 Purpose and Scope of Services

The objective of the preliminary geotechnical evaluation was to provide a preliminary determination of geotechnical related issues and soil conditions at the Site. BSK's scope of services for this assessment included a Site reconnaissance, desktop review, and report preparation.

2.0 SITE CONDITIONS

The following sections address the Site description, surface conditions, and preliminary groundwater conditions at the Site. This information is based on BSK's field reconnaissance and review of published maps and reports.

2.1 Site Description and Surface Conditions

The proposed project is located within Section 21, Township 9 North, Range 13 East, San Bernardino Base and Meridian (SBB&M). The proposed project is in the eastern high desert region of unincorporated Kern County. The proposed project is in the western extent of the Mojave Desert south of Mojave, California. The Site is located on the south side of Rosamond Boulevard, between 70th Street West and 80th Street West approximately 5 miles west of SR 14.

2.2 Site Observations

BSK performed Site reconnaissance surveys on March 12, 2018 to observe Site features and soil conditions. The majority of the Site consists of sparce arid type vegetation consisting of tumbleweeds, small shrubs, weeds. Surface soils generally consist of loose silty sand or sandy silt with abundant

windblown deposits of fine sand. Evidence of surficial soil erosion was observed to be more prominent on the southern portion of the Site. The central potion of the site is elevated slightly and the soils appear to have a reddish hue and are coarser grained with a with occaional gravels.

2.3 Site Topography

As shown on Figure 3, the Site area slopes to the southeast with a slope gradient of approximately 1.3% (Vertical/Horizontal). Elevations range from approximately 2,420 feet (NAVD88 datum) near the northwest corner of Site perimeter to 2,400 feet (NAVD88 datum) near the southeast Site perimeter. There are no streams or rivers crossing the Site. An intermittent stream is mapped approximately 1,300 feet southeast of the Site.

2.4 Site Surface Soils

Figure 4 presents a soil map showing the site area mapped soil types based on the U.S.D.A. Soil Survey Geographic (SSURGO) Database. According to the SSURGO database for Kern County, California, obtained from the U.S.D.A., Natural Resources Conservation Service, the Site soils consist as follows:

- Adelanto loamy sand, 2 to 5 percent slopes,
- Adelanto coarse sandy loam, 2 to 5 percent slopes,
- Rosamond sandy loam,
- Rosamond silty clay loam,
- Rosamond silty clay loam, saline-alkali

The Adelanto series soils mapped in the northwest portion of the Site area have a predominant engineering classification of SM (Silty Sand) and would be considered non-plastic to low plasticity with low expansive potential. The Rosamond series soil, located in the southern and southeastern section of the Site have a classification of CL that indicates a fraction of clay present. Soils with the CL classification may be potentially expansive. Soil unit descriptions with characteristic parameters are provided in Appendix B.

Observations made during the Site investigation indicate that the surface soils generally consist of loose silty sand or sandy silt with abundant windblown deposits.

2.5 Groundwater Conditions

The Site is within the Antelope Valley Groundwater Basin. This groundwater basin includes approximately the area south of the Tehachapi Mountains and north of the San Gabriel Mountains. The primary water-bearing materials are Pleistocene and Holocene age unconsolidated alluvial and lacustrine deposits that consist of compact gravels, sand, silt, and clay.

To ascertain groundwater levels for the area, groundwater elevation data from the California Department of Water Resources (DWR) were obtained for wells in the vicinity of the Site. Figure 5, presents data from the wells 09N13W17R001S and 09N13W21N001S located approximately 2,000 feet

northwest and 2,600 feet southwest of the Site, respectively. The groundwater data indicates that during the 1960s the depth to groundwater was greater than 160 feet below the ground surface (bgs) and more recent data indicates that groundwater is greater than 211 feet bgs.

2.6 Geologic Setting

The Site is located in Mojave Desert geomorphic province. The Mojave Desert is characterized by block-faulted mountain ranges and intervening valleys. Broad alluvial fans have formed along the transition of the ranges and valleys. The western part of the Mohave Desert is bounded by two major active faults, the Garlock Fault to the north and the San Andreas Fault to the south.

South of the Site are the San Gabriel Mountains that generally consist of Mesozoic granitic rocks and minor Cenozoic volcanic Rocks. The Tehachapi Mountains consisting of Mesozoic metamorphic and granitic rocks are located west of the Site. The Rosamond Hills are located northeast of the Site and consist of uplifted quartz monzonite and Miocene volcanic rocks. Just north of the Site is Willow Springs Mountain consisting of Miocene volcanic rocks and quartz monzonite. Willow Springs Mountain was a historically mining area for gold, uranium and aggregate. As shown on Figure 6, the Site is situated on a somewhat dissected broad alluvial fan consisting of recent alluvium.

3.0 GEOLOGIC/SEISMIC HAZARDS

The types of geologic and seismic hazards assessed include surface ground fault rupture, liquefaction, seismically-induced settlement, slope failure, flood hazards and inundation hazards.

3.1 Kern County General Plan Physical Constraints

As shown on Figure 7, the Site is not located in a hazard zone identified by Kern County.

3.2 Fault Rupture Hazard Zones in California

The purpose of the Alquist-Priolo Geologic Hazards Zones Act, as summarized in CDMG Special Publication 42 (SP 42), is to "prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." As indicated by SP 42, the State Geologist is required to delineate "earthquake fault zones" (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development 'projects' within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

The Site is not located in a Fault-Rupture Hazard Zone. The nearest Fault-Rupture Hazard Zone is associated with the San Andreas Fault located approximately 13 miles southwest of the site.

As shown on Figure 8, the Willow Springs/Rosamond Fault, Cottonwood Fault and Tyler Horse Fault are located approximately 2 miles northwest, 10 miles northwest and 11 miles northwest of the Site, respectively. The Willow Springs/Rosamond Fault, Cottonwood Fault and Tyler Horse Fault are not

considered active faults according to the most recent California Geologic Survey and United States Geologic Survey (USGS) fault databases. The nearest active Fault is the San Andreas Fault located approximately 13 miles southwest of the Site. Other significant active faults include the Garlock Fault located approximately 14 miles northwest of the Site and the White Wolf Fault located approximately 37 mile northwest of the Site.

3.3 State of California Seismic Hazard Zones (Liquefaction and Landslides)

Zones of Required Investigation referred to as "Seismic Hazard Zones" in CCR Article 10, Section 3722, are areas shown on Seismic Hazard Zone Maps where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. There are no mapped areas that have Seismic Hazard Zones in the project area.

3.4 Slope Stability and Potential for Slope Failure

The Site and surrounding areas are essentially flat and the potential hazard due to landslides from adjacent properties is not applicable. Debris flows may occur in the form of sheet flow during high intensity rainfall events located upgradient.

3.5 Land Subsidence

Land subsidence in California generally occurs in areas of fluid removal (petroleum and groundwater) and in arid areas due to hydrocompaction of loose near-surface soils.

The Site is located in an area that is just north of an identified subsidence area that extends to the south and southeast. The Antelope Valley Groundwater Basin has reported ground subsidence due to groundwater withdrawal in the area south of Rosamond near Lancaster (Sneed, 2000). Given that the current groundwater usage at the Site remains at current levels, subsidence at the Site would not be significant.

Hydrocompaction is the consolidation of loose dry surface soils from the infiltration of water. Materials of unusually low density deposited in areas of low rainfall undergo significant compaction when they become thoroughly wetted. Site soils may have a potential for hydrocompaction, which will require further evaluation. A more detailed geotechnical investigation will be performed once the layout of the structures is defined. Hydrocompaction materials consist of sediments loosely placed by wind or by mudflow, that when saturated, the material hydrocompacts (settlement). If hydrocompaction soil is encountered, some of the options to mitigate this issue are over-excavate and recompact the material or design the foundation deeper than the hydrocompaction material zone.

3.6 Expansive Soils

Near-surface soils observed at the Site, and mapped by the U.S.D.A., indicate that expansive soils are probably not located in the northern portion project area. As stated in Section 2.4, expansive soils may be present in the in the southern section of the Site where Rosamond type soils are present. Expansive soils have the potential to cause displacement and possible damage to surface improvements such as

concrete slab-on-grade floors and exterior walkways. The potential effects of the shrinking and swelling of expansive soils and the associated impacts can be mitigated through prudent grading and design of the structures. A design level geotechnical investigation will be required to confirm the status of expansive soils in the project area.

3.7 Flood and Inundation Hazards

An evaluation of flooding at the site includes review of potential hazards from flooding during periods of heavy precipitation and flooding due to a catastrophic dam breach from up-gradient surface impoundments.

3.7.1 Flood Hazards

Federal Emergency Management Agency (FEMA) flood hazard data was obtained to present information regarding the potential for flooding at the Site. As shown on Figure 9, according to FEMA Flood Hazard Map Layer GIS data, dated 3/29/2016, the southern half of the project Site is located in a designated 100 year flood zone. The northern half is located in zone X, area of minimal flood hazard.

3.7.2 Inundation Hazards - Dams

The Site is not located in the pathway of inundation from a catastrophic breach of a dam or reservoir.

3.8 Flooding Scour

There are no identified stream channels or arroyos that cross the Site that could cause significant scour. Some scour may occur on structures during high intensity sheet flow events causing damage to the structure or foundation.

4.0 SEISMIC HAZARD ASSESSMENT

The types of seismic hazards assessed include earthquake induced ground motion, seismic induced landslides, liquefaction, and seismic induced settlement.

4.1 Seismic Sources

Figure 8 presents a regional fault map showing the major fault which may impact the Site. The probabilistic value of ground motion at a site can be caused by earthquakes on any of the sources surrounding the site. Deaggregation of the seismic hazard was performed by using the USGS interactive deaggregation website. The deaggregation at the Maximum Considered Earthquake (MCE) hazard level results in distance, magnitude and epsilon (round-motion uncertainty) for each source, which contributes to the hazard. Each source has a corresponding epsilon, which is the probabilistic value relative to the mean value of ground motion for that source.

Tables 1 lists the result of deaggregation at the MCE hazard level from the USGS website for the Site. The most extreme event would be a 7.94 magnitude earthquake on the San Andreas Fault. For liquefaction and seismic settlement, the modal magnitude (Mw) of 7.71 would be appropriate for probabilistic input parameter that is consistent with the design earthquake ground motion.

TABLE 1 SEISMIC HAZARD DEAGGREGATION MAXIMUM CONSIDERED EARTHQUAKE MODE (LARGEST R-M BIN)			
Project Area	**Distance (km)**	**Magnitude (Mw)**	**Epsilon (Mean Values)**
Mode	25.7	7.71	1.8
San Andreas (Max)	25.8	7.94	1.6
Garlock (Max)	23.0	7.72	1.7

4.1 Earthquake Ground Motion, 2016 California Building Code

4.1.1 Site Class

Confirmation of site soil class will require subsurface data and will be determined during the design level geotechnical investigation.

4.1.2 Seismic Design Criteria

The 2016 California Building Code (CBC) utilizes ground motion based on the Risk-Targeted Maximum Considered Earthquake (MCE_R) that is defined in the 2016 CBC as the most severe earthquake effects considered by this code, determined for the orientation that results in the largest maximum response to horizontal ground motions and with adjustment for targeted risk. Ground motion parameters in the 2016 CBC are based on ASCE 7-10, Chapter 11. The United States Geologic Survey (USGS) has prepared maps presenting the Risk-Targeted MCE spectral acceleration (5% damping) for periods of 0.2 seconds (S_S) and 1.0 seconds (S_1). The values of S_S and S_1 can be obtained from the USGS Ground Motion Parameter Application available at: http://earthquake.usgs.gov/designmaps/us/application.php

The USGS Ground Motion Parameter Application and Chapter 16A of 2016 CBC based on ASCE 7-10 produced the following values based on using default Site Class D conditions:

TABLE 2 SPECTRAL ACCELERATION PARAMETERS RISK TARGETED MAXIMUM CONSIDERED EARTHQUAKE			
Criteria	Value		Reference
MCE Mapped Spectral Acceleration (g)	S_S = 1.336	S_1 = 0.568	USGS Mapped Value
Site Coefficients (Site Class D)	Fa = 1.000	Fv = 1.500	ASCE Table 11.4
Site Adjusted MCE Spectral Acceleration (g)	S_{MS} = 1.336	S_{M1} = 0.851	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.891	S_{D1} = 0.568	ASCE Equations 11.4.3-4

The preliminary seismic parameters are based on using the default soil class (Class D) and should only be used for preliminary planning purposes. Actual seismic design parameters will require subsurface data and will be determined during the design level geotechnical investigation.

4.1.3 Geometric Mean Peak Ground Acceleration

As per Section 1803A.5.12 of the CBC, peak ground acceleration (PGA) utilized for dynamic lateral earth pressures and liquefaction, shall be based on a site specific study (ASCE 7-10, Section 21.5) or ASCE 7-10, Section 11.8.3. The USGS Ground Motion Parameter Application based on ASCE 7-10, Section11.8.3 produced the values shown in Table 3, based on default Site Class D conditions.

TABLE 3: GEOMETRIC MEAN PEAK GROUND ACCELERATION MAXIMUM CONSIDERED EARTHQUAKE

Criteria	Value	Reference
Mapped Peak Ground Acceleration (g)	PGA = 0.500	USGS Mapped Value
Site Coefficients (Site Class D)	F_{PGA} = 1.000	ASCE Table 11.8-1
Geometric Mean PGA (g)	PGA_M = 0.500	ASCE Equations 11.8-1

For liquefaction analysis and seismic settlement calculations a PGA of 0.505g should be used. The levels of earthquake induced ground motion presented in Sections 4.1.2 and 4.1.3 can be considered moderately intense to intense and structures should be designed to comply with seismic response requirements at the site. Structural dynamic characteristics contained in the Kern County Code of Building Regulations and the California Building Code and State of California design standards should be incorporated into the project design.

4.1.4 Seismic Design Category

As shown above, the short period design spectral response acceleration coefficient, SDS, is greater than 0.50, therefore the Site lies in Seismic Design Category D as specified in Section 1613A.3.5 of the 2016 CBC. The long period spectral response acceleration coefficient, S1, is less than 0.75, therefore the Site lies in Seismic Design Category D, based on Risk Category III. When S1 is greater than or equal to 0.75g, the Seismic Design Category is E for buildings in Risk Categories I, II, and III, and F for those in Risk Category IV.

4.2 Liquefaction

Liquefaction describes a condition in which a saturated, cohesionless soil loses shear strength during earthquake shocks. Ground motion from an earthquake may induce cyclic reversals of shearing strains of large amplitude. Lateral and vertical movements of the soil mass, combined with loss of bearing strength, usually result from this phenomenon. Historically, liquefaction of soils has caused severe damage to structures, berms, levees and roads. Seed and Idriss (1971) demonstrated that liquefaction potential depends on soil type, void ratio, depth to groundwater, duration of shaking and confining pressures over the potentially liquefiable soil mass. Fine, well sorted, loose sand, shallow groundwater, severe seismic ground motion and particularly long durations of ground shaking are conditions conducive for liquefaction.

The depth to groundwater is currently greater than 50 feet bgs, therefore, the potential for liquefaction is low.

5.0 REGULATORY SETTING

5.1 Federal Regulations

Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Program (NEHRP) leads the federal government's efforts to reduce the fatalities, injuries, and property losses caused by earthquakes. Congress established NEHRP in 1977, directing that four federal agencies coordinate their complementary activities to implement and maintain the program. These agencies are FEMA, the National Institute of Standards and Technology, the National Science Foundation, and the U.S. Geological Survey.

The NEHRP agencies pursue the goals of the program through collaboration with each other and numerous partners. In addition to other federal agencies, program partners include state and local governments, universities, research centers, professional societies, trade associations, and businesses, as well as associated councils, commissions, and consortia. NEHRP's work encompasses research, development, and implementation activities. Program research helps to advance our understanding of why and how earthquakes occur and impact the natural and built environments. The program develops strategies, tools, techniques, and other measures that can reduce the adverse effects of earthquakes, and facilitates and promotes implementation of these measures, thereby strengthening earthquake resilience among at-risk communities.

5.2 State Regulations

California and Uniform Building Codes

The 2016 California Building Standards Code (Title 24) and the Uniform Building Code provide standards for building construction as well as seismic design parameters and grading requirements. These codes contain specific requirements for seismic safety, excavation, foundations, retaining walls, and all demolition and grading activities.

Alquist-Priolo-Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The purpose of the Alquist-Priolo Geologic Hazards Zones Act, as summarized in CDMG Special Publication 42 (SP 42), is to "prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." As indicated by SP 42, "the State Geologist is required to delineate "earthquake fault zones" (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development 'projects' within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (1990) addresses non-surface fault rupture earthquake hazards such as liquefaction and seismically induced landslides. This Act requires the State Geologist to designate

Seismic Hazard Zones. These zones of Required Investigation referred in CCR Article 10, Section 3722, are areas shown on Seismic Hazard Zone Maps where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. The California Geological Survey has not issued a Seismic Hazards Maps for the project area.

NPDES General Permit for Construction Storm Water Discharges

The National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality Order 99-08-DWQ applies to projects that disturb one or more acres of soil. General Permits are implemented and enforced by the California Regional Water Quality Control Board (RWQCB). The permit requires that the following general measures be implemented during construction activity:

- Elimination or reduction of non-stormwater discharges to storm water systems and other waters of the U.S.
- Development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) prepared by a Qualified SWPPP Developer identifying Best Management Practices (BMPs) the discharger will use to protect storm water runoff and incorporating visual, chemical, and sediment monitoring programs.
- Inspections of storm water control structures and pollution prevention measures.

5.3 Local Regulations

Kern County Code of Building Regulations

The 2013 Kern County Code of Building Regulations was developed to promote the public safety and welfare by the adoption of minimum building standards to be required and enforced throughout the unincorporated territory of the County of Kern.

Construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the California Building Code, with some modifications and amendments.

Chapter 17.28 Kern County Grading Code

The purpose of the Kern County Grading Code is to safeguard life, limb, property, and the public welfare by regulating grading on private property. All requirements of the Kern County Grading Code would be applied during implementation of the proposed project. All required grading permit(s) would be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

17.28.140 Erosion control.

A. Slopes. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not

subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

B. Other Devices. Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

17.28.150 Drainage retention facilities.

General. All drainage retention/detention facilities and their associated conveyance facilities shall be designed in accordance with the Kern County Development Standards or latest revision thereof.

17.28.160 Maintenance.

The owner of any property on which grading has been performed pursuant to a permit issued under the provisions of this chapter, or any other person or agent in control of such property, shall maintain in good condition and repair all drainage structures, sumps and other protective devices shown on the grading plans filed with the application for grading permit and approved as a condition precedent to the issuance of such permit.

17.28.170 Grading inspection.

A. General. All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.

B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.

D. Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the

bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

E. Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Ordinance Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.

F. Building Official. The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.

G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.

H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:

1. The civil engineer, soils engineer, or engineering geologist, has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.

2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

5.4 Kern County Environmental Checklist

The Kern County CEQA Implementation Document and Kern County Environmental Checklist state that a project would have a significant effect if it:

- Exposes people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction;
  - Landslides;
- Results in substantial soil erosion or the loss of topsoil;
- Is located on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed project, and potentially result in on-site or off-site landslide, lateral spreading,

subsidence, liquefaction or collapse; is located on expansive soil, as defined in Section 1805.8 of the California Building Code, creating substantial risks to life or property.

An evaluation according to this checklist follows:

a) Exposes people or structures to 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.

The project area is not located in a Fault-Rupture Hazard Zone and no known active faults have been mapped in the project area.

ii) Strong seismic ground shaking.

Estimated ground motion may be moderate to very intense and there are numerous faults in the area that are capable of producing strong ground motion. The threshold of significance would be exceeded if habitable structures are not designed to withstand seismic loading that could result in structure damage or collapse.

Mitigation Measure GEO – 1: Project proponent will design structures in accordance with state and county code requirements for seismic ground shaking and geotechnical and geohazard constraints. Designs shall comply with seismic, soil response at the site, and structural dynamic characteristics contained in the Kern County Code of Building Regulations and the California Building Code and State of California design standards.

iii) Seismic-related ground failure, including liquefaction.

The depth to groundwater is currently greater than 50 feet bgs, therefore, the potential for liquefaction and seismic related ground failure is low.

iv) Landslides.

The site and surrounding areas are essentially flat, the project does not include any habitable structures, and the potential hazard due to landslides from adjacent properties is not applicable. Debris or mudflow flows may occur during intense rainfall induced sheet flow events.

b) Result in substantial soil erosion or the loss of topsoil.

According to the Kern County General Plan Safety Element, the Site is not within a zone that is prone to

soil erosion (Kern County General Plan Safety Element, 2009). The proposed Site is essentially flat which would minimize the possibility for the formation of significant rills or gullies by water. With respect to soil erosion by wind, earthwork at the Site during construction might cause some disturbed soils to be affected by wind erosion. After construction at the proposed Site, traffic from maintenance vehicles could contribute to soil erosion by wind, but due to the limited timespan of traffic, the potential impacts are considered low. Implementation of Best Management Practices (BMPs) and compliance with existing regulations will be necessary during construction and operation of the proposed facility to minimize potential soil erosion at the Site. New construction and grading projects requiring a storm water pollution prevention plan (SWPPP) will also require an Erosion Control Plan (ECP) for the mitigation of potential soil erosion and sedimentation. Projects that involve more than an acre of disturbance that will result in the discharge of stormwater to a Water of the United States containing contaminants and/or sediments must comply with the State Water Resources Control Board's Construction General Permit. Additionally, the Kern County Engineering, Survey and Permit Services Department require that such projects complete an "Applicability of NPDES Storm Water Program" form. As required, the SWPPP will be submitted for approval by Kern County Engineering, Survey and Permit Services.

c) Is located on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

The depth to groundwater is currently greater than 50 feet bgs, therefore, the potential for liquefaction and seismic related ground failure is low.

Hydrocompaction is the consolidation of loose dry surface soils from the infiltration of water. Materials of unusually low density deposited in areas of low rainfall undergo significant compaction when they become thoroughly wetted. Site soils may have a potential for hydrocompaction which will require further evaluation. A more detailed geotechnical investigation will be performed once the layout of the structures is defined. Hydrocompaction materials consist of sediments loosely placed by wind or by mudflow, that when saturated, the material hydrocompacts (settlement). If hydrocompaction soil is encountered, project proponent shall: 1) over-excavate and re-compact the material, 2) design the foundation deeper than the hydrocompaction material zone, or 3) provide an alternative engineering solution to ensure that hydrocompaction will not result in instability of project features.

Mitigation Measure GEO –2: The potential for impacts relating to unstable soils will be addressed by the applicant in the site-specific design-level geotechnical report prepared by a registered engineering geologist or soils engineer. Hydrocompaction assessment and protection recommendations in the geotechnical investigation and grading recommendations will mitigate this potential impact. Prior to issuance of grading or building permits for the project, the applicant shall submit the geotechnical report to the Kern County Engineering, Surveying, and Permit Services Department for review and approval.

d) Is located on expansive soil, as defined in Section 1805.8 of the California Building Code, creating substantial risks to life or property.

The soils in the northern portion of the Site are generally silty sand and sand; expansive soils are not anticipated to occur within the Site Boundary. Expansive soils may be present in the southern section of the Site. A geotechnical engineering evaluation would be needed to confirm the actual site conditions. Any recommendations based on the results of the evaluation would be performed according to standard geotechnical engineering practices.

5.5 Cumulative Impacts

Development of the proposed project in addition to projected future development in the area will alter the landforms in the region and expose workers and structures to the geologic hazards of the region. Site-specific geologic and construction issues will be addressed and potential impacts mitigated by implementation of recommendations contained in site-specific geotechnical investigation(s) as the proposed project and improvements proceed through the permitting processes. The consideration of geologic and soil impacts and mitigation efforts of each proposed project in the area will result in cumulative impacts that are less than significant.

6.0 LIMITATIONS

The findings expressed in this report are based on a limited preliminary study for the area that consisted of Site reconnaissance in accessible areas and a review of publicly available references. The findings and evaluations in this report do not represent an engineering analysis of actual site conditions such as those that would be determined through on-site geologic or geotechnical investigations. A detailed investigation consisting of field exploration (field exploration and soil sampling), laboratory testing of soil samples, and engineering analysis will be required for definitive evaluation of the potential environmental impacts from development.

The findings of this report are valid as of the present. However, changes in the conditions of the Site can occur with the passage of time, whether caused by natural processes or the work of man, on this property or adjacent property. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation, governmental policy or the broadening of knowledge.

BSK has prepared this report for the exclusive use of the Client and members of the project design team. The report has been prepared in accordance with generally accepted geotechnical engineering practices which existed in Kern County at the time the report was written. No other warranties either expressed or implied are made as to the professional advice provided under the terms of BSK's agreement with Client and included in this report.

7.0 REFERENCES

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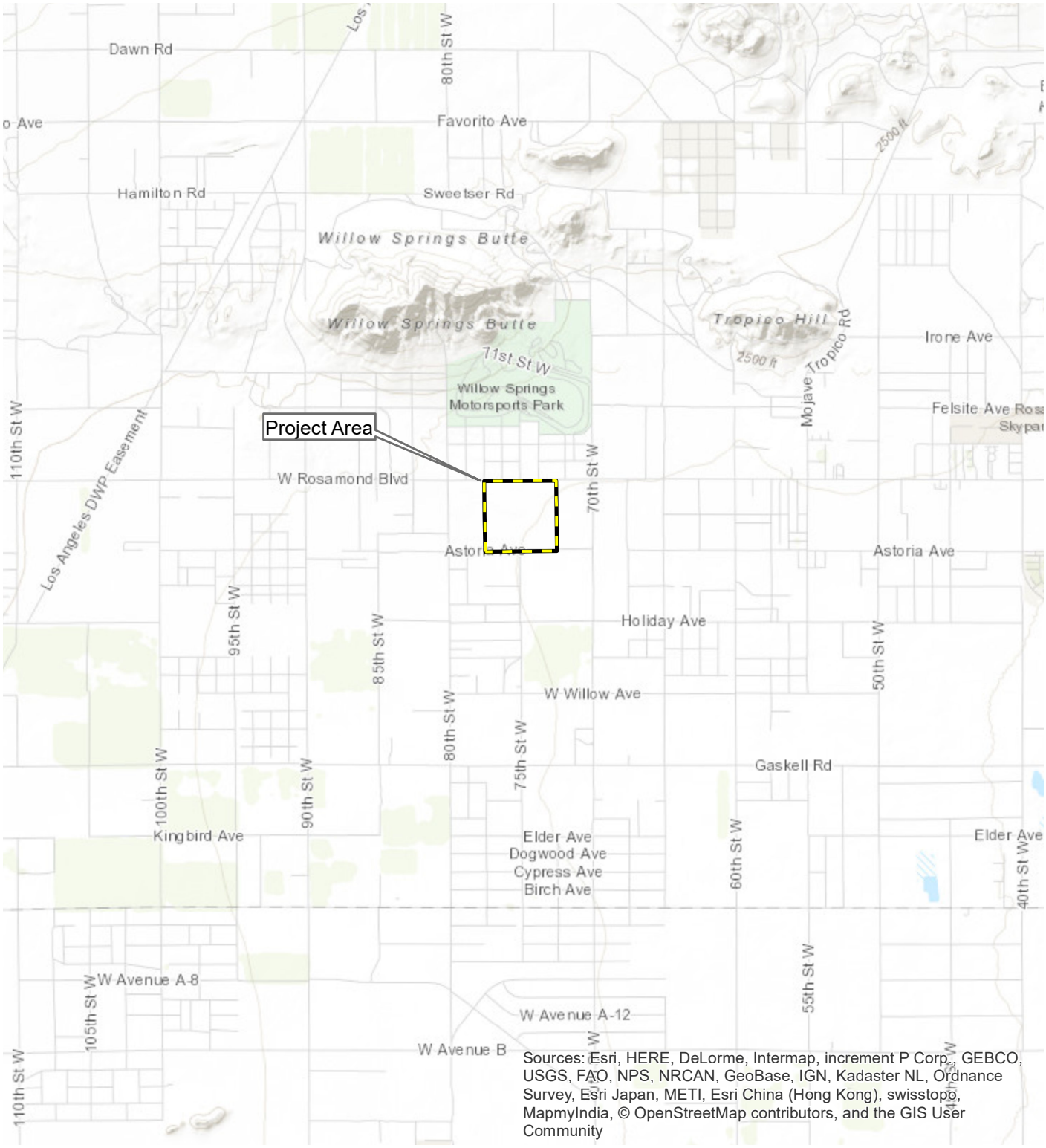
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United States Geological Survey Topographic 15 minute quadrangles: Digital files from Cal-Atlas http://atlas.ca.gov

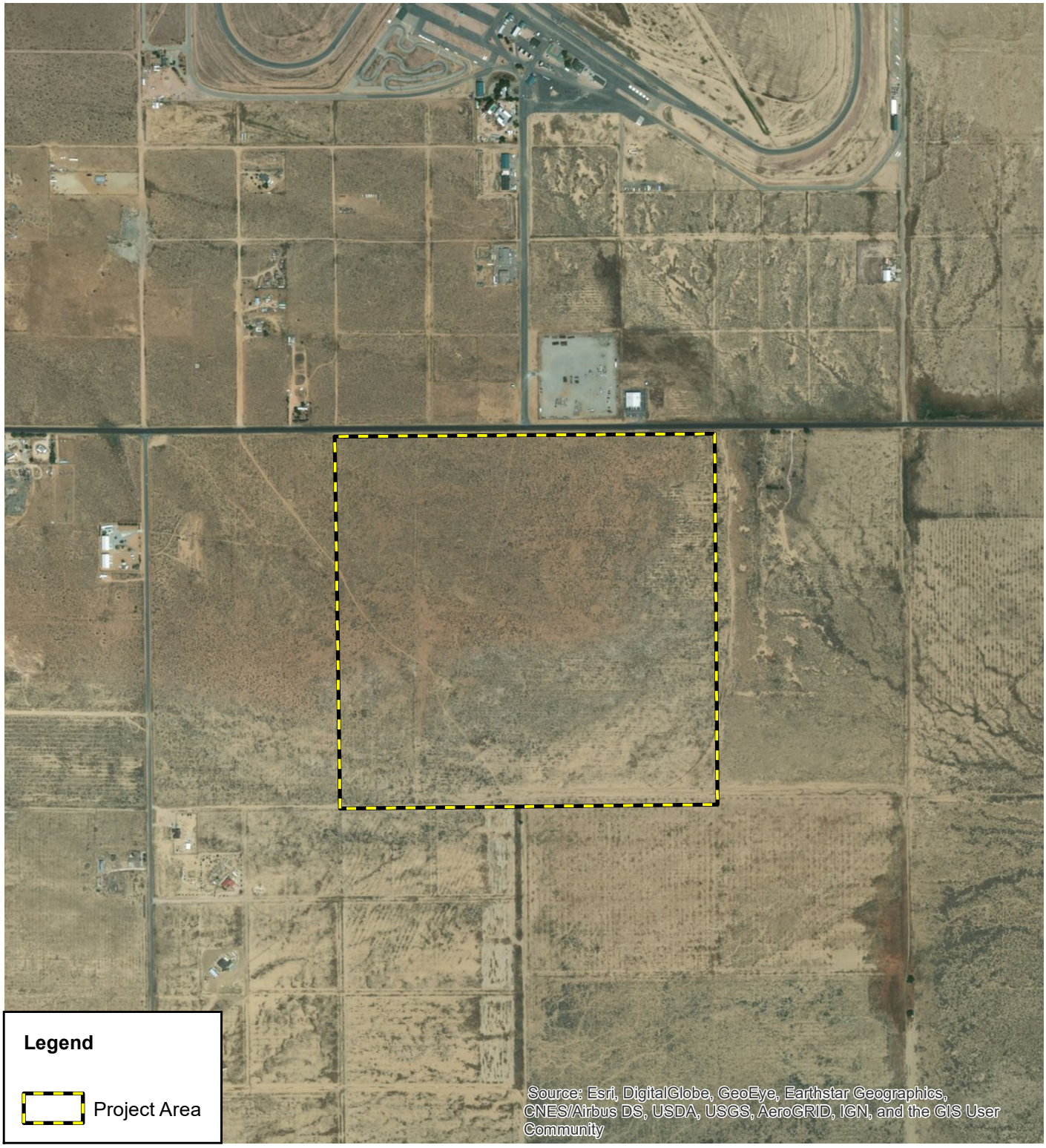


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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 1
Vicinity Map
BSK Project G1804910B

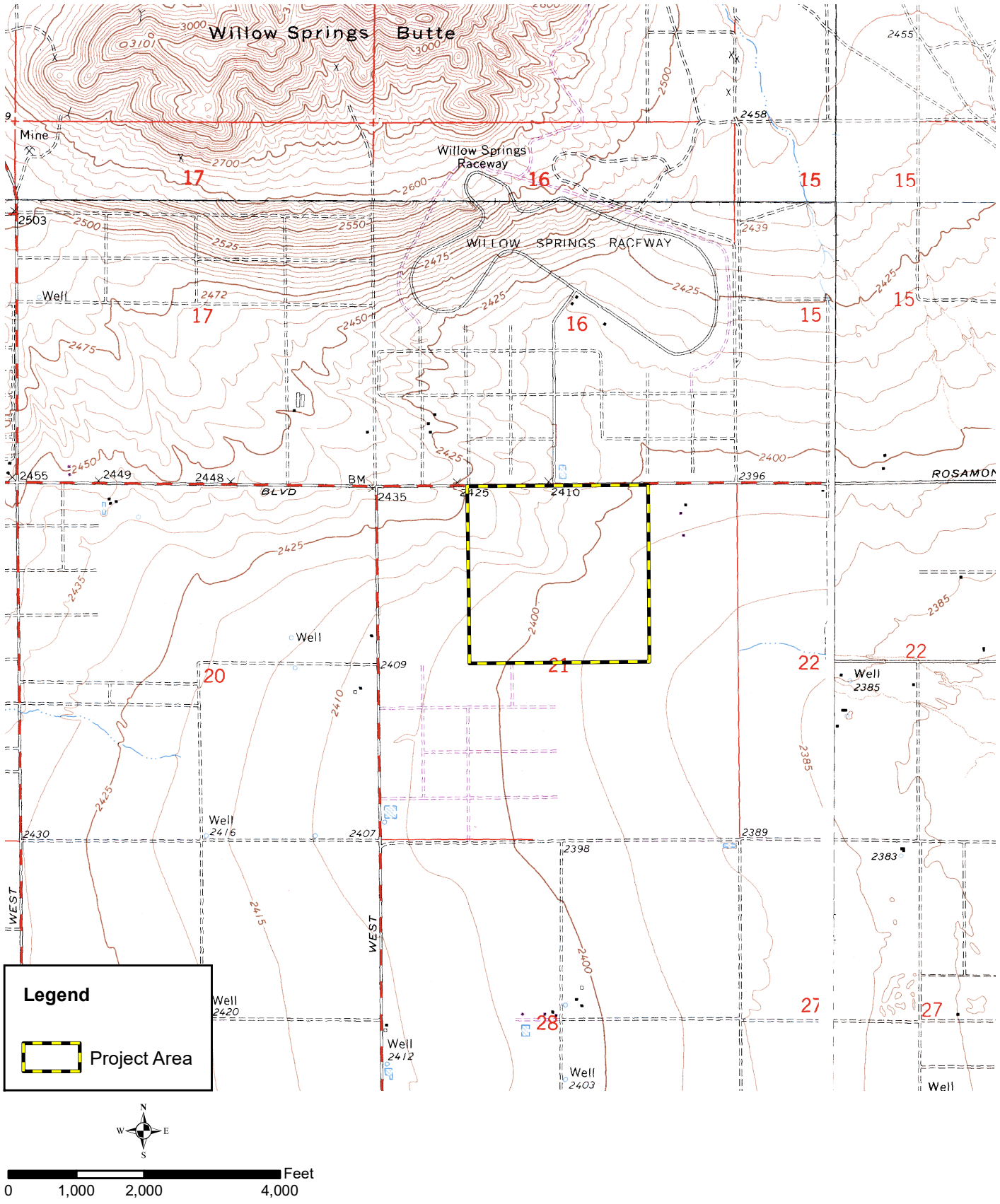


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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 2
Site Area Map
BSK Project G1804910B

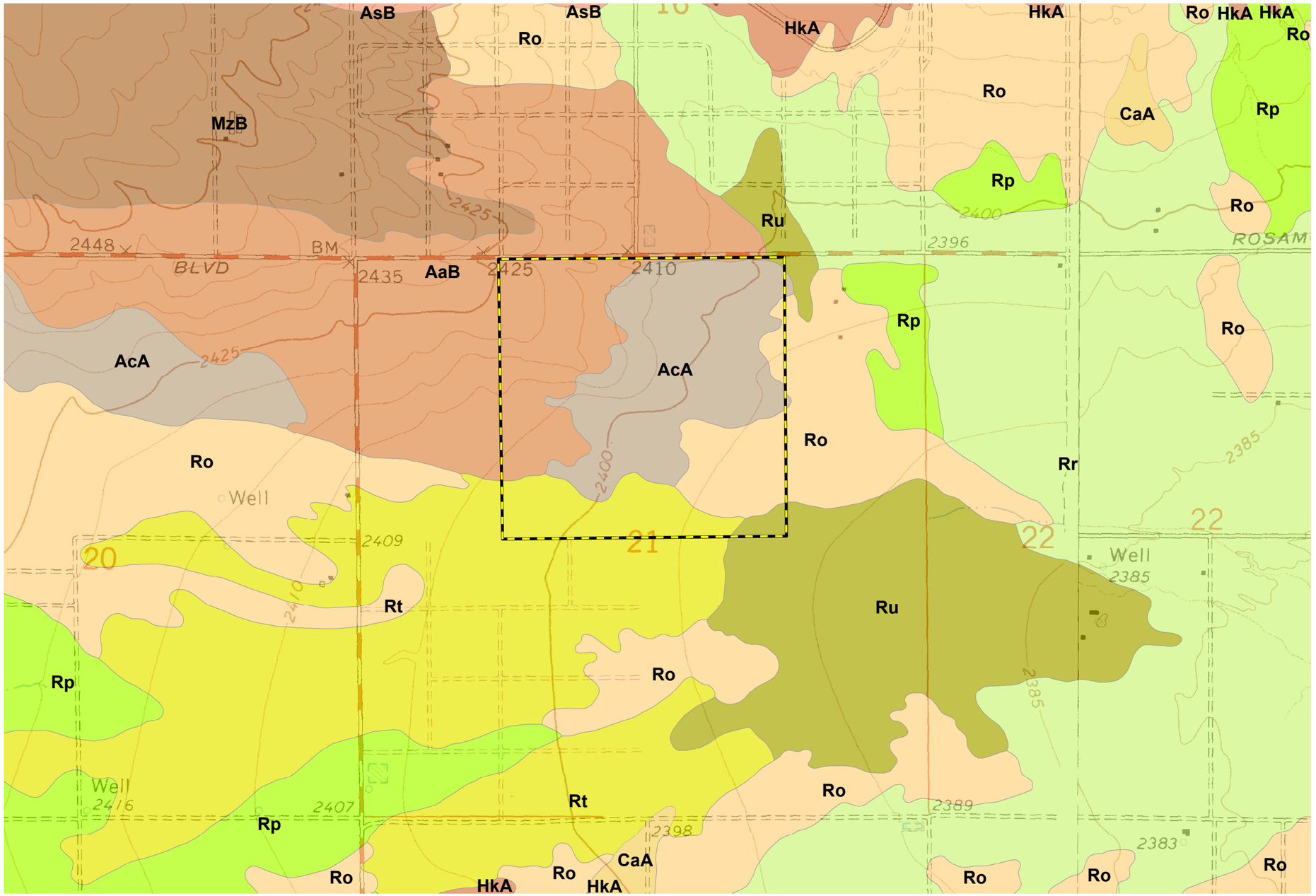


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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 3
Topographic Map
BSK Project G1804910B



Legend

Project Area

Symbol, Unit Name

- AaB | Adelanto loamy sand, 2 to 5 percent slopes
- AcA | Adelanto coarse sandy loam, 2 to 5 percent slopes
- AsB | Arizo gravelly loamy sand, 0 to 5 percent slopes
- CaA | Cajon loamy sand, 0 to 2 percent slopes
- HkA | Hesperia fine sandy loam, 0 to 2 percent slopes
- MzB | Mohave coarse sandy loam, 2 to 5 percent slopes
- Ro | Rosamond fine sandy loam
- Rp | Rosamond loam
- Rr | Rosamond loam, saline-alkali
- Rt | Rosamond silty clay loam
- Ru | Rosamond silty clay loam, saline-alkali

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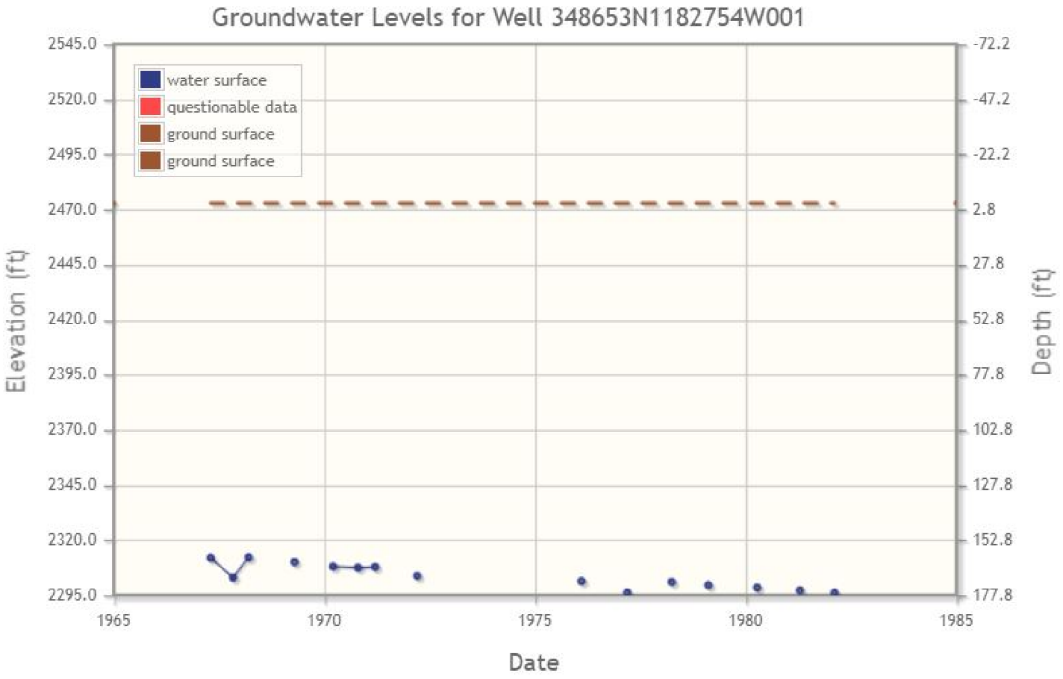
N W E S

0 500 1,000 2,000 Feet

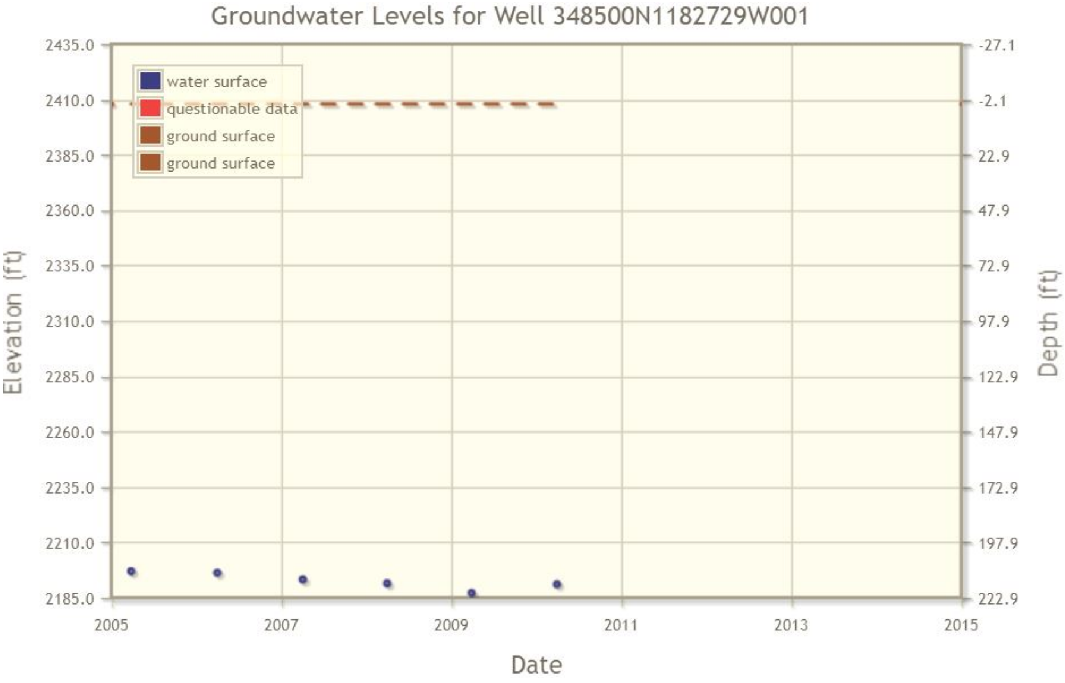
Source: http://SoilDataMart.nrcs.usda.gov/

Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 3
Soil Map
BSK Project G1804910B



State Well Number:□09N13W17R001S
Latitude (NAD83):□34.865300
Longitude (NAD83):□-118.2754
Groundwater Basin (code):□Antelope Valley (6-044)
Reference Point Elevation (NAVD88 ft):□2472.760
Ground Surface Elevation (NAVD88 ft):□2472.760



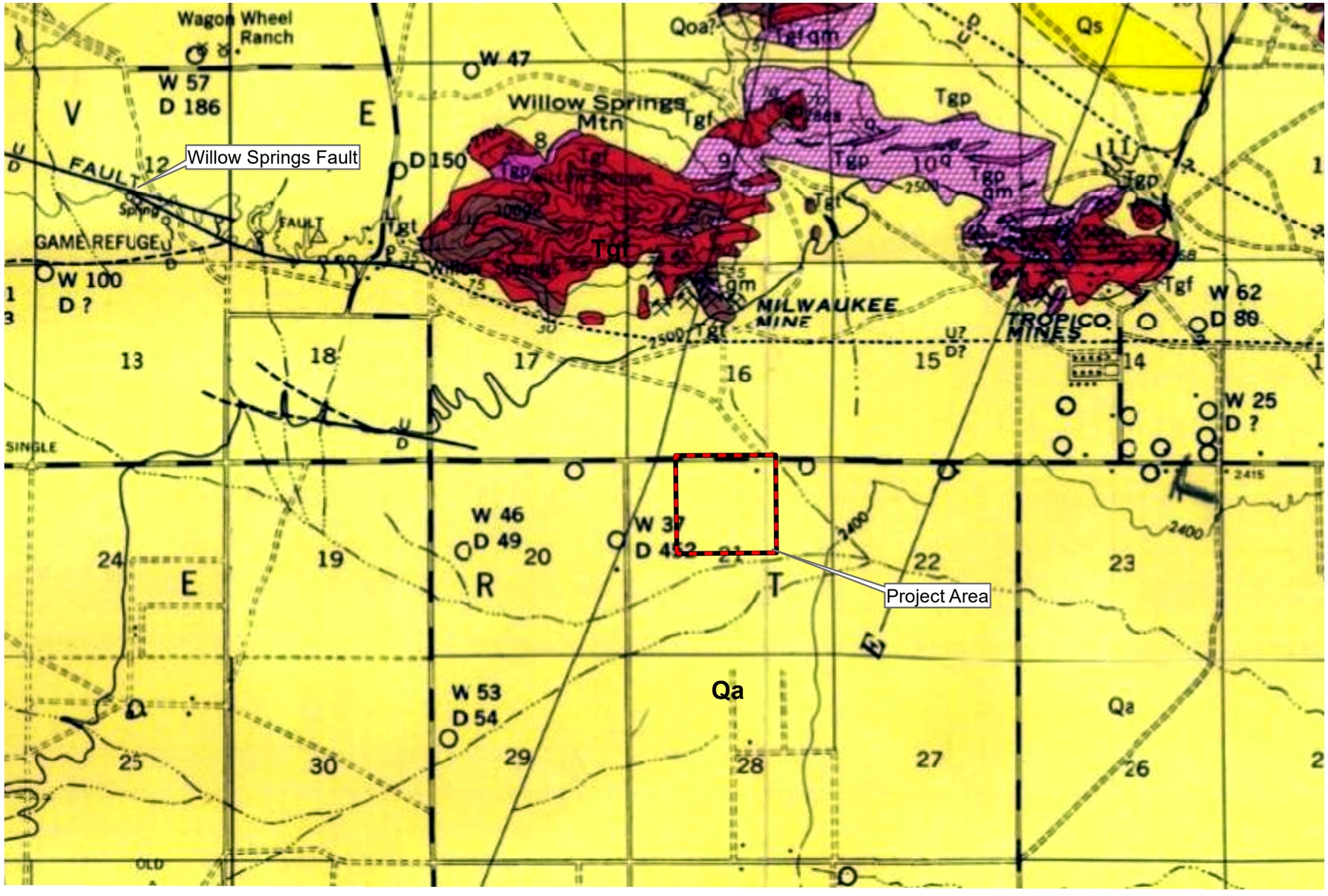
State Well Number:□09N13W21N001S
Latitude (NAD83):□34.850000
Longitude (NAD83):□-118.2729
Groundwater Basin (code):□Antelope Valley (6-044)
Reference Point Elevation (NAVD88 ft):□2407.940
Ground Surface Elevation (NAVD88 ft):□2407.940

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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 5
Area Hydrographs
BSK Project G1804910B



Legend
Qs - Dune Sand
Qa - Alluvium
Qoa - Pleistocene Alluvium
Tgf - Gem Hill Formation, Miocene Volcanic Rocks. porphyry
Tgp - Gem Hill Formation, Miocene Volcanic Rocks, felsite
qm - Quartz Monzonite

Project Area

Project Area

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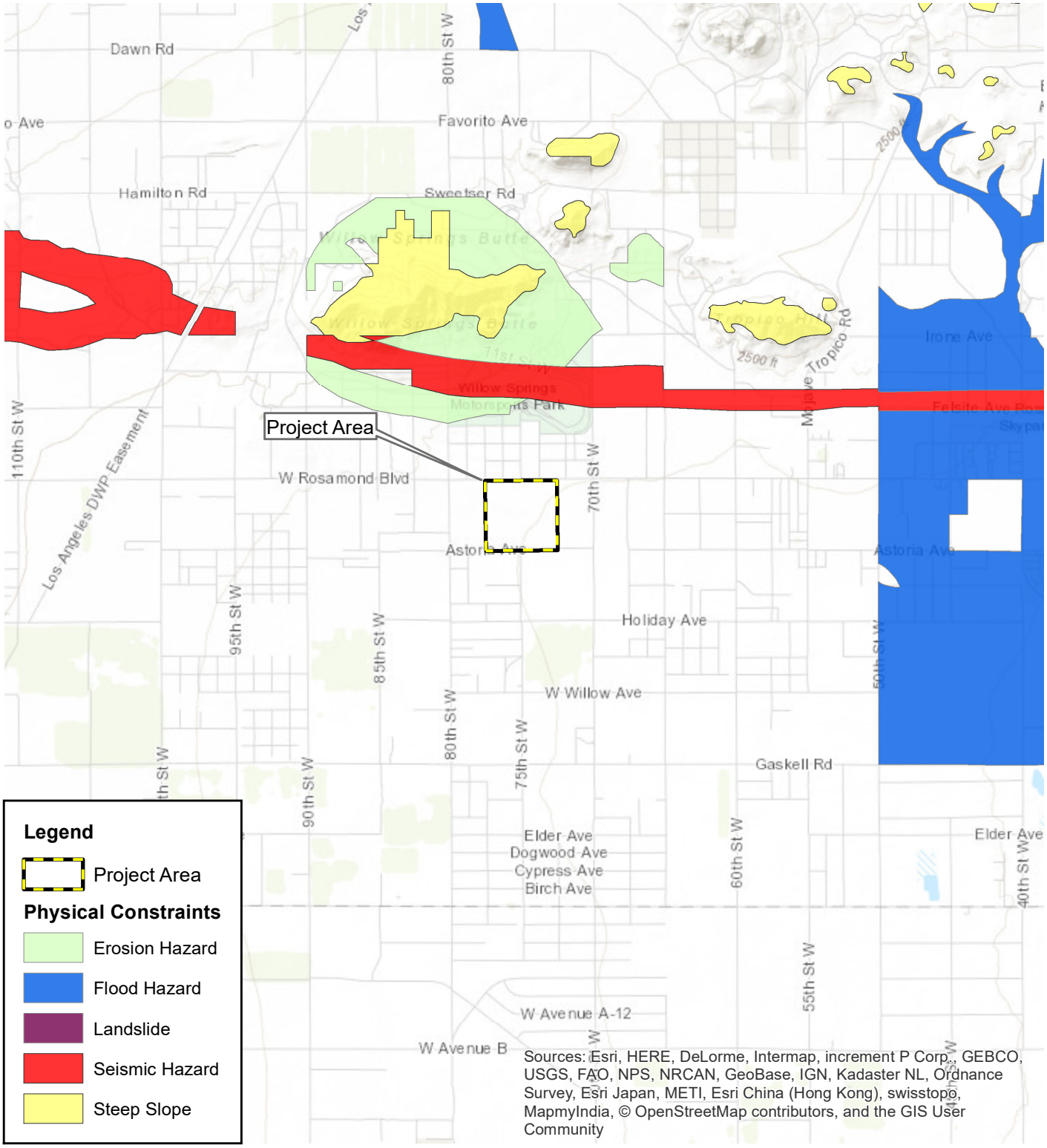
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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 6
Geologic Map
BSK Project G1804910B

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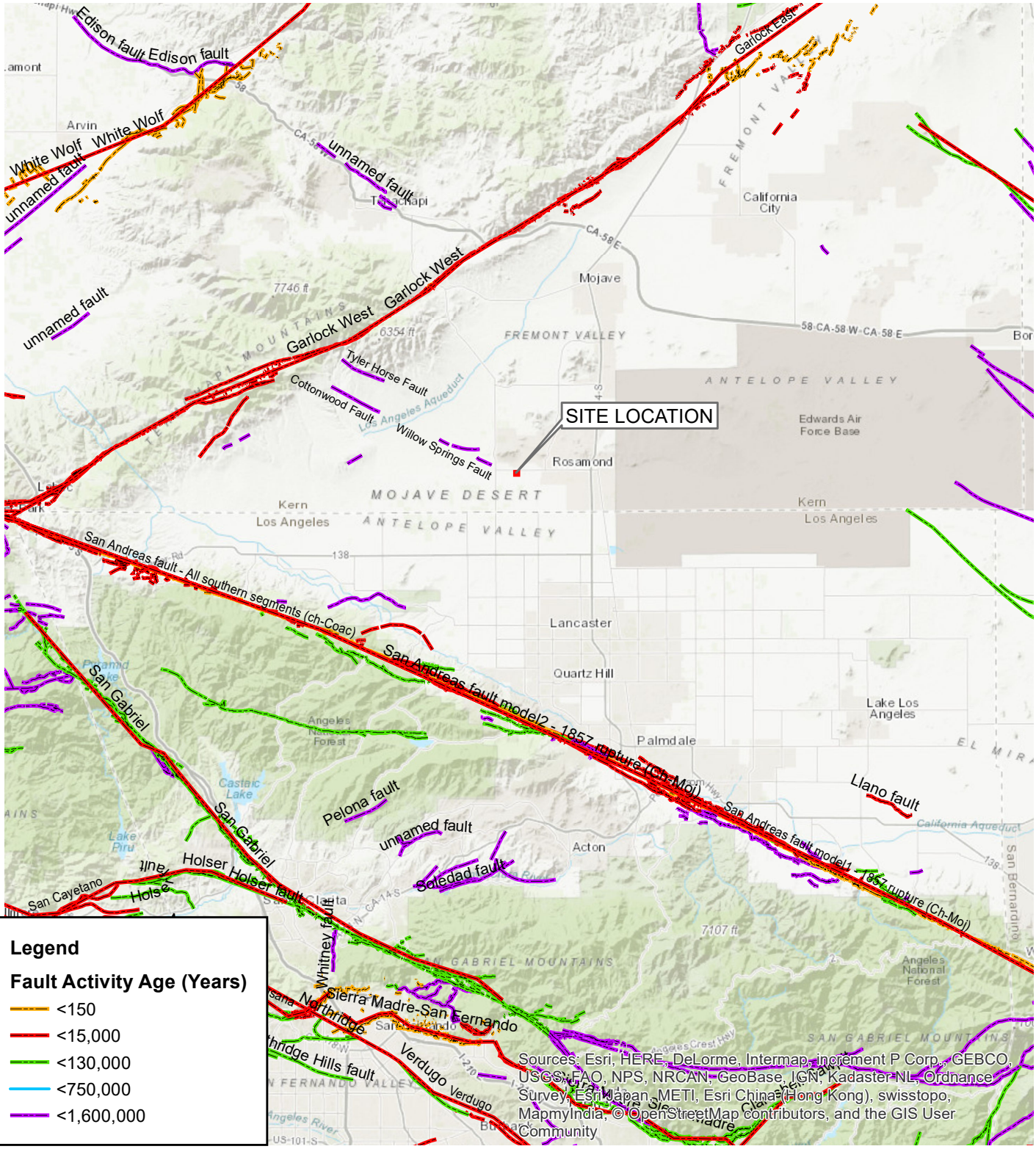


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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 7
Physical Constraints Map
BSK Project G1804910B



Legend

Fault Activity Age (Years)

- <150
- <15,000
- <130,000
- <750,000
- <1,600,000

0 5 10 20

Miles

N W E S

Reference:USGS Quaternary Fault Database ftp://hazards.cr.usgs.gov/maps/qfault/ November 3rd, 2010

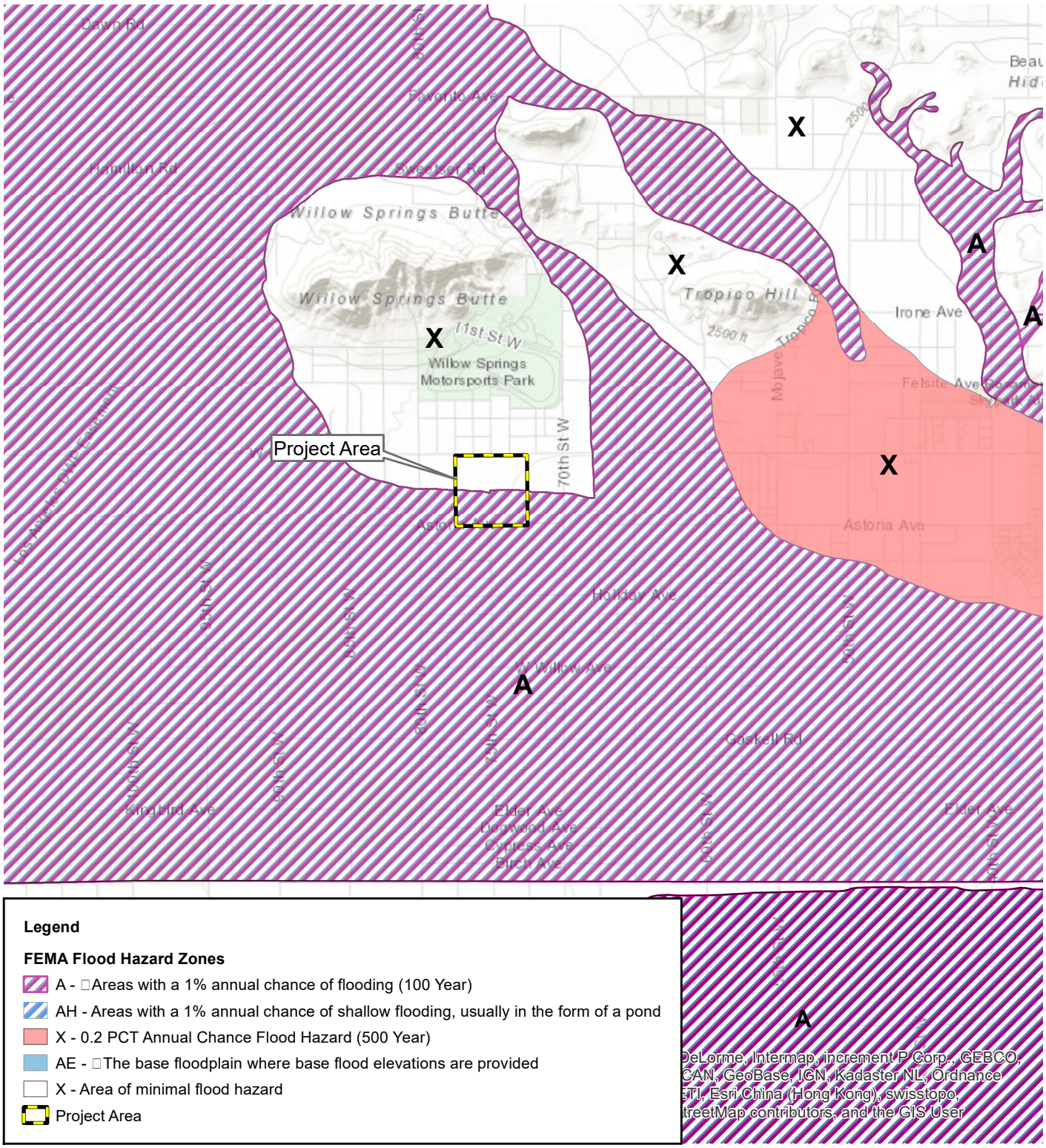
Map Date: 3/19/2018

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Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area
Kern County, California

Figure 8
Area Fault Map
BSK Project G1804910B

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Legend

FEMA Flood Hazard Zones

- A - Areas with a 1% annual chance of flooding (100 Year)
- AH - Areas with a 1% annual chance of shallow flooding, usually in the form of a pond
- X - 0.2 PCT Annual Chance Flood Hazard (500 Year)
- AE - The base floodplain where base flood elevations are provided
- X - Area of minimal flood hazard
- Project Area

DeLorme, Intermap, increment P Corp., GEBCO, CAN, GeoBase, IGN, Kadaster NL, Ordnance ETI, Esri China (Hong Kong), swisstopo, treetMap contributors, and the GIS User

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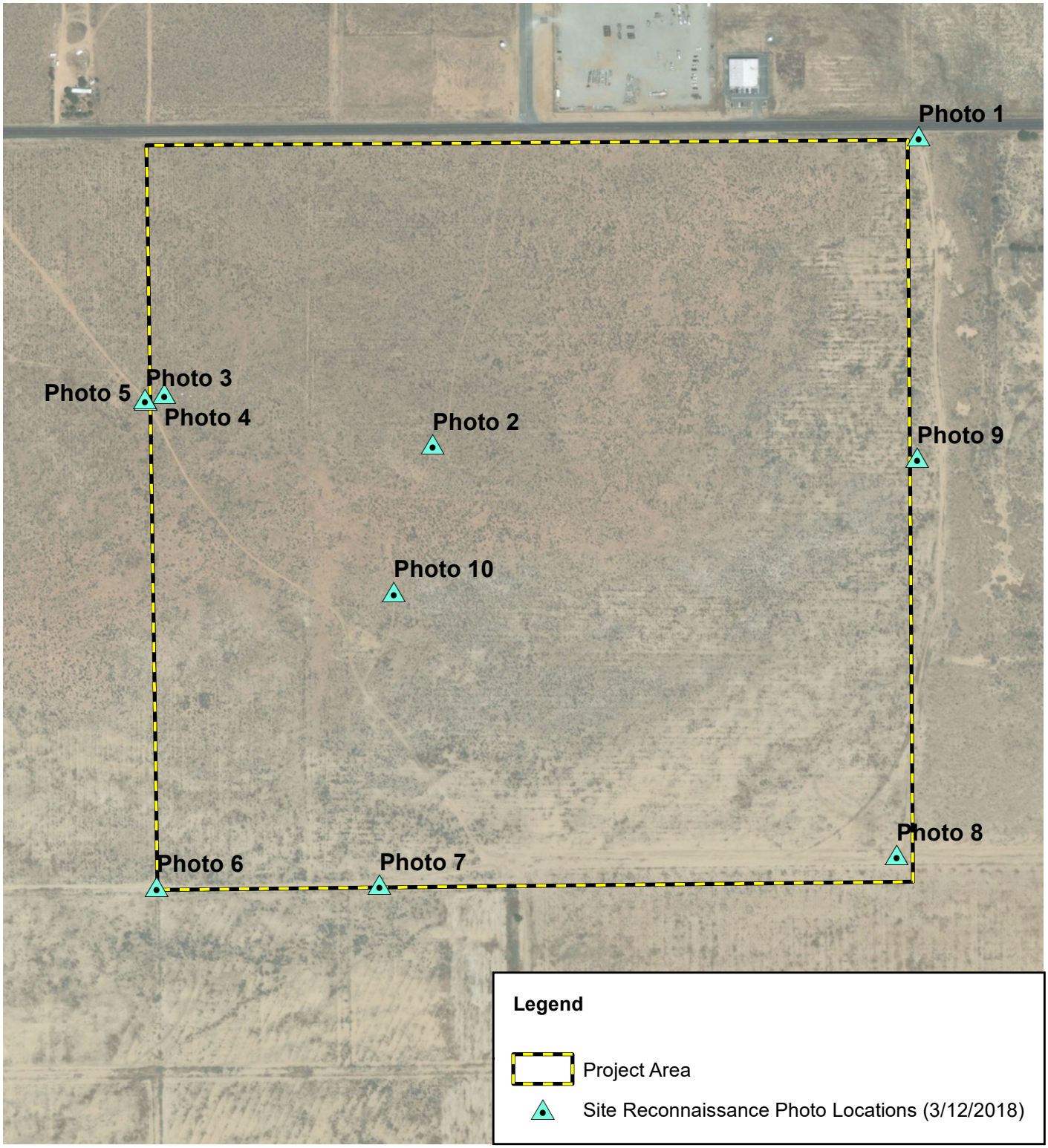
0 0.5 1 2 Miles

Source: FEMA Flood Hazard Layer 06029C, 3/29/2016

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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure 9
FEMA Flood Map
BSK Project G1804910B



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Preliminary Geotechnical Evaluation
Proposed Gettysburg Solar Project
Rosamond Area
Kern County, California

Figure A-1
Photo Location Map
BSK Project G1804910B

Photo 1) View west generally shows the northern border of the Site, parallel to Rosamond Boulevard as viewed from the northeast corner of the Site.



Photo 2) View south/southeast shows a narrow dirt road that cuts across the Site from the western border to the southern border. Approximately from 34.860826, -118.268863 to 34.856437, -118.118.264758.



Photo 3) View of trash and various debris found sparsely throughout the Site. This trash is located at 34.861045, -118.268504.



Photo 4) View north generally shows the western border of the Site, from 34.860833, -118.268860. The northern half of the Site generally consists of gravelly silty sand with dry vegetation on an elevated plateau, dipping approximately 5° to both the north and south, on an elongated mound trending northwest to the southeast.



Photo 5) View east generally shows the southern border of the Site as viewed from the southwest corner of the property. The southern border is the unpaved section of Astoria Avenue. The southern region of the Site is relatively flat, with gravelly silty sand and dry vegetation.



Photo 6) View east shows the fork in the road and lack of vegetation along Astoria Avenue and the southern border of the Site. Photograph taken at 34.856348, -118.266191.



Photo 7) View north, showing the eastern border of the Site, as seen from the southeast corner of the Site. The Site is more sparsely vegetated in the southeast region.



Photo 8) A debris and garbage dump on the eastern border of the Site located at 34.860570, -118.259987.



Photo 9) View of the southern edge of the mound located in the northern region of the Site. The truck in the background is the apex of the mound, approximately 10-feet above the flatter region where the photograph was taken, 34.859288, -118.266054. The areas of increased vegetation coincide with this elevated portion of the Site.



Photo 10) Freshly-dug animal burrows noted at 34.860549, -118.265638. Wildlife observed during the Site visit included small lizards and birds.



Photo 11) Approximate location of the elevated mound in the northern region of the Site (yellow), with approximate dipping directions (green).



Brief Soil Descriptions (CA)

Antelope Valley Area, California

[Absence of an entry indicates that the feature is not a concern or that data were not estimated. Data applies to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

AaB--Adelanto loamy sand, 2 to 5 percent slopes

Composition

- Adelanto and similar soils: 85 percent of the unit
- Cajon: 10 percent of the unit
- Mojave: 5 percent of the unit

Setting

Landform(s): alluvial fans, terraces
Elevation: 2001 to 2999 feet
Precipitation: 6 to 6 inches
Slope gradient: 2 to 5 percent
Air temperature: 63 to 63 ºF
Frost-free period: 250 to 260 days

Characteristics of Adelanto and similar soils

Average total avail. water in top five feet (in.): 9.7
Available water capacity class: High
Parent material: alluvium derived from granite
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Land capability class, irrigated: 2e
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Runoff class: very low
Potential frost action: none

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 16	Loamy sand	0.8 to 1.3	6.1 to 7.8	0.0 to 2.0	0
H2 -- 16 to 41	Coarse sandy loam	2.0 to 3.7	6.1 to 7.8	0.0 to 2.0	0
H2 -- 16 to 41	Sandy loam	2.0 to 3.7	6.1 to 7.8	0.0 to 2.0	0
H3 -- 41 to 80	Sandy loam	3.9 to 5.8	7.4 to 8.4	0.0 to 2.0	0
H4 -- 80 to 86	Stratified loamy sand to coarse sandy loam	0.4 to 0.6	7.9 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - SANDY 4-9"

AcA--Adelanto coarse sandy loam, 2 to 5 percent slopes

Composition

- Adelanto and similar soils: 85 percent of the unit
- Cajon: 10 percent of the unit
- Mohave: 5 percent of the unit

Setting

Landform(s): alluvial fans, terraces
Elevation: 2001 to 2999 feet
Precipitation: 6 to 6 inches
Slope gradient: 0 to 2 percent
Air temperature: 63 to 63 ºF
Frost-free period: 250 to 260 days

Characteristics of Adelanto and similar soils

Average total avail. water in top five feet (in.): 9.7
Available water capacity class: High
Parent material: alluvium derived from granite
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated: 2s
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Runoff class: very low
Potential frost action: none

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 16	Coarse sandy loam	1.3 to 2.4	6.1 to 7.8	0.0 to 2.0	0
H2 -- 16 to 41	Coarse sandy loam	2.0 to 3.7	6.1 to 7.8	0.0 to 2.0	0
H2 -- 16 to 41	Sandy loam	2.0 to 3.7	6.1 to 7.8	0.0 to 2.0	0
H3 -- 41 to 80	Sandy loam	3.9 to 4.7	7.4 to 8.4	0.0 to 2.0	0
H4 -- 80 to 86	Stratified loamy sand to coarse sandy loam	0.4 to 0.6	7.9 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - LOAMY 4-9"

Ro--Rosamond fine sandy loam

Composition

- Rosamond and similar soils: 85 percent of the unit
- Cajon: 10 percent of the unit
- Hesperia: 4 percent of the unit
- Unnamed: 1 percent of the unit

Setting

Landform(s): alluvial fans
Elevation: 1900 to 2900 feet
Precipitation: 3 to 8 inches
Slope gradient: 0 to 2 percent
Air temperature: 61 to 64 ºF
Frost-free period: 240 to 260 days

Characteristics of Rosamond and similar soils

Average total avail. water in top five feet (in.): 9.9
Available water capacity class: High
Parent material: alluvium derived from granite
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Land capability class, irrigated: 1
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: B
Runoff class: low
Potential frost action: none

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 8	Fine sandy loam	0.8 to 1.2	7.4 to 8.4	0.0 to 2.0	0
H2 -- 8 to 60	Stratified loam to silty clay loam	7.8 to 9.4	7.9 to 8.4	2.0 to 4.0	0

Ecological class(es): NRCS Rangeland Site - LOAMY 4-9"

Rt--Rosamond silty clay loam

Composition

- Rosamond and similar soils: 85 percent of the unit
- Cajon: 10 percent of the unit
- Hesperia: 4 percent of the unit
- Unnamed: 1 percent of the unit

Setting

Landform(s): alluvial fans
Elevation: 1900 to 2900 feet
Precipitation: 3 to 8 inches
Slope gradient: 0 to 2 percent
Air temperature: 61 to 64 ºF
Frost-free period: 240 to 260 days

Characteristics of Rosamond and similar soils

Average total avail. water in top five feet (in.): 10.3
Available water capacity class: High
Parent material: alluvium derived from granite
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Land capability class, irrigated: 1
Land capability class, nonirrigated: 7c
Hydric soil: no
Hydrologic group: B
Runoff class: low
Potential frost action: none

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 12	Silty clay loam	2.0 to 2.2	7.9 to 8.4	2.0 to 8.0	0
H2 -- 12 to 60	Stratified loam to silty clay loam	7.2 to 8.6	7.9 to 8.4	2.0 to 8.0	0

Ecological class(es): NRCS Rangeland Site - LOAMY 4-9"

Ru--Rosamond silty clay loam, saline-alkali

Composition

- Rosamond and similar soils: 85 percent of the unit
- Pond: 5 percent of the unit
- Tray: 5 percent of the unit
- Unnamed: 4 percent of the unit
- Unnamed: 1 percent of the unit

Setting

Landform(s): alluvial fans
Elevation: 1900 to 2900 feet
Precipitation: 3 to 8 inches
Slope gradient: 0 to 2 percent
Air temperature: 61 to 64 ºF
Frost-free period: 200 to 260 days

Characteristics of Rosamond and similar soils

Average total avail. water in top five feet (in.): 5.4
Available water capacity class: Low
Parent material: alluvium derived from granite
Restrictive feature(s): none
Depth to Water table: none within the soil profile
Drainage class: well drained
Flooding hazard: none
Ponding hazard: none
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Land capability class, irrigated: 3s
Land capability class, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Runoff class: medium
Potential frost action: none

Saturated hydraulic conductivity class: Moderately High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 12	Silty clay loam	0.7 to 1.4	7.9 to 9.0	4.0 to 16.0	0 to 5
H2 -- 12 to 60	Stratified loam to silty clay loam	2.9 to 5.8	7.9 to 9.0	4.0 to 16.0	5 to 10

Ecological class(es): NRCS Rangeland Site - ALKALI FLATS 4-9"

Engineering Properties

Antelope Valley Area, California

[Absence of an entry indicates that the data were not estimated. This report shows only the major soils in each map unit]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
AaB:												
Adelanto	0-16	Loamy sand	SM	A-1, A-2	0	0	80-100	75-95	40-65	15-25	---	NP
	16-41	Coarse sandy loam, sandy loam	SM	A-2, A-4	0	0	80-100	75-95	50-75	30-50	---	NP
	41-80	Sandy loam	SM	A-4	0	0	80-95	75-90	50-75	35-50	20-30	NP-5
	80-86	Stratified loamy sand to coarse sandy loam	SM	A-1, A-2	0	0	80-95	75-90	40-70	15-35	---	NP
AcA:												
Adelanto	0-16	Coarse sandy loam	SM	A-2, A-4	0	0	80-100	75-95	50-70	25-50	---	NP
	16-41	Coarse sandy loam, sandy loam	SM	A-2, A-4	0	0	80-100	75-95	50-75	30-50	---	NP
	41-80	Sandy loam	SM	A-4	0	0	80-95	75-90	50-75	35-50	20-30	NP-5
	80-86	Stratified loamy sand to coarse sandy loam	SM	A-1, A-2	0	0	80-95	75-90	40-70	15-35	---	NP
Ro:												
Rosamond	0-8	Fine sandy loam	SM	A-4	0	0	100	100	70-85	35-50	20-30	NP-5
	8-60	Stratified loam to silty clay loam	CL	A-6	0	0	100	100	95-100	60-85	25-40	10-20
Rt:												
Rosamond	0-12	Silty clay loam	CL	A-6	0	0	100	100	85-100	60-85	20-40	10-20
	12-60	Stratified loam to silty clay loam	CL	A-6	0	0	100	100	95-100	60-85	25-40	10-20
Ru:												
Rosamond	0-12	Silty clay loam	CL	A-6	0	0	100	100	85-100	65-85	30-40	10-20
	12-60	Stratified loam to silty clay loam	CL	A-6	0	0	100	95-100	85-100	60-85	25-40	10-20

APPENDIX G

HYDROLOGY AND WATER SUPPLY ASSESSMENT

WILL SERVE LETTER

HYDROLOGY STUDY

GETTYSBURG SOLAR PROJECT

KERN COUNTY, CALIFORNIA



FEBRUARY 2019

HYDROLOGY STUDY

GETTYSBURG SOLAR PROJECT

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February 2019

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Project #150447.10

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SECTION 1 - INTRODUCTION

1.1 - Project description

The proposed Project includes the development of a 30 MWac photovoltaic energy generation facilities and associated infrastructure located adjacent to one another. At this time, the PV technology that would be used for the proposed project has not been determined.

The proposed Project would consist of approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid pattern over the project. Power generated by the proposed Project would be transferred directly to SCE's Antelope-Cal Cement-Rosamond 66kV line. The route for associated gen-tie transmission lines for the Project is along the Rosamond Boulevard right-of-way, and will require a Franchise Agreement with the County of Kern.

The solar PV generating facilities would consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts. The proposed solar facilities are intended to operate year-round, and would generate electricity during daylight hours when electricity demand is at its peak.

1.2 - Project Location

The proposed Project (Assessor's Parcel Numbers 374-011-06 and -39 [approximately 79 acres respectively]), is located just east of the intersection of Rosamond Boulevard (Blvd) and 80th Street W, 5.5 miles west of State Route (SR) 14. The west parcel is described as Parcel B of Parcel Map Waiver (PMW)7-93, and the east parcel is the west ½ of the NE ¼ of Section 21 T9N R13W, SBB&M. A proposed gen-tie route will run east along Rosamond Blvd to connect to the existing Rosamond substation (Figure 1).

The Project site and adjacent land is undisturbed and currently undeveloped (Figure 2). There is industrial development on a property north of Rosamond Blvd. Sparse residential and commercial/industrial development is also in the vicinity of the Project site.

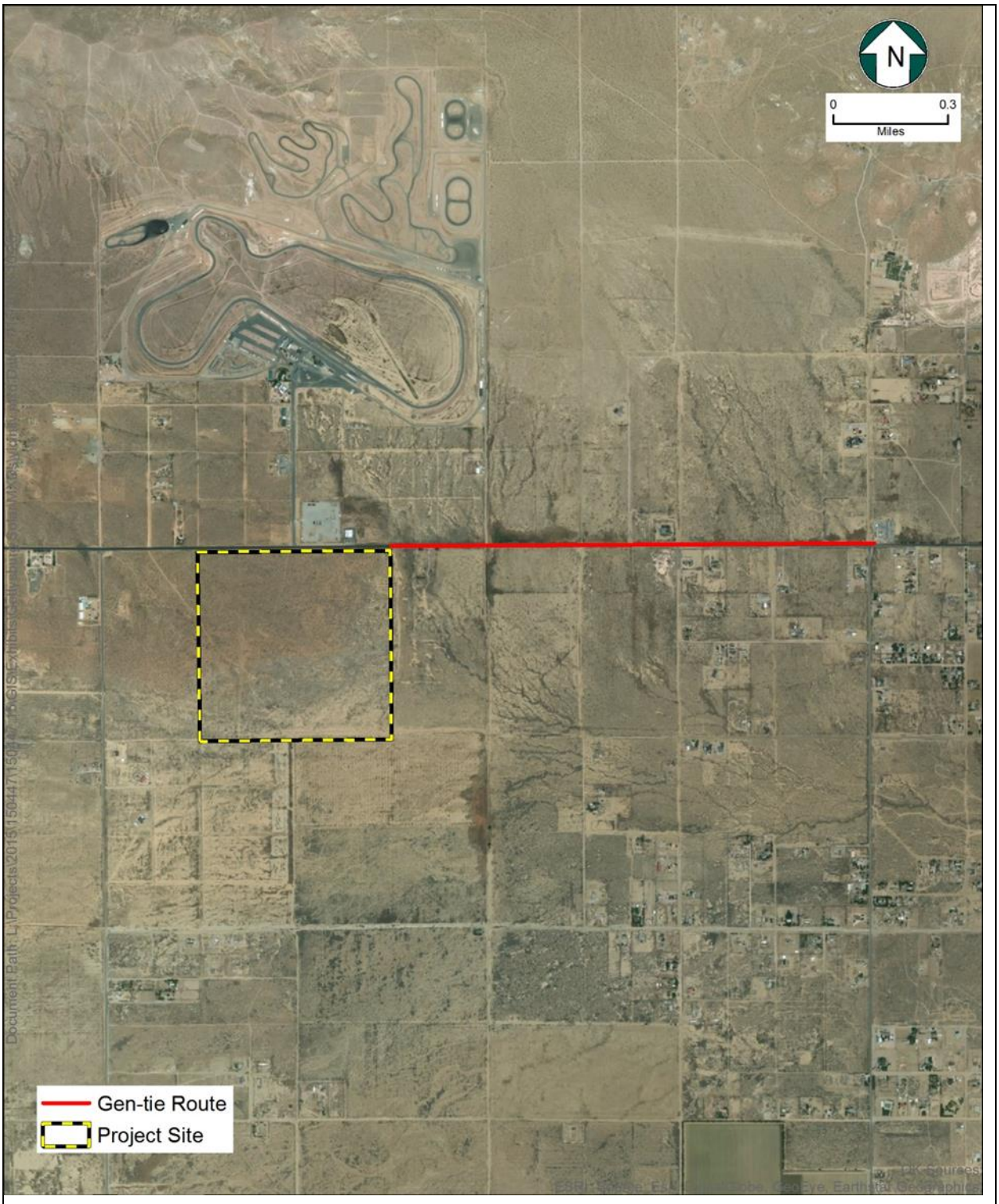


Figure 1
Vicinity Map

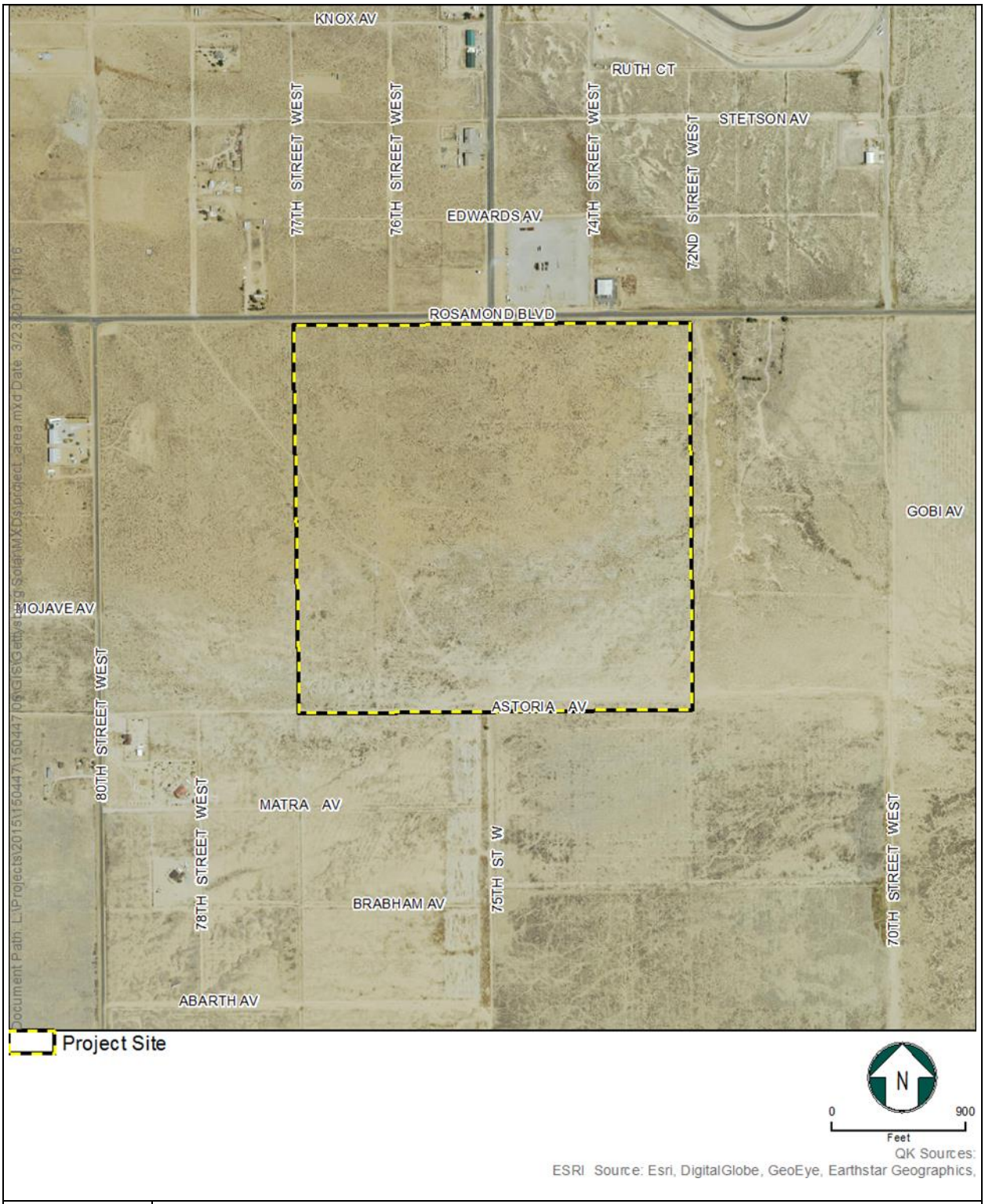


Figure 2
Project Site

SECTION 2 - REGULATORY SETTING

The project is under the jurisdiction of the Kern County Floodplain Manager. The County of Kern Floodplain Ordinance requires PV solar facilities to conduct a flood encroachment analysis where the project is in FEMA's Flood Zone "A," and to mitigate on-site generated runoff with use of a retention basin. The following section describes the regulatory- related hydrologic conditions for the project.

2.1 - Federal

2.1.1 - CLEAN WATER ACT (33 USC 1251-1387)

The Federal Clean Water Act (CWA) 33 U.S.C 1251-1387 has its origin in 1899 with the Rivers and Harbor Act. Since that time, the CWA has evolved into its present form via numerous amendments, including the Federal Water Pollution Control Act of 1972 (P.L. 92-217), the Clean Water Act of 1977 (P.L. 95-217), and the Water Quality Act of 1987 (P.L. 100-4). The Clean Water Act is administered by the Federal Environmental Protection Agency, which has delegated authority and enforcement to some states, including California. The stated objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Except within the provisions of the CWA, discharge of pollutants into any navigable waters of the United States is prohibited.

Pollutants have been broadly defined to include anything introduced from the outside world, or an increase in a material that is already present. This includes erosion of natural material into the watershed in excess of that which naturally occurs. The jurisdiction of the CWA is based on Congress's authority to protect the flow of interstate commerce. One component of interstate commerce is protection of navigable waters of the United States. The CWA defines "Navigable Waters" as "waters of the United States." Under the regulation of the Environmental Protection Agency, "waters of the United States" include the following:

1. All waters that are currently used, were used in the past, or may be susceptible to use in the future in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.
2. All interstate waters, including interstate "wetlands."
3. All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds of which the use, degradation, or destruction would affect or could affect interstate or foreign commerce.
4. All impoundments of waters otherwise defined as waters of the United States under this definition.
5. Tributaries of waters identified in 1-4 of this definition.
6. The territorial seas.

7. "Wetlands" adjacent to waters identified in 1-6 of this definition.

2.1.2 - FEDERAL EMERGENCY MANAGEMENT AGENCY

The Federal Emergency Management Agency (FEMA) administrates the regulations of new developments encroaching within a flood zone as published in "Standards for Flood Risk Analysis and Mapping," November 2016.

2.1.3 - NATIONAL FLOOD INSURANCE PROGRAM

The National Flood Insurance Program (NFIP), implemented by the Congress of the United States in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by FIRM (flood insurance rate maps) developed by the Federal Emergency Management Agency. FIRMs identify the estimated limits of the 100-year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance. Kern County participates in the NFIP

2.2 - State of California

2.2.1 - PORTER COLOGNE ACT (CALIFORNIA WATER CODE SECTION 13000 ET. SEQ.)

Water quality in California is further protected under the Porter-Cologne Water Quality Control Act. This law assigns responsibility for protection of water quality to the State Water Resources Control Board (SWRCB). The SWRCB is divided into nine statewide Regional Water Quality Control Boards (RWQCBs), which enforce water quality standards. The governing Board for the project area is the jurisdiction of the Lahontan Regional Board, with offices in Victorville and South Lake Tahoe. The Lahontan Region has developed a Water Quality Control Plan (Basin Plan) to show how the quality of the surface and ground waters in the Lahontan Region should be managed to provide the highest water quality reasonably possible. The Basin Plan lists the various beneficial uses of water within the region; describes the water quality that must be maintained to allow those uses; describes the programs, projects, and other actions necessary to achieve the standards established in this plan; and summarizes plans and policies to protect water quality.

2.2.2 - PERMITTING AND COMPLIANCE FOR THE CLEAN WATER ACT

The CWA contains a broad range of tools to meet the statutory objectives, including the following:

a. **Section 301** of the CWA prohibits discharges of pollutants, except as provided by the CWA.
b. **Section 303** of the CWA requires states to identify "impaired" water bodies as those that do not meet water quality standards. States are required to compile this

information in a list and submit the list to the USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of Total Maximum Daily loads (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

c. **Section 401** of the CWA requires any activity that may result in any discharge into navigable water to provide certification to the appropriate state agency that any such discharge will comply with the applicable provisions of the CWA. In the case of California, the enforcing agency is the RWQCB.

d. **Section 402** of the CWA established a framework for regulating municipal and industrial discharges of storm water into waters of the United States under the NPDES permit program. The latest update to the NPDES program (referred to as Phase II rule – effective December 8, 1999), requires permitting for construction activity that disturbs land greater than or equal to one acre. The NPDES regulations provide two permitting options for storm water discharges (Individual and General Permits). However, the SWRCB has opted to acquire one statewide General Permit (NPDES No. CAS000002) to cover all construction activity in the State of California, except Tribal Lands, projects by the California Department of Transportation, and the Lake Tahoe Hydrologic Unit. These exceptions are regulated under separate permits. The project itself is covered under the State's General Permit (provided the provisions of the permit are followed). The State of California's General Permit was issued with the requirement that all construction activity that disturbs one or more acres is subject to the following requirements:
    1. Develop and implement an SWPPP. The SWPPP must specify BMPs to prevent construction pollutants from contacting storm water, and keeping all products of erosion from moving off site into receiving waters.
    2. Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the United States.
    3. Perform inspections of BMPs.
    4. Prior to commencement of grading or other land disturbance, the landowner must provide notification to the SWRCB. This obligation is met when the landowner files a "Notice of Intent" (NOI) with the SWRCB, and pays the appropriate fee. The NOI is a mechanism to establish responsible parties, dischargers, and scope of the proposed operations.

a. **Section 404** of the CWA requires a permit for the discharge or placement of dredge or fill material within "jurisdictional waters," or waters of the United States. This permit is issued by the United States Army Corps of Engineers (USACE). As discussed, jurisdiction of the CWA is limited to "waters of the United States" (often referred to as "jurisdictional waters"). The SWRCB defers determination of "jurisdictional waters" to the USACE. The USACE has made the determination the watershed associated with the project is non-jurisdictional waters. This determination means that the project will not require a Section 404 permit. However, under the California Porter-Cologne Water Quality Control Act, the SWRCB has released a legal memorandum confirming the State's jurisdiction over isolated wetlands. Said memorandum has indicated generally that discharges to "Waters of the State" are

subject to state regulation. "Waters of the State" have been defined under State law to mean any surface water, groundwater, or saline water, within the State's boundary. As a result, the SWRCB regulates discharges to "Waters of the State" and isolated waters similarly to waters of the United States. Again, for waters not subject to federal jurisdiction, SWRCB regulation is under the authority of Porter-Cologne rather than the CWA.

In effect, the project must comply with all the requirements of the NPDES permitting process, including noticing, preparation, and implementing an SWPPP and establishing a monitoring program.

2.2.3 - California Department of Fish and Game – Section 1602

In the interest of conserving and protection fish, wildlife and native plant resources, Section 1602 of the California Fish and Game (CDFG) Code requires anyone to notify the CDFG of any proposed activity that may substantially modify a river, stream, or lake. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams and lakes in the State of California. Upon notification, the CDFG will evaluate the proposed activity, and make a determination whether an alteration agreement is needed. The alteration agreement will impose conditions upon the proposed activity.

2.2.4 - Public Resources Code Section 21060.1

The Public Resource Code Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California.

2.3 - Review and Oversight

The Kern County General Plan and the Kern County Zoning Ordinance control local land uses within agricultural areas. These documents identify the types of land uses permitted in agricultural zones and define the development parameters within each land use category.

Kern County Department of Planning and Development Services

The County of Kern, Department of Planning and Development Services will review all grading and drainage improvements, including hydrology and hydraulic calculations. In accordance with the California Building Code and Grading Guidelines for Kern County, a grading permit will be required. At the time of this report, the County of Kern does not review the SWPPPs. However, the County requires verification that the NOI to grade has been submitted to the SWRCB.

The California Regional Water Quality Control Board

The RWQCB will review the project in accordance with the requirements of the CWA. A Section 401 Water Quality Certification will be required for the project. In addition, the RWQCB, will review the SWPPP. Upon its acceptance of the SWPPP, the RWQCB will issue a Waste Discharge Identification (WDID) Number for the Project. As discussed in Section 4.3 of this report, preparation of an SWPPP and issuance of a WDID number are part of the requirements of the State of California's General Permit for the NPDES program.

California Department of Fish and Wildlife Service

The California Department of Fish and Wildlife Service (CDFWS) will review the project in accordance with the requirements of Section 1600 et seq. of the CDFWS. Said Section 1600 *et seq*. applies to all perennial, intermittent and ephemeral rivers, streams, and lakes in the State.

SECTION 3 - ENVIRONMENTAL SETTING

This section identifies the regional environmental setting of the Project and describes baseline conditions. The setting is described in the context of the following subject areas:

- Climate
- Land Use
- Soils Conditions
- Site Specific Conditions
- Hydrology

3.1 - Climate

The climate near the project area is characterized as a Mediterranean-type, with hot, dry summers and cool, moist winters, with high variable precipitation events from year to year. Summer temperatures are hot both day and night, with maximum temperatures reaching up to 100 degrees Fahrenheit (F). The largest metropolitan area in the vicinity with similar climate and elevation is Bakersfield. Most precipitation occurs in the winter months, but the area can experience rare, intense summer thunderstorms. The average annual precipitation in the area is approximately 7.4 inches (Western Regional Climate Center, 2017). Wind speeds in the area average 10 to 15 miles per hour.

3.2 - Land Use

Land uses in the region include a mix of primarily undeveloped land, scattered residences and renewable energy projects (solar and wind). One utility-scale solar facilities, RE Rosamond Two, approximately three miles to the west of the project site.

The Project is undeveloped and has been disked regularly. No active cultivated lands are surrounding the project site. The project site is surrounding with undeveloped lands. The site is located in Agricultural Preserve No. 24, and the site is mapped as nonagricultural and natural vegetation by the Farmland Mapping and Monitoring Program (FMMP) (CA

Department of Conservation, 2016). The site is not under a Williamson Act Contract, the closest property under William act is located 0.4 miles southwest of the project site. The general topography of the site is relatively flat, and the soil types are classified as Adelanto course sandy loam, Aldelanto loamy sand and Rosamond find sandy loam.

3.3 - Soil Conditions

Department of Conservation soils and USGS topography mapping illustrates the soils types as predominantly Adelanto course sandy loam, Aldelanto loamy sand and Rosamond find sandy loam. A small portion of Rosamond silty clay loam occurs along the southern boundary (Figure 4). These types of sandy soils are classified as having a low potential for expansion. (US Department of Agriculture, n.d.).

3.4 - Site Specific Conditions

The project site is not included within the boundaries of an "Earthquake Fault Zone," as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act (California Department of Conservation, 2018). The Garlock Fault is approximately 15 miles north of the Project site.

3.5 - Hydrology

The Project site is located partially within an Area of Minimal Flood Hazard while the other portion is within a zone with a 1% Annual Chance of Flood Hazard as designated by the Federal Emergency Management Agency (FEMA) on the Flood Rate Insurance Maps (FIRM) (Figure 3).

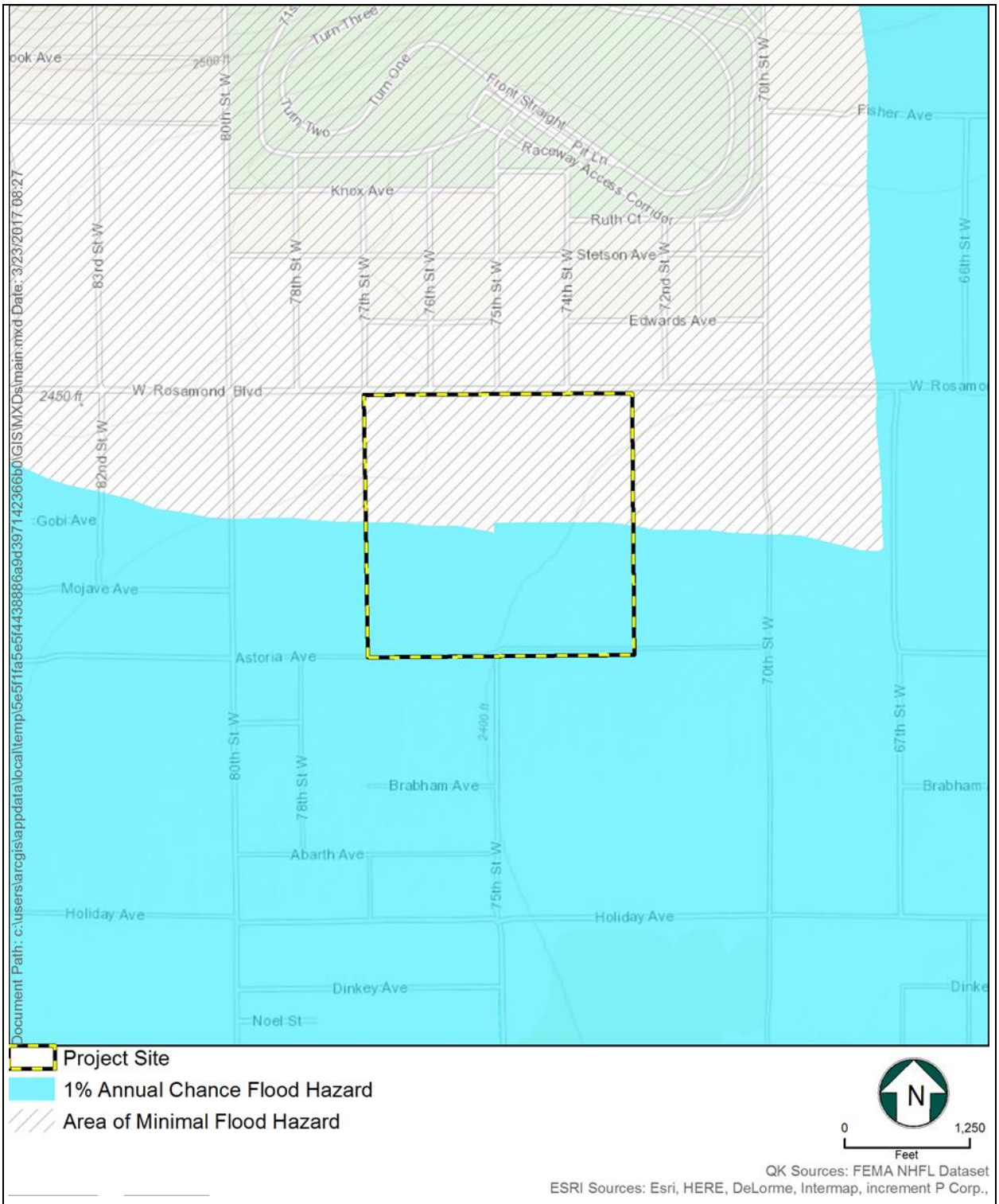


Figure 3
FEMA

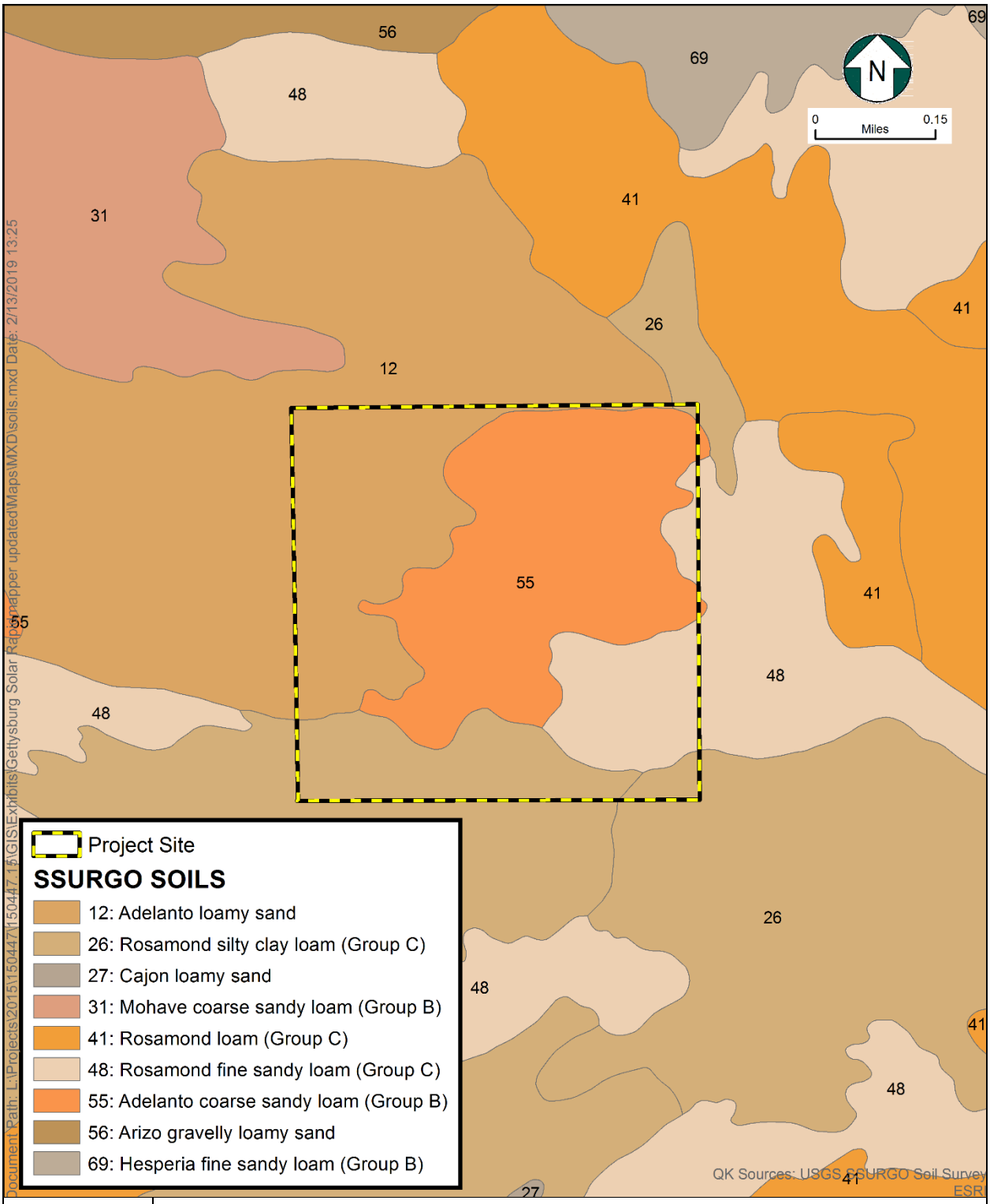


Figure 4
Soil Types

SECTION 4 - ENGINEERING HYDROLOGY

4.1 - Methodology

This study was prepared in the context of the guidelines prescribed by the Kern County Hydrology Manual and applicable engineering bulletins, with subsequent modifications applicable to photovoltaic facilities. As noted in Figure 3, the project site is located within an area of minimal flood hazard. The calculated storm water values for the project site are to be mitigated in two ways: 1. Best Management Practices during construction 2. Proper sizing of on-site retention facilities. Unit hydrograph generated by Civil Design can be found in Appendix B.

4.2 - Hydrology

The pre-developed conditions of the site have negligible storm runoff originating within the proposed project, and currently the runoff is retained on site. The land use is primarily agricultural with poor vegetative cover. Based on the hydrologic soil covers for agricultural lands a value of 55 was assessed based on Class B hydrologic soils group.

Under post-developed conditions, the soil will continue to remain pervious with minimal paved areas. Access roads within the project site can be set with gravel where high traffic volumes are expected. Accounting for a slight increase in impervious surfaces the net change between pre-developed and post- developed on-site runoff will be mitigated with a retention basin. Based on SCS, the storm run-off for the project area is 0.5 inches (in). With this data and gross area of 79 acres per parcel, totaling 158 gross acres for the project, the required retention basin is 3.76 acre-feet (AC-ft) of volume. According to NOAA, a 10-year rainfall depth in the project site was estimated to be 2.85 inches.

Table 1
Post-Developed Hydrology

Solar Farm	APN	Acreage	10-year Rainfall Depth (in)	SCS 24hr Storm Runoff (in)	Required Retention Volume (AC-ft)
Gettysburg Solar	374-011-06	79.0	2.85	0.5	1.88
Gettysburg Solar	374-011-39	79.0	2.85	0.5	1.88

The existing retention basins will be incorporated into the final layout if it is feasible to work with the proposed solar array configuration. If the proposed array configuration does not permit the use of the existing retention basins, a new basin layout will be designed.

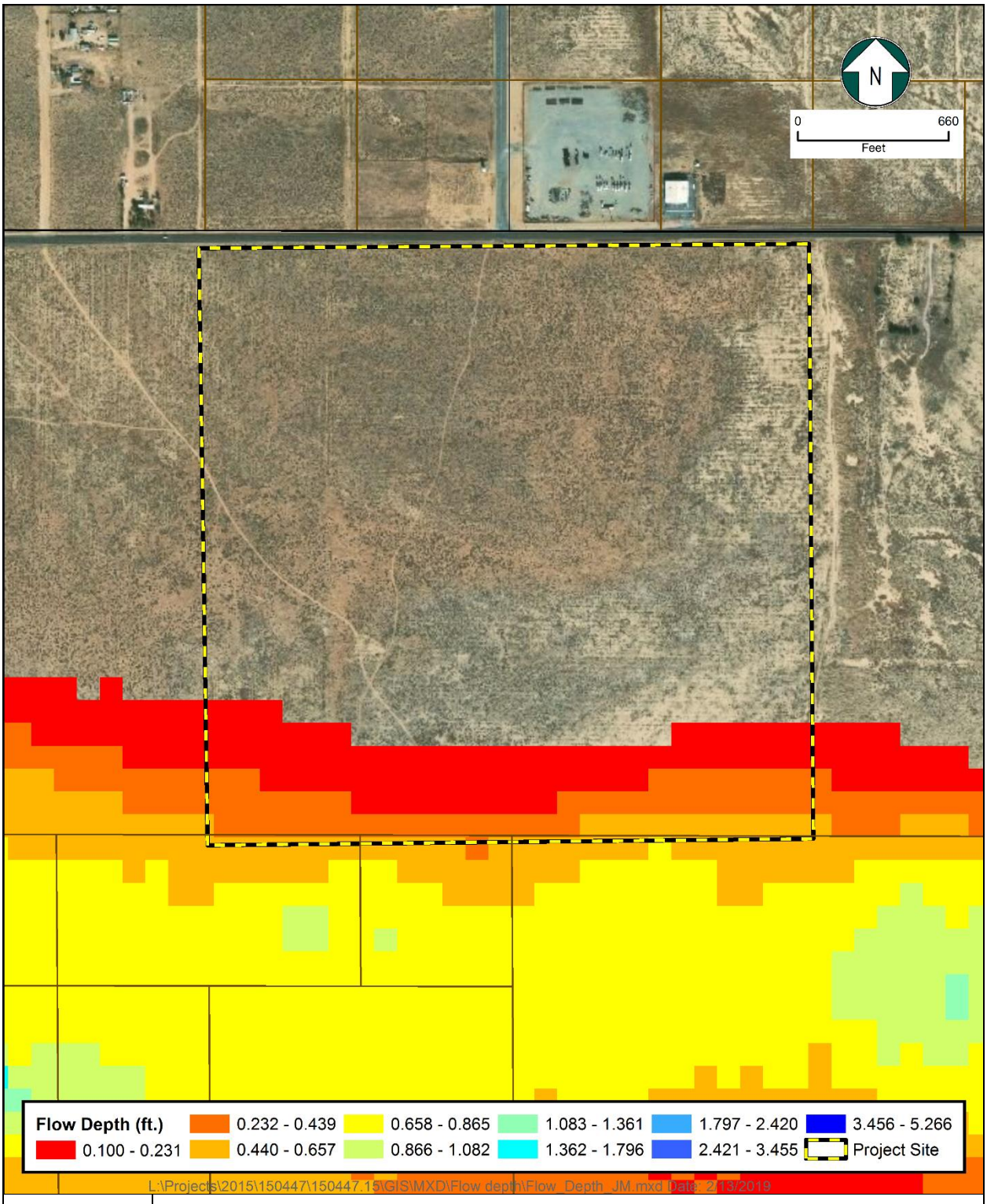


Figure 5
Flow Depth

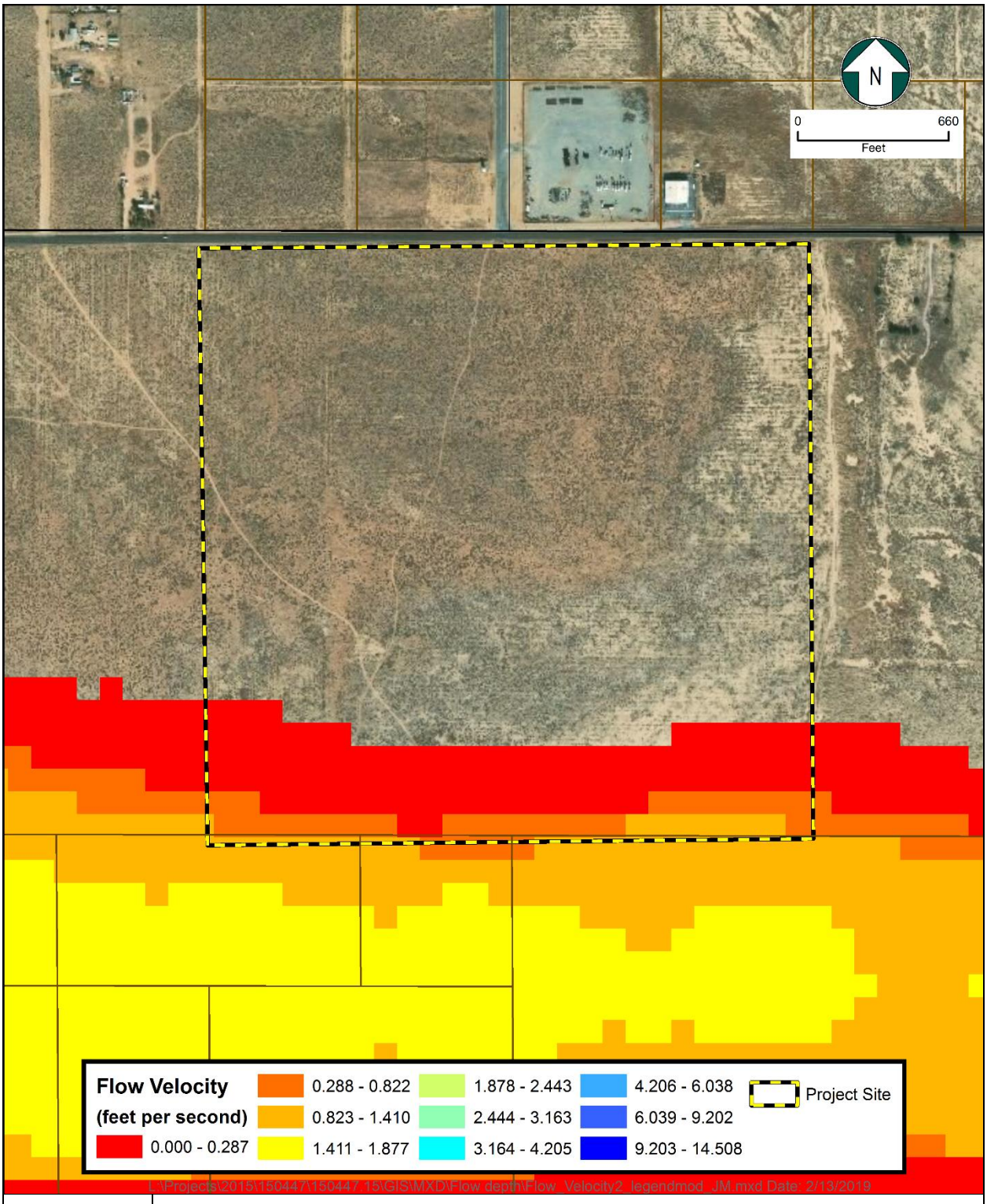


Figure 6
Flow Velocity

SECTION 5 - CONCLUSION

A small portion of the project site falls within the FEMA flood boundary as show on Figure 3. Hydraulic calculations performed in accordance with the Kern County Hydrology manual and approved flood modeling software indicate flood depths on site will be minimal, ranging from 0 to 0.65 feet, as shown on Figure 5. Flow velocities on site would be less than 2 feet per second, as shown on Figure 6. Post development of the site should be planned accordingly to mitigate flood levels and stormwater falling on or otherwise entering the site.

Mitigation of storm water falls into the categories of 1) construction, and 2) proper design of grading and drainage facilities that receive and discharge storm water. Similar to the mitigation measures imposed on the approved Redwood Cluster Solar project, the recommended mitigation measures below would ensure that impacts from stormwater runoff would be considered less than significant.

MM 4.9-1. Construction Phase

Prior to issuance of a grading permit, the project proponent shall submit a Stormwater Pollution Prevention Plan (SWPPP) to be reviewed and approved by Kern County Engineering, Surveying, and Permit Services Department. The SWPPP shall be designed to minimize runoff in accordance with the Construction General National Pollutant Discharge Elimination System Permit, and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sedimentation or any other pollutants from moving off-site and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and construction contracts. Recommended BMPs for the construction phase may include the following:

1. Stockpiling and disposing of demolition debris, concrete, and soil properly;
2. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas
3. Protecting existing storm drain inlets and stabilizing disturbed areas;
4. Implementing erosion controls;
5. Properly managing construction materials; and
6. Managing waste, aggressively controlling litter, and implementing sediment controls.

MM 4.9-2. Drainage Plan

Prior to issuance of a grading permit, the project proponent shall prepare a drainage plan to minimize the potential for changes, in on-site drainage patterns to result in increased erosion, sedimentation, or changes in drainage patterns off-site. The final drainage plan shall include applicable drainage infrastructure, including facilities to manage stormwater on-site. Stormwater management facilities, including detention

basins, shall be sized appropriately so as to ensure that County standards for hydromodification and drainage are met. Thus, the drainage plan shall be prepared in accordance with the Kern County Grading Code and approved by the Kern County Engineering, Surveying and Permit Services Department.

Prior to obtaining the grading permit, the proposed site plan and SWPPP designed to minimize runoff will be submitted for review and approval by the County of Kern. The requirements of the RWQCB as listed above are expected to be addressed through the development of the final site plan design and SWPPP. The soils encountered in the project site are classified as hydrological soils capable of sustaining percolation rates for a retention basin. The configuration of the on-site retention basin is expected to be addressed through the development of a final site plan design. The proposed project is anticipated to have minor grading modifications to accommodate the solar arrays and supporting infrastructure, which will result in minimal flood encroachments. With implementation of MM 4.9-1, MM 4.9-2 and BMPs, impacts of the proposed solar project would be considered less than significant.

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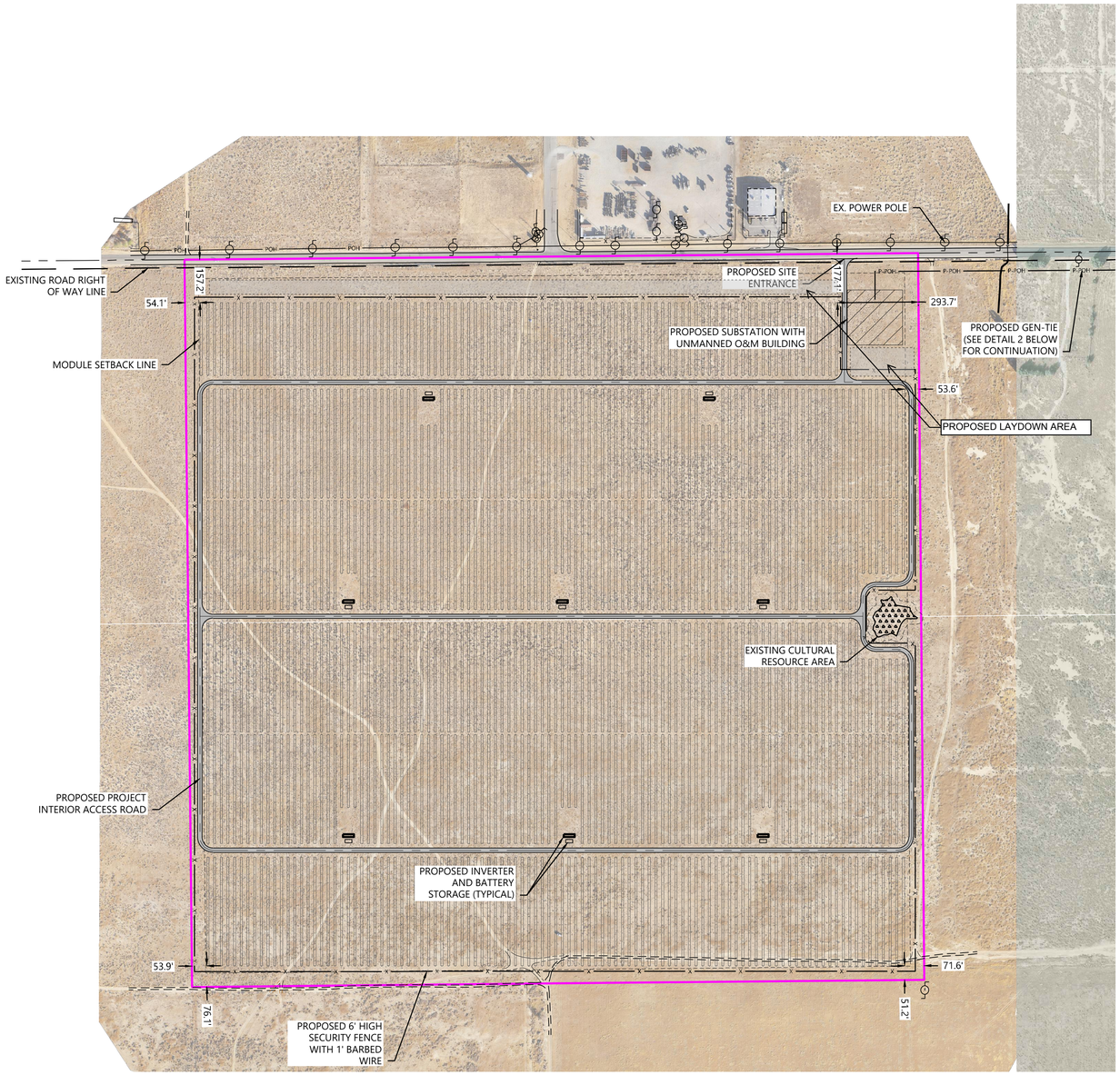
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Appendix A – Site Plan



1 Site Plan
1" = 250'



2 Gen-Tie Route
1" = 500'

LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- PARCEL LINE
- RIGHT-OF-WAY LINES
- EASEMENT LINES
- EX. PAVED ROAD
- EX. GRAVEL ROAD
- POH — EX. OVERHEAD POWER
- EX. POWER POLE
- PROPOSED SOLAR ARRAY
- PROPOSED MODULE SETBACK
- PROPOSED ACCESS ROAD
- X — PROPOSED SECURITY FENCE
- PROPOSED INVERTER
- PROPOSED BATTERY STORAGE
- P-POH — PROPOSED GEN-TIE

GENERAL NOTES

1. PV FACILITY RATING IS 25MWac.
2. PV FACILITY LOCATED IN KERN COUNTY, CALIFORNIA.
3. PV SYSTEM SHALL BE INSTALLED PER NEC AND ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES OR REGULATIONS.

Westwood

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1111 BAGBY STREET, SUITE 2000
HOUSTON, TX 77002

REVISIONS:

#	DATE	COMMENT

0' #### ##### #####

Gettysburg Solar
Kern County, CA

Overall Site Plan

ISSUED FOR REVIEW

DATE: 01/06/2021

SHEET: C.200

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Appendix B – Unit Hydrograph Analysis

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 2004-2014, Version 9.0

Study date 07/31/18

++

Kern County Synthetic Unit Hydrograph Hydrology Method
Manual date - 1992

Program License Serial Number 6404

Storm Event Year = 100

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

RAINFALL DATA INPUT:
Slope of Intensity-Duration Curve Slope = 0.580

Zone Designation: Desert Region Latitude = 34.84

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 2		
37923.00	6	0.81
Rainfall data for year 2		
37923.00	24	1.45
Rainfall data for year 100		
37923.00	6	2.03
Rainfall data for year 100		
37923.00	24	3.91

++
DESERT REGION area of study
Log-Log Rainfall Intensity Slope = 0.58

******** Area-averaged max loss rate, Fm ********

SCS curve Number	Area (Ac.)	Area Fraction	Fp (In/Hr)	Ap (dec.)	Fm (In/Hr)
41.0	16636.74	0.439	0.910	0.850	0.773
63.0	4621.83	0.122	0.658	1.000	0.658
75.0	9758.89	0.257	0.470	1.000	0.470
81.0	471.32	0.012	0.362	1.000	0.362
81.0	6434.22	0.170	0.362	0.100	0.036

Area-averaged adjusted loss rate Fm (In/Hr) = 0.551

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	S	Pervious Yield Fr
14141.23	0.373	41.0	14.39	0.018
2495.51	0.066	98.0	0.20	0.940
4621.83	0.122	63.0	5.87	0.222
9758.89	0.257	75.0	3.33	0.409
471.32	0.012	81.0	2.35	0.523
643.42	0.017	81.0	2.35	0.523
5790.79	0.153	98.0	0.20	0.940

Area-averaged catchment yield fraction, Y = 0.360
Area-averaged low loss fraction, Yb = 0.640
++
Watercourse length =   46402.00(Ft.)
Length from concentration point to centroid =   46401.00(Ft.)
Elevation difference along watercourse =   853.00(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area =   37923.00(Ac.)
Catchment Lag time =   1.575 hours
Unit interval = 15.000 minutes
Unit interval percentage of lag time = 15.8776
Hydrograph baseflow =   0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.551(In/Hr)
Average low loss rate fraction (Yb) = 0.640 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.406(In)

Computed peak 30-minute rainfall = 0.862(In)
Specified peak 1-hour rainfall = 1.154(In)
Computed peak 3-hour rainfall = 1.631(In)
Specified peak 6-hour rainfall = 2.030(In)
Specified peak 24-hour rainfall = 3.910(In)

Rainfall depth area reduction factors:
Using a total area of 37923.00(Ac.) (Ref: fig. E-4)

5-minute factor = 0.397 Adjusted rainfall = 0.161(In)
30-minute factor = 0.440 Adjusted rainfall = 0.379(In)
1-hour factor = 0.469 Adjusted rainfall = 0.542(In)
3-hour factor = 0.819 Adjusted rainfall = 1.337(In)
6-hour factor = 0.920 Adjusted rainfall = 1.868(In)
24-hour factor = 0.952 Adjusted rainfall = 3.723(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 152877.09 (CFS))	
1	0.882	1348.508
2	3.084	3365.984
3	7.015	6010.161
4	13.980	10647.818
5	27.449	20590.788
6	42.613	23182.408
7	51.484	13562.207
8	58.830	11230.276
9	64.497	8662.567
10	68.702	6429.613
11	72.316	5523.904
12	75.362	4657.307
13	77.899	3878.783
14	80.167	3466.005
15	82.224	3145.834
16	83.970	2669.065
17	85.451	2264.445
18	86.789	2044.188
19	88.027	1893.561
20	89.107	1651.523
21	90.128	1560.033
22	91.020	1364.390
23	91.892	1331.859
24	92.657	1169.897
25	93.395	1128.984

26	94.078	1043.022
27	94.586	777.355
28	95.082	758.536
29	95.578	758.536
30	96.029	688.168
31	96.320	446.175
32	96.599	425.845
33	96.878	425.845
34	97.156	425.845
35	97.435	425.845
36	97.713	425.845
37	97.979	405.581
38	98.154	268.406
39	98.313	242.732
40	98.472	242.732
41	98.630	242.732
42	98.789	242.732
43	98.948	242.732
44	99.107	242.732
45	99.266	242.732
46	99.424	242.732
47	99.583	242.732
48	99.742	242.732
49	100.000	394.666

Rainfall values calculated at 5 minute intervals:

Peak Rainfall Unit Number	Intensity	Depth	Adjusted	Unit Rainfall (In)
1	4.87	0.41	0.16	0.161
2	3.26	0.54	0.22	0.063
3	2.58	0.64	0.27	0.048
4	2.18	0.73	0.31	0.040
5	1.92	0.80	0.35	0.035
6	1.72	0.86	0.38	0.032
7	1.58	0.92	0.41	0.031
8	1.46	0.97	0.44	0.029
9	1.36	1.02	0.47	0.027
10	1.28	1.07	0.49	0.026
11	1.21	1.11	0.52	0.025
12	1.15	1.15	0.54	0.024
13	1.09	1.18	0.58	0.037
14	1.04	1.21	0.61	0.036
15	0.99	1.24	0.65	0.036
16	0.95	1.26	0.69	0.035
17	0.91	1.29	0.72	0.035
18	0.87	1.31	0.76	0.035
19	0.84	1.33	0.79	0.034
20	0.81	1.36	0.82	0.034
21	0.79	1.38	0.86	0.034
22	0.76	1.40	0.89	0.033

23	0.74	1.42	0.92	0.033
24	0.72	1.44	0.96	0.033
25	0.70	1.45	0.99	0.033
26	0.68	1.47	1.02	0.032
27	0.66	1.49	1.06	0.032
28	0.65	1.51	1.09	0.032
29	0.63	1.52	1.12	0.032
30	0.62	1.54	1.15	0.032
31	0.60	1.56	1.18	0.031
32	0.59	1.57	1.21	0.031
33	0.58	1.59	1.24	0.031
34	0.57	1.60	1.28	0.031
35	0.55	1.62	1.31	0.031
36	0.54	1.63	1.34	0.031
37	0.53	1.65	1.35	0.018
38	0.52	1.66	1.37	0.018
39	0.51	1.67	1.39	0.017
40	0.51	1.69	1.41	0.017
41	0.50	1.70	1.42	0.017
42	0.49	1.71	1.44	0.017
43	0.48	1.73	1.46	0.016
44	0.47	1.74	1.47	0.016
45	0.47	1.75	1.49	0.016
46	0.46	1.76	1.50	0.016
47	0.45	1.77	1.52	0.016
48	0.45	1.79	1.54	0.016
49	0.44	1.80	1.55	0.015
50	0.43	1.81	1.57	0.015
51	0.43	1.82	1.58	0.015
52	0.42	1.83	1.60	0.015
53	0.42	1.84	1.61	0.015
54	0.41	1.85	1.63	0.015
55	0.41	1.86	1.64	0.014
56	0.40	1.88	1.65	0.014
57	0.40	1.89	1.67	0.014
58	0.39	1.90	1.68	0.014
59	0.39	1.91	1.70	0.014
60	0.38	1.92	1.71	0.014
61	0.38	1.93	1.72	0.014
62	0.37	1.94	1.74	0.014
63	0.37	1.95	1.75	0.013
64	0.37	1.96	1.77	0.013
65	0.36	1.97	1.78	0.013
66	0.36	1.98	1.79	0.013
67	0.36	1.98	1.80	0.013
68	0.35	1.99	1.82	0.013
69	0.35	2.00	1.83	0.013
70	0.34	2.01	1.84	0.013
71	0.34	2.02	1.86	0.013
72	0.34	2.03	1.87	0.013

73	0.32	1.96	1.88	0.013
74	0.32	1.97	1.89	0.013
75	0.32	1.98	1.91	0.013
76	0.31	1.99	1.92	0.013
77	0.31	2.01	1.93	0.013
78	0.31	2.02	1.94	0.012
79	0.31	2.03	1.96	0.012
80	0.31	2.04	1.97	0.012
81	0.30	2.05	1.98	0.012
82	0.30	2.07	1.99	0.012
83	0.30	2.08	2.01	0.012
84	0.30	2.09	2.02	0.012
85	0.30	2.10	2.03	0.012
86	0.29	2.11	2.04	0.012
87	0.29	2.12	2.05	0.012
88	0.29	2.14	2.06	0.012
89	0.29	2.15	2.08	0.012
90	0.29	2.16	2.09	0.012
91	0.29	2.17	2.10	0.012
92	0.28	2.18	2.11	0.011
93	0.28	2.19	2.12	0.011
94	0.28	2.20	2.13	0.011
95	0.28	2.22	2.14	0.011
96	0.28	2.23	2.16	0.011
97	0.28	2.24	2.17	0.011
98	0.28	2.25	2.18	0.011
99	0.27	2.26	2.19	0.011
100	0.27	2.27	2.20	0.011
101	0.27	2.28	2.21	0.011
102	0.27	2.29	2.22	0.011
103	0.27	2.30	2.23	0.011
104	0.27	2.31	2.24	0.011
105	0.27	2.32	2.25	0.011
106	0.26	2.33	2.26	0.011
107	0.26	2.34	2.28	0.011
108	0.26	2.35	2.29	0.011
109	0.26	2.36	2.30	0.010
110	0.26	2.37	2.31	0.010
111	0.26	2.38	2.32	0.010
112	0.26	2.39	2.33	0.010
113	0.26	2.40	2.34	0.010
114	0.25	2.41	2.35	0.010
115	0.25	2.42	2.36	0.010
116	0.25	2.43	2.37	0.010
117	0.25	2.44	2.38	0.010
118	0.25	2.45	2.39	0.010
119	0.25	2.46	2.40	0.010
120	0.25	2.47	2.41	0.010
121	0.25	2.48	2.42	0.010
122	0.25	2.49	2.43	0.010

123	0.24	2.50	2.44	0.010
124	0.24	2.51	2.45	0.010
125	0.24	2.52	2.46	0.010
126	0.24	2.53	2.47	0.010
127	0.24	2.54	2.48	0.010
128	0.24	2.55	2.49	0.010
129	0.24	2.56	2.50	0.010
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134	0.23	2.61	2.54	0.009
135	0.23	2.62	2.55	0.009
136	0.23	2.62	2.56	0.009
137	0.23	2.63	2.57	0.009
138	0.23	2.64	2.58	0.009
139	0.23	2.65	2.59	0.009
140	0.23	2.66	2.60	0.009
141	0.23	2.67	2.61	0.009
142	0.23	2.68	2.62	0.009
143	0.23	2.69	2.63	0.009
144	0.22	2.70	2.64	0.009
145	0.22	2.71	2.65	0.009
146	0.22	2.71	2.66	0.009
147	0.22	2.72	2.66	0.009
148	0.22	2.73	2.67	0.009
149	0.22	2.74	2.68	0.009
150	0.22	2.75	2.69	0.009
151	0.22	2.76	2.70	0.009
152	0.22	2.77	2.71	0.009
153	0.22	2.78	2.72	0.009
154	0.22	2.78	2.73	0.009
155	0.22	2.79	2.74	0.009
156	0.22	2.80	2.74	0.009
157	0.21	2.81	2.75	0.009
158	0.21	2.82	2.76	0.009
159	0.21	2.83	2.77	0.009
160	0.21	2.83	2.78	0.009
161	0.21	2.84	2.79	0.009
162	0.21	2.85	2.80	0.009
163	0.21	2.86	2.80	0.009
164	0.21	2.87	2.81	0.009
165	0.21	2.88	2.82	0.009
166	0.21	2.88	2.83	0.008
167	0.21	2.89	2.84	0.008
168	0.21	2.90	2.85	0.008
169	0.21	2.91	2.86	0.008
170	0.21	2.92	2.86	0.008
171	0.21	2.92	2.87	0.008
172	0.20	2.93	2.88	0.008

173	0.20	2.94	2.89	0.008
174	0.20	2.95	2.90	0.008
175	0.20	2.96	2.91	0.008
176	0.20	2.97	2.91	0.008
177	0.20	2.97	2.92	0.008
178	0.20	2.98	2.93	0.008
179	0.20	2.99	2.94	0.008
180	0.20	3.00	2.95	0.008
181	0.20	3.00	2.95	0.008
182	0.20	3.01	2.96	0.008
183	0.20	3.02	2.97	0.008
184	0.20	3.03	2.98	0.008
185	0.20	3.04	2.99	0.008
186	0.20	3.04	3.00	0.008
187	0.20	3.05	3.00	0.008
188	0.20	3.06	3.01	0.008
189	0.19	3.07	3.02	0.008
190	0.19	3.07	3.03	0.008
191	0.19	3.08	3.03	0.008
192	0.19	3.09	3.04	0.008
193	0.19	3.10	3.05	0.008
194	0.19	3.10	3.06	0.008
195	0.19	3.11	3.07	0.008
196	0.19	3.12	3.07	0.008
197	0.19	3.13	3.08	0.008
198	0.19	3.13	3.09	0.008
199	0.19	3.14	3.10	0.008
200	0.19	3.15	3.11	0.008
201	0.19	3.16	3.11	0.008
202	0.19	3.16	3.12	0.008
203	0.19	3.17	3.13	0.008
204	0.19	3.18	3.14	0.008
205	0.19	3.19	3.14	0.008
206	0.19	3.19	3.15	0.008
207	0.19	3.20	3.16	0.008
208	0.19	3.21	3.17	0.008
209	0.18	3.22	3.17	0.008
210	0.18	3.22	3.18	0.008
211	0.18	3.23	3.19	0.008
212	0.18	3.24	3.20	0.008
213	0.18	3.25	3.20	0.007
214	0.18	3.25	3.21	0.007
215	0.18	3.26	3.22	0.007
216	0.18	3.27	3.23	0.007
217	0.18	3.27	3.23	0.007
218	0.18	3.28	3.24	0.007
219	0.18	3.29	3.25	0.007
220	0.18	3.30	3.26	0.007
221	0.18	3.30	3.26	0.007
222	0.18	3.31	3.27	0.007

223	0.18	3.32	3.28	0.007
224	0.18	3.32	3.29	0.007
225	0.18	3.33	3.29	0.007
226	0.18	3.34	3.30	0.007
227	0.18	3.34	3.31	0.007
228	0.18	3.35	3.31	0.007
229	0.18	3.36	3.32	0.007
230	0.18	3.37	3.33	0.007
231	0.18	3.37	3.34	0.007
232	0.17	3.38	3.34	0.007
233	0.17	3.39	3.35	0.007
234	0.17	3.39	3.36	0.007
235	0.17	3.40	3.36	0.007
236	0.17	3.41	3.37	0.007
237	0.17	3.41	3.38	0.007
238	0.17	3.42	3.39	0.007
239	0.17	3.43	3.39	0.007
240	0.17	3.43	3.40	0.007
241	0.17	3.44	3.41	0.007
242	0.17	3.45	3.41	0.007
243	0.17	3.45	3.42	0.007
244	0.17	3.46	3.43	0.007
245	0.17	3.47	3.43	0.007
246	0.17	3.47	3.44	0.007
247	0.17	3.48	3.45	0.007
248	0.17	3.49	3.46	0.007
249	0.17	3.49	3.46	0.007
250	0.17	3.50	3.47	0.007
251	0.17	3.51	3.48	0.007
252	0.17	3.51	3.48	0.007
253	0.17	3.52	3.49	0.007
254	0.17	3.53	3.50	0.007
255	0.17	3.53	3.50	0.007
256	0.17	3.54	3.51	0.007
257	0.17	3.55	3.52	0.007
258	0.17	3.55	3.52	0.007
259	0.16	3.56	3.53	0.007
260	0.16	3.57	3.54	0.007
261	0.16	3.57	3.54	0.007
262	0.16	3.58	3.55	0.007
263	0.16	3.59	3.56	0.007
264	0.16	3.59	3.56	0.007
265	0.16	3.60	3.57	0.007
266	0.16	3.60	3.58	0.007
267	0.16	3.61	3.59	0.007
268	0.16	3.62	3.59	0.007
269	0.16	3.62	3.60	0.007
270	0.16	3.63	3.60	0.007
271	0.16	3.64	3.61	0.007
272	0.16	3.64	3.62	0.007

273	0.16	3.65	3.62	0.007
274	0.16	3.66	3.63	0.007
275	0.16	3.66	3.64	0.007
276	0.16	3.67	3.64	0.007
277	0.16	3.67	3.65	0.007
278	0.16	3.68	3.66	0.007
279	0.16	3.69	3.66	0.007
280	0.16	3.69	3.67	0.007
281	0.16	3.70	3.68	0.007
282	0.16	3.71	3.68	0.007
283	0.16	3.71	3.69	0.006
284	0.16	3.72	3.70	0.006
285	0.16	3.72	3.70	0.006
286	0.16	3.73	3.71	0.006
287	0.16	3.74	3.72	0.006
288	0.16	3.74	3.72	0.006

Time = 24.00 Hours Total unit rainfall = 3.72(In)

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0193	0.0124	0.0070
2	0.0195	0.0125	0.0070
3	0.0197	0.0126	0.0071
4	0.0198	0.0127	0.0071
5	0.0200	0.0128	0.0072
6	0.0202	0.0129	0.0072
7	0.0203	0.0130	0.0073
8	0.0205	0.0131	0.0074
9	0.0207	0.0133	0.0074
10	0.0209	0.0134	0.0075
11	0.0211	0.0135	0.0076
12	0.0213	0.0136	0.0077
13	0.0215	0.0138	0.0077
14	0.0217	0.0139	0.0078
15	0.0219	0.0140	0.0079
16	0.0221	0.0142	0.0080
17	0.0224	0.0143	0.0081
18	0.0226	0.0145	0.0081
19	0.0229	0.0146	0.0082
20	0.0231	0.0148	0.0083
21	0.0234	0.0150	0.0084
22	0.0237	0.0151	0.0085
23	0.0239	0.0153	0.0086
24	0.0242	0.0155	0.0087
25	0.0245	0.0157	0.0088
26	0.0249	0.0159	0.0089
27	0.0252	0.0161	0.0091
28	0.0255	0.0163	0.0092

29	0.0259	0.0166	0.0093
30	0.0263	0.0168	0.0094
31	0.0267	0.0171	0.0096
32	0.0271	0.0173	0.0097
33	0.0275	0.0176	0.0099
34	0.0279	0.0179	0.0100
35	0.0284	0.0182	0.0102
36	0.0289	0.0185	0.0104
37	0.0294	0.0188	0.0106
38	0.0300	0.0192	0.0108
39	0.0306	0.0196	0.0110
40	0.0312	0.0200	0.0112
41	0.0318	0.0204	0.0115
42	0.0325	0.0208	0.0117
43	0.0333	0.0213	0.0120
44	0.0341	0.0218	0.0123
45	0.0350	0.0224	0.0126
46	0.0359	0.0230	0.0129
47	0.0369	0.0236	0.0133
48	0.0380	0.0243	0.0137
49	0.0381	0.0244	0.0137
50	0.0394	0.0252	0.0142
51	0.0409	0.0262	0.0147
52	0.0425	0.0272	0.0153
53	0.0444	0.0284	0.0160
54	0.0465	0.0297	0.0167
55	0.0490	0.0314	0.0176
56	0.0518	0.0331	0.0186
57	0.0925	0.0592	0.0333
58	0.0948	0.0607	0.0341
59	0.0977	0.0625	0.0351
60	0.1010	0.0647	0.0363
61	0.1057	0.0677	0.0380
62	0.0848	0.0543	0.0305
63	0.0882	0.0565	0.0317
64	0.1463	0.0937	0.0526
65	0.2326	0.1378*	0.0948
66	0.0983	0.0630	0.0354
67	0.1005	0.0644	0.0362
68	0.0944	0.0605	0.0340
69	0.0514	0.0329	0.0185
70	0.0462	0.0296	0.0166
71	0.0423	0.0271	0.0152
72	0.0392	0.0251	0.0141
73	0.0378	0.0242	0.0136
74	0.0357	0.0229	0.0129
75	0.0340	0.0217	0.0122
76	0.0324	0.0208	0.0117
77	0.0311	0.0199	0.0112
78	0.0299	0.0191	0.0108

79	0.0288	0.0185	0.0104
80	0.0279	0.0178	0.0100
81	0.0270	0.0173	0.0097
82	0.0262	0.0168	0.0094
83	0.0255	0.0163	0.0092
84	0.0248	0.0159	0.0089
85	0.0242	0.0155	0.0087
86	0.0236	0.0151	0.0085
87	0.0231	0.0148	0.0083
88	0.0226	0.0145	0.0081
89	0.0221	0.0142	0.0080
90	0.0217	0.0139	0.0078
91	0.0212	0.0136	0.0076
92	0.0209	0.0134	0.0075
93	0.0205	0.0131	0.0074
94	0.0201	0.0129	0.0072
95	0.0198	0.0127	0.0071
96	0.0195	0.0125	0.0070
	3.7226	2.3723	1.3502

Total soil rain loss = 2.37(In)
Total effective rainfall = 1.35(In)
Peak flow rate in flood hydrograph = 6217.76(CFS)

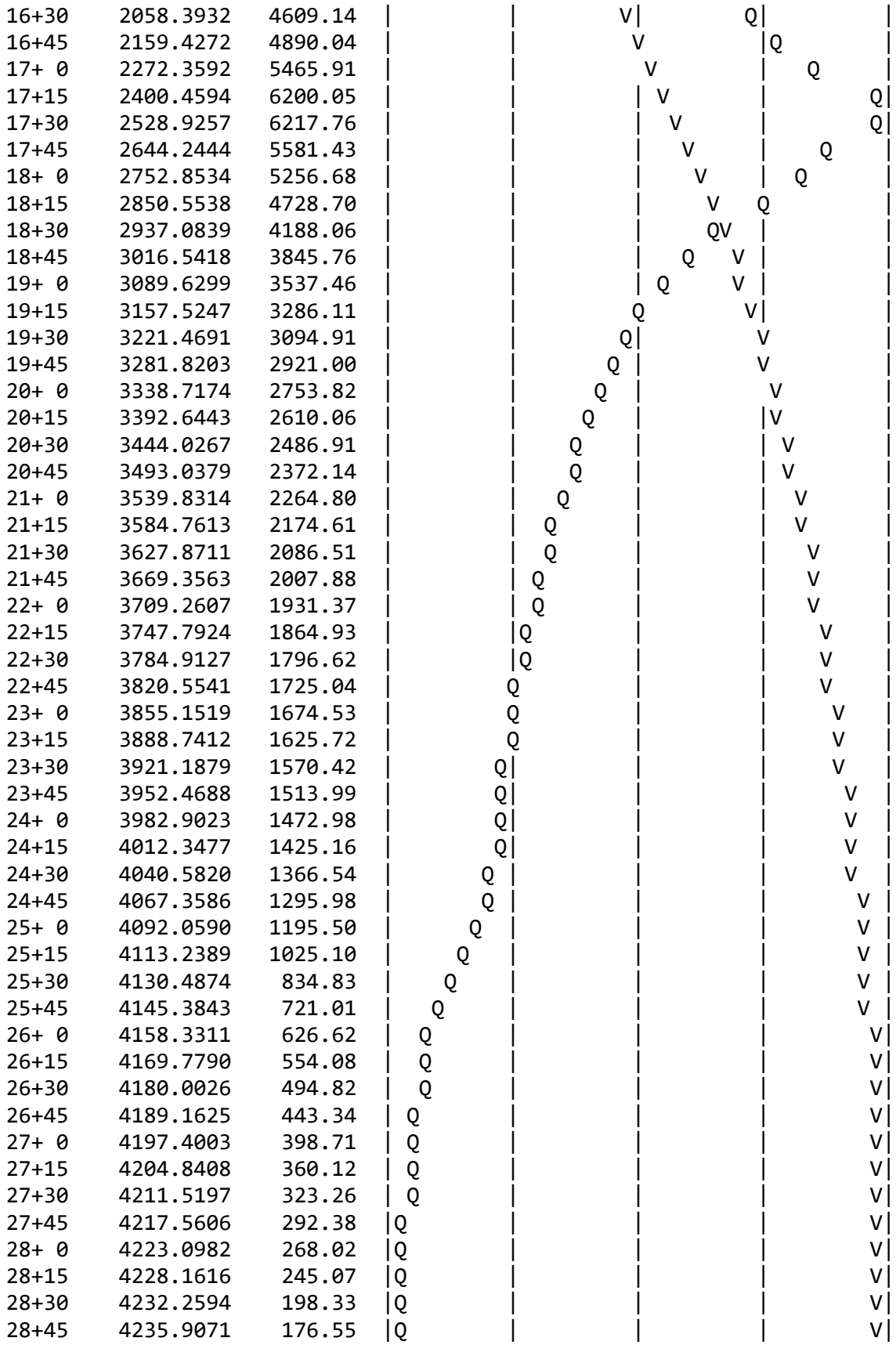
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 15 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	1575.0	3150.0	4725.0	6300.0
0+15	0.1939	9.38	Q				
0+30	0.8732	32.88	Q				
0+45	2.4220	74.96	Q				
1+ 0	5.5140	149.65	Q				
1+15	11.5912	294.14	VQ				
1+30	21.0502	457.81	V Q				
1+45	32.5359	555.91	V Q				
2+ 0	45.7307	638.63	V Q				
2+15	60.2807	704.22	V Q				
2+30	75.8779	754.90	V Q				
2+45	92.4023	799.78	V Q				
3+ 0	109.7394	839.12	V Q				
3+15	127.7863	873.47	|V Q				
3+30	146.4923	905.37	|V Q				
3+45	165.8195	935.44	|V Q				

4+ 0	185.7080	962.60	V Q			
4+15	206.1073	987.33	V Q			
4+30	226.9940	1010.91	V Q			
4+45	248.3541	1033.83	V Q			
5+ 0	270.1611	1055.46	V Q			
5+15	292.4100	1076.84	V Q			
5+30	315.0811	1097.28	V Q			
5+45	338.1783	1117.91	V Q			
6+ 0	361.6876	1137.85	V Q			
6+15	385.6119	1157.94	V Q			
6+30	409.9490	1177.91	V Q			
6+45	434.6705	1196.52	V Q			
7+ 0	459.7842	1215.50	V Q			
7+15	485.3009	1235.01	V Q			
7+30	511.2221	1254.59	V Q			
7+45	537.5250	1273.06	V Q			
8+ 0	564.2196	1292.02	V Q			
8+15	591.3189	1311.61	V Q			
8+30	618.8376	1331.90	V Q			
8+45	646.7905	1352.92	V Q			
9+ 0	675.1944	1374.75	V Q			
9+15	704.0636	1397.27	V Q			
9+30	733.3973	1419.75	V Q			
9+45	763.2118	1443.02	V Q			
10+ 0	793.5290	1467.35	V Q			
10+15	824.3721	1492.81	V Q			
10+30	855.7670	1519.51	VQ			
10+45	887.7411	1547.55	VQ			
11+ 0	920.3253	1577.07	V Q			
11+15	953.5526	1608.20	V Q			
11+30	987.4601	1641.13	VQ			
11+45	1022.0883	1676.00	VQ			
12+ 0	1057.4828	1713.10	VQ			
12+15	1093.7045	1753.13	VQ			
12+30	1130.7373	1792.39	VQ			
12+45	1168.6228	1833.66	VQ			
13+ 0	1207.3961	1876.63	Q			
13+15	1247.0579	1919.63	VQ			
13+30	1287.6848	1966.34	Q			
13+45	1329.4706	2022.43	Q			
14+ 0	1372.5714	2086.08	VQ			
14+15	1417.5449	2176.72	Q			
14+30	1465.1517	2304.17	VQ			
14+45	1516.3302	2477.04	VQ			
15+ 0	1572.5893	2722.94	V Q			
15+15	1636.9058	3112.92	V Q			
15+30	1709.8995	3532.90	V	Q		
15+45	1788.6618	3812.09	V	Q		
16+ 0	1872.8605	4075.22	V	Q		
16+15	1963.1631	4370.65	V	Q		



29+ 0	4239.1317	156.07	Q	|	|	|	V|
29+15	4241.9206	134.98	Q	|	|	|	V|
29+30	4244.4266	121.29	Q	|	|	|	V|
29+45	4246.6691	108.54	Q	|	|	|	V|
30+ 0	4248.6826	97.45	Q	|	|	|	V|
30+15	4250.4834	87.16	Q	|	|	|	V|
30+30	4252.0880	77.66	Q	|	|	|	V|
30+45	4253.5407	70.31	Q	|	|	|	V|
31+ 0	4254.8493	63.34	Q	|	|	|	V|
31+15	4256.0184	56.58	Q	|	|	|	V|
31+30	4257.0620	50.51	Q	|	|	|	V|
31+45	4258.0180	46.27	Q	|	|	|	V|
32+ 0	4258.8920	42.30	Q	|	|	|	V|
32+15	4259.6863	38.45	Q	|	|	|	V|
32+30	4260.4032	34.70	Q	|	|	|	V|
32+45	4261.0446	31.04	Q	|	|	|	V|
33+ 0	4261.6122	27.48	Q	|	|	|	V|
33+15	4262.1109	24.13	Q	|	|	|	V|
33+30	4262.5615	21.81	Q	|	|	|	V|
33+45	4262.9689	19.72	Q	|	|	|	V|
34+ 0	4263.3341	17.68	Q	|	|	|	V|
34+15	4263.6580	15.68	Q	|	|	|	V|
34+30	4263.9416	13.72	Q	|	|	|	V|
34+45	4264.1856	11.81	Q	|	|	|	V|
35+ 0	4264.3909	9.93	Q	|	|	|	V|
35+15	4264.5581	8.09	Q	|	|	|	V|
35+30	4264.6879	6.29	Q	|	|	|	V|
35+45	4264.7811	4.51	Q	|	|	|	V|
36+ 0	4264.8382	2.76	Q	|	|	|	V|

RMR WATER TRUCKS

OFFICE: 661.510.8516
FAX: 661.294.8522
32016 N. CASTAIC RD.
CASTAIC, CA 91384

To whom it may concern:

Gettysburg Solar Farm, LLC owned by Lendlease (US) Energy Development, LLC has contacted RMR Water Trucks regarding the purchase of construction and operational water for the 20 megawatt solar project anticipated to begin construction in 2023.

The Gettysburg Solar project has an estimated water demand of approximately 16,500,000 gallons (50 acre-feet) of water during construction activities.

During operations approximately 800,000 gallons/year, or 2-3 acre-feet/year is anticipated.

RMR Water Trucks has been providing construction and operations water to green energy development projects in Kern County since 2009. The Company intends to provide water for the Gettysburg Solar Project from its water well located on Backus road at about 97th street west (APN 346-131-11). The water well has a verified rating of 432 GPM, so pumping of up to 1-acre foot per day will be no problem. Barring any unknown circumstances, we will be ready to provide water for this project in 2023.

If you have any questions, please feel free to contact me at 661 510 8516.

Thank you,

Deke Pike

President

APPENDIX H

PHASE I ENVIRONMENTAL SITE ASSESSMENT AND PALEONTOLOGICAL ASSESSMENT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

GETTYSBURG Solar Site

Rosamond Blvd and 80th Street West
Rosamond, California

Prepared For:

QK, Inc.
5080 California Avenue, Suite 220
Bakersfield, CA 93309

Prepared By:

Dolores Gough, P.E.
Senior Consultant

INSIGHT ENVIRONMENTAL CONSULTANTS, INC.
a Trinity Consultants Company
4900 California Avenue, Suite 420A
Bakersfield, CA 93309
661-282-2200

July 27, 2020

Project 200505.0151

Insight Environmental Consultants | Trinity Consultants

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1.1. SUBJECT PROPERTY DESCRIPTION

Insight Environmental Consultants (IEC), a Trinity Consultants, Inc. (Trinity) company has performed a Phase I Environmental Site Assessment (ESA) for an undeveloped property located south of Rosamond Boulevard between 72nd and 77th Streets (east of 80th Street W), approximately 5 miles west of State Route 14 in Rosamond, Kern County. The study property is herein referred to as "the Property" or the "the Site." This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation: E 1527-13) and 40 CFR 312 ("All Appropriate Inquiry"). The ESA is designed to provide the Client (Quad Knopf) with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the Property.

The Property consists of approximately 160 acres of land located in Rosamond, California. The Property is currently vacant and unimproved.

1.2. HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITION (HREC)

E 1527-13 defines an HREC 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 an unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls …. Before calling the past release a recognized environmental condition, the Environmental Professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted …. If the EP considers the past release to be a recognized environmental condition at the time the ESA Phase I is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition*."

IEC has not identified any HRECs in connection with the Property.

1.3. CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITION (CREC)

E 1527-13 defines a CREC 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 ….with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls …. A condition considered by an environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report.*"

IEC has not identified any CRECs in connection with the Property.

1.4. RECOGNIZED ENVIRONMENTAL CONDITION (REC)

E 1527-13 defines a REC as: *"The presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environmental. De minimis conditions are not recognized environmental conditions."*

This assessment has not revealed evidence suggesting the Property may potentially be impacted by an identified REC.

1.5. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted at this time. There was no REC or HREC or CREC that was identified from all the records review and during the site reconnaissance conducted on June 30, 2020. The solid waste (trash and rubbish) observed at several locations on the Property may be removed and disposed of properly.

2.1. PURPOSE

The purpose of the Phase I Environmental Site Assessment (ESA) is to identify existing or potential recognized environmental conditions (RECs) associated with the Property at the time of the site reconnaissance. This report documents the findings, opinions and conclusions of the ESA.

2.2. DETAILED SCOPE OF SERVICES

This Phase I ESA was conducted in general accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-13 and 40 CFR 312 (Standards and Practices for All Appropriate Inquiries), consistent with a level of care and skill ordinarily practiced by the environmental consulting profession currently providing similar services under similar circumstances. ASTM Standard E 1527-13 defines good commercial and customary practice for conducting an environmental site assessment of a parcel of commercial real estate within the scope of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

The scope of services for this Phase I ESA included an evaluation of the following:

- Physical setting characteristics of the property through a review of referenced sources such as topographic maps and geologic, soils and hydrologic reports.
- Usage of the property, adjoining properties and surrounding area through a review of referenced historical sources such as land title records, fire insurance maps, city directories, aerial photographs, prior reports and interviews.
- Observations and interviews regarding current property usage and conditions including: the use, treatment, storage, disposal or generation of hazardous substances, petroleum products, hazardous wastes, nonhazardous solid wastes and wastewater.
- Usage of adjoining and surrounding area properties and the likely impact of known or suspected releases of hazardous substances or petroleum products from those properties in, on or at the property.
- Information in referenced environmental agency databases and local environmental records, within the specified approximate minimum search distance from the property.
- Potential for subsurface vapor migration in, on or at the property.

2.3. DEVIATIONS

There were no conditions or circumstances restricting the execution of this Phase I ESA in accordance with ASTM 1527-13 or the above-defined scope of work.

2.4. SIGNIFICANT ASSUMPTIONS

This Phase I ESA is limited by the availability of information at the time of the assessment, including: (1) information derived from the property inspection conducted on June 30, 2020; (2) interviews and

inquiries conducted on July 7, 2020; (3) various records searched and reviewed from local, state and federal regulatory agency files; and (4) information and reports provided by others. It is possible that unreported disposal of waste or illegal activities impairing the environmental status of the property may have occurred which could not be identified. Trinity assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to IEC.

The conclusions and recommendations regarding environmental conditions that are presented in this report are based on a scope of work authorized by the Client. Please note however, that virtually no scope of work, no matter how exhaustive, can identify all contaminants or all conditions above and below ground. IEC also assumes that the Client and other interested parties will read this report in its entirety.

2.5. LIMITATIONS AND EXCEPTIONS

This assessment was performed using reasonable efforts to identify recognized environmental conditions associated with hazardous substances or petroleum products in, on or at the Property. This report has limitations, and as such, it should not be construed that all possible site conditions were identified. Additional information, which was not found or available to IEC at the time this report was written, may result in modification of the conclusions presented herein.

Certain indicators of the presence of hazardous substances are only relevant to the conditions observable on a particular day. As such, it is possible that the research conducted by IEC in preparing this ESA, while appropriate for such an ESA, may not have revealed the existence of these sources. Should such undiscovered indicators exist, it is important to note that they were not considered in the final results of this ESA.

The ASTM Standard Practice E1527-13 recognizes inherent limitations for Phase I ESAs, including, but not limited to the recognition that a Phase I ESA cannot completely eliminate uncertainty regarding the potential for recognized environmental conditions in connection with any property nor is it an exhaustive investigation of the property and environmental conditions on such property.

Users of this report may refer to *ASTM Standard Practice E1527-13* for further information regarding these and other limitations. This report is not definitive and should not be assumed to be a complete and/or specific definition of all conditions above or below grade. Current subsurface conditions may differ from the conditions determined by surface observations, interviews and reviews of historical sources. The most reliable method of evaluating subsurface conditions is through intrusive techniques, which are beyond the scope of this report. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other property construction purposes. Any use of this report by any party, beyond the scope and intent of the original parties, shall be at the sole risk and expense of such user.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area properties was requested for approximate minimum search

distances and is assumed to be correct and complete unless obviously contradicted by IEC's observations or other credible referenced sources reviewed during the assessment. IEC or Trinity shall not be liable for any such database firm's failure to make relevant files or documents properly available, to properly index files, or otherwise to fail to maintain or produce accurate or complete records.

IEC or Trinity, nor their successors or assignees does not warrant that there are no toxic or hazardous substances or contamination, nor do they accept any liability if such are found at some future time, or could have been found if sampling or additional studies were conducted. IEC or Trinity does not assume responsibility for other environmental issues that may be associated with this subject site.

In accordance with the *ASTM Standard Practice E1527-13*, this report is presumed to be valid for a six-month period. If the report is older than six months, the following information must be updated in order for the report to be valid: (1) regulatory review, (2) site visit, (3) interviews, (4) specialized knowledge and (5) environmental liens search. Reports older than one year may not meet *the ASTM Standard Practice E1527-13* and therefore, the entire report must be updated to reflect current conditions and property-specific information.

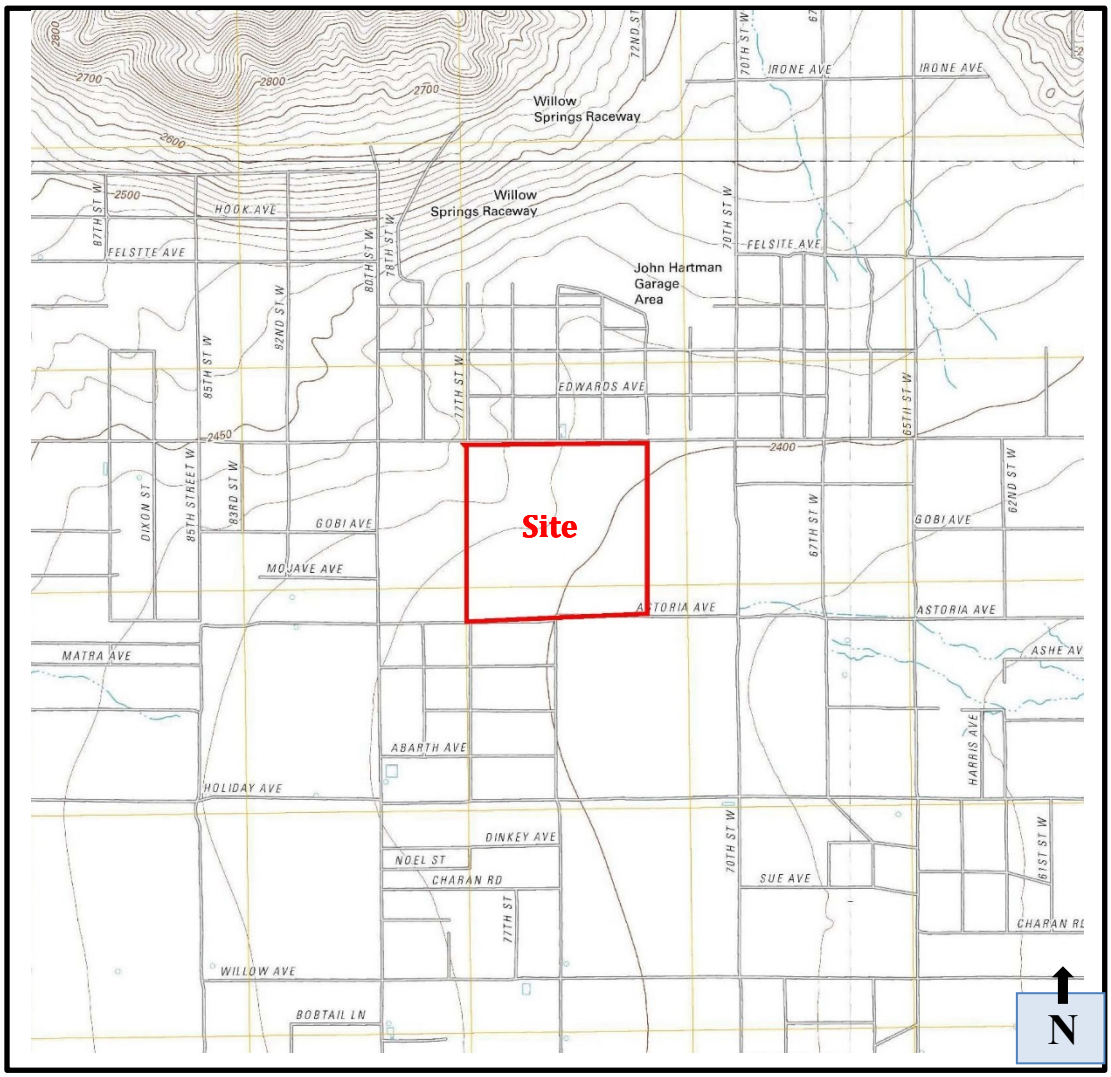
2.6. SPECIAL TERMS AND CONDITIONS (USER RELIANCE)

This report is for the sole use and benefit of, and may be relied upon, only by the Client and third parties authorized in writing by the Client including the lender(s) in connection with securing financing of the property and their respective successors and assigns. Any third party agrees, by accepting this report, that any use or reliance on this report shall be limited by the exceptions and limitations in this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the property that were not discovered within the authorized scope of the assessment. Any use by or distribution of this report to third parties, without the express written consent of the Client and IEC is at the sole risk and expense of such third party. IEC makes no other representation or warranty to any third party except that it has used the degree of care and skill ordinarily exercised by environmental professionals in the preparation of this report and in the assembling of data and information related thereto.

3.1. LOCATION AND LEGAL DESCRIPTION

The Property, which consists of two parcels, is located on the south side of Rosamond Boulevard between 72nd and 77th Street, east of 80th Street in Rosamond, California as shown in **Figures 3-1 and 3-2**. The legal description of the parcels as well as vesting and conveyance information is included in **Appendix B** (EDR Environmental LienSearch™). According to the EDR report, the title for Deed 1 consisting of Assessor's Parcel Numbers (APNs) 374-011-06 and '39 is vested in Diamond Home Developments & Investments Inc, dated 11/28/2005, which was conveyed from Kevin Vu et al. According to Kern County Assessor's parcel map included in **Appendix B,** the subject parcels of land consist of approximately 160 acres.

Figure 3-1. USGS Topographic Map - Little Buttes, 7.5 Minute



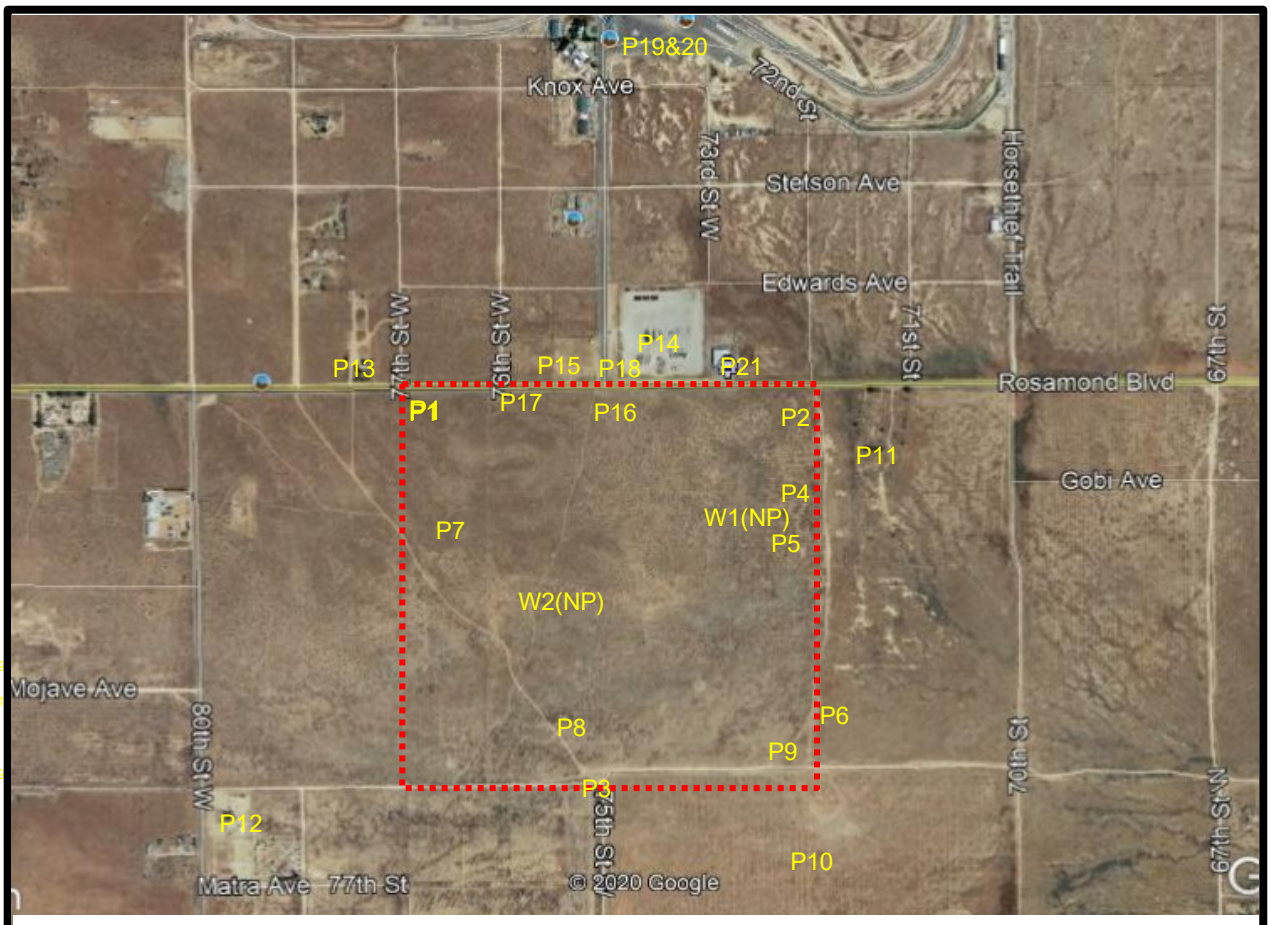
3.2. SITE AND VICINITY GENERAL CHARACTERISTICS

The Property is undeveloped and currently covered with vegetation consisting of native grass and desert brush plants. The adjacent properties to the south, east and west are also undeveloped. The adjacent property to the north across Rosamond Blvd. is partially developed along 75th Street.

3.3. CURRENT USE OF THE PROPERTY

As indicated above, the Property is vacant and unimproved. See Figure 3-2 and Table 3-1.

Figure 3-2. General Property Improvements & Site Survey Findings



Site Survey Findings (see also photographs (P) included in Appendix A

P1: Site view facing SE
P2: Site view facing SW
P3: Site view facing N
P4: Scattered old plywood panels, old rug, stucco-like debris)
P5: Scattered old wood, old cardboards, misc. household solid waste
P6: Waste pile of roofing, concrete and wood debris
P7: Old metal mattress and car front
P8: Old mattress and bench frames
P9: Old household waste (textile waste, bottles)
P10: View of adjacent property to the south
P11: View of adjacent property to the east
P12: Residence located offsite
P13: View of trailer located offsite
P14: Electrical storage facility
P15: Possibly water well (fenced no visible marking)
P16: North boundary by 75th Street
P17: Metal boxes marked LP, possibly for underground cables
P18: Out of service water well
P19 & 20: Willow Springs International Raceway
P21: American Performance Facility
W1&2 (NP): Misc. solid waste including auto tires (no photos included)

Table 3-1. Description of Structures and Other Improvements

Approximate Size of Property	160 acres
General Topography of Property	Generally level and sloping gently to the southeast.
Adjoining and/or Ingress/Egress Roads	Site is not fenced and can be accessed through 72nd Street (dirt road) off Rosamond Blvd and Astoria Avenue off 80th Street.
Paved or Concrete Areas (including parking)	The site is not paved.
Landscaped Areas	Property is predominantly covered with native grass and desert brush plants.
Surface Water	No surface water was observed during the Site visit.
Potable Water Source	N/A; Site is not occupied.
Sanitary Sewer Utility	None
Electrical / Natural Gas Utility	N/A; Site is not occupied.
Current Occupancy Status	None
Structures	None observed or identified in the research.
Other Improvements	Underground cable by the northern boundary

3.4. CURRENT USE OF ADJOINING PROPERTIES

The current uses of the properties adjacent to the subject Property are as follows:

- North: Across Rosamond Blvd. is partially developed on 75th Street
- Southwest: one residential housing at the corner of 80th Street and Astoria Avenue
- South: Undeveloped
- East: Undeveloped but had remnants of possibly old structure(s); part of fencing is still present.
- West: Undeveloped

4.1. TITLE RECORDS

Diamond Home Developments & Investments Inc. holds a 100% interest in the Property. The title for Deed 1 consisting of APNs 373-011-06 and '-39 was received from Kevin Vu, et al. The legal description of the parcels as well as the aforementioned conveyances are included in **Appendix B** (EDR Environmental LienSearch™).

4.2. ENVIRONMENTAL LIENS/ACTIVITY AND USE LIMITATIONS

A User Questionnaire (**Appendix D**) was provided to Diamond Home Development to obtain any additional information regarding property environmental liens or activity and use limitations. Based on the completed questionnaire, the User (Property owner) indicated that he did not have any information regarding property environmental liens or activity and use limitations. EDR provided an environmental lien search report for the property (**Appendix B -** EDR Environmental LienSearch™). According to the EDR report, no environmental liens or activity/use limitations were identified for the subject property.

4.3. SPECIALIZED KNOWLEDGE

The User provided no specialized knowledge of the Site based on the completed questionnaire. IEC has no specialized knowledge of the Site.

The term "specialized knowledge" means information regarding the environmental condition of the property that would not be available in public records or other sources as referenced in this report and could only be obtained from disclosure by the owner, occupants, or operators on the property from personal experience.

4.4. COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

The User has no commonly known or reasonably ascertainable information on the Site based on the completed questionnaire.

4.5. VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

The User did not provide information if the current purchase price for the property reflects fair market value based on the completed questionnaire.

4.6. OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The owner of the Property is listed in the Title records (Section 4.1). The Property is currently vacant.

4.7. REASON FOR PERFORMING THIS PHASE I ESA

Trinity was contracted to perform this Phase I ESA in order to satisfy the requirements of the Client and other interested parties with respect to potential environmental impairment associated with the property due to contamination by hazardous substances, controlled substances or petroleum products on or near the Site. The Site is proposed to be developed as a solar farm.

5.1. STANDARD ENVIRONMENTAL RECORD SOURCES

A radius map report was obtained from Environmental Data Resources, Inc. (EDR) for use in preparation of this Phase I ESA report. The EDR Radius Map™ Report with GeoCheck® was obtained to fulfill the requirements pertaining to standard environmental record sources as well as supplementary information considered in addition to the readily locatable environmental records. Under the requirements of ASTM Practice E 1527-13, minimum requirements for database searches have been established for environmental professionals to follow. Findings reported in the EDR Radius Map™ Report with GeoCheck® (**Appendix C**) occur up to a radius of one mile and also include any unmappable (orphan) sites within the area. The EDR data meets the standards established by ASTM Practice E 1527-13. The EDR Report did not identify any site within the search radius from the regulatory databases listed in **Table 5-1.**

Table 5-1. Summary of Regulatory Database Findings

Regulatory Database	Minimum Search Distance	Subject Property Listed?	No. of Sites Listed
Federal National Priority List (NPL)	1 mile	No	0
Federal Delisted NPL	1 mile	No	0
Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list	½ mile	No	0
Federal CERCLIS No Further Remedial Action Planned (NFRAP)	½ mile	No	0
Federal Resource Conservation and Recovery Act (RCRA), Corrective Action facilities (CORRACTS)	1 mile	No	0
Federal RCRIS non-CORRACTS Treatment, Storage, and Disposal Facilities (TSD)	½ mile	No	0
Federal RCRA Generators	¼ mile	No	0
Federal Institutional Control/Engineering Control Registry	½ mile	No	0
Federal Emergency Response Notification System (ERNS) list	Property	No	0
State and Tribal equivalent NPL	1 mile	No	0
State and Tribal equivalent CERCLIS	1 mile	No	0
State and Tribal Landfill or Solid Waste Disposal Sites	½ mile	No	0
State and Tribal Leaking Storage Tank Sites	½ mile	No	0
State and Tribal Registered Storage Tank Sites – not included in LUST sites	¼ mile	No	0
State and Tribal Voluntary Cleanup Sites	½ mile	No	0
State and Tribal Brownfield Sites	½ mile	No	0
Local Brownfield Sites	½ mile	No	0
Local Landfill/Solid Waste Disposal Sites	½ mile	No	0

Local Hazardous Waste/Contaminated Sites	1 mile	Yes	2
Local Registered Storage Tanks	¼ mile	No	1
Other Ascertainable Records	¼ mile	Yes	0
Local Land Records	½ mile	No	0
Emergency Release Reports	Property	No	0
EDR High Risk Historical Records	¼ to 1 mile	No	0
Exclusive Recovered Gov't Archives	Property	No	0

There were no orphan sites reported in the EDR search. The following facilities are listed to represent environmental concerns due to distance, anticipated direction of groundwater flow and/or anticipated risk of contamination:

- **Solar Star 2 (**EDR reported as Target property but incorrect based on site visit & map review)
  Location: 11936 Rosamond Blvd., Rosamond, CA
  Summary: This facility is listed in the following databases: CERS Haz waste, NPDES, CIWQS, FINDS and CERS. The facility is a hazardous waste generator; also had NPDES permits for construction activities but have been terminated.

  Review of Google map indicated this facility is located approximately 4 miles west of the subject site. This information was verified during the site visit on June 30, 2020. Due to the distance to the subject site, this facility is not considered a REC at this time.

- **Solar Star XX, LLC (**EDR reported as Target property but incorrect on site visit & map review)
  Location: Avenue A & Rosamond Blvd., Rosamond, CA
  Summary: This facility is listed in the EMI and FINDS databases. The facility has an air permit from the Eastern Kern Air Pollution Control District. This facility is located approximately 4 west of the subject site. See Solar Star 2 site above.

- **Transmission Line FO (**EDR reported as Target property but incorrect on site visit & map review)
  Location: 11936 Rosamond Blvd., Rosamond, CA
  Summary: This facility is listed in the CIWQS database. This facility is located approximately 4 miles west of the subject site. See Solar Star 2 site above.

- **Willow Springs International** (<1/8 mile per EDR report but it is approx. 0.5 miles north of the Property based on site visit & map review)
  Location: 75th West Street, Rosamond, CA
  Summary: This facility is listed in the HIST UST database. The facility operates a racetrack and has a fuel underground tank. No violations were noted. This facility is not considered a REC at this time.

- **American Performance Engineering (APE)** (<1/8 mile per EDR report)
  Location: 7347 West Rosamond Blvd., Rosamond, CA
  Summary: This facility is listed in the CERS HAZ WASTE, CERS, RCRA nonGen/NLR databases. Facility was issued a Notice of Violation from Kern County Environmental Health

mainly for recordkeeping violations in 2015; Facility is now in compliance. This facility is not considered a REC at this time.

5.2. ADDITIONAL ENVIRONMENTAL RECORDS SOURCES

5.2.1. GeoTracker Online Database

The GeoTracker online database operated by the California State Water Resources Control Board was reviewed to confirm the EDR radius findings. There were no sites listed in Geotracker within a mile of the subject Property.

5.2.2. Oil and Gas and Water Well Report

EDR searched local and regional water agency records for water well information and reported the following, with details included in **Appendix C:**

- 11 Federal USGS and 13 State water wells were identified within 1 mile of the Site. Some of the wells may be in both lists. One well appeared to be on the northeastern area of the Site based on the EDR map but was not verified during the site visit.
- No public water supply system was found within 1 mile of the Site.

No oil and gas wells were identified in the EDR search using the Department of Conservation database.

5.2.3. Property Tax Map

EDR's search of available property tax maps found is included in the EDR Property Tax Map in **Appendix B.**

5.2.4. Sanborn Map

EDR searched the Sanborn Library, which is the largest and the most complete collection of fire insurance maps. EDR found no insurance maps covering the subject site**.**

5.2.5. Vapor Encroachment Screen

A Vapor Encroachment Screen is intended to identify the potential for a vapor encroachment condition (VEC) to exist on a target property. The ASTM Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions (Designation: E 2600-10) defines the term "Vapor Encroachment Condition" as the presence or likely presence of chemical of concern (COC) vapors in the subsurface of the target property caused by the release of vapors from contaminated soil and/or groundwater either on or near the target property.

Vapor encroachment screening was not conducted since there are no contaminated sites identified in the EDR search. Therefore, a VEC can be ruled out for this Property.

5.3. SITE PHYSICAL SETTING

The Site is located on the south side of Rosamond Blvd. between 72nd and 77th Street. The EDR report showed the Property slopes generally to the southeast. Elevation at the site is 2408 feet above mean sea level. Based on the surface topography, the inferred primary direction of groundwater flow for the Property is determined to be generally toward the southeast. USGS Topographic Maps are included in **Appendix B**.

Based on the EDR Radius Map Report provided in **Appendix C**, the following is provided:

- The southern half of the Site is located within the 100-yr flood zone.
- There is no wetland identified in the National Wetland Inventory that is located at the Site.
- The dominant soil type at the Site is Adelanto, which is a coarse sandy loam characterized with medium infiltration rates.

No information was provided with respect to groundwater quality, velocity, or flow direction. Groundwater depth measured on USGS well USGS40000155493 was 209.21 feet below surface in March 2003. Historically, higher groundwater level was present in the area based on information for USGS well USGS40000155618 (65 feet in 1944). See **Appendix C** for additional historical groundwater depths.

5.4. HISTORICAL USE INFORMATION - PROPERTY AND ADJOINING PROPERTIES

5.4.1. Historical Aerial Photographs

Historical aerial photographs of the property and vicinity were obtained from EDR. Copies of the historical photos are presented in **Appendix B**. The results of this review are included in the following table:

Table 5-2. Historical Property Use Based on Aerial Photography

Period	Identified Historical Uses		RECs
	Subject Property	Surrounding Property	
1948	No evidence of development.	No evidence of development except there is a small rectangular feature, possibly a sump, at the property directly to the north (across Rosamond Blvd). There are also some visible features, possibly buildings, at the adjacent property to the east.	None

1954	No significant changes.	No significant changes.	As Above
1968	No significant changes.	No significant changes except there are some features, possibly buildings at the property to the northwest across Rosamond Blvd.	As Above
1973	No significant changes.	No significant changes.	As Above
1987	No significant changes.	The presumed sump at the property to the north appeared to have been filled. Two distinct areas of the property across Rosamond Blvd. appeared to have been cleared of vegetation.	As Above
1995	No significant changes.	Some structures are now present in one of the areas identified in the 1987 aerial photograph.	As Above
2006	No significant changes.	Streets now identified as 72 to 77th Streets are visible in the property across Rosamond Blvd. There is a new building in the corner of Rosamond Blvd, and 74th Street.	As above
2009	No significant changes.	No significant changes except the property adjacent to the new building appeared to have been developed.	
2012	No significant changes.	No significant changes.	As above
2016	No significant changes.	No significant changes.	As above

5.4.2. Historical Topographic Maps

Historical topographic maps of the property and vicinity were obtained from EDR for the years stated below. Copies of the topographic maps are presented in **Appendix B**. Observations made from the reviewed topographic maps are presented in the following table.

Table 5-3. Historical Property Use Based on Topographic Maps

Map Year/Quad	Identified Historical Uses		RECs
	Subject Property	Surrounding Property	
1915 /Elizabeth Lake	No evidence of development.	No evidence of development except some roads to the east and north across Rosamond Blvd. There is possibly a hydrologic drainage feature (blue line) running E-W near the southern border of the Site.	None
1917/Elizabeth Lake	No significant changes.	No significant changes.	As Above
1943/Willow Springs	No significant changes except a blue line running S-N along the eastern boundary of the Site.	No significant changes. except for some roads located on the adjacent property to the south.	As Above
1947/Willow Springs	No significant changes.	No significant changes.	As above
1965/Little Buttes	No significant changes.	No significant changes except the property across Rosamond Blvd. appeared to have been divided.	As Above
1974/Little Buttes	No significant changes.	No significant changes.	As Above
2012/Little Buttes	No significant changes.	Surrounding properties except the adjoining properties to the south, east and west have been divided.	As above

5.4.3. City Directory Abstract

EDR researched historical city directories for the Property and immediate vicinity. The city directory abstract is a screening tool that can be used to evaluate potential liability on the target property resulting from past activities. The city directory search findings include addresses, corresponding occupant at 5-yr intervals and the source of the information such as telephone directories. Detailed findings for each listed address are included in **Appendix B.**

Review of the findings indicate the listed occupants are predominantly individuals presumably residing at the corresponding address. As such, the potential liability from past activities of the findings from the city directory abstract provided by EDR is insignificant.

5.4.4. Previous Environmental Studies

No previous environmental studies for the Site were provided by the current property owner.

6.1. METHODOLOGY AND LIMITING CONDITIONS

A physical inspection of the Site and surrounding area was conducted on June 30, 2020 by Dolores Gough with IEC. The Site was accessible during the inspection. Weather conditions at the time of inspection were sunny with temperatures in the mid-70's to mid-80's (°F).

The inspection consisted of a visual survey of the Site and adjoining properties and was conducted pursuant to ASTM Practice E 1527-13. The reconnaissance was performed by driving along the perimeter dirt roads and vehicle trails transecting the Site and walking selected portions of the Site. Site conditions were documented with photographs (**Appendix A**) and field notes.

6.2. SITE VISIT FINDINGS

The Site does not have a perimeter fence and can be accessed from the northeast corner of the Property along Rosamond Blvd. and from Astoria Ave. off 80th Street. In addition to the features and findings described in **Section 3.4**, the following are specific hazardous materials-related observations during the Site reconnaissance:

6.2.1. Hazardous Substance Use, Storage and Disposal

No hazardous substance use, storage and disposal was observed during the Site reconnaissance.

6.2.2. Other Petroleum Products

No other petroleum products were observed during the Site reconnaissance.

6.2.3. Unidentified Substance Containers

IEC did not observe any container of unidentified substance during the Site reconnaissance.

6.2.4. Underground Storage Tanks (USTs)

IEC did not observe any indication of a UST during the Site reconnaissance.

6.2.5. Aboveground Storage Tanks (ASTs)

IEC did not observe any indication of an AST during the Site reconnaissance.

6.2.6. Polychlorinated Biphenyls (PCBs)

IEC did not observe any indication of PCBs during the Site reconnaissance.

6.2.7. Nonhazardous Solid Waste

Several surface "scatter" sites (trash/rubbish) were observed mostly along the perimeter dirt roads. The surface solid wastes observed include household wastes that include old furniture frames, wood debris, textile wastes and roofing debris. Two rubber tires were also observed during the Site reconnaissance.

6.2.8. Wastewater

No wastewater or stormwater drains, or underground injection system were observed on the Property during the Site reconnaissance.

6.2.9. Pits, Ponds, and Lagoons

No pits, ponds or lagoons were observed during the Site reconnaissance.

6.2.10. Septic Systems

No septic systems were observed on the Property during the Site reconnaissance.

6.2.11. Stormwater Management System

No constructed onsite stormwater drainage was observed at the Site. The Site is not paved and stormwater would follow the topographic gradient or flow into low spots and percolate. Some would also evaporate. No erosion was observed at the Site.

6.2.12. Stained Soil/Stressed Vegetation

No stressed vegetation was observed during the Site reconnaissance or reported during interviews that may be related to hazardous material or petroleum products. Stained areas indicating hazardous material or petroleum product release were not observed during the Site reconnaissance.

6.2.13. Wells

No obvious indications of potable and/or irrigation water wells on site were observed during the Site reconnaissance or reported during interviews.

6.2.14. Other Observations

See Figure 3-2 for other observations at the Site and adjoining properties.

7.1. PROPERTY OWNER, REPRESENTATIVE INTERVIEWS

Mr. Quincy Tran, President of Diamond Home Development & Investment Corporation was contacted to complete a Current Property Owner/User Questionnaire. No additional information was provided by Mr. Tran regarding the subject Property in the completed Questionnaire

7.2. REGULATORY AGENCY INTERVIEWS

Kern County Environmental Health Services (KCEHS) was contacted on July 7, 2020. A representative of KCEHS indicated that there were no reported hazardous material complaints, violations or permits for the Property.

Insight Environmental Consultants, a Trinity Consultants, Inc. company has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice 1527-13 of APNs 374-011-06 and '39 located in Rosamond, California, the "Property." Any exceptions to or deletions from, this practice are described in **Sections 2.3** through **2.5**, inclusive, of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property.

8.1. HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITION (HREC)

E 1527-13 defines an HREC 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 an unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls …. Before calling the past release a recognized environmental condition, the Environmental Professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted …. If the EP considers the past release to be a recognized environmental condition at the time the ESA Phase I is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition*."

IEC has not identified any HRECs in connection with the Property.

8.2. CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITION (CREC)

E 1527-13 defines a CREC 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 ….with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls …. A condition considered by an environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report.*"

IEC has not identified any CRECs in connection with the Property.

8.3. RECOGNIZED ENVIRONMENTAL CONDITION (REC)

E 1527-13 defines a REC as: *"The presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environmental. De minimis conditions are not recognized environmental conditions."*

This assessment has not revealed evidence suggesting the Property may potentially be impacted by an identified REC.

8.4. OBSERVED CONDITION OF THE SITE WITH RESPECT TO INTENDED USE

The Client intends to develop the Property as a solar power generation site. The observed condition of the Site is not expected to affect the intended use.

8.5. DATA GAPS

A data gap is defined by ASTM Standard E 1527-05 as a lack or inability to obtain information required by this practice despite good faith efforts by the Environmental Professional to gather such information. Data gaps may result from the incompleteness in any of the activities required by this practice including, but not limited to, the site reconnaissance, interviews, and historical research. Failure to achieve the historical research objectives identified in the standard is termed a data gap.

The following data gaps were identified during this Phase I ESA:

- An interview with an adjacent property owner/occupant was not conducted. This data gap is not considered significant since the Property has never been developed as shown in historical records.
- Aerial photographs of the Property from 1915 to 1947 were not available. Other historical sources including topographical maps were reviewed for this ESA; therefore, this data gap is not considered to be significant.

8.6. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted at this time. There was no REC or HREC or CREC that was identified from all the records review and during the Site reconnaissance conducted on June 30, 2020. The solid waste (trash and rubbish) observed at several locations on the Property may be removed and disposed of properly.

9. QUALIFICATIONS/SIGNATURE OF ENVIRONMENTAL PROFESSIONAL(S)

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR Part 312.10. I certify that this report has been prepared in general accordance with 40 CFR Part 312 and ASTM E 1527-13 Standard Practice for Environmental Site Assessments. I further certify that, in my professional judgment, this report meets the requirements of 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries. I have the specific qualifications based on training, experience and registration to perform and/or assist in the assessment of a property of the nature, history and setting of the subject property.

Dolores Gough, P.E. C-62599 Date

Resume(s) provided in **Appendix E**.

10. NON-SCOPE SERVICES

No non-scope services, additional investigations or other quantitative/qualitative testing was performed as part of this assessment, and no other work was performed as part of this assessment that was not required by the ASTM Standard Practices E1527-13. These non-scope issues include, but are not limited to, the following: Asbestos-Containing Building Materials, Radon, Lead-Based Paint, Lead in Drinking Water, Wetlands, Regulatory Compliance, Cultural and Historic Resources, Industrial Hygiene, Health and Safety, Geotechnical Evaluation, Sinkhole Evaluation, Ecological Resources, Endangered Species, Indoor Air Quality, Biological Agents, and Mold.

11. REFERENCES

Reference sources for historical research data, environmental reports, site specific information, interviews and other records used during the preparation of this ESA are identified throughout this report and provided as appendices as appropriate. No additional reference sources not cited in the previous section of this report require disclosure.

APPENDIX A: SITE PHOTOGRAPHS



P1: Site view facing SE from NW corner; 6-30-2020



P2: Site view facing SW from NE corner; 6-30-2020



P3: Site view facing N from southern boundary (Astoria Ave./75th St. W corner); 6-30-2020



P4: Scattered solid waste (old plywood panels, old rug, stucco-like debris), see Fig. 3-2 for approx. location; 6-30-2020



P5: Scattered solid waste (old wood, old cardboards, misc. household waste), see Fig. 3-2 for approx. location; 6-30-2020



P6: Solid waste pile (roofing, concrete and wood debris), see Fig. 3-2 for approx. location; 6-30-2020



P7: Old metal mattress and car front, see Fig. 3-2 for approx. location; 6-30-2020



P8: Old mattress and bench frames, see Fig. 3-2 for approx. location; 6-30-2020



P9: Scattered solid waste (old household waste such as textile waste, bottles, plastic, etc.), see Fig. 3-2 for approx. location; 6-30-2020



P10: View of adjacent property to the south, facing S from SE corner; 6-30-2020



P11: View of adjacent property to the east, facing E from eastern boundary; 6-30-2020



P12: Residence located near the SW corner of the site (cor of 80th & Astoria Ave.); 6-30-2020



P13: View of trailer located offsite across Rosamond Blvd near 77th St.; 6-30-2020



P14: View of electrical storage facility across Rosamond Blvd, at 75th St.; 6-30-2020



P15: Fenced possibly water well located across Rosamond Blvd. on the west side of 75th St..; 6-30-2020



P16: View of site facing south from 75th St. & Rosamond Blvd.; 6-30-2020



P17: Metal boxes marked LP, possibly underground cable related, along Rosamond Blvd.; ; 6-30-2020



P18: Out of service water well located at the SE corner of 75th St. & Rosamond Blvd.; 6-30-2020



P19: Willow Springs Int'l Raceway, north of the site on 75th St.; 6-30-2020



P20: Willow Springs Int'l Raceway (listed site in the EDR report); 6-30-2020



P21: American Performance located directly to the north across Rosamond Blvd. (listed site in EDR report); 6-30-2020

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION

EDR AERIAL PHOTO PACKAGE

Gettysburg Solar Site

Rosamond Blvd & 80th Street

Rosamond, CA 93560

Inquiry Number: 6099228.6

June 22, 2020

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

06/22/20

Site Name:

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560
EDR Inquiry # 6099228.6

Client Name:

Trinity Consultants
4900 California Ave Suite 420A
Bakersfield, CA 93309
Contact: Dolores Gough

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
1995	1"=500'	Acquisition Date: October 04, 1995	USGS/DOQQ
1987	1"=500'	Flight Date: July 25, 1987	USDA
1973	1"=500'	Flight Date: May 01, 1973	USDA
1968	1"=500'	Flight Date: March 26, 1968	Teledyne
1954	1"=500'	Flight Date: February 02, 1954	USDA
1948	1"=500'	Flight Date: November 20, 1948	USDA

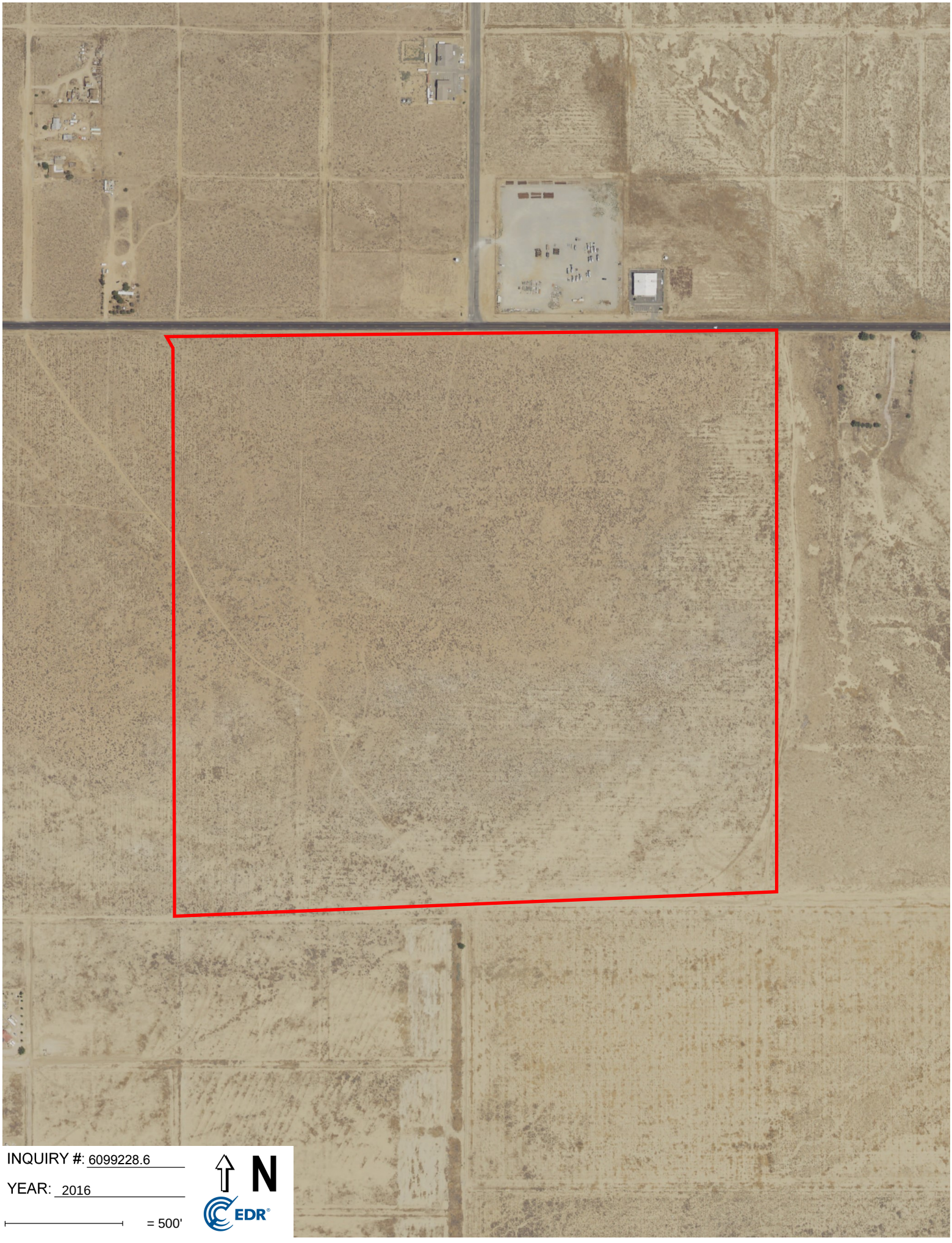
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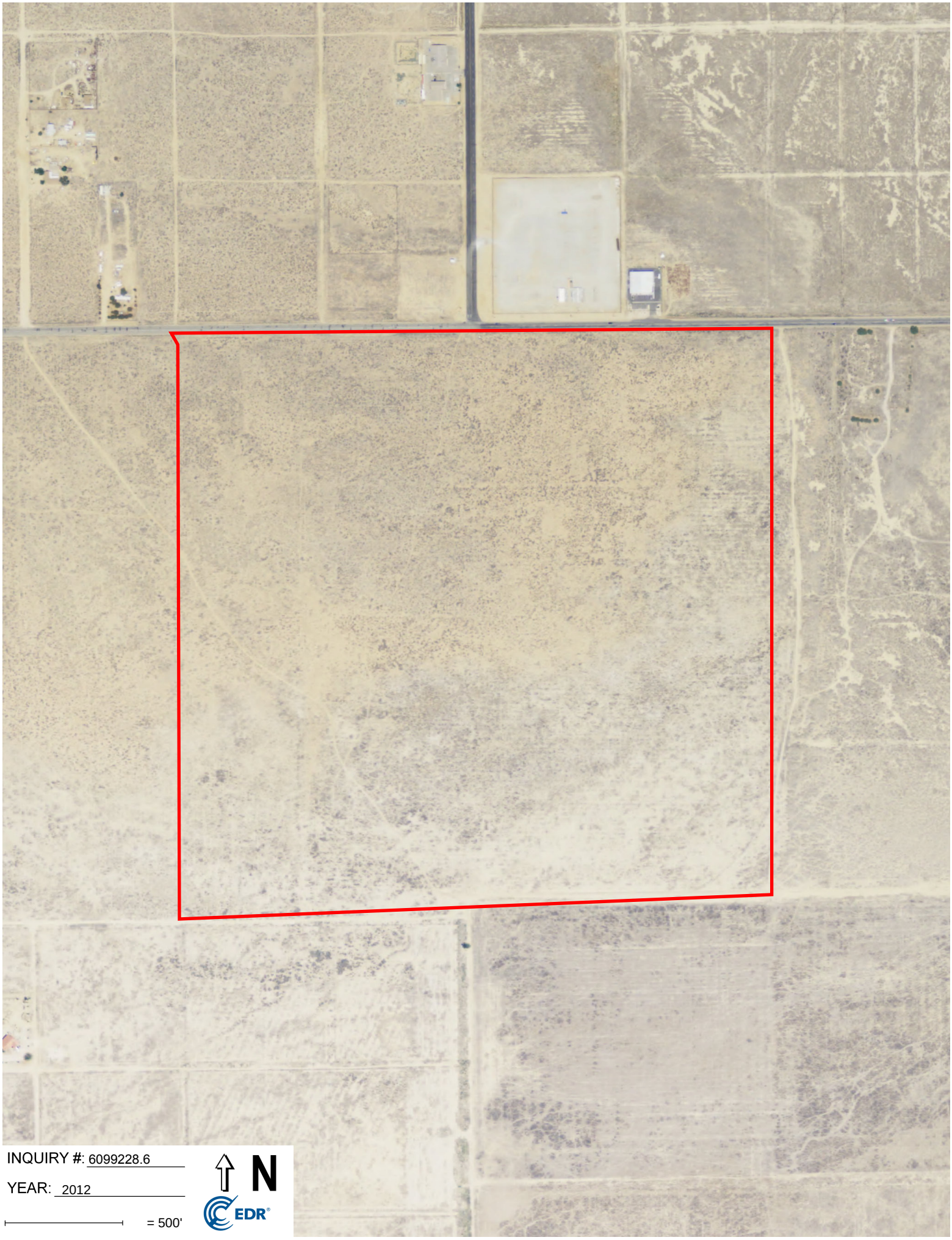
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YEAR: 2016

= 500'

N

EDR



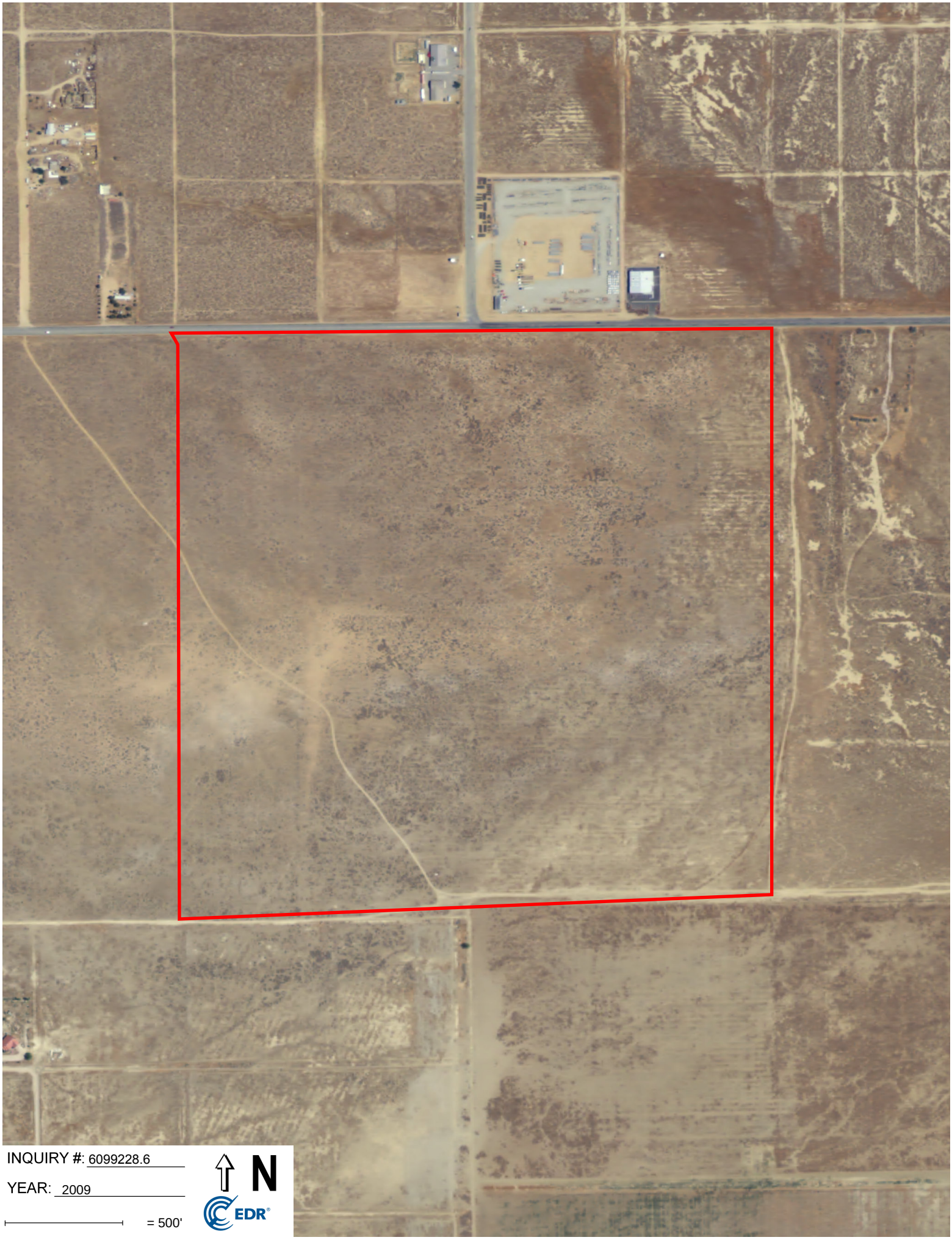
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YEAR: 2012

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EDR



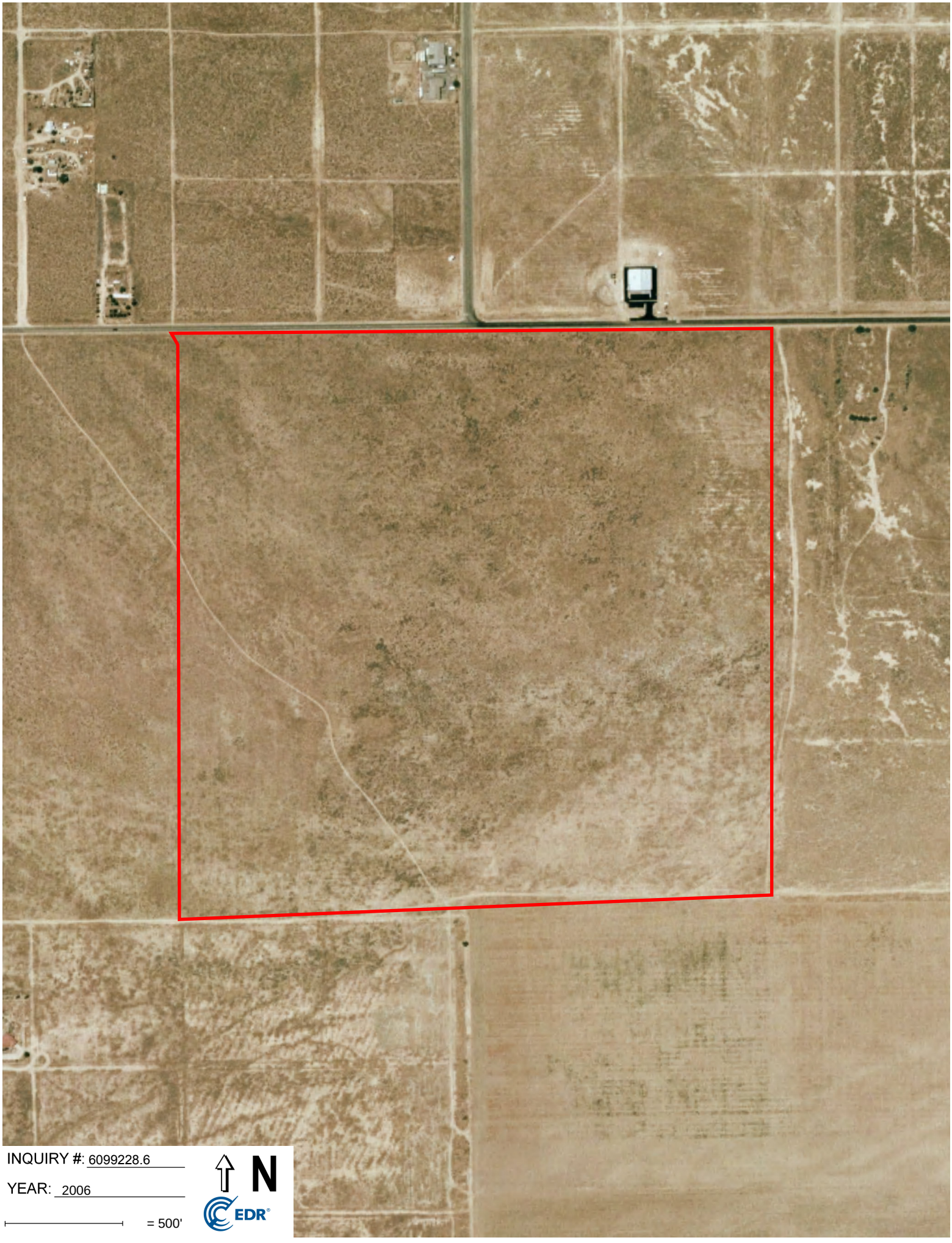
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EDR



INQUIRY #: 6099228.6

YEAR: 2006

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EDR



INQUIRY #: 6099228.6

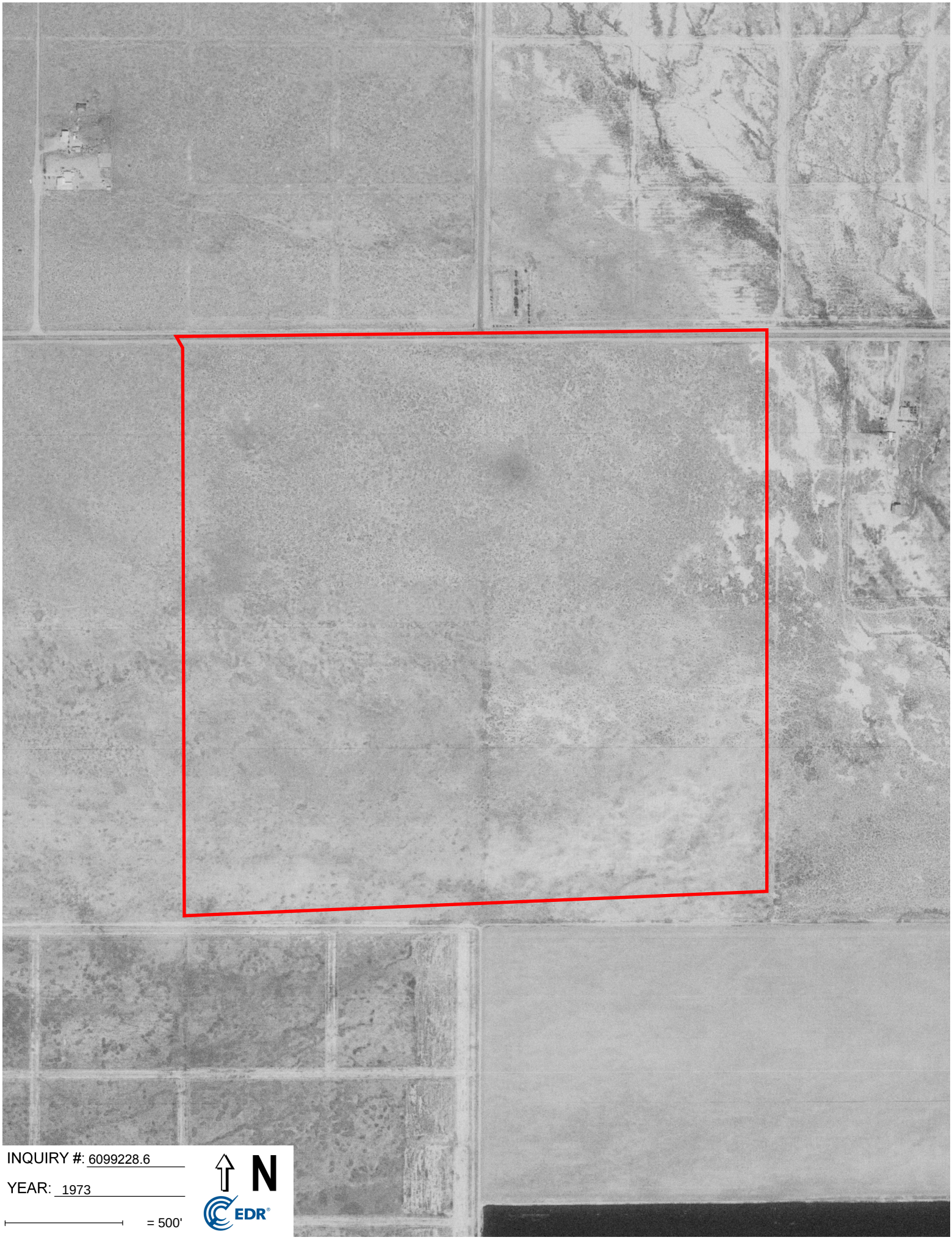
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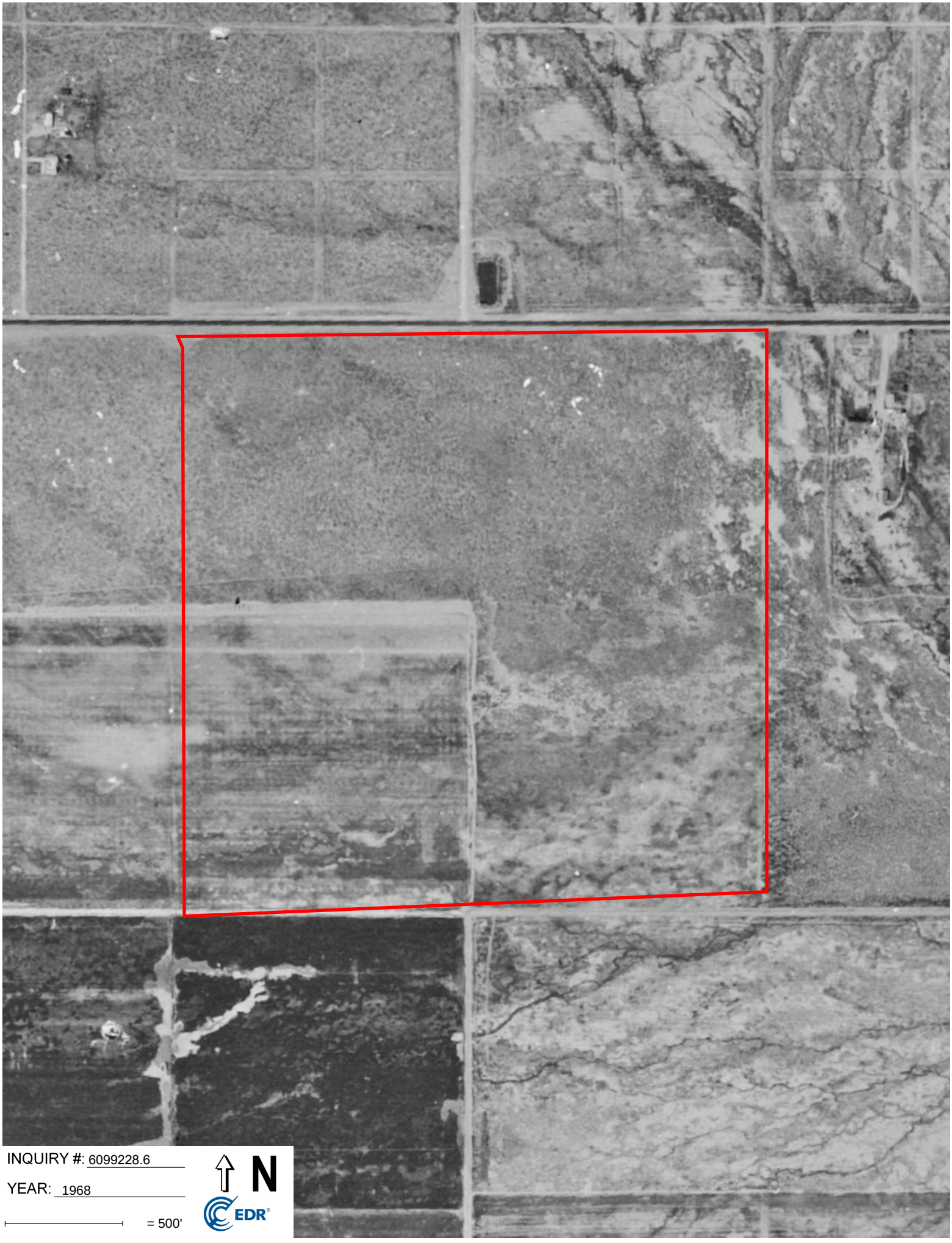
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EDR


INQUIRY #: 6099228.6
YEAR: 1987
= 500'
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EDR


INQUIRY #: 6099228.6
YEAR: 1973
= 500'
N
EDR



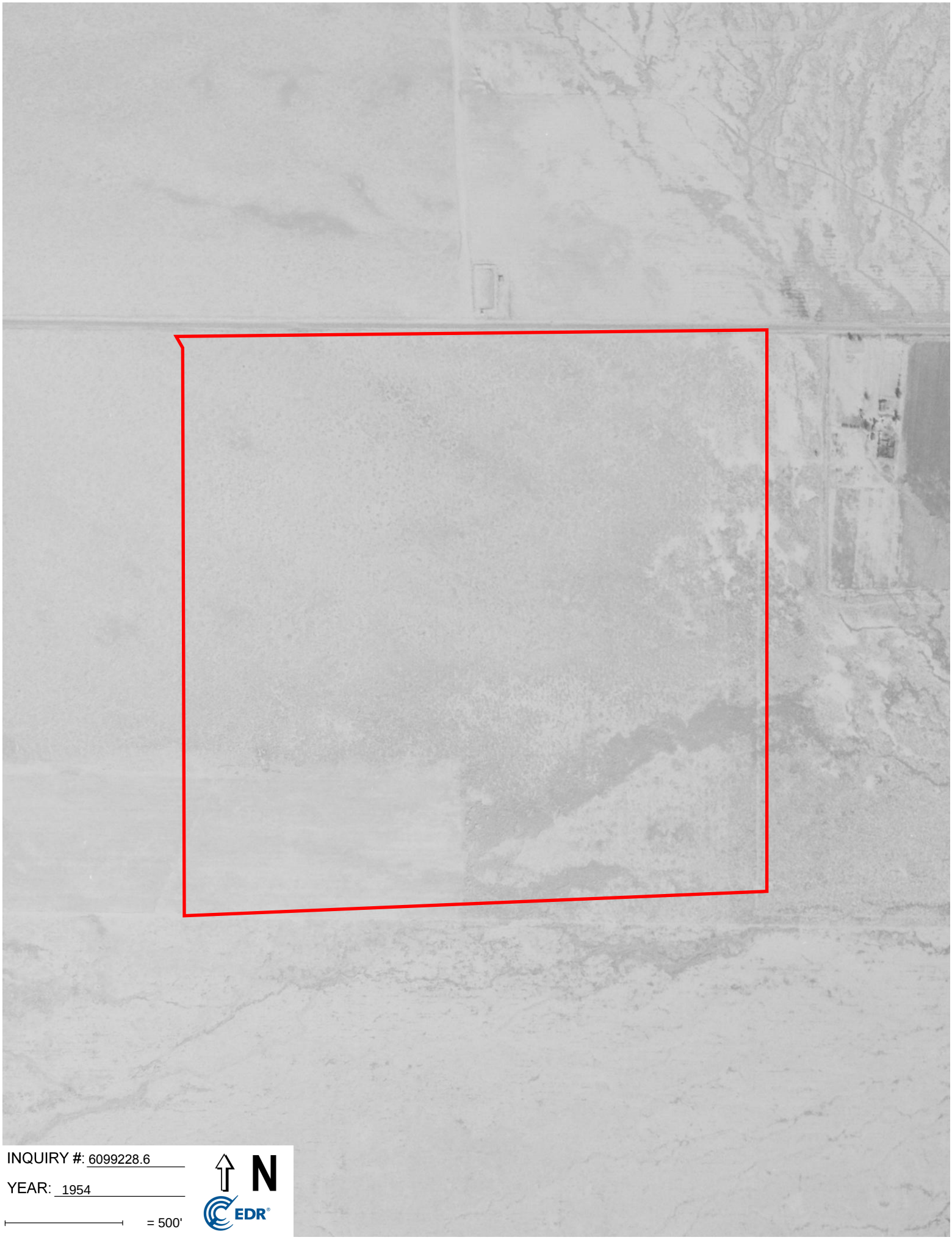
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YEAR: 1968

= 500'

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EDR



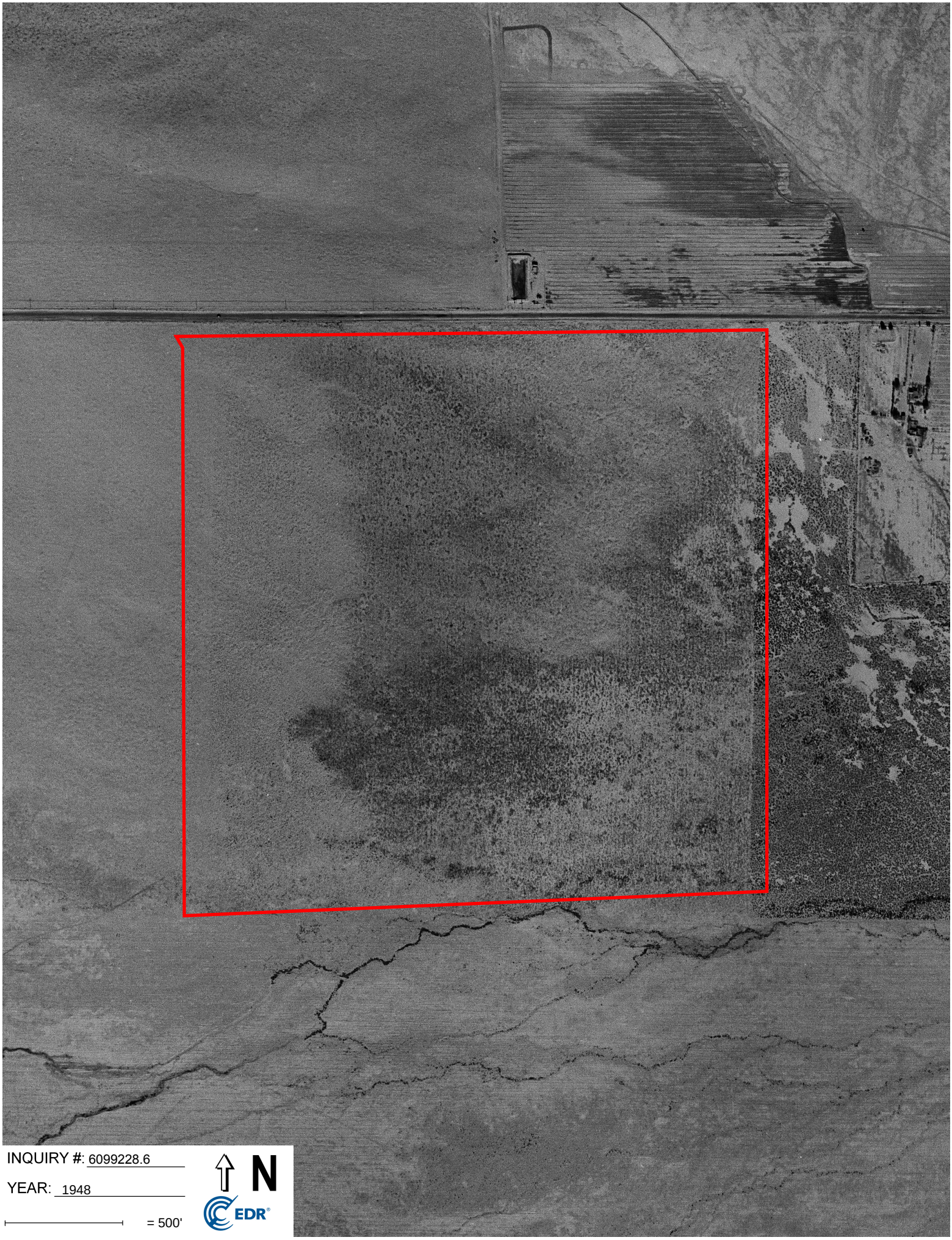
INQUIRY #: 6099228.6

YEAR: 1954

= 500'

N

EDR



INQUIRY #: 6099228.6

YEAR: 1948

= 500'

N

EDR

EDR HISTORICAL TOPOGRAPHIC MAP REPORT

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560

Inquiry Number: 6099228.7
June 22, 2020

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

06/22/20

Site Name:

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560
EDR Inquiry # 6099228.7

Client Name:

Trinity Consultants
4900 California Ave Suite 420A
Bakersfield, CA 93309
Contact: Dolores Gough

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Trinity Consultants 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.# NA

Project: Gettysburg Solar Phase I ESA

Coordinates:

Latitude:	34.860208 34° 51' 37" North
Longitude:	-118.2645 -118° 15' 52" West
UTM Zone:	Zone 11 North
UTM X Meters:	384413.11
UTM Y Meters:	3858269.95
Elevation:	2408.45' above sea level

Maps Provided:

2012
1973, 1974
1965
1947
1943
1917
1915

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

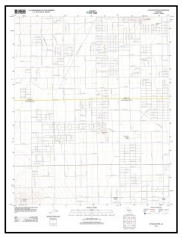
2012 Source Sheets



Soledad Mountain
2012
7.5-minute, 24000



Rosamond
2012
7.5-minute, 24000



Little Buttes
2012
7.5-minute, 24000

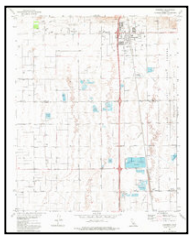


Willow Springs
2012
7.5-minute, 24000

1973, 1974 Source Sheets



Soledad Mtn
1973
7.5-minute, 24000
Aerial Photo Revised 1972



Rosamond
1973
7.5-minute, 24000
Aerial Photo Revised 1972



Willow Springs
1974
7.5-minute, 24000
Aerial Photo Revised 1963



Little Buttes
1974
7.5-minute, 24000
Aerial Photo Revised 1974

1965 Source Sheets

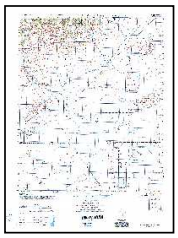


Willow Springs
1965
7.5-minute, 24000
Aerial Photo Revised 1963



Little Buttes
1965
7.5-minute, 24000
Aerial Photo Revised 1963

1947 Source Sheets



WILLOW SPRINGS
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1943 Source Sheets



Rosamond
1943
15-minute, 62500



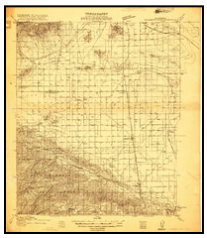
Willow Springs
1943
15-minute, 62500
Aerial Photo Revised 1943

1917 Source Sheets



Elizabeth Lake
1917
30-minute, 125000

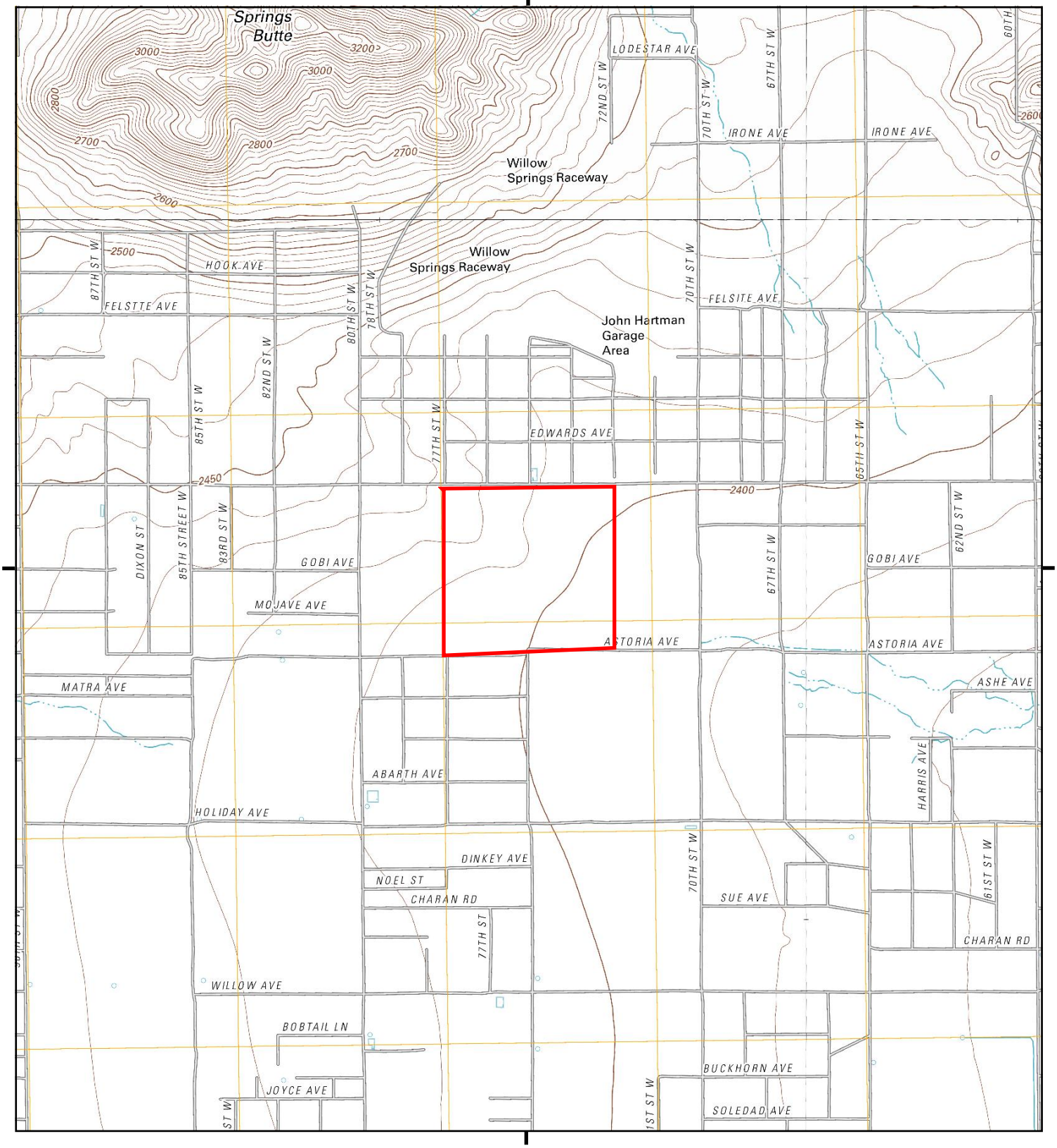
1915 Source Sheets



Elizabeth Lake
1915
30-minute, 96000

Historical Topo Map

2012



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

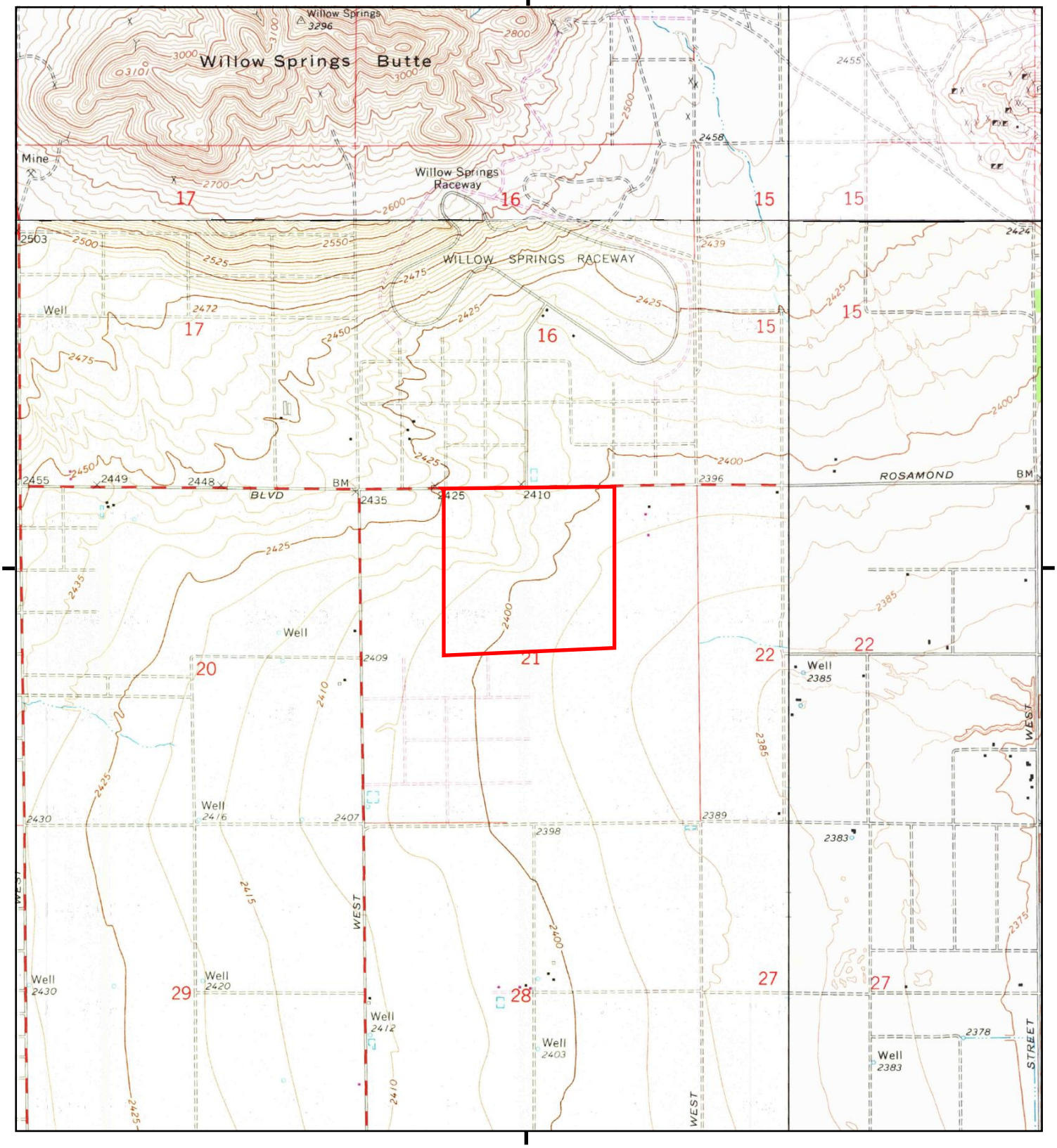
TP, Little Buttes, 2012, 7.5-minute
NE, Soledad Mountain, 2012, 7.5-minute
SE, Rosamond, 2012, 7.5-minute
NW, Willow Springs, 2012, 7.5-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N

Historical Topo Map

1973, 1974



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

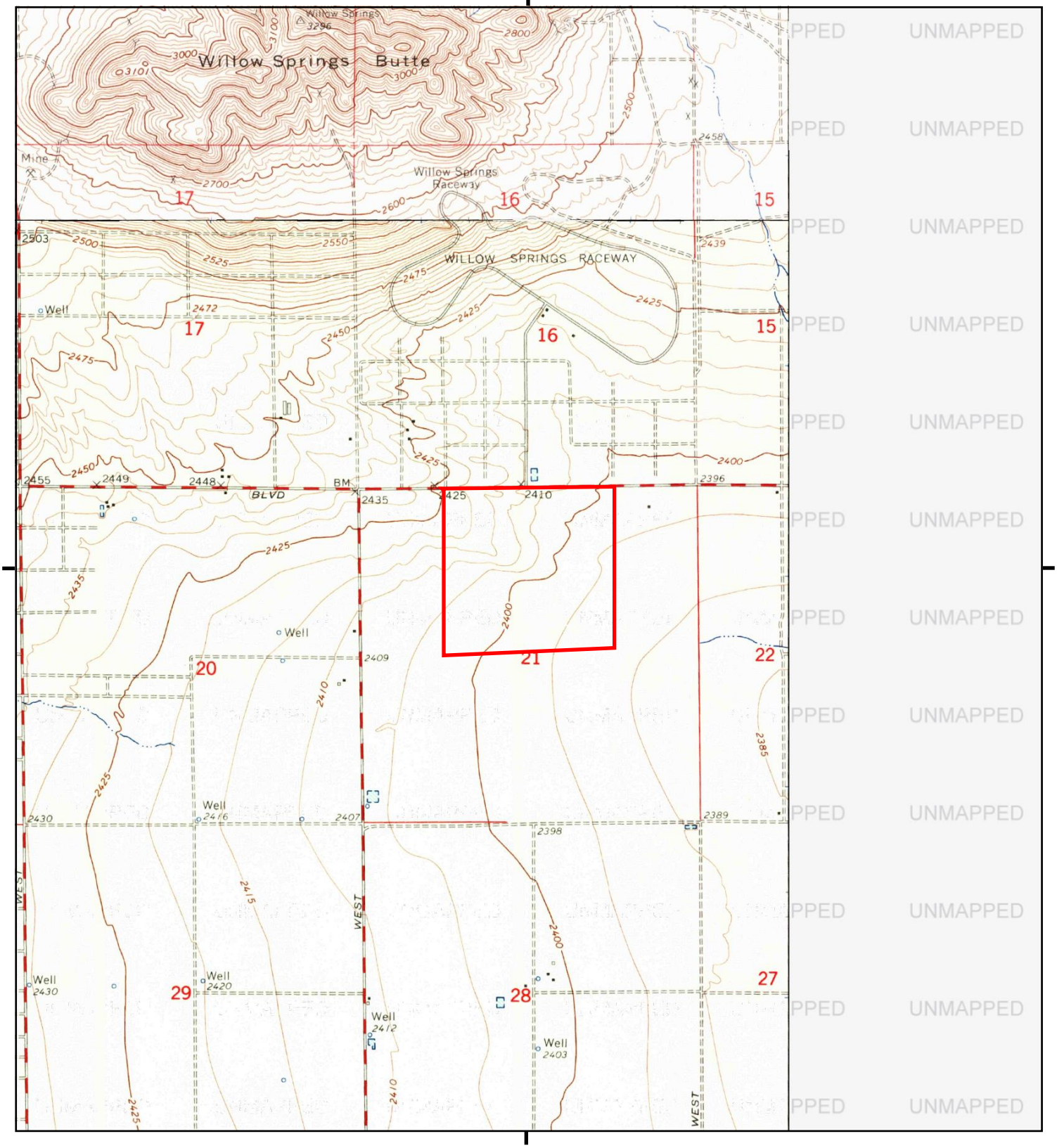
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NE, Soledad Mtn, 1973, 7.5-minute
SE, Rosamond, 1973, 7.5-minute
NW, Willow Springs, 1974, 7.5-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N

Historical Topo Map

1965



This report includes information from the following map sheet(s).

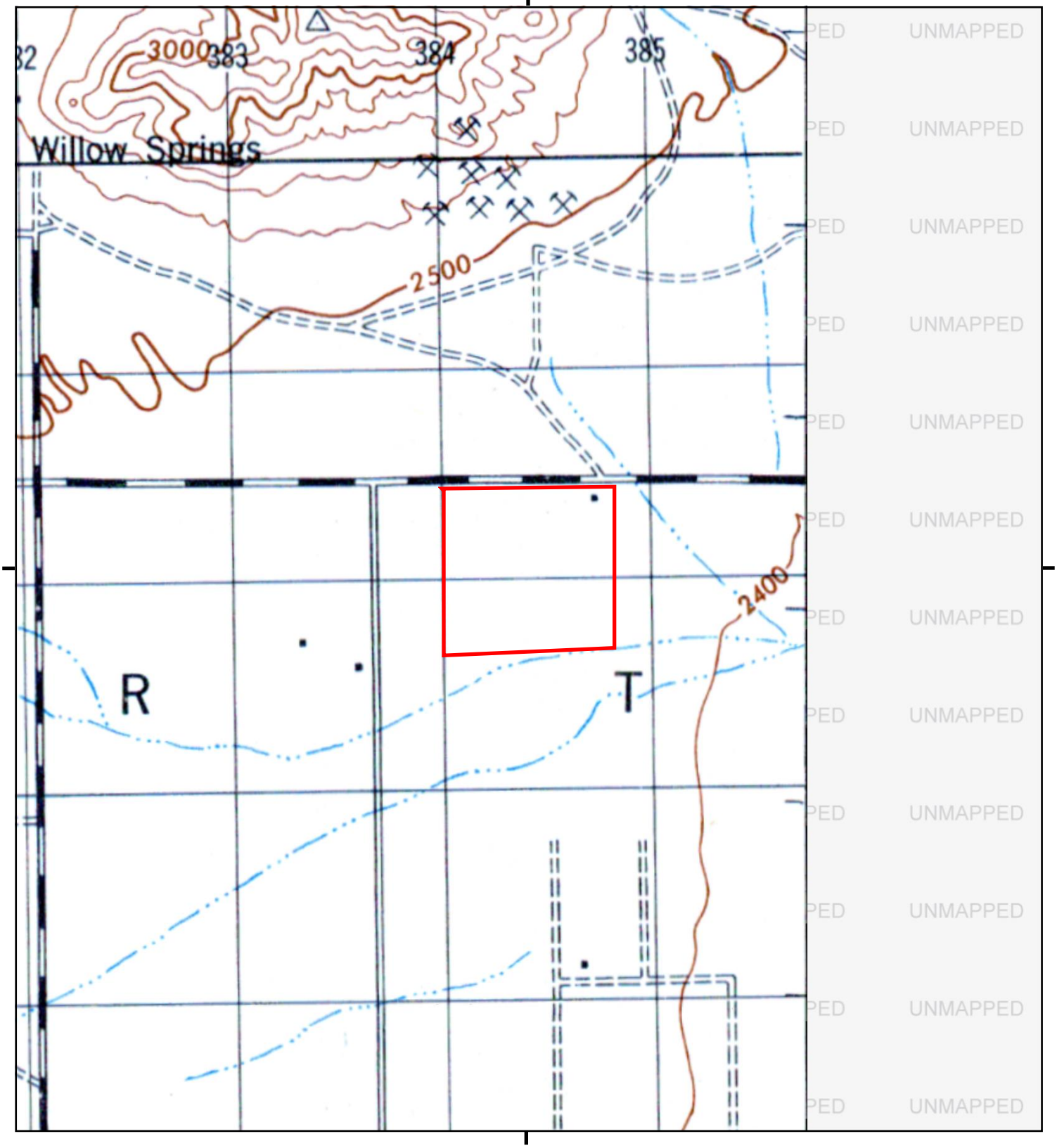
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Little Buttes, 1965, 7.5-minute
NW, Willow Springs, 1965, 7.5-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N



This report includes information from the following map sheet(s).

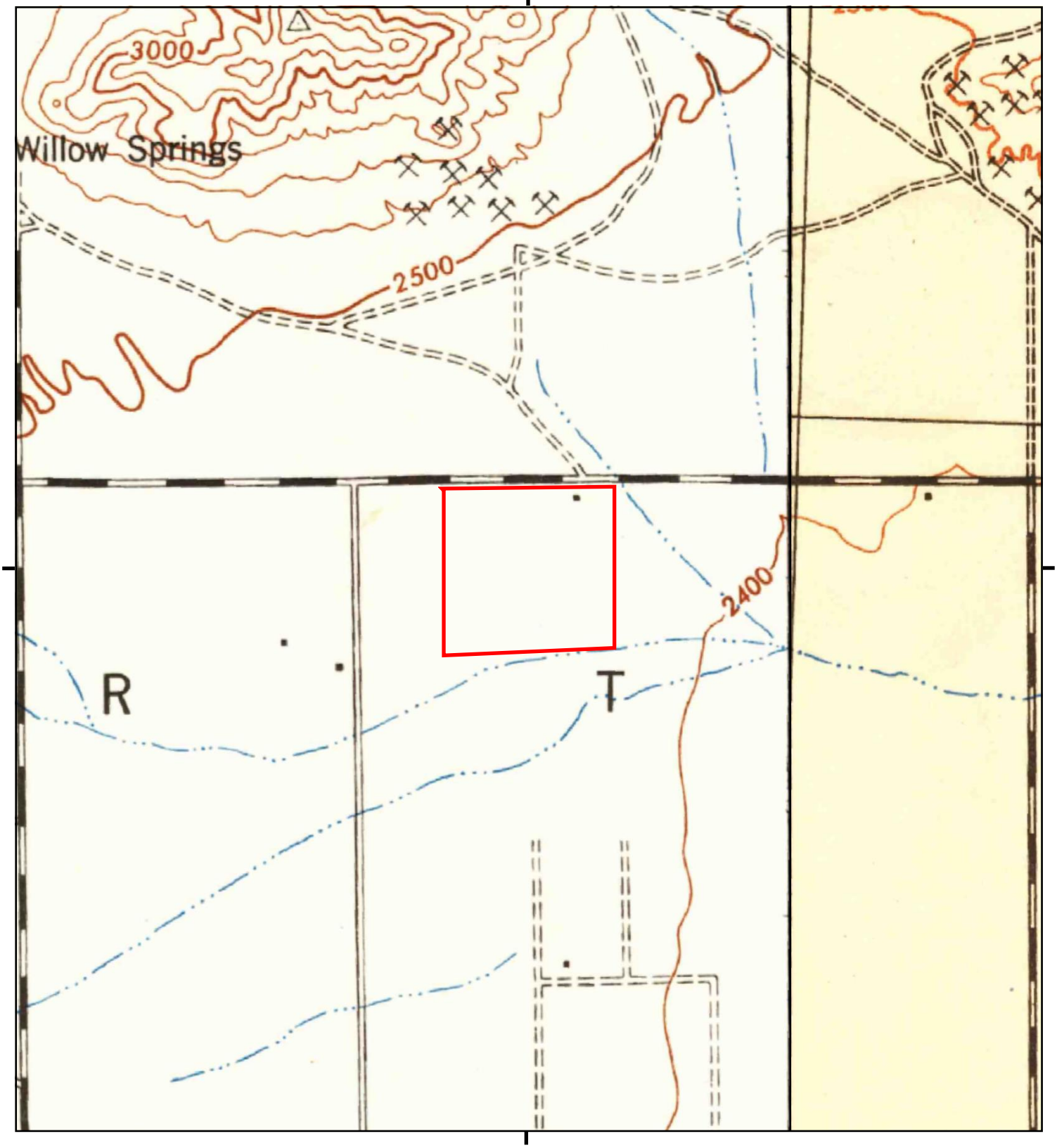
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, WILLOW SPRINGS, 1947, 15-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N



This report includes information from the following map sheet(s).

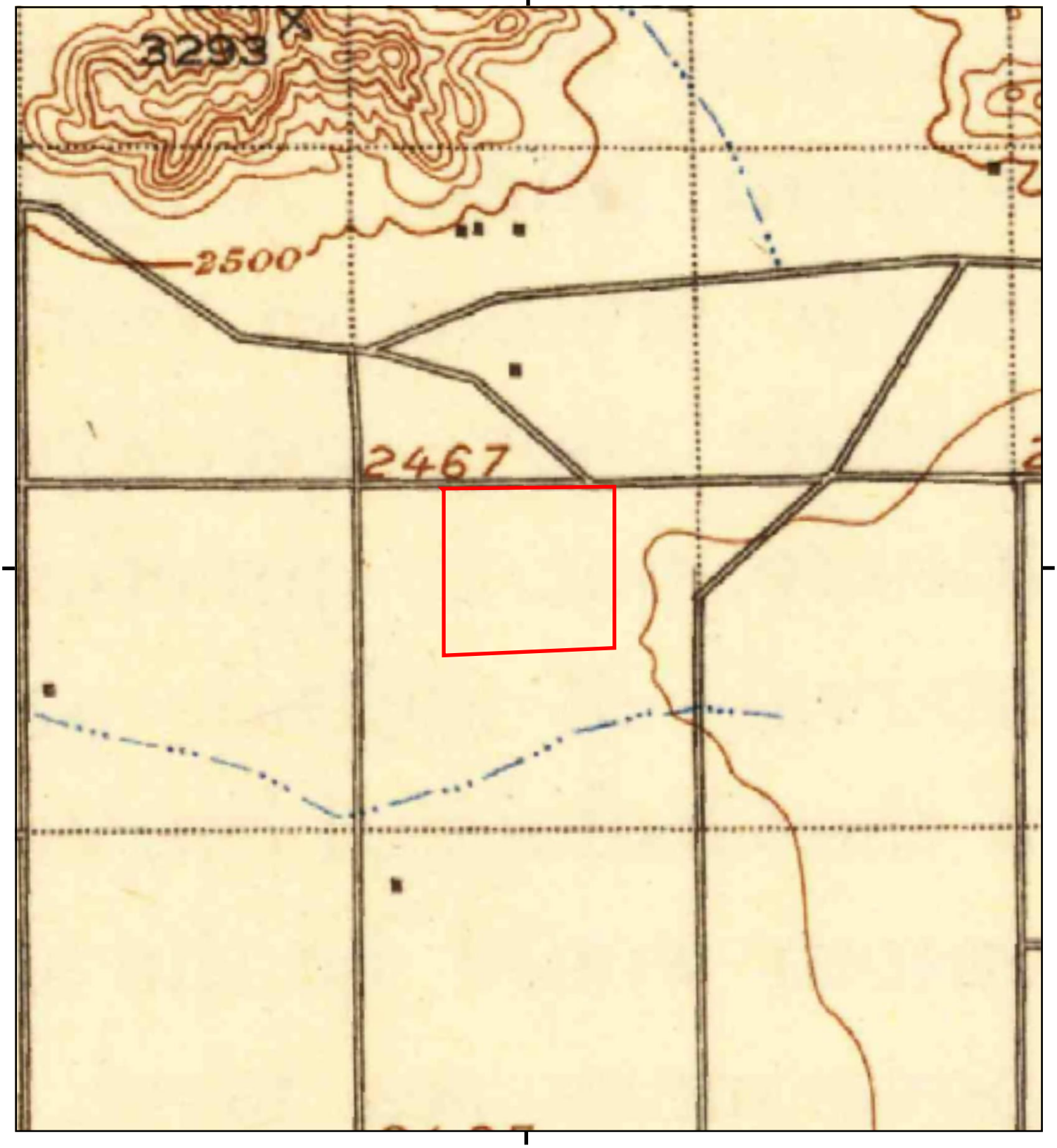
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Willow Springs, 1943, 15-minute
E, Rosamond, 1943, 15-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N



This report includes information from the following map sheet(s).

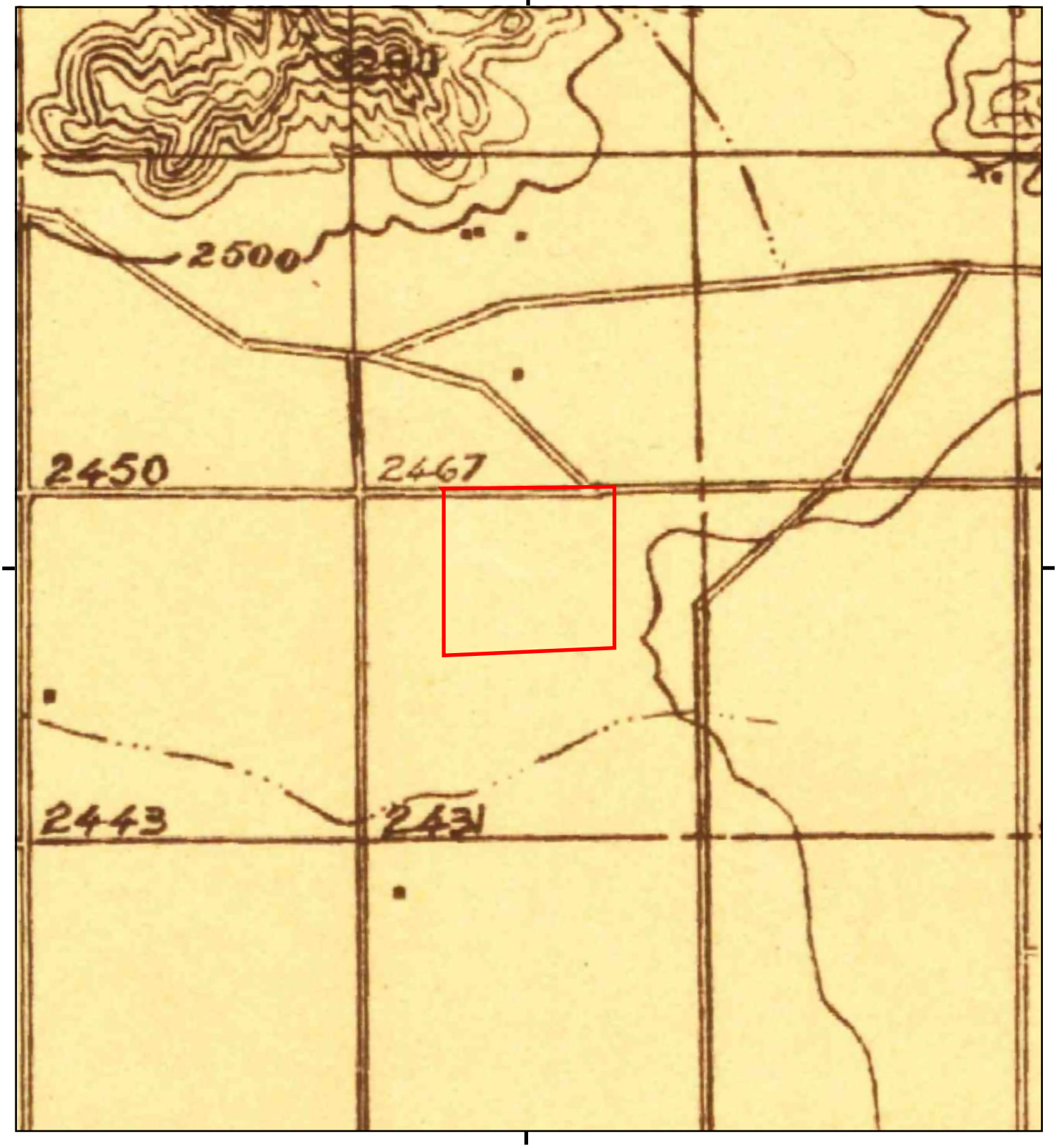
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Elizabeth Lake, 1917, 30-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Elizabeth Lake, 1915, 30-minute

SITE NAME: Gettysburg Solar Site
ADDRESS: Rosamond Blvd & 80th Street
Rosamond, CA 93560
CLIENT: Trinity Consultants

N

EDR CITY DRECTORY ABSTRACT

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560

Inquiry Number: 6099228.16
June 23, 2020

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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

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EXECUTIVE SUMMARY

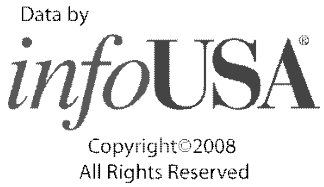
DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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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
1996	☑	☐	Polk City Directory
1990	☑	☐	Haines Criss-Cross Directory
1985	☑	☐	Haines Criss-Cross Directory
1980	☑	☐	Haines Criss-Cross Directory
1976	☑	☐	Haines Criss-Cross Directory
1973	☑	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Rosamond Blvd & 80th Street
Rosamond, CA 93560

Year	*CD Image*	*Source*	
80TH ST W			
2017	pg A1	EDR Digital Archive	
2014	pg A3	EDR Digital Archive	
2010	pg A6	EDR Digital Archive	
2005	pg A9	EDR Digital Archive	
2000	pg A12	EDR Digital Archive	
1996	pg A14	Polk City Directory	
1990	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1985	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1980	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1976	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1973	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
W ROSAMOND BLVD			
2017	pg A2	EDR Digital Archive	
2014	pg A4	EDR Digital Archive	
2010	pg A7	EDR Digital Archive	
2005	pg A10	EDR Digital Archive	
2000	pg A13	EDR Digital Archive	
1996	pg A15	Polk City Directory	
1990	pg A16	Haines Criss-Cross Directory	
1985	pg A17	Haines Criss-Cross Directory	
1980	pg A18	Haines Criss-Cross Directory	
1980	pg A19	Haines Criss-Cross Directory	
1976	pg A20	Haines Criss-Cross Directory	
1976	pg A21	Haines Criss-Cross Directory	
1973	pg A22	Haines Criss-Cross Directory	

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

80TH ST W 2017

346 EUBANKS, REBECCA E
736 POWELL, MARY A
782 JAMES, RYAN L
2845 AFFORDABLE LIMOUSINE SERVICE
SANDERS, JACKIE
3333 FISHER, BRENDA L
3709 HIGH DESERT BROADCASTING LLC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

W ROSAMOND BLVD 2017

5005	ARTIGA, JOE D
5335	ACOSTA, GUILLERMO
	AGUILAR, MARIA
	BALTIERRA, MARIA
	BELTRAN, YESENIA
	CABRERA, CAROLINA
	CALDERON, EVER
	CARR, NELLIE M
	CIBRIAN, MANUELA V
	CROWN, SHANNON
	DAVIDSON, TRACEY
	FINCH, DANA
	FONTAINE, TODD C
	GARCIA, JAVIER
	GIBSON, LORI A
	HERNANDEZ, HILARIO
	JENSEN, DON R
	KLEIN, STEVEN P
	KOWALEWSKY, HALLE M
	LEON-FLORES, RAMIRO L
	LOPEZ, MARVIN
	MARIN, SAUL
	MARQUEZ, STEVE
	MARTINEZ, JAIME
	PINEDA, JUAN
	PONCE, BELTRAN
	PRUDENTIAL MOBILE HOME PARK
	SAAVEDA, CARMEN
	SANCHEZ, CHRISSY
	SUTTLE, RUTH M
5554	JULIAN, DELORES D
5570	DIFRANCESCO, TAMARA L
5675	BUTLER, VERL L
5760	RONNIE, JUVINALL
7347	AMERICAN PERFORMANCE ENGINEERING
8134	WADLEIGH, CURTIS C
8270	KOPACZ, ROBERT E
8543	RITCHEY, TERRANCE B
8748	LUJAN, GEORGE N
9171	RIVERA, QUEEN
9354	GONZALES, KEVIN
9534	TORREZ, DONATO
9650	MORENO, D
9714	NOEL, BRYAN D
11137	BRENNA, VICTORIA A

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

80TH ST W 2014

346	EUBANKS, REBECCA E
736	VANNORMAN, RODNEY J
782	JAMES, RYAN L
1818	COLLINS, EDWARD R
2845	CASE, RICHARD D
	RCS AFFORDABLE LIMOUSINE SERVICE
3333	HOLLIS, JERALD A
	PATIOS PLUS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

W ROSAMOND BLVD 2014

5001	OCCUPANT UNKNOWN,
5005	ARTIGA, JOE D
5335	ACOSTA, GUILLERMO
	AGUILAR, MARIA
	BALTIERRA, MARIA
	CABESAS, DOLORES
	CABRERA, FRANK J
	CARRASCO, KARA
	CIBRIAN, MANUELA V
	DIAZ, EDGAR
	FLORES, LEON M
	FRANK, STEVE
	GARCIA, JAVIER
	GIBSON, LORI A
	GREGORY, ROSE D
	HERNANDEZ, HILARIO
	JENSEN, DON R
	KLEIN, STEVEN P
	KOWALEWSKY, HALLE M
	LEON-FLORES, RAMIRO L
	LINDA, RIOS
	LOPEZ, MARIZSA
	MARIN, SAUL
	MARQUEZ, STEVE
	MATTERA, SALINA V
	NICHOLAS, ELIZABETH M
	PIERCE, DENISE
	PONCE, BELTRAN
	PRUDENTIAL MOBILE HOME PARK
	SAAVEDA, CARMEN
	SALDANA, FERNANDO
	SANCHEZ, CHRISSY
	SUTTLE, RUTH M
	VALENCIA, ALFERDO
	VILLARUEL, MANUEL S
5500	MCBRIEN, STEPHANIE M
5511	HARVELL, ALSACE G
5554	JULIAN, DELORES D
5570	HOLZER, DANIEL E
5615	BROWN, ROBERT D
5636	MELCHERS, GENE R
5675	BUTLER, VERL L
5767	BAXTER, RAYMOND A
5832	OCCUPANT UNKNOWN,
5834	SMITH, LARRY G
6401	PEEK, DAVE A
6423	LORD, LILIA V
6455	OCCUPANT UNKNOWN,
7347	AMERICAN PERFORMANCE ENGINEERING
	ESHBACH, JAY

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

W ROSAMOND BLVD 2014 (Cont'd)

7805	PRETER, FRANK E
8134	WIDEMAN, CHRISTOPHER
8170	MCLAIN, LORI L
8270	KOPACZ, ROBERT E
8543	DARNOLD, FELICIA
8738	ANDALORA, DIANA
8748	LUJAN, GEORGE N
8847	OCCUPANT UNKNOWN,
9009	OCCUPANT UNKNOWN,
9171	RIVERA, QUEEN
9354	GARCIA, MANUELA L
9534	TORREZ, DONATO
9580	CASTILLO, BRENDA
9650	MORENO, D
9668	NOEL, KATHLEEN M
9714	NOEL, BRYAN D
11137	ROULEAU, VINCENT P

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

80TH ST W 2010

346 EUBANKS, REBECCA E
736 VANNORMAN, RODNEY J
782 SCOTT, WAYNE B
1818 COLLINS, EDWARD R
2845 CASE, RICHARD D
R CS AFFORDABLE LIMOUSINE SVC
3333 HOLLIS, JERALD A

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

W ROSAMOND BLVD 2010

5001	OCCUPANT UNKNOWN,
5005	ARTIGA, ANGEL
5335	ACOSTA, GUILLERMO
	ALMANZA, RAMIRO P
	BALLARD, JAMES
	BALTIERRA, MARIA
	BELL, CHRISTINA
	CABRERA, FRANK J
	CARRASCO, KARA
	CIBRIAN, MANUELA
	COOPER, JASON
	COX, OTHA L
	DE, LEON
	DECARRERA, MARGARITA R
	DELEON, LIMBER
	DIAZ, EDGAR
	DOMINGUEZ, ABLE
	FINCH, DANA
	FLORES, LEON M
	FOWLER, ROSEMARY
	FRANK, STEVE
	GARCIA, JAVIER
	GARRIDO, FRANCISCO
	HERNANDEZ, HILARIO
	KLEIN, STEVEN
	LAWSON, MANOR
	LOPES, CARLOS M
	MALLOY, S
	MARIN, SAUL
	MARQUEZ, ANGEL D
	MERCADO, MARIO
	MINER, RICHARD H
	PEDROZA, GLORIA
	PERPICH, JASON A
	PONCE, BELTRAN
	PRUDENTIAL MOBILE HOME PARK
	ROBLEDO, MARTIN
	SALDANA, FERNANDO
	SCOTT, PAULA
	SOLIS, ANSELMO
	SUTTLE, RUTH
	THOMAS, HAROLD
	VALENCIA, ISIDRO
	VILLARUEL, MANUEL S
	WATTERS, DAVID
5500	LEONI, DANIEL R
5511	HARVELL, CLAUDY V
5554	JULIAN, DELORES D
5570	HOLZER, DANIEL E
5615	BROWN, ROBERT D

W ROSAMOND BLVD 2010 (Cont'd)

5636	MELCHERS, CHARLENE Y
5675	BUTLER, KENT J
5760	NIEBLA, NATE
5767	BAXTER, RAYMOND A
5832	OCCUPANT UNKNOWN,
5834	SMITH, LARRY G
6401	PEEK, DAVE A
6423	LORD, LILIA V
6455	HART, JAMES A
7347	AMERICAN PERFORMANCE ENGRG
7805	JADIDOLLAHI, B
8134	WIDEMAN, CHRISTOPHER
8270	COLEMAN, RICHARD J
8738	ANDALORA, DIANA
8748	LUJAN, GEORGE N
8847	OCCUPANT UNKNOWN,
9009	CHICOS MINI MARKET
	GARCIA, DANNY
9171	SINECIO, EZEQUIEL
9354	WORTELBOER, GILBERT
9534	TORREZ, DONATO
9580	DELAROSA, REINALDO R
9650	GREENMAN, DAVID
9668	SMILLIE, RONALD E
9714	NOEL, BRYAN D
11137	ROULEAU, VINCENT P

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

80TH ST W 2005

346 OCCUPANT UNKNOWN,
736 VANNORMAN, RODNEY J
1818 COLLINS, EDWARD R
2845 CASE, RICHARD D

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

W ROSAMOND BLVD 2005

5001	OCCUPANT UNKNOWN,
5005	OCCUPANT UNKNOWN,
5335	ACOSTA, GUILLERMO
	ANDERSON, MICHAE
	AVILA, ERNESTO
	BUCKLES, MATTHEW
	CABRERA, FRANK J
	CAGLE, LARRY
	CARR, NELLIE M
	COOK, WILLIAM
	DECARRERA, MARGARITA R
	DOMINGUEZ, ABLE
	FERNANDEZ, MANUEL
	FINCH, DANA
	FLORES, RAMON C
	GONZALEZ, MANUEL
	HEBERT, PETER A
	HERNANDEZ, HILARIO
	JACKSON, JOHN E
	JONES, JUDIE
	LADD, RON
	LOPEZ, MARIZSA
	MADISON MOBILE HOME PARK
	MARIN, SAUL
	MERCADO, MARIO
	MEZSA, RUDY
	NGUYEN, ANDY
	PARKHURST, MICHAEL
	PEREZ, TINA
	PERPICH, JASON
	PRUDENTIAL MOBILE HOME PARK
	ROBLEDO, LUZ M
	RODRIGUEZ, V M
	ROMERO, JOSE A
	SANDERS, JIM
	SARGENT, DENISE
	SENDELBACH, JUDITH A
	TAYLOR, M
	VALENCIA, ISIDRO
	VALLARD, SHIRLEY
	VILLARUEL, MANUEL S
	WATTERS, DAVID
	WETZEL, WELBERT
5500	LEONI, DANIEL R
5511	HARVELL, CLAUDY V
5554	JULIAN, DELORES D
5570	HOLZER, JOHN L
5615	BROWN, ROBERT D
5636	MELCHERS, GENE R
5675	BUTLER, KENT J

W ROSAMOND BLVD 2005 (Cont'd)

5675	KENT J BUTLER
5760	LAMY, GERALD R
5767	BAXTER, RAYMOND A
5832	OCCUPANT UNKNOWN,
5834	SMITH, LARRY G
6401	PEEK, DAVE A
6423	LORD, LILIA V
6455	HART, JAMES
7805	BARICKMAN, LEE W
8270	COLEMAN, RICHARD J
8738	ANDALORA, DIANA
8748	LUJAN, GEORGE N
8847	OCCUPANT UNKNOWN,
9009	EL CHICOS MINI MARKET
	GARCIA, DANNY
9171	VERA, MARIA
9580	DELAROSA, REINALDO R
9668	SMILLIE, RONALD E
9714	NOEL, DIXIE L
11137	ROULEAU, VINCENT P

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

80TH ST W 2000

346	EUBANKS, REBECCA
1528	TAYLOR, TOM
2845	CASE, RICHARD

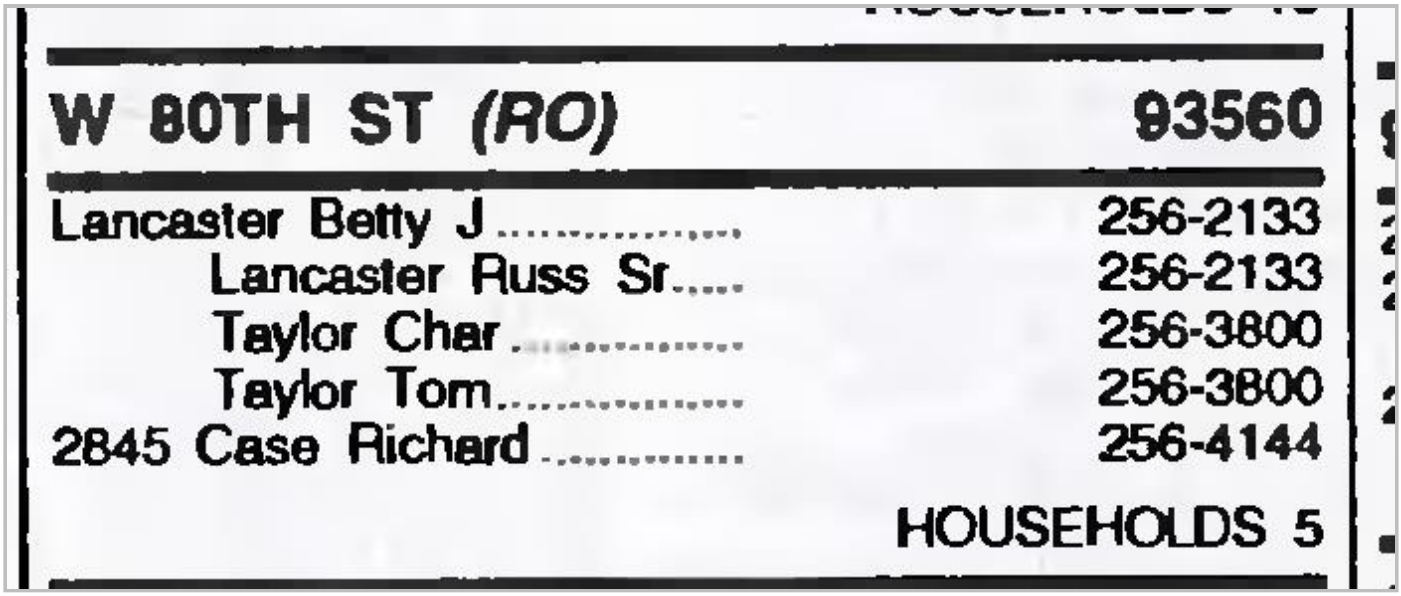
Target Street	Cross Street	Source
✓	-	EDR Digital Archive

W ROSAMOND BLVD 2000

5001	SCATES, JEWELL E
5335	ACOSTA, G
	CABRERA, FRANK J
	FERNANDEZ, MANUEL
	GONZALEZ, MANUEL
	HERNANDEZ, HILARIO
	MONTOYA, M
	PARKHURST, FRANK A
5511	HARVELL, ALSACE
5570	BARNES, KENNETH
5615	BROWN, ROBERT
5636	CONIGLIO, GEORGE
5675	BUTLER, KENT
5767	BAXTER, RAYMOND
5832	BENDER, ALVIN
5834	SMITH, LARRY G
6401	PEEK, DAVE
6423	LIBATIQUE, JOHN
8748	LUJAN, GEORGE
9580	DELAROSA, RAY
9714	NOEL, DIXIE
12492	DOMINQUEZ, JOAQUIN

Target Street	Cross Street	Source
✓	-	Polk City Directory

80TH ST W 1996



W 80TH ST (RO) 93560

Lancaster Betty J	256-2133
Lancaster Russ Sr	256-2133
Taylor Char	256-3800
Taylor Tom	256-3800
2845 Case Richard	256-4144

HOUSEHOLDS 5

Target Street	Cross Street	Source
✓	-	Polk City Directory

W ROSAMOND BLVD 1996

	Seaman Alfred	-6471	H047	256-1544
5005	Potter Richard J	-6447	H047	256-3637
5335	THUNDERBIRD MOBILE RANCH	-6448	H047	256-2616
	Acosta Guiller	-6448	H047	256-7678
	Aguilar Salvad	-6448	H047	256-0503
	Castillo Julio C	-6448	H047	256-4043
	Fernandez Manuel	-6448	H047	256-9418
	Gonzalez Armando	-6448	H047	256-3544
	Moran Margari	-6448	H047	256-8963
5511	Harvell Alsace	-6559	H047	256-2503
	Harvell C V	-6559	H047	256-2503
5570	Holzer John	-6559	H047	256-2580
5615	Brown Gwen			256-3765
	Brown Robert			256-3765
5675	Butler Kent			256-2785
5767	Stish John	-6567	H047	256-7141
	Stish Maureen	-6567	H047	256-7141
5832	Copeland Vici	-6516	H047	256-0347
5834	Smith Larry G	-6516	H047	256-3000
6401	Peek Dave	-6993	H073	256-2281
	Peek Judy	-6993	H073	256-2281
6423	Libatique Alexander	-6993	H073	256-2026
	Libatique John	-8993	H073	256-2026
8455	Marimla Pedro	-6993	H073	256-1384
7805	ABEST FIREWOOD	-6927	H073	256-0377
8746	Lujan George	-6972	H073	256-2185
8748	Lujan Ramon	-6972	H073	256-2112
9009	WILYUMS FOOD & DRINKS TO GO	-6945	H073	256-8058
9714	Noel R L	-6973	H073	256-3396
12492	Lord Kim E	-7052	H073	256-3414
14271	Carter S	-6948	H073	256-1228

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1990

5001	IRVIN R L	258-4386	5
5005	POTTER Richard J	256-3637	3
5335	THUNDRBRD TRLR PK		
47	BAUER John G	256-2137	
	CAMPBELL Dorine	256-4806	+0
	CASTILLO Julio C	256-4043	+0
	CORDER Rick	256-8224	
	CORDER Wanda	256-8224	9
	COWAN Ernest P	256-3131	5
	DUNHAM James C	256-4425	8
	GONZALEZ Armando	256-3544	+0
	GOODE John S	256-3076	
	SCHMOE Tammy	256-1738	9
	SWOGGER E	256-2616	
	SWOGGER J	256-2616	
	★THUNDERBIRD MBL RCN	256-2616	
5335			
5338	XXXX	00	
5342	XXXX	00	
5615	BROWN Gwen	256-3785	
	BROWN Robert	256-3765	8
5636	XXXX	00	
5834	SMITH Larry G	256-3008	
	SMITH P M	256-3008	
6401	PEEK Dave	256-2281	
	PEEK Judy	256-2281	
6423	LIBATIQUE Alexandra	256-2026	
	LIBATIQUE John	256-2026	
6455	LABATIQUE R C	255-2755	6
6486	XXXX	00	
7805	HILSINGER Sandy	256-0116	+0
8746	LUJAN George	256-2185	+0
11137	★J O B LINE CONSTR	256-1933	+0

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1985

4980			
5001	IRVIN R L	256-4386	+5
5005	POTTER RICHARD J	256-3637	3
5335	THUNDRBRD TRLR ANCH		
47	BAUER JOHN G	256-2137	
	COCHRAN GEORGE S	256-2213	+5
	COWAN ERNEST P	256-3131	+5
	GOODE JOHN S	256-3076	
	HEINMILLER L	256-4572	+5
	MONTGOMERY DAVID	256-3738	4
47	QUANTZ DALLAS	256-2773	
	ROBERTSON RUSSELL D	256-3734	+5
	THUNDERBIRD TRLR PK	256-2616	0
5335			
5342	MUGUIRO JULIAN	256-3804	4
5636	MAYHUGH KATHY J	256-4651	+5
5832	ILECKI EDW	256-3018	4
5834	SMITH P M	256-3000	9
6455	LIBATIQUE ALEXANDRA	256-2397	3
	LIBATIQUE C R	256-2759	+5
6486	POWELL CHARLES P	256-4434	4
NO #	BARTLETT JEANETTE M	256-4457	2
NO #	BARTLING DONALD	256-2796	1
NO #	BAXTER RAYMOND A	256-3874	2
NO #	BURD BARBARA	256-4553	+5
NO #	BUTLER L M	256-2198	
NO #	BUTLER WESLEY C	256-3450	
NO #	COCHRAN LEE	256-3763	7
NO #	CURNUTTE JAMES	256-3825	4

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1980

5335	THUNDABRD TRLR RNCH		
	BARNES LOUISE	256-3207	9
47	BAUER JOHN G	256-2137	
65	BISHOP RICHARD J	256-2195	
53	BLANCHARD FLOYD	256-3508	5
	DAVIE ROY P	256-3588	+0
	DEMORY VIRGINIA	256-4204	+0
31	DWELLE ANN	256-3287	8
56	GOODE JOHN S	256-3076	
	GRAEB KENNETH A	256-3931	9
24	HARPER DICK E	256-2134	3
24	HARPER ROSEMARIE P	256-2134	4
16	PEDERSEN BESSIE MRS	256-2578	3
47	QUANTZ DALLAS	256-2773	
	RADER GEORGE A	256-3848	9
52	RUDOLPHS CHRISTINA	256-3331	
62	RYAN E J	256-2534	
58	SMITH ANCEL N	256-3159	7
	SMITH SCOTT	256-2801	+0

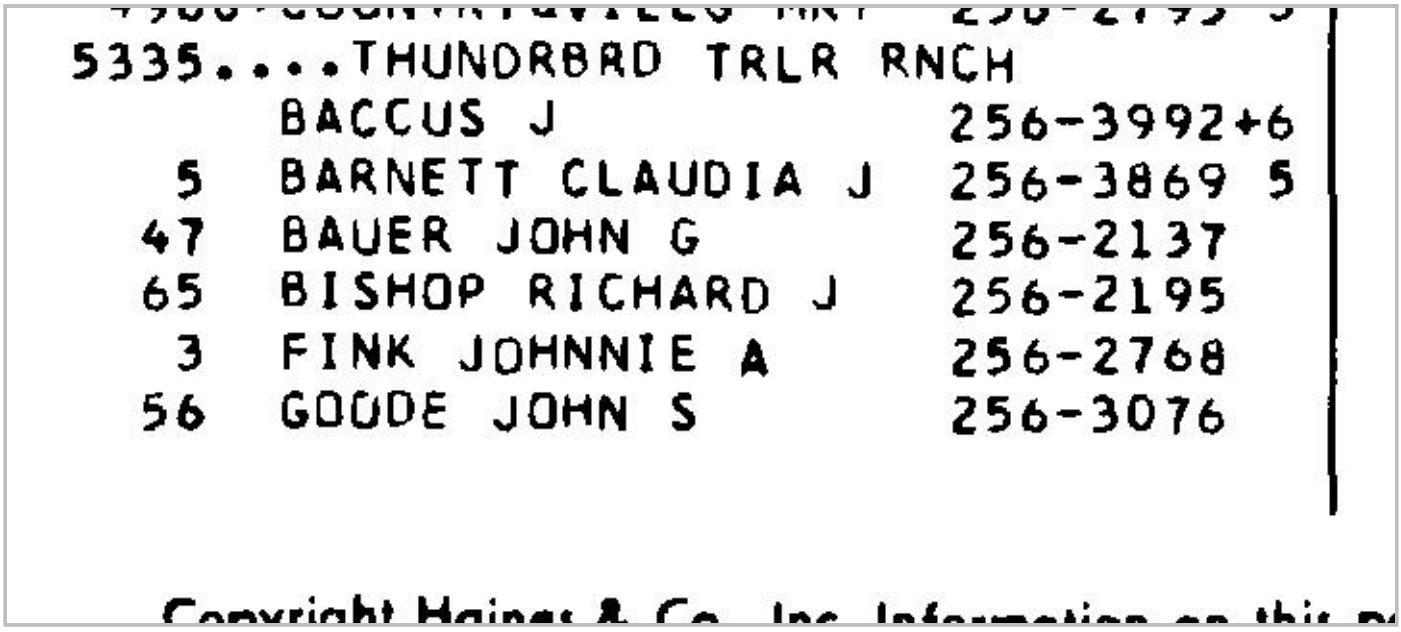
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1980

	ROSAMOND BLVD		93560 CONT	
0	32	TEDFORD J M	256-4239	8
0	★	THUNDERBIRD TR PK	256-2616	+0
	32★	THUNDRBRD TRLR RNCH	256-2198	
0		WINKLER WILLIAM	256-4120	+0
	37	WRIGHT LUCY M	256-2559	8
0	5335			
5	5342	HUMPHREYS ROBERT	256-2579	+0
9	5834	SMITH P M	256-3000	9
4	6455	KEPLINGER GENE REV	256-2035	+0
	NO #★	ARONSON AIR SERVICE	256-3070	
9	NO #★	ARONSON AIR SERVICE	256-2200	7
	NO #	BAXTER RAYMOND A	256-3874	9
	NO #	BEGAY JAMES	258-4072	+0
	NO #	BISHOP ARTHUR S	256-3328	
5	NO #	BUTLER L M	256-2198	
	NO #	BUTLER WESLEY C	256-3450	4

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1976



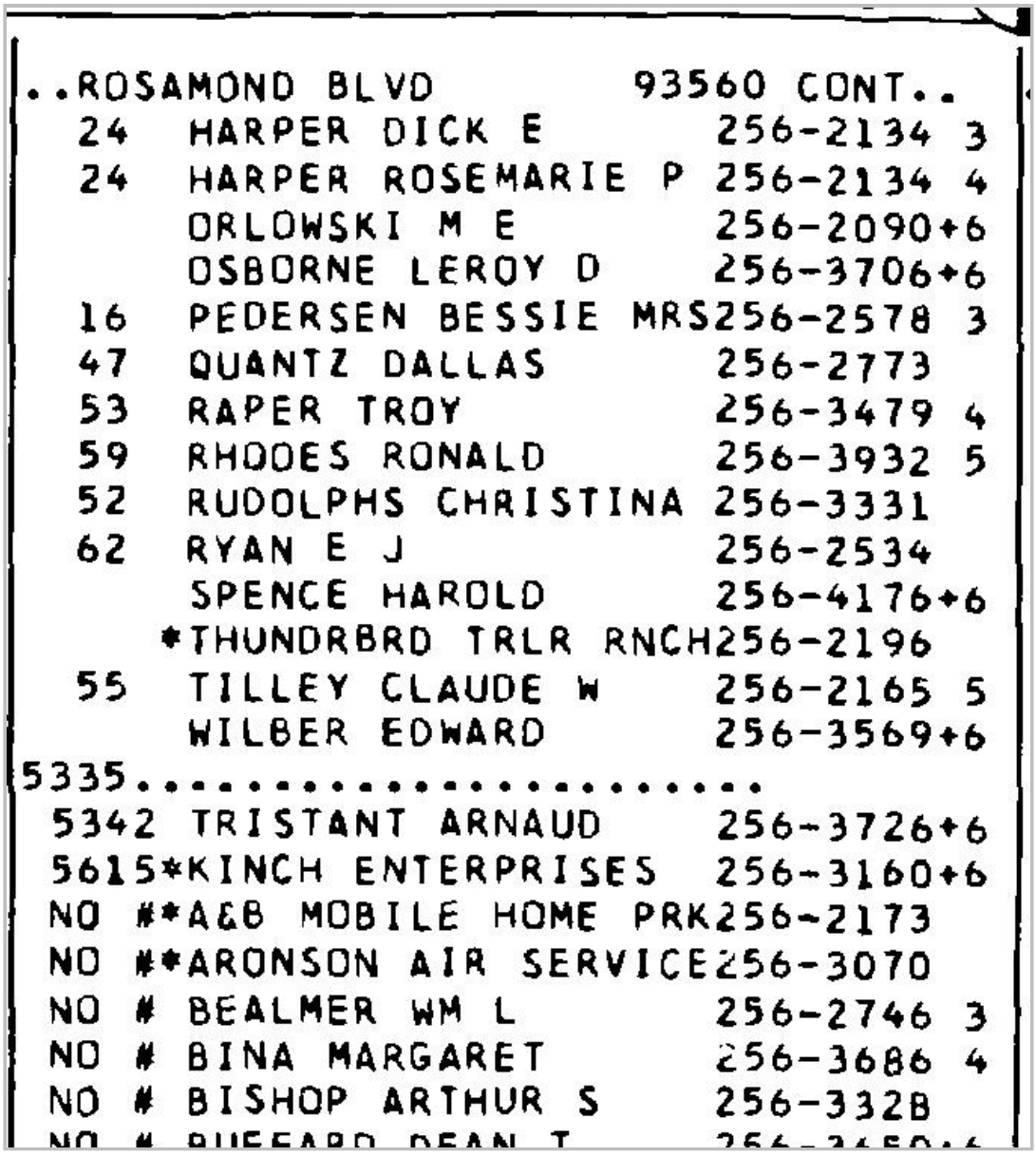
5335....THUNDRBRD TRLR RNCH

	BACCUS J	256-3992+6
5	BARNETT CLAUDIA J	256-3869 5
47	BAUER JOHN G	256-2137
65	BISHOP RICHARD J	256-2195
3	FINK JOHNNIE A	256-2768
56	GOODE JOHN S	256-3076

Copyright Haines & Co. Inc. Information on this p

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1976



..ROSAMOND BLVD 93560 CONT..

24	HARPER DICK E	256-2134 3
24	HARPER ROSEMARIE P	256-2134 4
	ORLOWSKI M E	256-2090+6
	OSBORNE LEROY D	256-3706+6
16	PEDERSEN BESSIE MRS	256-2578 3
47	QUANTZ DALLAS	256-2773
53	RAPER TROY	256-3479 4
59	RHODES RONALD	256-3932 5
52	RUDOLPHS CHRISTINA	256-3331
62	RYAN E J	256-2534
	SPENCE HAROLD	256-4176+6
	*THUNDRBRD TRLR RNCH	256-2196
55	TILLEY CLAUDE W	256-2165 5
	WILBER EDWARD	256-3569+6
5335	.....	
5342	TRISTANT ARNAUD	256-3726+6
5615	*KINCH ENTERPRISES	256-3160+6
NO	#*A&B MOBILE HOME PRK	256-2173
NO	#*ARONSON AIR SERVICE	256-3070
NO	# BEALMER WM L	256-2746 3
NO	# BINA MARGARET	256-3686 4
NO	# BISHOP ARTHUR S	256-3328
NO	# BUFFARD DEAN T	256-3650+6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

W ROSAMOND BLVD 1973

5335	....THUNDRBRD TRLR RNCH	
	ALLEN PHYLLIS LT	256-3364+3
47	BAUER JOHN G	256-2137
65	BISHOP JOANN	256-2195
65	BISHOP RICHARD J	256-2195
2	BURTON CECIL	256-2673
	CAVAN ALBERT	256-3627+3
	DEERE WILLARD W	256-3217+3
	DIEKEMPER MARK S	256-3610+3
3	FINK JOHNNIE A	256-2768
40	FISHER ENID	256-3398
56	GOODE JOHN S	256-3076
	GREEN ELMER	256-3674+3
	HARPER DICK E	256-2134+3
	HARPER ROSEMARIE P	256-2134+3
57	KELLEY A L	256-2634
37	MAY JAS L	256-2068
54	MCCASLIN J W	256-2154
	PEDERSEN BESSIE MRS	256-2578+3
48	QUANTZ DALLAS	256-2773
32	RASTICA JULIUS	256-3342
	ROWELL ART	256-3335+3
52	RUDOLPHS CHRISTINA	256-3331
62	RYAN E J	256-2534
	SCANLAN R J	256-3514+3
	STEWART WM	256-3069+3
	*THUNDRBRD TRLR RNCH	256-2196
	UONITES JOSEPH R	256-3203+3
6	WILSON M R	256-2897
5335	.....	
NO	#*A&B MOBILE HOME PRK	256-2173
NO	#*ARONSON AIR SERVICE	256-3070
NO	# BAGNANI RICHARO	256-2755+3

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560

Inquiry Number: 6099228.9
June 22, 2020

The EDR Property Tax Map Report

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.

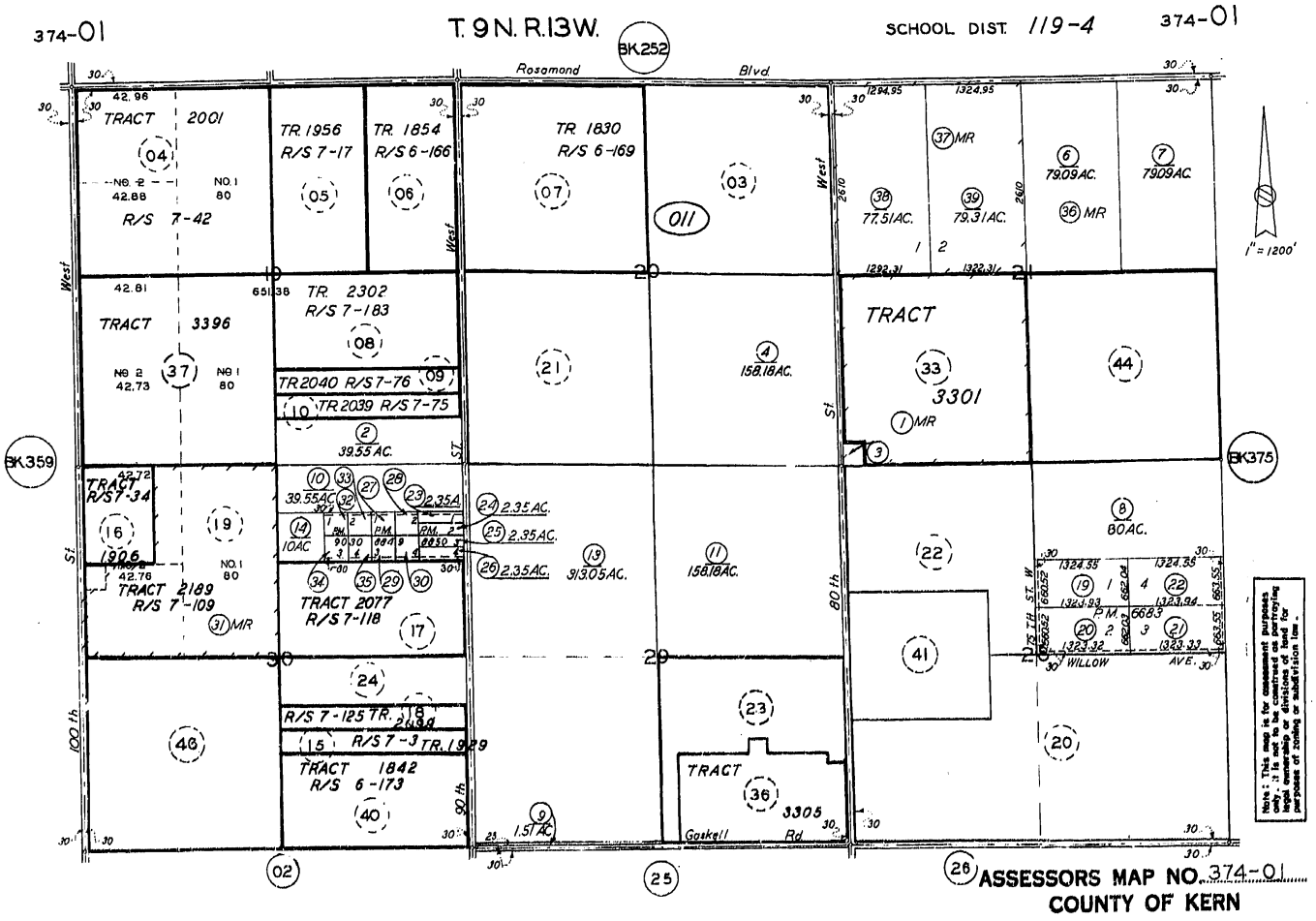
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

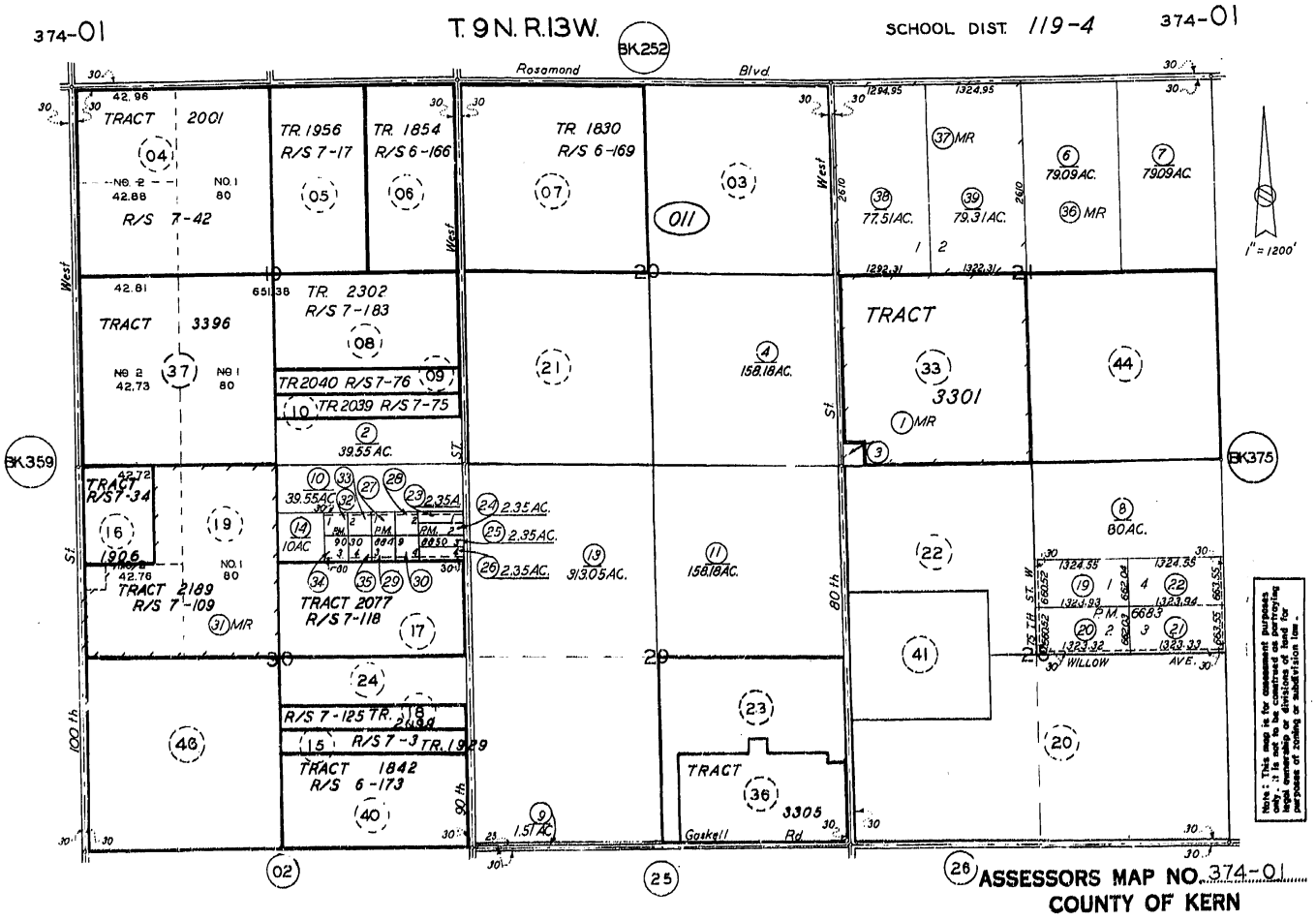
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374-01
T. 9 N. R. 13 W.
BK. 252
SCHOOL DIST. 119-4
374-01
Rosamond Blvd.
TRACT 2001
TR. 1956 R/S 7-17
TR. 1854 R/S 6-166
TR. 1830 R/S 6-169
R/S 7-42
TRACT 3396
TR. 2302 R/S 7-183
TR 2040 R/S 7-76
TR 2039 R/S 7-75
39.55 AC.
158.18 AC.
TRACT 3301
79.09 AC.
77.51 AC.
79.31 AC.
80 AC.
TRACT R/S 7-34
TRACT 2189 R/S 7-109
TRACT 2077 R/S 7-118
R/S 7-125 TR. 2438
R/S 7-3 TR. 1929
TRACT 1842 R/S 6-173
TRACT 3305
Gosford Rd.
1.51 AC.
2.35 AC.
10 AC.
91.905 AC.
BK. 359
BK. 375
1" = 1200'
Note: This map is for assessment purposes only. It is not to be construed as portraying legal ownership or division of land for purposes of zoning or subdivision law.
ASSESSORS MAP NO. 374-01
COUNTY OF KERN


374-01
T. 9 N. R. 13 W.
BK.252
SCHOOL DIST. 119-4
374-01
Rosamond Blvd.
TRACT 2001
TR. 1956 R/S 7-17
TR. 1854 R/S 6-166
TR. 1830 R/S 6-169
R/S 7-42
TRACT 3396
TR. 2302 R/S 7-183
TR 2040 R/S 7-76
TR 2039 R/S 7-75
39.55 AC.
TRACT R/S 7-34
1906
TRACT 2189 R/S 7-109
TRACT 2077 R/S 7-118
R/S 7-125 TR. 2438
R/S 7-3 TR. 1929
TRACT 1842 R/S 6-173
158.18 AC.
91.905 AC.
2.35 AC.
10 AC.
1.51 AC.
TRACT 3301
TRACT 3305
Gaskell Rd.
WILLOW AVE.
79.09 AC.
77.51 AC.
79.31 AC.
80 AC.
BK.359
BK.375
1" = 1200'
Note: This map is for assessment purposes only. It is not to be construed as portraying legal ownership or division of land for purposes of zoning or subdivision law.
ASSESSORS MAP NO. 374-01
COUNTY OF KERN

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560

Inquiry Number: 6099228.10
June 23, 2020

EDR Environmental Lien and AUL Search

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search 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;
- 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) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

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

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

Rosamond Blvd & 80th Street
Gettysburg Solar Site
Rosamond, CA 93560

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

RESEARCH SOURCE

Source 1:

Kern Recorder
Kern, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	Deed
Title is vested in:	Diamond Home Developments & Investments Inc
Title received from:	Kevin Vu et al
Deed Dated	11/28/2005
Deed Recorded:	1/11/2006
Book:	NA
Page:	NA
Volume:	NA
Instrument:	0206008194
Docket:	NA
Land Record Comments:	see exhibit
Miscellaneous Comments:	NA
Legal Description:	see exhibit
Legal Current Owner:	Diamond Home Developments & Investments Inc
Parcel # / Property Identifier:	37401139
Comments:	see exhibit

Deed Exhibit 1

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO:

Name
Street Address
City
State
Zip

DIAMOND HOME DEVELOPMENT
AND INVESTMENT INC.
6461 NAVAJO ROAD
WESTMINSTER, CA 92683

James W. Fitch, Assessor – Recorder
Kern County Official Records

SABRINA
1/11/2006
1:41 PM

Recorded at the request of
Public

DOC#: **0206008194**

Stat Types: 1	Pages: 2
Fees	10.00
Taxes	0.00
Others	3.00
PAID	$13.00

RECORDERS USE ONLY

ORDER NO.

APN; 374-001-39 AND APN: 374-001-06

GRANTOR ARE ALL OF THE PARTNERS OF THE PARTNERSHIP AND HOLD THE SAME PROPORTIONATE SHARE IN THE PARTNERSHIP.

GRANT DEED

TAX PARCEL NO. 374-011-06 & 39

The undersigned declares that the documentary transfer tax is 0.00** and is

X computed on the full value of the interest of the property conveyed, or is

_____ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.

The land, tenements or realty is located in

_____ unincorporated area X city WILLOW SPRING and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

KEVIN VU AND LAN THUY PHAM , HUSBAND AN WIFE, as to undivided 20% interest .

hereby GRANT(S) to DIAMOND HOME DEVELOPMENTS AND INVESTMENTS INC,.
A CALIFORNIA CORPORATION.

The following described real property in the City of WILLOW SPRING
County of KERN, State of California:

EXHIBIT A

** NO CONSIDERATION:

Dated 11 / 28 / 2005

KEVIN VU LAN THUY PHAM

KEVIN VU AND LAN THUY PHAM

STATE OF CALIFORNIA,)
COUNTY OF SANTA CLARA)

On 11 / 28 / 2005, before me,
TRUNG HUYNH
(insert name/title of the officer), personally appeared
KEVIN VU AND LAN THUY PHAM

personally known to me (or 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.
WITNESS my hand and official seal.

TRUNG HUYNH
Commission # 1416247
Notary Public - California
Santa Clara County
My Comm. Expires May 6, 2007

Signature Trung Huynh (Notary Seal)

MAIL TAX STATEMENTS TO PARTY SHOWN BELOW: IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE.

Name	Street Address	City & State
DIAMOND HOME DEVELOPMENTS AND INVESTMENT INC.	6461 NAVAJO ROAD	WESTMINSTER, CA 92683

EXHIBIT (A)

PARCEL 1:

THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 9 NORTH, RANGE 13 WEST, S.B.B.M., IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL RIGHT, TITLE AND INTEREST IN AND TO ALL COAL, HYDROCARBONS, GEOTHERMAL RESOURCES PRECIOUS METALS ORES, BASE METALS ORES, INDUSTRIAL GRADE SILICATES AND CARBONATES, FISSIONABLE MINERALS OF EVERY KIND AND CHARACTER, METALLIC OR OTHERWISE, WHETHER OR NOT PRESENTLY KNOWN TO SCIENCE OR INDUSTRY, NOW KNOWN TO EXIST OR HEREAFTER DISCOVERED UPON, WITHIN OR UNDERLYING THE SURFACE OF SAID LAND REGARDLESS OF THE DEPTH BELOW THE SURFACE AT WHICH ANY SUCH SUBSTANCE MAY BE FOUND; HOWEVER, GRANTOR OR ITS SUCCESSORS AND ASSIGNS, SHALL NOT HAVE THE RIGHT FOR ANY PURPOSE WHATSOEVER TO ENTER UPON, INTO OR THROUGH THE SURFACE OF THE FIRST 100 FEET OF THE SUBSURFACE OF THE PROPERTY DESCRIBED HEREIN, AS RESERVED BY SF PACIFIC PROPERTIES INC., A DELAWARE CORPORATION IN DEED RECORDED NOVEMBER 30, 1992 IN BOOK 6769, PAGE 672 OF OFFICIAL RECORDS.

PARCEL 2:

THE EAST HALF OF THE NORTHWEST QUARTER OF SECTION 21, TOWNSHIP 9 NORTH, RANGE 13 WEST, S.B.B.M., IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL, BEING PARCEL 2 OF PARCEL MAP WAIVER NO. 7 -93, AS CONTAINED IN CERTIFICATE OF COMPLIANCE RECORDED OCTOBER 14, 1993 IN BOOK 6924, PAGE 2469 OF OFFICIAL RECORDS.

EXCEPTING THEREFROM ALL RIGHT, TITLE AND INTEREST IN AND TO ALL COAL, GAS AND OTHER HYDROCARBONS, GEOTHERMAL RESOURCES PRECIOUS METALS ORES, BASE METALS ORES, INDUSTRIAL-GRADE SILICATES AND CARBONATES, FISSIONABLE MINERALS OF EVERY KIND AND CHARACTER, METALLIC OR OTHERWISE, WHETHER OR NOT PRESENTLY KNOWN TO SCIENCE OR INDUSTRY, NOW KNOWN TO EXIST HEREAFTER DISCOVERED UPON, WITHIN OR UNDERLYING THE SURFACE OF SAID LAND REGARDLESS OF THE DEPTH BELOW THE SURFACE AT WHICH ANY SUCH SUBSTANCE MAY BE FOUND; HOWEVER, GRANTOR OR ITS SUCCESSORS AND ASSIGNS, SHALL NOT HAVE THE RIGHT FOR ANY PURPOSE WHATSOEVER TO ENTER UPON, INTO OR THROUGH THE SURFACE OR THE FIRST 100 FEET OF THE SUBSURFACE OF THE PROPERTY, DESCRIBED HEREIN, AS RESERVED BY SF PACIFIC PROPERTIES INC., A DELAWARE CORPORATION, IN DEED RECORDED OCTOBER 14, 1993 IN BOOK 6924, PAGE 2482 OF OFFICIAL RECORDS.

APPENDIX C: REGULATORY RECORDS DOCUMENTATION

Gettysburg Solar Site
Rosamond Blvd & 80th Street
Rosamond, CA 93560

Inquiry Number: 6099228.4s
June 22, 2020

The EDR Radius Map™ Report with GeoCheck®

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

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Detail Map	3
Map Findings Summary	4
Map Findings	9
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GEOCHECK ADDENDUM

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Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-11
Physical Setting Source Map Findings	A-13
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
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EXECUTIVE SUMMARY

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

TARGET PROPERTY INFORMATION

ADDRESS

ROSAMOND BLVD & 80TH STREET
ROSAMOND, CA 93560

COORDINATES

Latitude (North):	34.8602080 - 34° 51' 36.74''
Longitude (West):	118.2644830 - 118° 15' 52.13''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	384412.0
UTM Y (Meters):	3858072.8
Elevation:	2408 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5630793 LITTLE BUTTES, CA
Version Date:	2012
Northeast Map:	5630773 SOLEDAD MOUNTAIN, CA
Version Date:	2012
Southeast Map:	5630767 ROSAMOND, CA
Version Date:	2012
Northwest Map:	5630781 WILLOW SPRINGS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140705, 20140823, 20140515
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
ROSAMOND BLVD & 80TH STREET
ROSAMOND, CA 93560

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	SOLAR STAR 2	11936 ROSAMOND BLVD	CERS HAZ WASTE, NPDES, CIWQS, CERS		TP
A2	SOLAR STAR XX, LLC	AVENUE A AND ROSAMON	EMI		TP
A3	TRANSMISSION LINE FO	11936 ROSAMOND BLVD	CIWQS		TP
A4	SOLAR STAR 2	11936 ROSAMOND BLVD	FINDS		TP
A5	SOLAR STAR XX, LLC	AVENUE A AND ROSAMON	FINDS		TP
A6	SOLAR STAR 2	11936 ROSAMOND BLVD	FINDS		TP
7	WILLOW SPRINGS INTER	75TH STREET WEST AND	HIST UST	Higher	31, 0.006, North
B8	AMERICAN PERFORMANCE	7347 WEST ROSAMOND B	CERS HAZ WASTE, CERS	Lower	87, 0.016, NNE
B9	AMERICAN PERFORMANCE	7347 W ROSAMOND BLVD	RCRA NonGen / NLR	Lower	87, 0.016, NNE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
SOLAR STAR 2 11936 ROSAMOND BLVD ROSAMOND, CA 93560	CERS HAZ WASTE NPDES CIWQS CERS	N/A
SOLAR STAR XX, LLC AVENUE A AND ROSAMON ROSAMOND, CA 93560	EMI Facility Id: 5004	N/A
TRANSMISSION LINE FO 11936 ROSAMOND BLVD ROSAMOND, CA 93560	CIWQS	N/A
SOLAR STAR 2 11936 ROSAMOND BLVD ROSAMOND, CA 93560	FINDS Registry ID:: 110066555864	N/A
SOLAR STAR XX, LLC AVENUE A AND ROSAMON ROSAMOND, CA 93560	FINDS Registry ID:: 110070521182	N/A
SOLAR STAR 2 11936 ROSAMOND BLVD ROSAMOND, CA 93560	FINDS Registry ID:: 110057113083	N/A

DATABASES WITH NO MAPPED SITES

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL---------- National Priority List

EXECUTIVE SUMMARY

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

Federal Delisted NPL site list

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

Federal CERCLIS list

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

Federal CERCLIS NFRAP site list

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

Federal RCRA CORRACTS facilities list

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

Federal RCRA non-CORRACTS TSD facilities list

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

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

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

Federal ERNS list

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

State- and tribal - equivalent NPL

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

State- and tribal - equivalent CERCLIS

ENVIROSTOR ---------- EnviroStor Database

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

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

State and tribal leaking storage tank lists

LUST ---------- Geotracker’s Leaking Underground Fuel Tank Report

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

State and tribal registered storage tank lists

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

State and tribal voluntary cleanup sites

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

State and tribal Brownfields sites

BROWNFIELDS ---- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

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

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register
PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ---- SWEEPS UST Listing
CERS TANKS ---- California Environmental Reporting System (CERS) Tanks
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
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing

HAZNET Facility and Manifest Data
ICE ICE
HIST CORTESE Hazardous Waste & Substance Site List
HWP EnviroStor Permitted Facilities Listing
HWT Registered Hazardous Waste Transporter Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program 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
NON-CASE INFO NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ Well Stimulation Project (GEOTRACKER)
MINES MRDS Mineral Resources Data System
HWTS Hazardous Waste Tracking System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

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

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

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

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

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

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

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 01/21/2020 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
AMERICAN PERFORMANCE	***7347 WEST ROSAMOND B***	***NNE 0 - 1/8 (0.016 mi.)***	***B8***	***19***

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

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

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WILLOW SPRINGS INTER Facility Id: 00000046978	75TH STREET WEST AND	N 0 - 1/8 (0.006 mi.)	7	18

Other Ascertainable Records

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

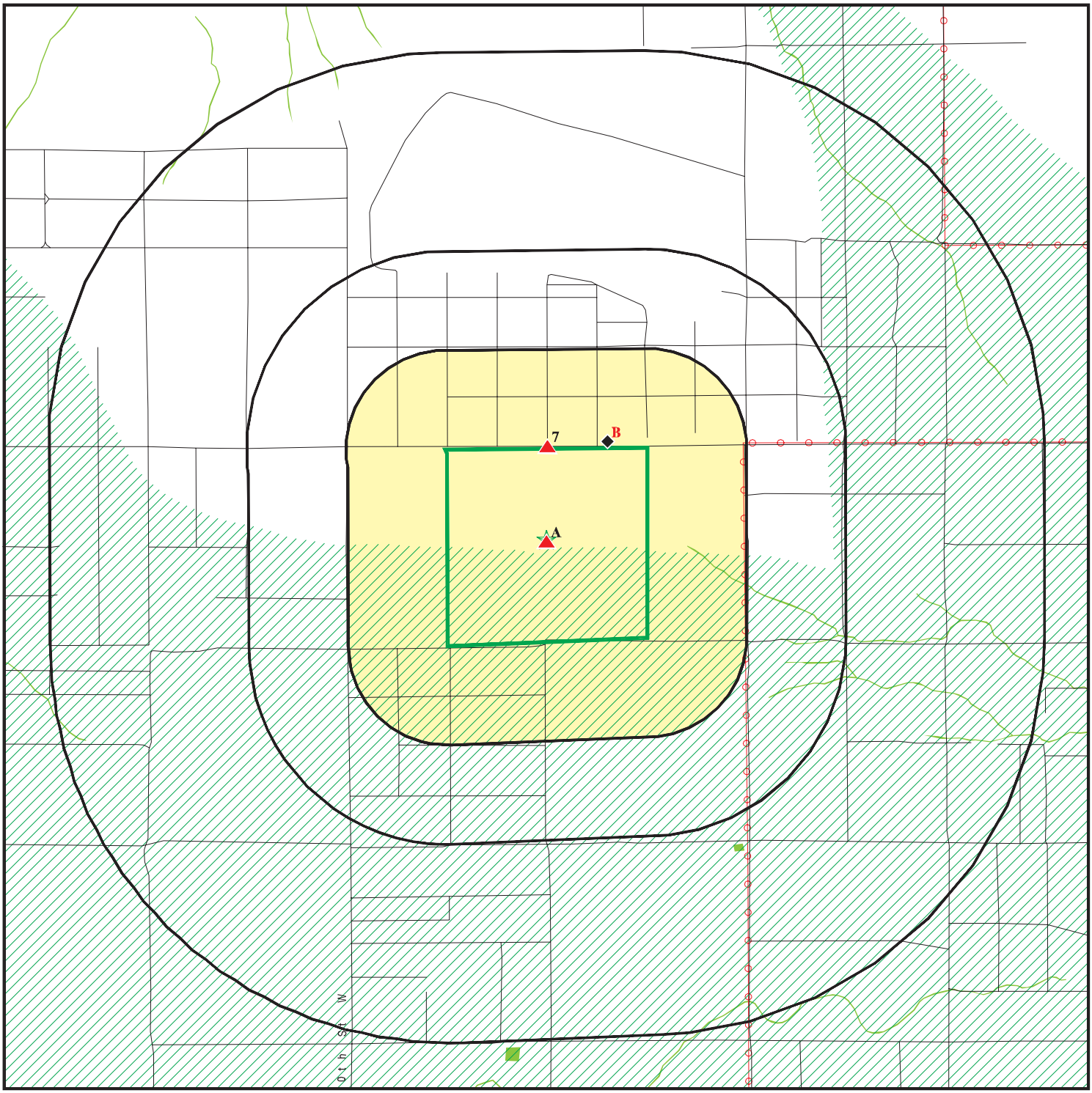
A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/23/2020 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
AMERICAN PERFORMANCE EPA ID:: CAL000311493	7347 W ROSAMOND BLVD	NNE 0 - 1/8 (0.016 mi.)	B9	23

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 6099228.4S



0 1/4 1/2 1 Miles

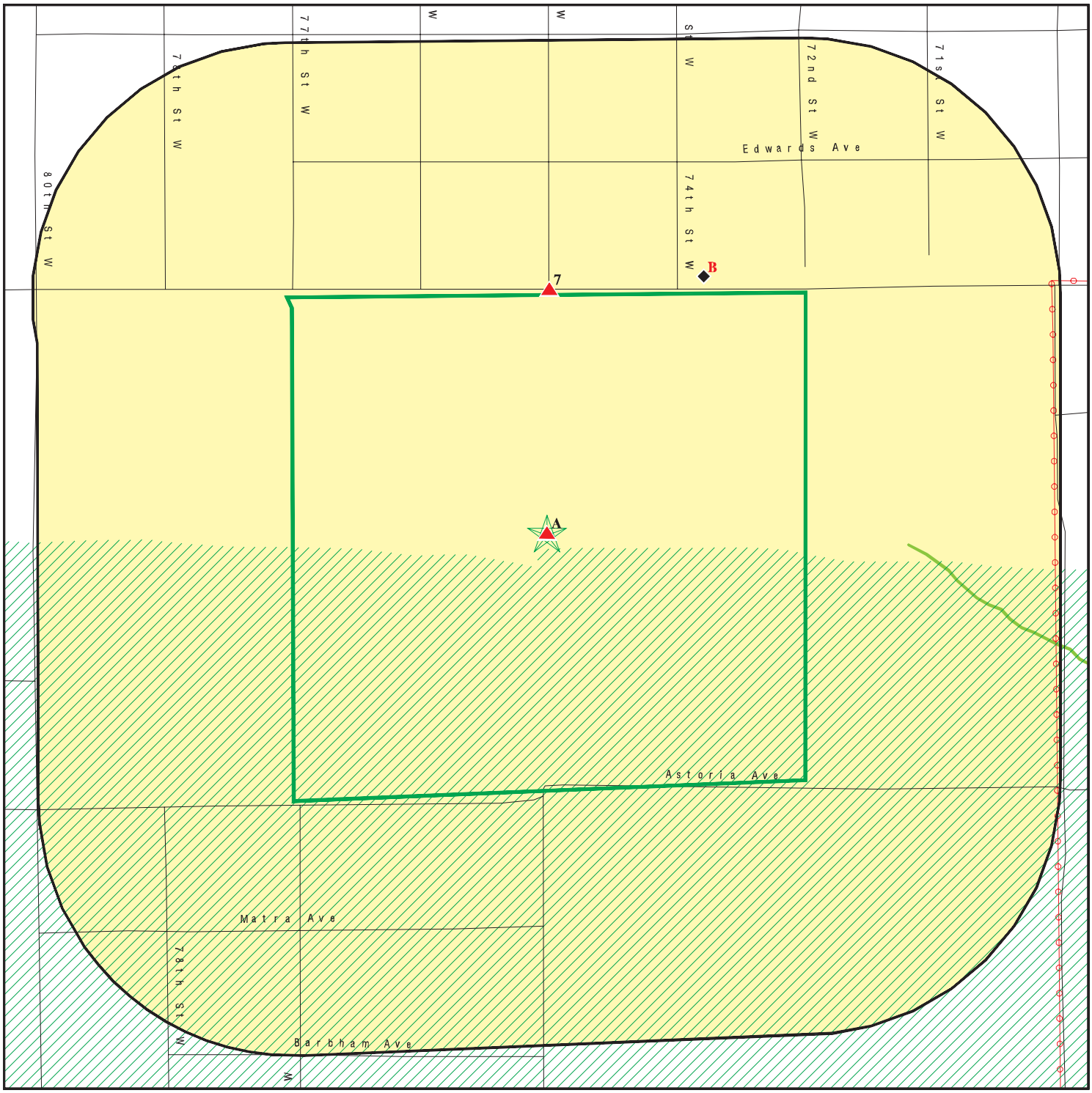
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)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

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

SITE NAME:	Gettysburg Solar Site	CLIENT:	Trinity Consultants
ADDRESS:	Rosamond Blvd & 80th Street Rosamond CA 93560	CONTACT:	Dolores Gough
LAT/LONG:	34.860208 / 118.264483	INQUIRY #:	6099228.4s
		DATE:	June 22, 2020 5:15 pm

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DETAIL MAP - 6099228.4S



- 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
- National Wetland Inventory
- State Wetlands
- Areas of Concern

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

SITE NAME:	Gettysburg Solar Site	CLIENT:	Trinity Consultants
ADDRESS:	Rosamond Blvd & 80th Street Rosamond CA 93560	CONTACT:	Dolores Gough
LAT/LONG:	34.860208 / 118.264483	INQUIRY #:	6099228.4s
		DATE:	June 22, 2020 5:16 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	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
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250	1	1	0	NR	NR	NR	2
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
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		1	0	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	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	3	0	NR	NR	NR	NR	3
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001	1	0	NR	NR	NR	NR	1
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	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001	1	0	NR	NR	NR	NR	1
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	2	0	NR	NR	NR	NR	2
CERS	0.001	1	0	NR	NR	NR	NR	1
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		9	3	0	0	0	0	12

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **SOLAR STAR 2** **CERS HAZ WASTE** **S112241618**
Target **11936 ROSAMOND BLVD** **NPDES** **N/A**
Property **ROSAMOND, CA 93560** **CIWQS**
CERS

Site 1 of 6 in cluster A

Actual:
2408 ft.

CERS HAZ WASTE:

Name:	SOLAR STAR 2
Address:	11936 ROSAMOND BLVD
City,State,Zip:	ROSAMOND, CA 93560
Site ID:	402449
CERS ID:	10458601
CERS Description:	Hazardous Waste Generator

NPDES:

Name:	TRANSMISSION LINE FOR SOLAR STAR 2 LRP SOLAR STAR 20
Address:	11936 ROSAMOND AVE
City,State,Zip:	ROSAMOND, CA 93560
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:	6B15C369986
Regulatory Measure Type:	Construction
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:	Terminated
Status Date:	02/20/2015
Operator Name:	Solar Star XX
Operator Address:	1850 N Central Avenue
Operator City:	Phoenix
Operator State:	Arizona
Operator Zip:	85004

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	6B
Regulatory Measure ID:	446257
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	6B15C369986
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

SOLAR STAR 2 (Continued) **S112241618**

Termination Date Of Regulatory Measure:	02/12/2015
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/27/2014
Processed Date:	06/12/2014
Status:	Terminated
Status Date:	02/20/2015
Place Size:	54
Place Size Unit:	Acres
Contact:	Jon Bortle
Contact Title:	Not reported
Contact Phone:	928-699-2090
Contact Phone Ext:	Not reported
Contact Email:	jonathan.bortle@sunpower.com
Operator Name:	Solar Star XX
Operator Address:	1850 N Central Avenue
Operator City:	Phoenix
Operator State:	Arizona
Operator Zip:	85004
Operator Contact:	Joe Bannon
Operator Contact Title:	Not reported
Operator Contact Phone:	661-749-0932
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jbannon@bherenewables.com
Operator Type:	Private Business
Developer:	SunPower Corporation Systems
Developer Address:	1414 Harbour S
Developer City:	Richmond
Developer State:	California
Developer Zip:	94709
Developer Contact:	Jon Bortle
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Y
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Y
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	Y
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Not reported
Constype Other Ind:	N
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Not reported
Certifier:	Joe Bannon

SOLAR STAR 2 (Continued) **S112241618**

Certifier Title:	Manager Project Administration
Certification Date:	27-MAY-14
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Name:	SOLAR STAR 2
Address:	11936 ROSAMOND BLVD
City,State,Zip:	ROSAMOND, CA 93560
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:	6B15C369826
Regulatory Measure Type:	Construction
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:	Terminated
Status Date:	02/20/2015
Operator Name:	Solar Star XX
Operator Address:	1850 N Central Avenue
Operator City:	Phoenix
Operator State:	Arizona
Operator Zip:	85004

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	6B
Regulatory Measure ID:	445292
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	6B15C369826
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:	02/12/2015
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	04/23/2014

SOLAR STAR 2 (Continued) **S112241618**

Processed Date:	05/23/2014
Status:	Terminated
Status Date:	02/20/2015
Place Size:	1480
Place Size Unit:	Acres
Contact:	Jon Bortle
Contact Title:	Permit Compliance Lead
Contact Phone:	928-699-2090
Contact Phone Ext:	Not reported
Contact Email:	jonathan.bortle@sunpower.com
Operator Name:	Solar Star XX
Operator Address:	1850 N Central Avenue
Operator City:	Phoenix
Operator State:	Arizona
Operator Zip:	85004
Operator Contact:	Joe Bannon
Operator Contact Title:	Not reported
Operator Contact Phone:	661-749-0932
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jbannon@bherenewables.com
Operator Type:	Private Business
Developer:	SunPower Corporation Systems
Developer Address:	1414 Harbour Way S
Developer City:	Richmond
Developer State:	California
Developer Zip:	94709
Developer Contact:	Jon Bortle
Developer Contact Title:	Permit Compliance Lead
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Not reported
Constype Other Ind:	N
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Solar Energy
Constype Utility Ind:	Y
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Not reported
Certifier:	Joe Bannon
Certifier Title:	Manager Project Administration
Certification Date:	23-APR-14
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

SOLAR STAR 2 (Continued) **S112241618**

CIWQS:

Name:	AVSP2 PHASES 2A TO 2L AND 3A LRP SOLAR STAR 20
Address:	11936 ROSAMOND BLVD
City,State,Zip:	ROSAMOND, CA 93560
Agency:	SunPower Corporation Systems
Agency Address:	1414 Harbour Way S, Richmond, CA 94709
Place/Project Type:	Construction - Utility: Solar Energy
SIC/NAICS:	Not reported
Region:	6V
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	6B15C364637
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	09/21/2012
Termination Date:	06/05/2014
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:	34.83353
Longitude:	-118.4024

Name:	SOLAR STAR 2
Address:	11936 ROSAMOND BLVD
City,State,Zip:	ROSAMOND, CA 93560
Agency:	Solar Star XX
Agency Address:	1850 N Central Avenue 1025, Phoenix, AZ 85004
Place/Project Type:	Construction - Utility: Solar Energy
SIC/NAICS:	Not reported
Region:	6V
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	6B15C369826
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	05/23/2014
Termination Date:	02/12/2015
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:	34.83353
Longitude:	-118.4024

Name:	TRANSMISSION LINE FOR SOLAR STAR 2 LRP SOLAR STAR 20
Address:	11936 ROSAMOND AVE

SOLAR STAR 2 (Continued) **S112241618**

City,State,Zip:	ROSAMOND, CA 93560
Agency:	Solar Star XX
Agency Address:	1850 N Central Avenue 1025, Phoenix, AZ 85004
Place/Project Type:	Construction - Above Ground, Electrical
SIC/NAICS:	Not reported
Region:	6V
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	6B15C369986
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	06/12/2014
Termination Date:	02/12/2015
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:	34.84825
Longitude:	-118.43202

CERS:

Name:	SOLAR STAR 2
Address:	11936 ROSAMOND BLVD
City,State,Zip:	ROSAMOND, CA 93560
Site ID:	402449
CERS ID:	10458601
CERS Description:	Chemical Storage Facilities

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-14-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Please add a NFPA placard for Diesel on the backup generator as well as a "No smoking" sign.
Eval Division:	Kern County Env Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-13-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Kern County Env Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Affiliation:

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported

SOLAR STAR 2 (Continued) **S112241618**

Affiliation Address:	11936 Rosamond Blvd
Affiliation City:	Rosamond
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93560
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	SunPower 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:	(661) 256-2246
Affiliation Type Desc:	Legal Owner
Entity Name:	Solar Star California XX, LLC
Entity Title:	Not reported
Affiliation Address:	11936 Rosamond Blvd
Affiliation City:	Rosamond
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93560
Affiliation Phone:	(661) 256-2246
Affiliation Type Desc:	Property Owner
Entity Name:	Solar Star California XX, LLC
Entity Title:	Not reported
Affiliation Address:	11936 Rosamond Blvd
Affiliation City:	Rosamond
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93560
Affiliation Phone:	(661) 256-2246
Affiliation Type Desc:	Environmental Contact
Entity Name:	Joe Bannon
Entity Title:	Not reported
Affiliation Address:	11936 Rosamond Blvd
Affiliation City:	Rosamond
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93560
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	Joe Bannon
Entity Title:	Joe Bannon
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

SOLAR STAR 2 (Continued) **S112241618**

Affiliation Type Desc:	CUPA District
Entity Name:	Kern County Environmental Health Services Departme
Entity Title:	Not reported
Affiliation Address:	2700 M Street, Suite 300
Affiliation City:	Bakersfield
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93301-2370
Affiliation Phone:	(661) 862-8740

Affiliation Type Desc:	Document Preparer
Entity Name:	Joe Bannon
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:	Parent Corporation
Entity Name:	Solar Star California XX, LLC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

A2 **SOLAR STAR XX, LLC** **EMI** **S124455231**
Target **AVENUE A AND ROSAMOND BLVD.** **N/A**
Property **ROSAMOND, CA 93560**

Site 2 of 6 in cluster A

Actual:
2408 ft.

EMI:

Name:	SOLAR STAR XX, LLC
Address:	AVENUE A AND ROSAMOND BLVD.
City,State,Zip:	ROSAMOND, CA 93560
Year:	2017
County Code:	15
Air Basin:	MD
Facility ID:	5004
Air District Name:	KER
SIC Code:	4911
Air District Name:	EASTERN KERN APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.00067653276956
Reactive Organic Gases Tons/Yr:	0.00064
Carbon Monoxide Emissions Tons/Yr:	0.01183
NOX - Oxides of Nitrogen Tons/Yr:	0.00895
SOX - Oxides of Sulphur Tons/Yr:	1e-005
Particulate Matter Tons/Yr:	5.8976925436
Part. Matter 10 Micrometers and Smllr Tons/Yr:	3.38548

A3 **TRANSMISSION LINE FOR AVSP2 LRP SOLAR STAR 20** **CIWQS** **S112242125**
Target **11936 ROSAMOND BLVD** **N/A**
Property **ROSAMOND, CA 93560**

Site 3 of 6 in cluster A

Actual: **2408 ft.**

CIWQS:

Name:	TRANSMISSION LINE FOR AVSP2 LRP SOLAR STAR 20
Address:	11936 ROSAMOND BLVD
City,State,Zip:	ROSAMOND, CA 93560
Agency:	SunPower Corporation Systems
Agency Address:	1414 Harbour Way S, Richmond, CA 94709
Place/Project Type:	Construction - Above Ground, Electrical
SIC/NAICS:	Not reported
Region:	6V
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	6B15C364635
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	09/21/2012
Termination Date:	07/11/2014
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:	34.84825
Longitude:	-118.43202

A4 **SOLAR STAR 2** **FINDS** **1023358596**
Target **11936 ROSAMOND BLVD** **N/A**
Property **ROSAMOND, CA 93560**

Site 4 of 6 in cluster A

Actual: **2408 ft.**

FINDS:

Registry ID:	110066555864
Facility URL:	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066555864

Environmental Interest/Information System:
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A5
Target Property
Actual: 2408 ft.

SOLAR STAR XX, LLC
AVENUE A AND ROSAMOND BLVD.
ROSAMOND, CA 93560

FINDS **1025450642**
N/A

Site 5 of 6 in cluster A

FINDS:
Registry ID: 110070521182
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070521182

Environmental Interest/Information System:
AIR EMISSIONS CLASSIFICATION UNKNOWN

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A6
Target Property
Actual: 2408 ft.

SOLAR STAR 2
11936 ROSAMOND BLVD
ROSAMOND, CA 93560

FINDS **1016718057**
N/A

Site 6 of 6 in cluster A

FINDS:
Registry ID: 110057113083
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110057113083

Environmental Interest/Information System:
ELECTRIC GENERATOR

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

7
North
< 1/8
0.006 mi.
31 ft.

Relative: Higher
Actual: 2411 ft.

WILLOW SPRINGS INTERNATIONAL R
75TH STREET WEST AND ROSAMOND
ROSAMOND, CA 93560

HIST UST **U001587142**
N/A

HIST UST:
Name: WILLOW SPRINGS INTERNATIONAL R
Address: 75TH STREET WEST AND ROSAMOND
City,State,Zip: ROSAMOND, CA 93560
File Number: 000274F4
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000274F4.pdf
Region: STATE
Facility ID: 00000046978
Facility Type: Other
Other Type: RACE TRACK
Contact Name: BOBBIE COOPER
Telephone: 8052562471
Owner Name: DAECO FUELS AND ENGINEERING CO
Owner Address: 201 WEST "D" STREET
Owner City,St,Zip: WILMINGTON, CA 90744
Total Tanks: 0001

Tank Num: 001
Container Num: 2
Year Installed: 1983
Tank Capacity: 00010000

WILLOW SPRINGS INTERNATIONAL R (Continued) **U001587142**

Tank Used for: PRODUCT
Type of Fuel: 06
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

B8 **AMERICAN PERFORMANCE ENGINEERING** **CERS HAZ WASTE** **S123535974**
NNE **7347 WEST ROSAMOND BLVD** **CERS** **N/A**
< 1/8 **ROSAMOND, CA 93560**
0.016 mi.
87 ft. **Site 1 of 2 in cluster B**

Relative:
Lower

Actual:
2406 ft.

CERS HAZ WASTE:
Name: AMERICAN PERFORMANCE ENGINEERING
Address: 7347 WEST ROSAMOND BLVD
City,State,Zip: ROSAMOND, CA 93560
Site ID: 91697
CERS ID: 10236838
CERS Description: Hazardous Waste Generator

CERS:
Name: AMERICAN PERFORMANCE ENGINEERING
Address: 7347 WEST ROSAMOND BLVD
City,State,Zip: ROSAMOND, CA 93560
Site ID: 91697
CERS ID: 10236838
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 91697
Site Name: AMERICAN PERFORMANCE ENGINEERING
Violation Date: 03-31-2015
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Notes: Returned to compliance on 04/06/2015. The operator has not submitted a Site Map in CERS. Please submit a Site Map in CERS.
Violation Division: Kern County Env Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Site ID: 91697
Site Name: AMERICAN PERFORMANCE ENGINEERING
Violation Date: 03-31-2015
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
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 03/31/2015. The operator has not submitted a complete Emergency Response Plan in CERS. The operator completed the form and submitted in CERS. Violation corrected on site. No further action required.
Violation Division: Kern County Env Health Services Department
Violation Program: HMRRP
Violation Source: CERS

AMERICAN PERFORMANCE ENGINEERING (Continued) **S123535974**

Site ID:	91697
Site Name:	AMERICAN PERFORMANCE ENGINEERING
Violation Date:	03-31-2015
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes:	Returned to compliance on 03/31/2015. The hazardous materials inventory previously submitted in CERS was incorrect. The operator revised the inventory and submitted in CERS. Violation corrected on site. No further action required.
Violation Division:	Kern County Env Health Services Department
Violation Program:	HMRRP
Violation Source:	CERS

Site ID:	91697
Site Name:	AMERICAN PERFORMANCE ENGINEERING
Violation Date:	03-31-2015
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to establish and electronically submit an adequate training program in safety procedures in the event of a release or threatened release of a hazardous material.
Violation Notes:	Returned to compliance on 03/31/2015. The operator had not submitted an Employee Training Plan in CERS. The operator completed an Employee Training Plan and submitted in CERS. Violation corrected on site. No further action required.
Violation Division:	Kern County Env Health Services Department
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-06-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Kern County Env Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-31-2015
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Kern County Env Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	03-31-2015
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Drive time back from Rosamond.
Eval Division:	Kern County Env Health Services Department

AMERICAN PERFORMANCE ENGINEERING (Continued) **S123535974**

Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-06-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Kern County Env Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-31-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Kern County Env Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: The operator has completed the submittal process in the California Environmental Reporting System (CERS).
Eval Division: Kern County Env Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 91697
Site Name: AMERICAN PERFORMANCE ENGINEERING
Site Address: 7347 WEST ROSAMOND BLVD
Site City: ROSAMOND
Site Zip: 93560
Enf Action Date: 03-31-2015
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: Kern County Env Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Kern County Environmental Health Services Departme
Entity Title: Not reported
Affiliation Address: 2700 M Street, Suite 300
Affiliation City: Bakersfield
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93301-2370
Affiliation Phone: (661) 862-8740

AMERICAN PERFORMANCE ENGINEERING (Continued) **S123535974**

Affiliation Type Desc:	Document Preparer
Entity Name:	Dianne Eshbach
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:	PO BOX 749
Affiliation City:	TEHACHAPI
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93581
Affiliation Phone:	Not reported

Affiliation Type Desc:	Property Owner
Entity Name:	Jay & Dianne Eshbach
Entity Title:	Not reported
Affiliation Address:	PO Box 749
Affiliation City:	Tehachapi
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93581
Affiliation Phone:	(661) 822-0848

Affiliation Type Desc:	Identification Signer
Entity Name:	Dianne Eshbach
Entity Title:	CFO
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:	JAY AND DIANNE ESHBACH
Entity Title:	Not reported
Affiliation Address:	PO BOX 749
Affiliation City:	TEHACHAPI
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93581-0749
Affiliation Phone:	(661) 822-0848

Affiliation Type Desc:	Parent Corporation
Entity Name:	AMERICAN PERFORMANCE ENGINEERING
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported

AMERICAN PERFORMANCE ENGINEERING (Continued) **S123535974**

Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	DIANNE ESHBACH
Entity Title:	Not reported
Affiliation Address:	P O BOX 749
Affiliation City:	TEHACHAPI
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93581-0749
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	JAY AND DIANNE ESHBACH
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:	(661) 822-0848

B9 **AMERICAN PERFORMANCE ENGINEERING** **RCRA NonGen / NLR** **1024815005**
NNE **7347 W ROSAMOND BLVD** **CAL000311493**
< 1/8 **ROSAMOND, CA 93560**
0.016 mi.
87 ft. **Site 2 of 2 in cluster B**

Relative: **Lower**

Actual: **2406 ft.**

RCRA NonGen / NLR:

Date form received by agency:	2006-09-13 00:00:00.0
Facility name:	AMERICAN PERFORMANCE ENGINEERING
Facility address:	7347 W ROSAMOND BLVD ROSAMOND, CA 93560
EPA ID:	CAL000311493
Contact:	JAY OR DIANNE ESHBACH
Contact address:	PO BOX 749 TEHACHAPI, CA 93581
Contact country:	Not reported
Contact telephone:	661-256-7309
Contact email:	DIANNE@APERACEPARTS.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	JAY OR DIANNE ESHBACH
Owner/operator address:	PO BOX 749 TEHACHAPI, CA 93581
Owner/operator country:	Not reported
Owner/operator telephone:	661-256-7309
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator

AMERICAN PERFORMANCE ENGINEERING (Continued) **1024815005**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: AMERICAN PERFORMANCE ENGINEERIN INC
Owner/operator address: PO BOX 749
TEHACHAPI, CA 93581
Owner/operator country: Not reported
Owner/operator telephone: 661-822-0848
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

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

Violation Status: No violations found

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/03/2020
Next Scheduled EDR Contact: 07/13/2020
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: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

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

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
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: 05/15/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 30

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/24/2020
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: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
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: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/22/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 86

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/24/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/27/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/28/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

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

Date of Government Version: 01/27/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/28/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Quarterly

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

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/10/2020
Date Data Arrived at EDR: 02/11/2020
Date Made Active in Reports: 04/20/2020
Number of Days to Update: 69

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/12/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

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

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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 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 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 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 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 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 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

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
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: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 12/17/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
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: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
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: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 1
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 02/01/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/19/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 71

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 03/09/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/26/2020
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
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: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
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: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/27/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/28/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/05/2020
Number of Days to Update: 73

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/24/2020
Next Scheduled EDR Contact: 07/06/2020
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: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/28/2020
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: 04/16/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/15/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 69

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/06/2020
Next Scheduled EDR Contact: 08/24/2020
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: 04/16/2020
Next Scheduled EDR Contact: 08/10/2020
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: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 05/01/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 09/07/2020
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: 01/27/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/28/2020
Next Scheduled EDR Contact: 08/10/2020
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: 12/31/2018
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

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

Date of Government Version: 01/21/2020
Date Data Arrived at EDR: 01/22/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 70

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 04/21/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

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

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/19/2019
Date Data Arrived at EDR: 12/23/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 60

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/11/2019
Number of Days to Update: 70

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

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: 01/21/2020
Date Data Arrived at EDR: 01/22/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 70

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/21/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Quarterly

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

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: 03/03/2020
Date Data Arrived at EDR: 03/05/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
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: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/13/2020
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: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
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: 02/27/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 86

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/24/2020
Next Scheduled EDR Contact: 07/06/2020
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: 12/24/2019
Date Data Arrived at EDR: 01/22/2020
Date Made Active in Reports: 03/30/2020
Number of Days to Update: 68

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/21/2020
Next Scheduled EDR Contact: 08/03/2020
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: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 1

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

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

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
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: 01/28/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 85

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/10/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/06/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/24/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/04/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/08/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 09/28/2020
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: 02/05/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 79

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/21/2020
Next Scheduled EDR Contact: 08/31/2020
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: 05/01/2019
Date Data Arrived at EDR: 10/23/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 84

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/21/2020
Next Scheduled EDR Contact: 08/03/2020
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: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/05/2019
Date Data Arrived at EDR: 11/20/2019
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 149

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/15/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/10/2020
Next Scheduled EDR Contact: 07/20/2020
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: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
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: 10/25/2019
Date Data Arrived at EDR: 10/25/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 82

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/10/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/05/2020
Next Scheduled EDR Contact: 09/14/2020
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: 06/01/2020
Next Scheduled EDR Contact: 09/14/2020
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: 05/08/2020
Next Scheduled EDR Contact: 08/17/2020
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: 07/01/2019
Next Scheduled EDR Contact: 07/13/2020
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: 04/28/2020
Next Scheduled EDR Contact: 08/10/2020
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: 12/31/2019
Date Data Arrived at EDR: 01/17/2020
Date Made Active in Reports: 03/06/2020
Number of Days to Update: 49

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/25/2020
Next Scheduled EDR Contact: 07/06/2020
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: 04/10/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/17/2020
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: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 07/13/2020
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: 03/31/2020
Date Data Arrived at EDR: 04/01/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 50

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
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: 02/11/2020
Date Data Arrived at EDR: 02/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 86

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/21/2020
Next Scheduled EDR Contact: 09/07/2020
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: 01/16/2018
Date Data Arrived at EDR: 02/28/2020
Date Made Active in Reports: 05/22/2020
Number of Days to Update: 84

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/07/2020
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: 05/21/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/05/2020
Date Data Arrived at EDR: 03/06/2020
Date Made Active in Reports: 05/29/2020
Number of Days to Update: 84

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/19/2020
Next Scheduled EDR Contact: 09/21/2020
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: 02/03/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 86

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/03/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 09/07/2020
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: 01/05/2020
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/06/2020
Number of Days to Update: 59
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/07/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 85
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/19/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/05/2020
Number of Days to Update: 73
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/24/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 02/03/2020
Date Data Arrived at EDR: 02/04/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 65

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
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: 02/27/2020
Date Data Arrived at EDR: 02/28/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 69

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
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: 12/04/2019
Date Data Arrived at EDR: 01/29/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 71

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/25/2020
Date Data Arrived at EDR: 03/26/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 81

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 59

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/16/2020
Next Scheduled EDR Contact: 09/28/2020
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: 04/03/2020
Date Data Arrived at EDR: 04/07/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 8

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/03/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 01/21/2020
Date Data Arrived at EDR: 01/23/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 02/19/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 54

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/15/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 65

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

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

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 65

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
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: 01/06/2020
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/05/2020
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 07/20/2020
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: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 02/12/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 72

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/10/2020
Date Data Arrived at EDR: 02/11/2020
Date Made Active in Reports: 04/20/2020
Number of Days to Update: 69

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/12/2020
Next Scheduled EDR Contact: 08/24/2020
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: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 72

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 03/12/2020
Date Data Arrived at EDR: 03/13/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 69

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
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: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/10/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
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: 01/21/2020
Date Data Arrived at EDR: 01/22/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 70

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/21/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System
The Hazardous Waste Tracking System (HWTS) is the Department of Toxic Substances Control?s data repository for hazardous waste Identification (ID) numbers and manifest information. HWTS generates reports on hazardous waste shipments for generators, transporters, and TSDFs.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 11/14/2019
Date Made Active in Reports: 02/07/2020
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
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: 06/08/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Semi-Annually

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: 05/21/2020
Next Scheduled EDR Contact: 09/07/2020
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: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
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: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/06/2020
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/06/2020
Number of Days to Update: 59

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/20/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/01/2020
Number of Days to Update: 13

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 03/27/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/04/2020
Date Made Active in Reports: 06/01/2020
Number of Days to Update: 89

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 04/06/2020
Next Scheduled EDR Contact: 08/17/2020
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: 02/14/2020
Date Data Arrived at EDR: 02/18/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 66

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/16/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 12/27/2019
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 72

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 04/16/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/03/2020
Date Made Active in Reports: 03/05/2020
Number of Days to Update: 62

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/06/2020
Next Scheduled EDR Contact: 08/10/2020
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: 01/10/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/31/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/19/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 26

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 01/21/2020
Date Data Arrived at EDR: 01/23/2020
Date Made Active in Reports: 03/30/2020
Number of Days to Update: 67

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 01/31/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
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: 02/13/2020
Date Data Arrived at EDR: 02/14/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 70

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 01/15/2020
Date Data Arrived at EDR: 01/16/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 76

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/13/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 01/31/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 69

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/26/2020
Date Data Arrived at EDR: 03/26/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 81

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 03/26/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/13/2020
Date Data Arrived at EDR: 01/14/2020
Date Made Active in Reports: 03/24/2020
Number of Days to Update: 70

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/14/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/02/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/27/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 04/17/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/27/2020
Next Scheduled EDR Contact: 07/06/2020
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/27/2020
Next Scheduled EDR Contact: 07/06/2020
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: 12/31/2019
Date Data Arrived at EDR: 01/14/2020
Date Made Active in Reports: 03/24/2020
Number of Days to Update: 70

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/14/2020
Next Scheduled EDR Contact: 07/27/2020
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: 04/02/2020
Next Scheduled EDR Contact: 07/27/2020
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: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 06/27/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 02/24/2020
Date Data Arrived at EDR: 02/25/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
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: 03/20/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/20/2019
Date Made Active in Reports: 01/03/2020
Number of Days to Update: 44

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/06/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/21/2020
Date Data Arrived at EDR: 03/05/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 69

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 11/06/2019
Date Data Arrived at EDR: 11/07/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 62

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 04/13/2020
Next Scheduled EDR Contact: 07/13/2020
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: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
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: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/05/2020
Date Data Arrived at EDR: 02/06/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 69

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/06/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/04/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/04/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 02/04/2020
Date Made Active in Reports: 04/10/2020
Number of Days to Update: 66

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/05/2020
Next Scheduled EDR Contact: 08/17/2020
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: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 03/10/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 70

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 02/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 03/10/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 70

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/31/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 78

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/31/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 02/12/2020
Date Data Arrived at EDR: 02/13/2020
Date Made Active in Reports: 04/23/2020
Number of Days to Update: 70

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
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: 02/25/2020
Date Data Arrived at EDR: 02/26/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 71

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
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: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 12/26/2019
Date Data Arrived at EDR: 01/22/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 70
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
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: 01/08/2020
Date Data Arrived at EDR: 01/09/2020
Date Made Active in Reports: 03/06/2020
Number of Days to Update: 57
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/12/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 09/21/2020
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: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 02/14/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 65

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
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: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 04/22/2020
Date Data Arrived at EDR: 04/24/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 13
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
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: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/26/2020
Next Scheduled EDR Contact: 09/13/2020
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/04/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 71
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/15/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 02/25/2020
Date Data Arrived at EDR: 02/26/2020
Date Made Active in Reports: 03/11/2020
Number of Days to Update: 14

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
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: 01/02/2020
Date Data Arrived at EDR: 01/03/2020
Date Made Active in Reports: 03/05/2020
Number of Days to Update: 62

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/04/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/02/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 01/23/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/08/2020
Number of Days to Update: 66

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 03/16/2020
Date Data Arrived at EDR: 03/17/2020
Date Made Active in Reports: 05/26/2020
Number of Days to Update: 70

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 01/21/2020
Date Data Arrived at EDR: 01/23/2020
Date Made Active in Reports: 03/30/2020
Number of Days to Update: 67

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 02/10/2020
Date Data Arrived at EDR: 02/11/2020
Date Made Active in Reports: 04/20/2020
Number of Days to Update: 69

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/09/2020
Next Scheduled EDR Contact: 08/03/2020
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: 12/26/2019
Date Data Arrived at EDR: 01/24/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 68

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/20/2020
Next Scheduled EDR Contact: 08/03/2020
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/20/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/24/2020
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: 12/26/2019
Date Data Arrived at EDR: 01/24/2020
Date Made Active in Reports: 04/01/2020
Number of Days to Update: 68
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/20/2020
Next Scheduled EDR Contact: 08/03/2020
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: 01/27/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 71
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
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: 03/23/2020
Date Data Arrived at EDR: 04/01/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 77
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/20/2020
Next Scheduled EDR Contact: 07/13/2020
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 01/27/2020
Date Data Arrived at EDR: 02/12/2020
Date Made Active in Reports: 04/23/2020
Number of Days to Update: 71
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 04/16/2020
Next Scheduled EDR Contact: 08/10/2020
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: 01/30/2020
Date Data Arrived at EDR: 01/30/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 39
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/12/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/10/2020
Next Scheduled EDR Contact: 07/20/2020
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 05/01/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 51

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/02/2020
Next Scheduled EDR Contact: 07/27/2020
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 12/10/2019
Number of Days to Update: 69

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/04/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

GETTYSBURG SOLAR SITE
ROSAMOND BLVD & 80TH STREET
ROSAMOND, CA 93560

TARGET PROPERTY COORDINATES

Latitude (North):	34.860208 - 34° 51' 36.75''
Longitude (West):	118.264483 - 118° 15' 52.14''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	384412.0
UTM Y (Meters):	3858072.8
Elevation:	2408 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5630793 LITTLE BUTTES, CA
Version Date:	2012
Northeast Map:	5630773 SOLEDAD MOUNTAIN, CA
Version Date:	2012
Southeast Map:	5630767 ROSAMOND, CA
Version Date:	2012
Northwest Map:	5630781 WILLOW SPRINGS, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

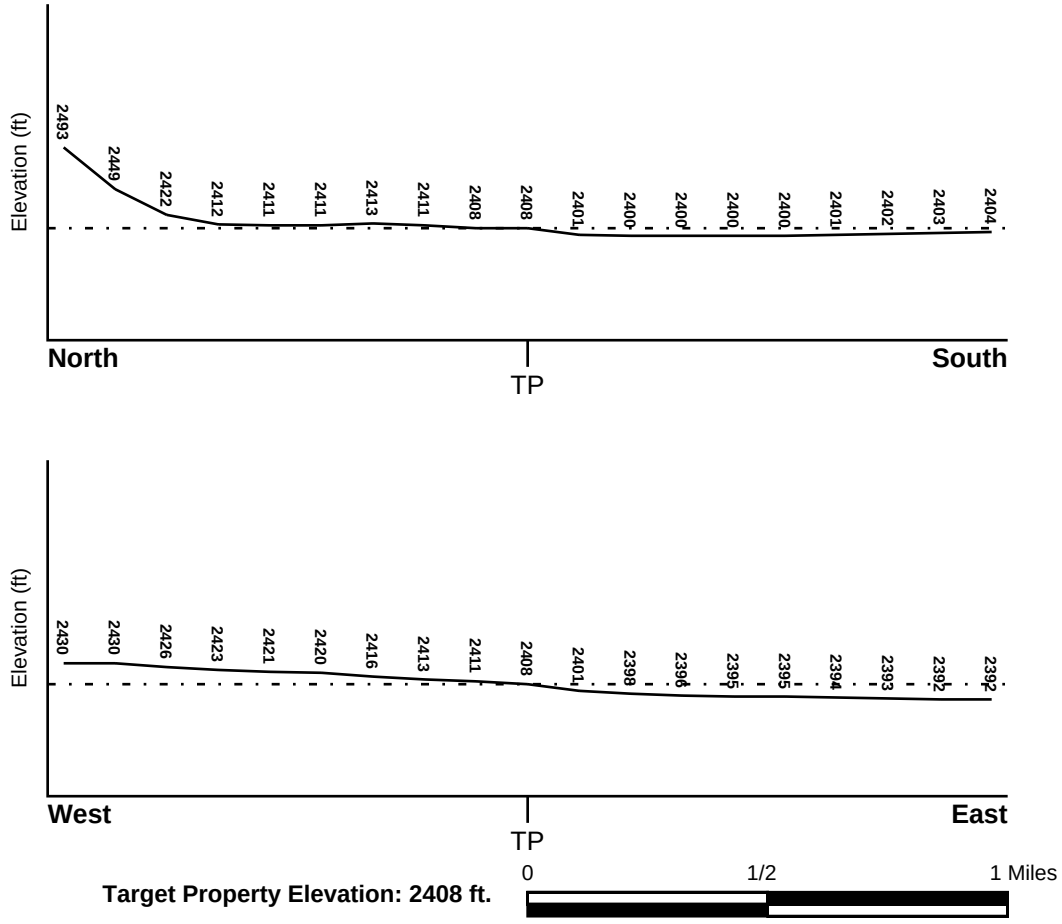
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06029C4000E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06029C4025E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LITTLE BUTTES	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

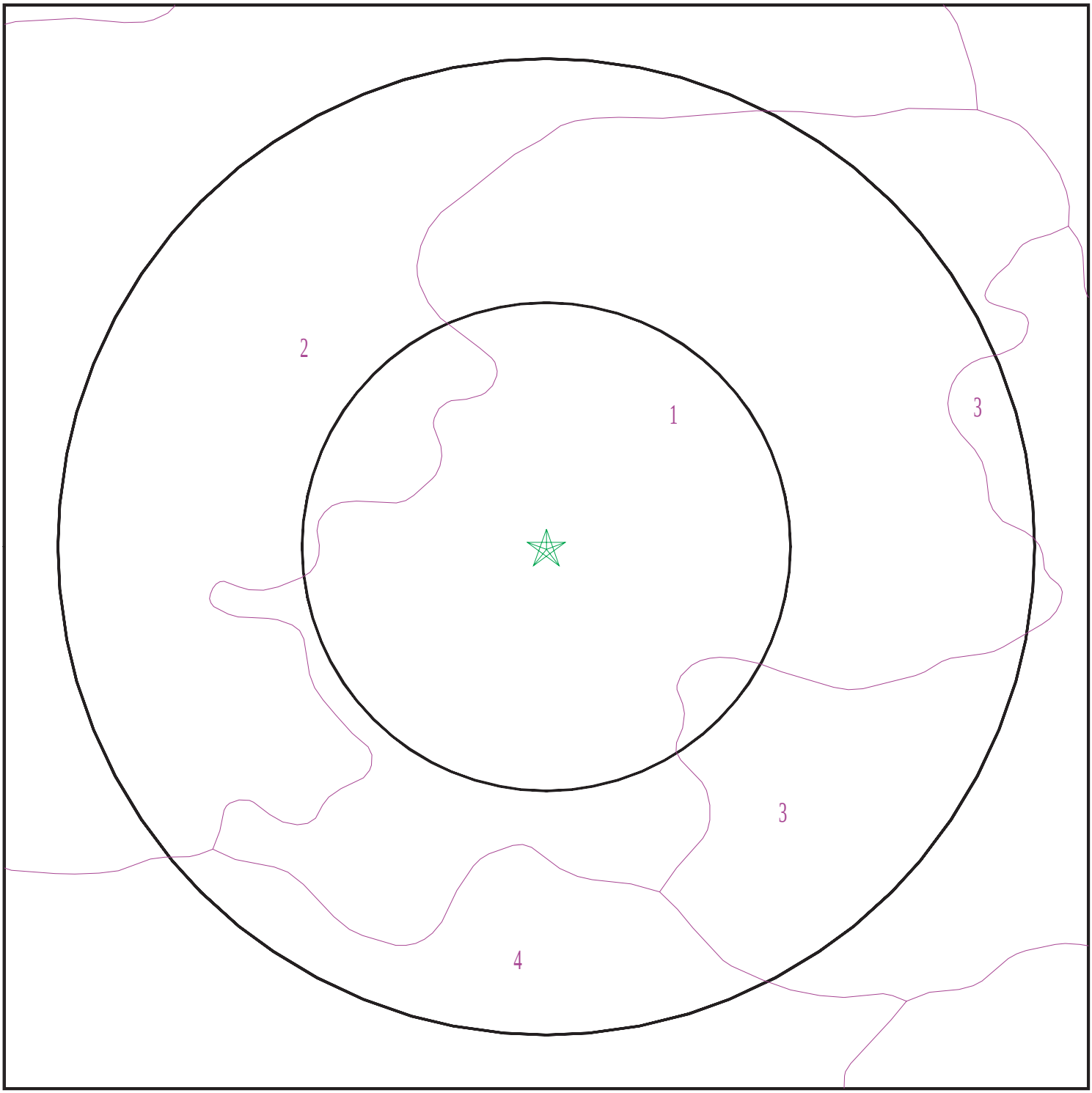
Era:	Cenozoic
System:	Tertiary
Series:	Miocene
Code:	Tmc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

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 - 6099228.4s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Gettysburg Solar Site	CLIENT:	Trinity Consultants
ADDRESS:	Rosamond Blvd & 80th Street Rosamond CA 93560	CONTACT:	Dolores Gough
LAT/LONG:	34.860208 / 118.264483	INQUIRY #:	6099228.4s
		DATE:	June 22, 2020 5:17 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Adelanto

Soil Surface Texture: coarse sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9
2	16 inches	40 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: 8.4 Min: 7.9
3	40 inches	79 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: 8.4 Min: 7.9

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	79 inches	85 inches	stratified loamy sand to coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: Adelanto

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 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: 42 Min: 14	Max: 8.4 Min: 7.9
2	16 inches	40 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	40 inches	79 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9
4	79 inches	85 inches	stratified loamy sand to coarse sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Rosamond

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	7 inches	59 inches	stratified loam to silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9

Soil Map ID: 4

Soil Component Name: Rosamond

Soil Surface Texture: silty clay 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: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	11 inches	59 inches	stratified loam to silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9

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
B3	USGS40000155780	1/4 - 1/2 Mile NE
B4	USGS40000155809	1/4 - 1/2 Mile NE
B6	USGS40000155779	1/4 - 1/2 Mile ENE
B7	USGS40000155808	1/4 - 1/2 Mile NE
C9	USGS40000155891	1/2 - 1 Mile WNW
D12	USGS40000155807	1/2 - 1 Mile ENE
E13	USGS40000155655	1/2 - 1 Mile WSW
F14	USGS40000155618	1/2 - 1 Mile WSW
15	USGS40000155791	1/2 - 1 Mile ENE
G18	USGS40000155493	1/2 - 1 Mile SW
H22	USGS40000155724	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

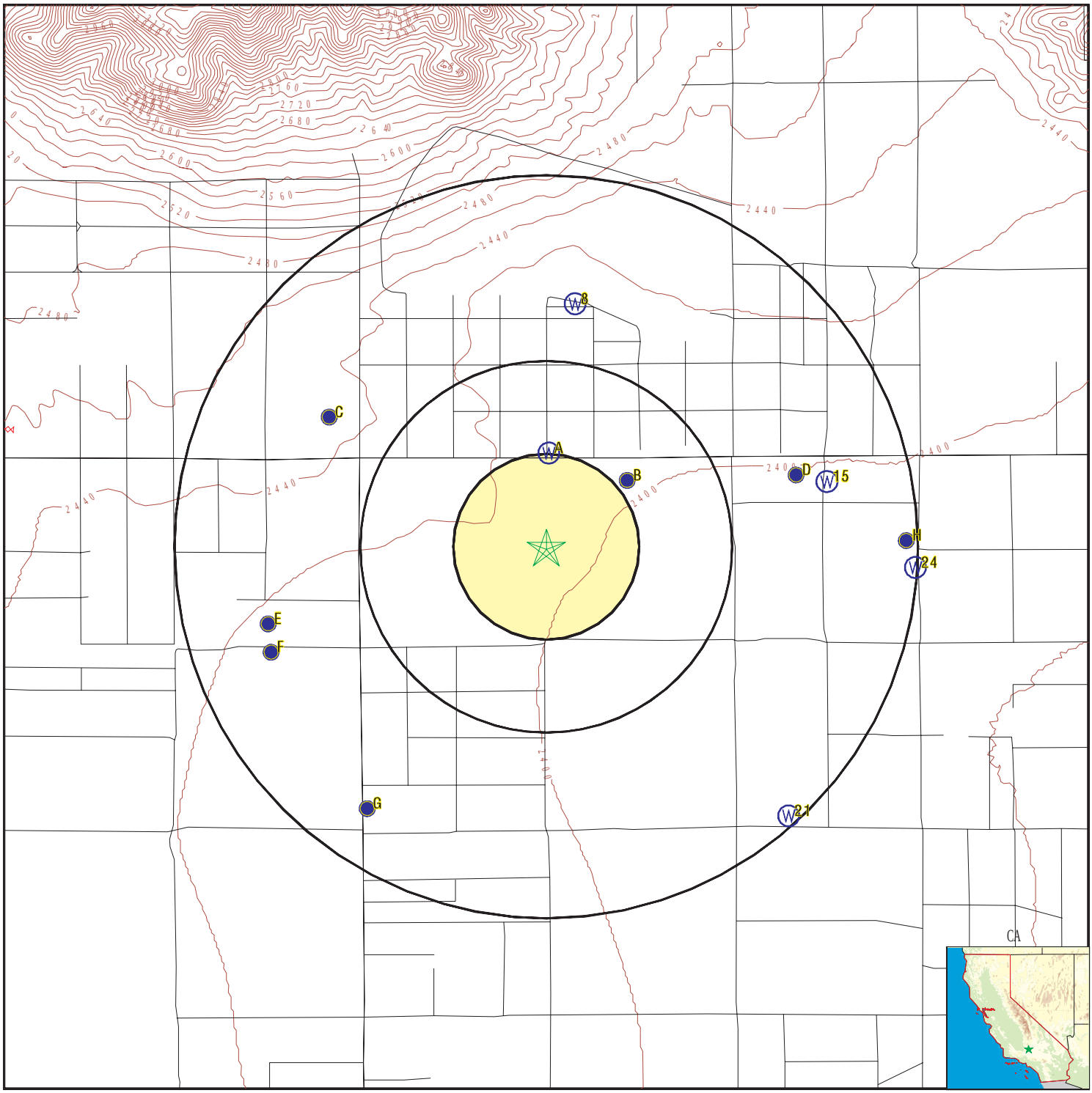
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	12391	1/4 - 1/2 Mile North
A2	12393	1/4 - 1/2 Mile North
B5	CADWR8000013695	1/4 - 1/2 Mile NE
8	12394	1/2 - 1 Mile North
D10	CADWR8000013694	1/2 - 1 Mile ENE
C11	CADWR8000013747	1/2 - 1 Mile WNW
E16	CADWR8000013618	1/2 - 1 Mile WSW
F17	CADWR8000013600	1/2 - 1 Mile WSW
G19	CADWR8000013529	1/2 - 1 Mile SW
H20	CADWR8000013651	1/2 - 1 Mile East
21	CADWR8000013526	1/2 - 1 Mile SE
H23	CADWR8000013656	1/2 - 1 Mile East
24	CADWR8000013640	1/2 - 1 Mile East

PHYSICAL SETTING SOURCE MAP - 6099228.4s



- 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:	Gettysburg Solar Site	CLIENT:	Trinity Consultants
ADDRESS:	Rosamond Blvd & 80th Street Rosamond CA 93560	CONTACT:	Dolores Gough
LAT/LONG:	34.860208 / 118.264483	INQUIRY #:	6099228.4s
		DATE:	June 22, 2020 5:17 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
North
1/4 - 1/2 Mile
Higher

CA WELLS **12391**

Seq:	12391	Prim sta c:	1502223-001
Frds no:	1502223001	County:	15
District:	12	User id:	CYA
System no:	1502223	Water type:	G
Source nam:	75TH/ROSAMOND WEST WELL	Station ty:	WELL/AMBNT
Latitude:	345150.0	Longitude:	1181549.0
Precision:	2	Status:	AU
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:	1502223	System nam:	Willow Springs Raceway
Hqname:	Not Reported	Address:	PO BOX X
City:	ROSAMOND	State:	CA
Zip:	93560	Zip ext:	Not Reported
Pop serv:	2800	Connection:	3
Area serve:	Not Reported		

A2
North
1/4 - 1/2 Mile
Higher

CA WELLS **12393**

Seq:	12393	Prim sta c:	1502223-003
Frds no:	1502223003	County:	15
District:	12	User id:	CYA
System no:	1502223	Water type:	G
Source nam:	75TH/ROSAMOND EAST WELL - INACTIVE	Station ty:	WELL/AMBNT
Latitude:	345150.0	Longitude:	1181548.0
Precision:	2	Status:	IU
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:	1502223	System nam:	Willow Springs Raceway
Hqname:	Not Reported	Address:	PO BOX X
City:	ROSAMOND	State:	CA
Zip:	93560	Zip ext:	Not Reported
Pop serv:	2800	Connection:	3
Area serve:	Not Reported		

B3
NE
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000155780**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W21B001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported

Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill 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:	260
Well Hole Depth Units:	ft		

B4
NE
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000155809**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W21B003S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	112
Well Depth Units:	ft	Well Hole Depth:	172
Well Hole Depth Units:	ft		

B5
NE
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000013695**

State Well #:	09N13W21A001S	Station ID:	12100
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

B6
ENE
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000155779**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W21B002S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	59
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B7
NE **FED USGS** **USGS40000155808**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W21A001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill 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:	185
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1963-03-06
Feet below surface:	129.41	Feet to sea level:	Not Reported
Note:	Not Reported		

8
North **CA WELLS** **12394**
1/2 - 1 Mile
Higher

Seq:	12394	Prim sta c:	1502223-004
Frds no:	1502223004	County:	15
District:	12	User id:	CYA
System no:	1502223	Water type:	G
Source nam:	HARTMAN WELL - INACTIVE	Station ty:	WELL/AMBNT
Latitude:	345211.0	Longitude:	1181544.0
Precision:	2	Status:	IU
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:	1502223	System nam:	Willow Springs Raceway
Hqname:	Not Reported	Address:	PO BOX X
City:	ROSAMOND	State:	CA
Zip:	93560	Zip ext:	Not Reported
Pop serv:	2800	Connection:	3
Area serve:	Not Reported		

C9
WNW **FED USGS** **USGS40000155891**
1/2 - 1 Mile
Higher

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W17R001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		

Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	200
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	16	Level reading date:	1985-03-27
Feet below surface:	Not Reported	Feet to sea level:	Not Reported
Note:	The measurement was discontinued.		

Level reading date:	1982-02-10	Feet below surface:	176.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-04-14	Feet below surface:	175.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-04-10	Feet below surface:	174.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-02-13	Feet below surface:	173.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-03-30	Feet below surface:	171.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-09	Feet below surface:	176.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-10	Feet below surface:	171.41
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-14	Feet below surface:	169.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-15	Feet below surface:	164.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-19	Feet below surface:	165.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-16	Feet below surface:	164.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-15	Feet below surface:	162.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-14	Feet below surface:	160.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-01	Feet below surface:	169.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-04-19	Feet below surface:	160.80
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D10
ENE
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000013694**

State Well #:	09N13W22C001S	Station ID:	12102
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

C11
WNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000013747**

State Well #:	09N13W17R001S	Station ID:	30900
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

D12
ENE
1/2 - 1 Mile
Lower

FED USGS **USGS40000155807**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W22C001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill 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:	168
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1963-04-23
Feet below surface:	126.69	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1960-08-09	Feet below surface:	159.00
Feet to sea level:	Not Reported	Note:	Not Reported

E13
WSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000155655**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W20H001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported

Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19201130	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	350
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	118	Level reading date:	1963-03-05
Feet below surface:	228.72	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1955-05-16	Feet below surface:	125.7
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1953-03-11	Feet below surface:	125.7
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1952-05-01	Feet below surface:	102.3
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1951-09-18	Feet below surface:	95.10
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1951-06-12	Feet below surface:	92.65
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1951-04-19	Feet below surface:	91.0
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1951-01-30	Feet below surface:	90.15
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1950-10-24	Feet below surface:	93.24
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1950-07-25	Feet below surface:	91.3
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1950-04-18	Feet below surface:	89.75
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1950-01-25	Feet below surface:	91.1
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1949-11-29	Feet below surface:	90.0
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1949-09-21	Feet below surface:	88.8
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1949-07-12	Feet below surface:	87.5
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1949-03-08	Feet below surface:	77.05
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1948-12-01	Feet below surface:	77.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1948-10-14	Feet below surface:	82.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1948-07-14	Feet below surface:	80.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1948-03-02	Feet below surface:	73.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1947-11-19	Feet below surface:	74.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1947-07-07	Feet below surface:	78.90
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		
Level reading date:	1947-03-09	Feet below surface:	65.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1947-02-13	Feet below surface:	66.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1947-01-02	Feet below surface:	68.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-11-01	Feet below surface:	71.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-10-17	Feet below surface:	71.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-09-05	Feet below surface:	70.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-07-03	Feet below surface:	69.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-04-05	Feet below surface:	67.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-01-07	Feet below surface:	66.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1946-01-03	Feet below surface:	66.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1945-11-07	Feet below surface:	67.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1945-10-02	Feet below surface:	71.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1945-06-28	Feet below surface:	70.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1945-03-12	Feet below surface:	64.35
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		

Level reading date:	1945-02-07	Feet below surface:	64.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1945-01-08	Feet below surface:	64.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1944-12-06	Feet below surface:	64.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1944-05-09	Feet below surface:	63.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1944-01-27	Feet below surface:	62.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-12-15	Feet below surface:	62.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-09-24	Feet below surface:	63.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-08-26	Feet below surface:	63.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-07-23	Feet below surface:	63.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-06-25	Feet below surface:	63.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-05-28	Feet below surface:	62.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-04-30	Feet below surface:	62.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-04-20	Feet below surface:	64.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-03-26	Feet below surface:	61.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-02-19	Feet below surface:	61.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-01-30	Feet below surface:	61.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-12-26	Feet below surface:	59.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-11-24	Feet below surface:	61.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-10-23	Feet below surface:	61.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-09-25	Feet below surface:	62.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-07-31	Feet below surface:	61.7
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1942-06-27	Feet below surface:	61.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-05-29	Feet below surface:	60.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-04-24	Feet below surface:	60.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-04-21	Feet below surface:	61.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-03-28	Feet below surface:	60.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-02-13	Feet below surface:	60.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-01-31	Feet below surface:	61.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-08-29	Feet below surface:	60.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-07-27	Feet below surface:	60.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-07-18	Feet below surface:	60.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-05-30	Feet below surface:	59.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-04-25	Feet below surface:	58.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-04-09	Feet below surface:	58.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1940-12-06	Feet below surface:	61.7
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		
Level reading date:	1940-03-13	Feet below surface:	57.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1939-11-17	Feet below surface:	57.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1938-05-23	Feet below surface:	58.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1938-03-08	Feet below surface:	55.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1937-11-10	Feet below surface:	55.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1937-04-22	Feet below surface:	54.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1937-01-08	Feet below surface:	52.9

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1936-04-16	Feet below surface:	53.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1935-12-13	Feet below surface:	52.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1935-05-01	Feet below surface:	52.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1935-01-08	Feet below surface:	51.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1934-04-19	Feet below surface:	53.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1933-12-20	Feet below surface:	50.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1933-04-13	Feet below surface:	52.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1932-12-29	Feet below surface:	49.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1932-04-07	Feet below surface:	52.1
Feet to sea level:	Not Reported		
Note:	A nearby site that taps the same aquifer was being pumped.		
Level reading date:	1931-12-16	Feet below surface:	48.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1930-04-17	Feet below surface:	45.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1929-12-28	Feet below surface:	44.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1929-12-05	Feet below surface:	44.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1929-04-25	Feet below surface:	44.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1928-11-18	Feet below surface:	43.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1928-04-26	Feet below surface:	43.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1927-10-27	Feet below surface:	42.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1927-05-09	Feet below surface:	43.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1927-01-19	Feet below surface:	40.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1926-10-15	Feet below surface:	42.2
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1926-08-20	Feet below surface:	42.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1926-05-13	Feet below surface:	40.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1926-01-09	Feet below surface:	38.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1925-07-21	Feet below surface:	41.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1925-05-08	Feet below surface:	40.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1925-05-05	Feet below surface:	40.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1925-02-10	Feet below surface:	37.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1924-12-31	Feet below surface:	37.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1924-10-23	Feet below surface:	38.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1924-07-04	Feet below surface:	40.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1924-04-13	Feet below surface:	40.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1923-08-08	Feet below surface:	40.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1923-07-10	Feet below surface:	40.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1923-04-30	Feet below surface:	40.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1922-10-17	Feet below surface:	38.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1922-05-24	Feet below surface:	36.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1922-04-29	Feet below surface:	35.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1922-01-01	Feet below surface:	36.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1921-10-03	Feet below surface:	37.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1921-05-30	Feet below surface:	37.1
Feet to sea level:	Not Reported	Note:	Not Reported

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F14
WSW
1/2 - 1 Mile
Higher | **FED USGS** | **USGS40000155618**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W20H002S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill 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		

Ground water levels,Number of Measurements:	5	Level reading date:	1946-01-03
Feet below surface:	66.81	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1944-12-06	Feet below surface:	65.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1943-12-15	Feet below surface:	63.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1942-04-21	Feet below surface:	61.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1941-12-03	Feet below surface:	59.4
Feet to sea level:	Not Reported	Note:	Not Reported

15
ENE
1/2 - 1 Mile
Lower | **FED USGS** | **USGS40000155791**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W22Z001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	18880101	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	35
Well Hole Depth Units:	ft		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E16
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000013618**

State Well #:	09N13W20H001S	Station ID:	12098
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

F17
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000013600**

State Well #:	09N13W20H002S	Station ID:	29750
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

G18
SW
1/2 - 1 Mile
Higher

FED USGS **USGS40000155493**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W21N001S	Type:	Well
Description:	In Bull. 91-11	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	391
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	5	Level reading date:	2004-03-31
Feet below surface:	212.60	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	2003-03-26	Feet below surface:	209.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-09-17	Feet below surface:	223.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-03-27	Feet below surface:	200.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-05-10	Feet below surface:	194.92
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

G19
SW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000013529**

State Well #:	09N13W21N001S	Station ID:	25911
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

H20
East
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000013651**

State Well #:	09N13W22F001S	Station ID:	29866
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

21
SE
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000013526**

State Well #:	09N13W22N001S	Station ID:	29867
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

H22
East
1/2 - 1 Mile
Lower

FED USGS **USGS40000155724**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	009N013W22F001S	Type:	Well
Description:	Not Reported	HUC:	18090206
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill 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		

Ground water levels,Number of Measurements:	1	Level reading date:	1963-04-23
Feet below surface:	130.58	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

H23
East
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000013656**

State Well #:	09N13W22B001S	Station ID:	12101
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

---

24
East
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000013640**

State Well #:	09N13W22G002S	Station ID:	12104
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Antelope Valley	Well Completion Rpt #:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93560	12	1

Federal EPA Radon Zone for KERN 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: 93560

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.250 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.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: 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

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX D: SUPPORTING DOCUMENTATION

4900 California Avenue | Suite 420A | Bakersfield, CA 93309 | P (661) 282-2200 | F (661) 427-0703
trinityconsultants.com

Trinity Consultants

USER QUESTIONNAIRE

Property: APNs: 374-011-06 and 374-011-39, Kern County

In order to qualify for one of the *Landowner Liability Protections* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *user* 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 cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law (40 CFR 312.25)?
✓ NO ___ YES If yes, please explain:

2. Are you aware of any activity and land use limitations, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law (40 CFR 312.26)?
✓ NO ___ YES If yes, please explain:

3. As the *user* of this *ESA* 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 chemicals and processes used by this type of business (40 CFR 312.28)?
✓ NO ___ YES If yes, please explain:

4. Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property* (40 CFR 312.29)?
✓ NO ___ YES If yes, please explain:

5. Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases (40 CFR 312.30)? For example,

(a.) Do you know the past uses of the *property*?
(b.) Do you know of specific chemicals that are present or once were present at the *property*?
(c.) Do you know of spills or other chemical releases that have taken place at the *property*?
(d.) Do you know of any environmental cleanups that have taken place at the *property*?

✓ NO ___ YES If yes, please explain:

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* (40 CFR 312.31)?
✓ NO ___ YES If yes, please explain:

Helpful Documents Checklist

Pursuant to ASTM E 1527-13 §10.8, do you know whether any of the following documents exist related to the subject property and, if so, whether copies can or will be provided to the environmental professional? Check all that apply:

- ☐ Environmental site assessment reports
- ☐ Environmental compliance audit reports
- ☐ Geotechnical studies
- ☐ Reports regarding hydrogeologic conditions on the property or surrounding area
- ☐ Registrations for above or underground storage tanks or for underground injection systems
- ☐ SPCC or facility response plans
- ☐ Safety data sheets
- ☐ Notices or other correspondence from any governmental agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens or AULs encumbering the property
- ☐ Environmental permits, e.g. solid waste disposal permits; hazardous waste disposal permits, generator notices or reports; wastewater permits; NPDES permits; or underground injection permits
- ☐ Risk assessments

Name (Print) QUINCY TRAN

Signature [signature]

Title MANAGER

Date JULY 25 20

Representing DIAMOND HOME DEVELOPMENTS & INVESTMENT CORP.

Address 8471 SYRACUSE AVE
ANAHEIM CA 92804

Phone Number 714 510 0884

Email Address

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL

Dolores Gough, P.E.

Senior Consultant — Bakersfield

AREAS OF SPECIALIZATION

- Water Quality & NPDES Permitting
- Waste and Wastewater Management
- Watershed Sanitary Surveys & Public Water Supply Studies
- Air Quality Permitting
- SPCC Plan and SWPPP Development
- Phase I & II Environmental Assessments
- Soil & Groundwater Remediation

EDUCATION

M.S., Environmental Engineering, University of So. California
B.S., Chemical Engineering, University of Santo Tomas

AFFILIATIONS

National Environmental Health Association
Air and Waste Management Association

CERTIFICATIONS

Registered Professional Civil Engineer in CA
Registered Environmental Health Specialist in CA
General Permit Qualified Storm Water Practitioner and Developer in CA

SUMMARY OF EXPERIENCE

Dolores has over 30 years of experience in environmental permitting, water and waste management, soil & groundwater investigations/remediation, regulatory compliance audits, analytical chemistry, and risk assessment.

Dolores has been in the consulting business for over 10 years working on projects that include preparation of drainage studies, technical reports for wastewater reclamations & discharges to land, air permit applications, storm water pollution prevention plans (SWPPP) for construction projects and industrial activities, spill prevention control and countermeasures plans (SPCC), and Phase I and II environmental assessments.

Dolores had also worked in the regulatory sector as a Hazardous Materials Specialist overseeing investigation and remediation of contaminated soil and groundwater. She had also worked as an air quality permit engineer for the local air district

In addition, Dolores currently works as a Part-time Faculty in the College of Safety and Emergency Services at Columbia Southern University teaching Chemistry of Hazardous Materials, Environmental Technology and Air Quality.

TECHNICAL EXPERTISE

Soil and Groundwater Assessment & Remediation – Provided oversight of over 100 "contaminated soil and/or groundwater cases" while employed as a Hazardous Materials Specialist with Kern County Environmental Health. The cases were associated with leaking underground storage tanks, shallow disposal wells, industrial waste sumps, sanitary landfills and hazardous materials releases. Some specific tasks included reviewing/approving plans and reports, drafting permits, performing risk assessment studies and approving site closures. Developed compliance guideline documents and assisted in the development and implementation of new programs such as the Underground Injection Control (UIC) program and Certified Unified Program Agency (CUPA). Worked closely with US EPA, California Department of Toxic Substances Control (DTSC), and the State and Regional Water Boards to resolve project related issues. In addition, worked in the private sector investigating over 100 areas of concern/waste sites that included landfills, burn dumps and surface scatter sites identified by DTSC as part of a RCRA facility assessment associated with the sale of a Department of Energy facility to the private sector.

Air Quality Permitting - Currently, prepare air permit application for various equipment and operations. Previously in the regulatory sector, reviewed and evaluated air permit applications for a variety of equipment and processes from industrial and commercial facilities. Specific tasks included calculation of emission rates and permit fees, determination of best available control technologies and compliance with air quality regulations, specifying permit conditions, and issuance of permits. Worked on special projects such as conducting engineering research in support of district rule development and the development of best performance standards for greenhouse gases associated with oil and natural gas production, processing and storage.

Water Quality & NPDES Permitting - Prepare Reports of Waste Discharge and/or Technical Reports in support of applications to reclaim wastewater as part of Waste Discharge Requirements (WDR) permits. Prepare watershed sanitary surveys and source assessments for public water systems. Conduct preliminary assessments of industrial operations to determine storm water permitting requirements. Develop Storm Water Pollution Prevention plans or Technical Reports, as appropriate.

EMPLOYMENT HISTORY

2014 – Present Insight -Trinity Consultants – Senior Consultant
2009 – Present Columbia Southern University, College of Safety & Emergency Services – Part-time Faculty
2007 – 2012 San Joaquin Valley Air Pollution Control District – Air Quality Engineer
2000 – 2007 Quad Knopf & RAM Environmental Engineering– Project Engineer
1998 – 2000 Bechtel Corporation – Environmental Engineer
1988 – 1998 Kern County Environmental Health – Hazardous Materials Specialist

PALEOSERVICES
SAN DIEGO NATURAL HISTORY MUSEUM

Paleontological Resource Assessment

Gettysburg Solar Project
Kern County, California

May 17, 2018

Prepared for:
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theNAT
SAN DIEGO NATURAL HISTORY MUSEUM

Executive Summary

This Paleontological Resource Assessment was prepared for the Gettysburg Solar Project (the Project) located in an unincorporated portion of the Antelope Valley in Kern County, California. As proposed, the Project would involve the construction, operation and the eventual decommissioning of a new 30 MW solar photovoltaic energy generation facility. The Project site is located on approximately 160 acres just east of the intersection of Rosamond Boulevard and 80th Street West, about 5.5 miles west of State Route (SR) 14. The parcels occupy the east ½ of the NW ¼ and the west ½ of the NE ¼ of Section 21 T9N R13W, SBB&M. A proposed gen-tie route will extend from the northern portion of the Project site, and run east along Rosamond Blvd to connect with the existing Southern California Edison (SCE) Rosamond Substation, approximately 1.25 miles to the east. The proposed Project photovoltaic energy generation facility would consist of modular solar arrays either fixed or on tracking structures mounted to vertical posts. In addition to the gen-tie line connecting to the Rosamond Substation, other infrastructure components may include, but not be limited to, above-ground or below ground electrical lines, access roads, maintenance facilities, and fencing.

The purpose of this report is to identify and summarize paleontological resources that occur within the Project site, identify Project construction elements that may negatively impact paleontological resources, and provide recommendations and mitigation measures to reduce any potential negative impacts to less than significant levels. The report includes the results of institutional records searches from the Natural History Museum of Los Angeles County (LACM), the San Bernardino County Museum (SBCM), and the San Diego Natural History Museum (SDNHM).

The Project site is located within the Antelope Valley of the western Mojave Desert, and is entirely underlain by alluvial deposits of Holocene to Pleistocene-age that are derived from the regional erosion of the surrounding highlands (e.g., Tehachapi Mountains, San Gabriel Mountains). The southern approximately half of the Project site is specifically underlain by late Holocene-age modern alluvium (Qa) and Holocene to late Pleistocene-age young alluvial fan deposits (Qyf), while the northern half of the Project site is underlain by middle to early Pleistocene-age old alluvial fan deposits (Qof). Alluvial deposition in the Antelope Valley has been ongoing since at least the early Pleistocene, therefore it is believed that Holocene-age alluvial deposits (i.e., Qa, Qyf deposits) transition downsection (i.e., from the ground surface into the subsurface) into older alluvial deposits of Pleistocene-age. Based on the results of paleontological mitigation programs conducted for adjacent projects (e.g., Solar Star Project), it is believed that the gradational contact between Holocene and Pleistocene-age deposits may occur as shallow as 15 feet below the ground surface.

The institutional records searches indicate that there are no known fossil localities from Holocene to Pleistocene-age alluvial deposits within a 5-mile radius of the Project site. However, both the LACM and SBCM document several localities discovered in Pleistocene-age alluvial and lacustrine deposits of the western Mojave Desert, with additional fossil localities documented in the paleontological literature. These localities yielded fossil remains of large-bodied mammals (e.g., mammoth, horse, antilocaprid antelope, camel, bison, dog), as well as small mammals (e.g., rodents, bats, shrews, rabbits) and other terrestrial vertebrates (e.g., snakes, lizards, tortoises, birds).

Following the paleontological potential criteria developed by the Society of Vertebrate Paleontology (SVP, 2010), the late Holocene and Holocene to late Pleistocene-age alluvial deposits (i.e., Qa and Qyf deposits) in the southern portion of the Project site are assigned a low paleontological potential at depths of less than 15 feet below grade (where they are assumed to be Holocene in age), and an undetermined paleontological potential at depths greater than 15 feet below grade (where the strata may represent alluvial deposits of Pleistocene-age). Middle to early Pleistocene-age old alluvial fan

deposits (Qof) in the northern portion of the Project site are assigned an undetermined paleontological potential at all depths. As such, Project-related earthwork at all depths in the northern portion of the Project site, and earthwork that would extend greater than 15 feet below the ground surface in the southern portion of the Project site has the potential to impact paleontological resources.

The recommended course of action, should Project-related earthwork disturb paleontologically sensitive strata, is implementation of an adaptive paleontological monitoring program, as outlined in Mitigation Measures 1–7. Paleontological monitoring is recommended specifically for earthwork operations that will extend greater than 15 feet below existing grade in the southern portion of the Project that is underlain by Holocene-age Qa or Qyf deposits, and excavations at all depths in the northern portion of the Project site that is underlain by Pleistocene-age Qof deposits. An exception to this recommendation is that pile-driving and small-diameter augering (less than 18 inch diameter auger) are not recommended for monitoring, as these earthwork activities cannot feasibly be mitigated for paleontological resources. The adaptive monitoring strategy should involve ongoing evaluation of the paleontological potential of impacted alluvial deposits over the course of the monitoring program. If after the first 50% of earthwork potentially impacting paleontologically sensitive strata is completed and no fossils are observed and/or no evidence for the preservation of fossils (e.g., paleosol horizons, rootlets, etc.) is recorded, monitoring may be reduced or eliminated at the discretion of the Project Paleontologist. However, if fossils, or strong evidence suggesting the possible preservation of fossils, is documented, monitoring shall continue at the discretion of the Project Paleontologist. Adoption of Mitigation Measures 1–7 will reduce potential impacts to paleontological resources from ground disturbance to less than significant levels.

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1.0 Introduction

1.1 Project Description

This technical report provides an assessment of paleontological resources at the proposed Gettysburg Solar Project (Project), a 30 MW solar photovoltaic energy generation facility located on approximately 160 acres in the eastern high desert region of unincorporated Kern County, California (Figure 1). The proposed Project site includes two adjacent parcels (Assessor's Parcel Numbers 374-011-06 and -39) located just east of the intersection of Rosamond Boulevard and 80th Street West, 5.5 miles west of State Route (SR) 14 (Figure 1, Figure 2). The parcels occupy the east ½ of the NW ¼ and the west ½ of the NE ¼ of Section 21 T9N R13W, SBB&M. A proposed gen-tie route will extend from the northern portion of the Project site and run east along Rosamond Blvd to connect with the existing Southern California Edison (SCE) Rosamond Substation, approximately 1.25 miles to the east. The Project site and adjacent lands are undisturbed and currently undeveloped.

The proposed Project photovoltaic energy generation facility would consist of approximately 125,000 crystalline modules or 100,000 thin film modules arranged in a grid pattern over the Project. The modules would occur as either fixed or tracking solar array structures mounted to vertical posts. In addition to the gen-tie line connecting to the Rosamond Substation, other infrastructure components may include, but not be limited to, above-ground or below ground electrical lines, access roads, maintenance facilities, and fencing.

The Project proponents may eventually choose to decommission and remove all or none of the systems from the sites. If the site is decommissioned, it would be converted to another use consistent with the applicable land use regulations in effect at that time.

1.2 Scope of Work

The Project site occurs in an area underlain by undisturbed native sedimentary rocks. For this reason, a paleontological resource assessment was conducted to determine whether construction of the Project has the potential to negatively impact paleontological resources. This assessment report is intended to summarize existing paleontological resource data within the Project site, discuss the significance of these resources, examine Project related potential impacts to paleontological resources, and suggest mitigation measures to reduce potential impacts to paleontological resources to less than significant levels. This report was written by Shelly L. Donohue and Thomas A. Deméré of the Department of PaleoServices, SDNHM.

1.3 Definition of Paleontological Resources

As defined here, paleontological resources (i.e., fossils) are the buried remains and/or traces of prehistoric organisms (i.e., animals, plants, and microbes). Body fossils such as bones, teeth, shells, leaves, and wood, as well as trace fossils such as tracks, trails, burrows, and footprints, are found in the geologic units/formations within which they were originally buried. The primary factor determining whether an object is a fossil or not is not how the organic remain or trace is preserved (e.g., "petrified"), but rather the age of the organic remain or trace. Although typically it is assumed that fossils must be older than ~10,000 years (i.e., the generally accepted end of the last glacial period of the Pleistocene Epoch), organic remains older than recorded human history and/or older than middle Holocene (about 5,000 radiocarbon years) can also be considered to represent fossils (SVP, 2010).

Fossils are considered important scientific and educational resources because they serve as direct and indirect evidence of prehistoric life and are used to understand the history of life on Earth, the nature of past environments and climates, the membership and structure of ancient ecosystems, and the pattern and process of organic evolution and extinction. In addition, fossils are considered to be non-renewable resources because typically the organisms they represent no longer exist. Thus, once destroyed, a particular fossil can never be replaced. Finally, paleontological resources can be thought of as including not only the actual fossil remains and traces, but also the fossil collecting localities and the geologic units containing those localities.

1.3.1 Definition of Scientifically Significant Fossils

The California Environmental Quality Act (CEQA, Public Resources Code Section 21000 *et seq.*) dictates that a paleontological resource is considered significant if it "has yielded, or may be likely to yield, information important in prehistory or history" (Section 15064.5, [a][3][D]). The Society of Vertebrate Paleontology (SVP) has further defined significant paleontological resources as consisting of "fossils and fossiliferous deposits … consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information" (SVP, 2010).

1.4 Regulatory Framework

Paleontological resources are considered scientifically and educationally significant nonrenewable resources; they are protected under a variety of laws, regulations, and ordinances. The Project site is located within Kern County, California. As such, state and local regulations are applicable to the Project.

1.4.1 State: California Environmental Quality Act

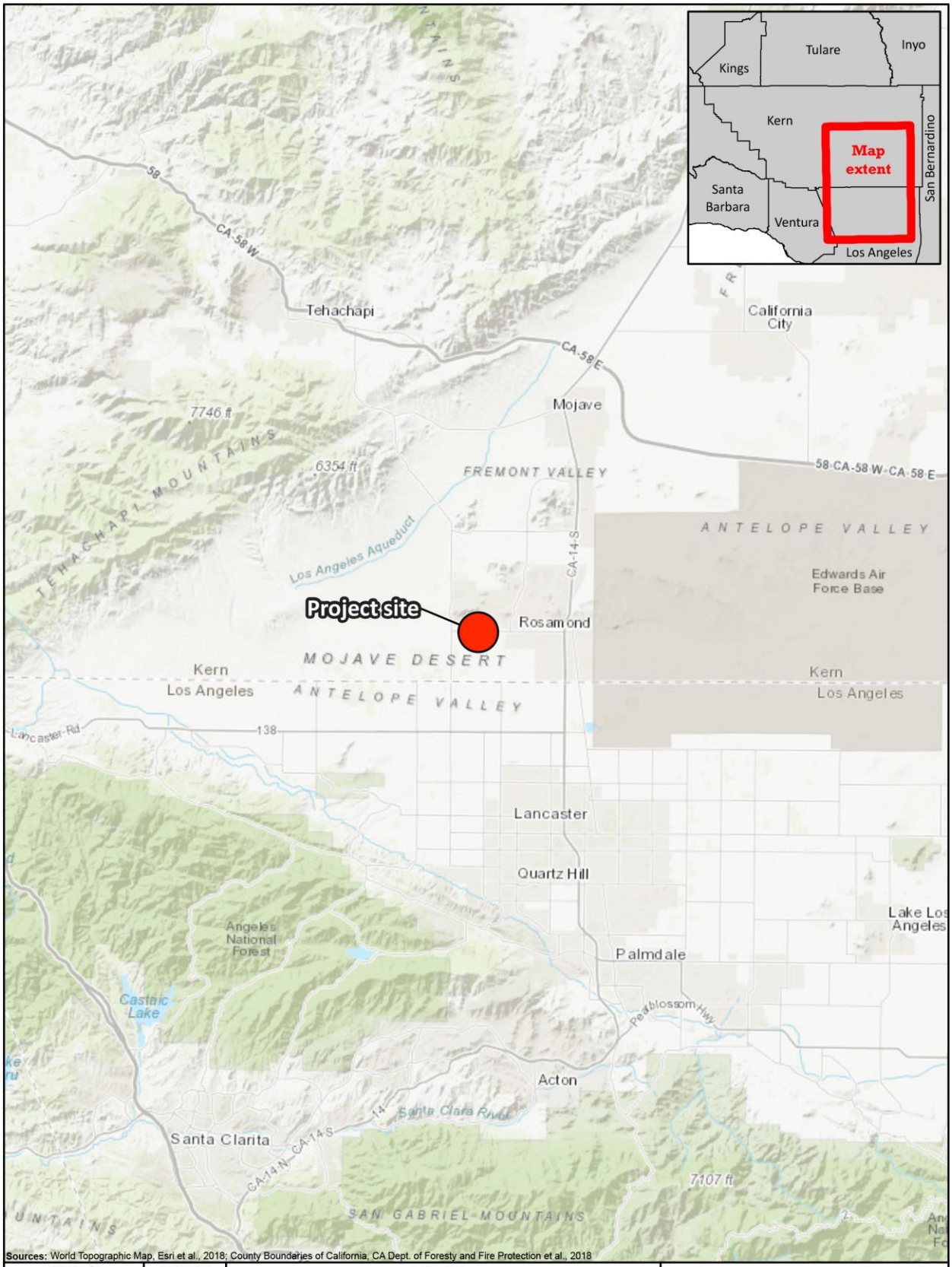
CEQA (Public Resources Code Section 21000 *et seq.*) requires the identification of environmental impacts of a proposed project, the determination of significance of the impacts, and the identification of alternative and/or mitigation measures to reduce adverse environmental impacts. The Guidelines for the Implementation of CEQA (Title 14, Chapter 3, California Code of Regulations: 15000 *et seq.*) outline the necessary procedures for complying with CEQA. Paleontological resources are specifically included as a question in the CEQA Environmental Checklist (Section 15023, Appendix G): "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature." Also applicable to paleontological resources is the checklist question: "Does the project have the potential to… eliminate important examples of major periods of California history or pre-history." As discussed in Section 1.3, fossils are important examples of California's prehistory.

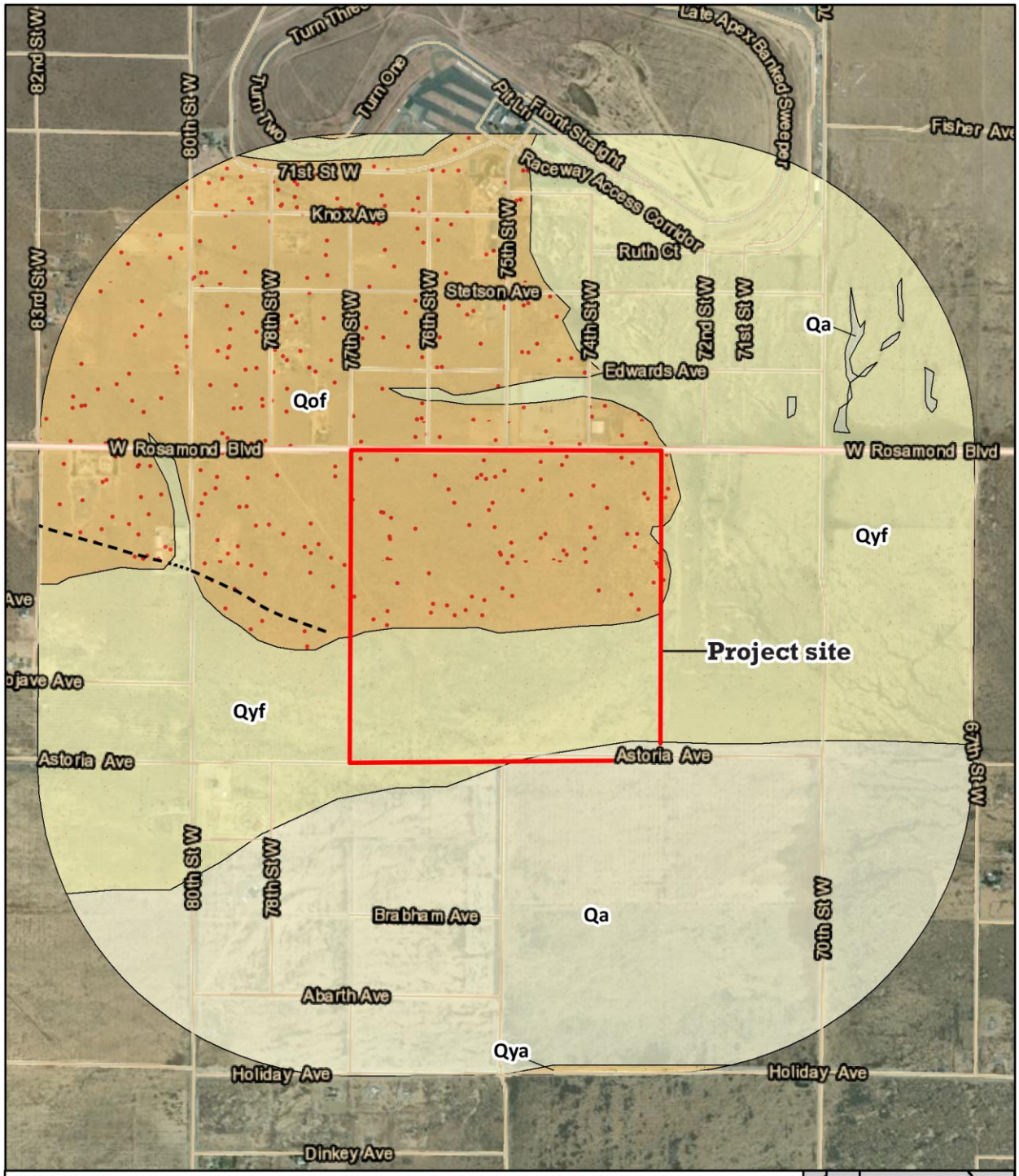
If significant paleontological resources may be impacted within a given project site, CEQA provides that "a lead agency shall identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource. The lead agency shall ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures" (Section 15064.5, [b][4]).

1.4.2 Local: Kern County

The 2009 Kern County General Plan, Land Use, Conservation, Open Space Element (Section 1.10.3 Archeological, Paleontological, Cultural, and Historical Preservation) includes the following Policy and Implementation Measures relevant to paleontological resources:

- Implementation Measure M: In areas of known paleontological resources, the County should address the preservation of these resources, where feasible.


Tulare
Inyo
Kings
Kern
Map extent
San Bernardino
Santa Barbara
Ventura
Los Angeles
Tehachapi
California City
Mojave
7746 ft
6354 ft
FREMONT VALLEY
58 CA-58 W CA-58 E
ANTELOPE VALLEY
Los Angeles Aqueduct
CA-14 S
Edwards Air Force Base
Project site
Rosamond
MOJAVE DESERT
Kern
Los Angeles
ANTELOPE VALLEY
Kern
Los Angeles
Lancaster Rd
138
Lancaster
Quartz Hill
Angeles National Forest
Palmdale
Lake Los Angeles
Castaic Lake
Antelope Valley Freeway
Acton
Santa Clara River
Santa Clarita
CA-14 N CA-14 S
7107 ft
SAN GABRIEL MOUNTAINS
Sources: World Topographic Map, Esri et al., 2018; County Boundaries of California, CA Dept. of Foresty and Fire Protection et al., 2018
PALEOSERVICES
FIGURE 1
Index Map
Gettysburg Solar Project
Kern County, California
0
10
scale in miles
N


Turn Three
Late Apex Banked Sweeper
Turn Two
Turn One
Pit Ln
Front Straight
Raceway Access Corridor
82nd St W
80th St W
83rd St W
71st St W
Knox Ave
75th St W
Ruth Ct
Stetson Ave
78th St W
77th St W
74th St W
72nd St W
71st St W
Edwards Ave
Fisher Ave
Qa
Qof
W Rosamond Blvd
Qyf
Project site
Mojave Ave
Astoria Ave
67th St W
70th St W
Brabham Ave
Abarth Ave
Qya
Holiday Ave
Dinkey Ave
Geologic Map Units
Qa modern alluvium, undivided
Qya younger alluvium, undivided
Qyf younger alluvial fan deposits, undividied
Qof older alluvial fan deposits, undivided
Geologic Map Symbols
fault, concealed
fault, inferred
contact
Project site
Sources: Geology modified from Lancaster and Holland, 2012; World Imagery and Transportation, ESRI et al., 2018
Kings
Tulare
Inyo
Kern
Map extent
Santa Barbara
Ventura
Los Angeles
PaleoServices
FIGURE 2
Geologic Map
Gettysburg Solar Project
Kern County, California
0
0.5
scale in miles
N

2.0 Methods

2.1 Paleontological Records Searches and Literature Review

A paleontological records search of the paleontological collections at the SDNHM was conducted in order to identify known fossil localities within an approximately 5-mile radius of the Project site. Paleontological records searches of the collections at the LACM and SBCM were previously conducted for Projects within a 5-mile radius of the Project site (Appendix 1). Both records searches summarized paleontological resources from the Antelope Valley as a whole, and thus are deemed appropriate for identifying known fossil localities in the vicinity of the Project site.

In addition, a literature review was conducted to gain a greater understanding of the geologic history of the area surrounding the Project site, as well as to determine the types of fossils that specific geologic units underlying the Project site have produced. The review included examination of relevant published geologic maps and reports, peer-reviewed papers, and other relevant literature (e.g., field trip guidebooks, unpublished theses and dissertations, archived paleontological mitigation reports). This approach was followed in recognition of the direct relationship between paleontological resources and the geologic units within which they are entombed. Knowing the geologic history of a particular area and the fossil productivity of geologic units that occur in that area, it is possible to predict where fossils may or may not be encountered. Understanding the fossil content of a geologic unit everywhere it occurs is important for outlining the types of fossils that may occur within the unit, and confidently assigning a paleontological potential rating.

2.2 Paleontological Resource Assessment Criteria

The Society of Vertebrate Paleontology (SVP, 2010) has developed mitigation guidelines for paleontological resources that conform with industry standards and were developed with input from a variety of federal and state land management agencies (Murphey et al., 2014). These guidelines recognize that paleontological resources are considered to include not only actual fossil remains and traces, but also the fossil collecting localities and the geologic units containing those fossils and localities, and thus evaluate paleontological potential (or paleontological sensitivity) of individual geologic units within a project area. Paleontological potential is determined based on the existence of known fossil localities within a given geologic unit, and/or the potential for future fossil discoveries, given the age and depositional environment of a particular geologic unit. The SVP guidelines include four classes of paleontological potential: High Potential, Low Potential, No Potential, or Undetermined Potential (SVP, 2010). A summary of the criteria for each ranking is outlined below.

2.2.1 High Potential

Geologic units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Geologic units classified as having high potential include, but are not limited to, some volcaniclastic formations (e. g., ashes or tephras), some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., deposits aged middle Holocene and older consisting of fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential includes both the potential for yielding abundant or significant vertebrate fossils or for yielding significant invertebrate, plant, or trace fossils, as well as the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic

data. Geologic units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and geologic units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.

2.2.2 Undetermined Potential

Geologic units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these geologic units have high or low potential to contain significant paleontological resources. A field survey to specifically determine the paleontological resource potential of these geologic units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

2.2.3 Low Potential

Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some geologic units have low potential for yielding significant fossils. Such geologic units will be poorly represented by fossil specimens in institutional collections, or, based on general scientific consensus, only preserve fossils in rare circumstances where the presence of fossils is an exception not the rule, e. g. basalt flows or Recent colluvium. Geologic units with low potential typically will not require impact mitigation measures to protect fossils.

2.2.4 No Potential

Geologic units with no potential are either entirely igneous in origin and therefore do not contain fossil remains, or are moderately to highly metamorphosed and thus any contained fossil remains have been destroyed. Artificial fill materials also have no potential, because the stratigraphic and geologic context of any contained organic remains (i.e., fossils) has been lost. For projects encountering only these types of geologic units, paleontological resources can generally be eliminated as a concern, and no further action taken.

2.3 Paleontological Impact Analysis

Direct impacts to paleontological resources occur when earthwork operations cut into the geologic units within which fossils are buried and physically destroy the fossil remains. As such, only those excavations that will disturb potentially fossil-bearing sedimentary rocks (i.e., those rated with a paleontological potential of high or undetermined) have the potential to significantly impact paleontological resources. Although impact avoidance is possible through relocation of a proposed action, paleontological mitigation during construction is typically recommended to reduce any negative impacts to paleontological resources to less than significant levels.

The purpose of the impact analysis is to determine which (if any) of the proposed Project-related earthwork activities may disturb potentially fossil-bearing sedimentary rocks, and where and at what depths these potential impacts will occur. The paleontological impact analysis involved analysis of available Project documents and comparison with geological and paleontological data gathered during the records search and literature review.

3.0 Existing Conditions: Geologic Setting

The Project site is located in southeastern Kern County, California, about 5.75 miles west of the unincorporated community of Rosamond, in the western portion of the Antelope Valley. The Antelope Valley forms the western corner of the Mojave Desert and is bounded by the Tehachapi Mountains to the northwest, and the San Gabriel Mountains to the southwest (Figure 1). These two mountain ranges were formed by the development of two major strike slip faults, the northwest trending right-lateral San Andreas Fault (adjacent to the San Gabriel Mountains) and the southwest trending left-lateral Garlock Fault (adjacent to the Tehachapi Mountains). These two faults intersect to the northwest of the Project site near Frazier Park, California. Structural compression in this tectonically complex region (known as the "structural knot of California") is responsible for the formation and continued uplift of the adjacent mountain ranges (e.g., Dibblee, 1961; 1967; Norris and Webb, 1990). The rain shadows created by this ongoing uplift results in the increased aridity of the Antelope Valley.

The Project site is underlain by Pleistocene and Holocene-age alluvial deposits derived from regional erosion of the surrounding highlands (Figure 2). Extensive alluvial fan complexes originating from the mouths of numerous deeply incised canyons on the southeastern flanks of the Tehachapi Mountains and northeastern flanks of the San Gabriel Mountains extend out into Antelope Valley. These complexes have been depositing sediment since at least the early Pleistocene, with younger, Holocene-age alluvial fan complexes building on top of older, Pleistocene-age complexes (Dibblee, 1963). Alluvial fan complexes generally consist of coarser-grained fan deposits, originating as overland sheetwash flows from the flanks of the uplands, and finer-grained alluvial valley deposits originating in alluvial channels on the distal fringes of the fans (Bedrossian et al., 2012; Dibblee, 1963; Lancaster and Holland, 2012).

4.0 Results

4.1 Results of the Records Search and Literature Review

4.1.1 Project Geology

As mapped by Lancaster and Holland (2012), the southern half of the Project site is underlain by modern alluvium (Qa) of late Holocene-age and younger alluvial fan deposits (Qyf) of Holocene to late Pleistocene-age, while the northern half of the Project site is underlain by old alluvial fan deposits (Qof) of middle to early Pleistocene-age (Figure 2, Table 2). Dibblee (1963) maps the entirety of the Project site as undifferentiated Quaternary alluvium. As described above, these alluvial deposits are generally derived from erosion of the surrounding highlands (e.g., Tehachapi Mountains, San Gabriel Mountains). Presumably, the Holocene-age deposits transition downsection (i.e., from the ground surface into the subsurface) into older, Pleistocene-age deposits (Dibblee, 1963).

Results of paleontological mitigation programs conducted elsewhere in western Antelope Valley can offer insight into the subsurface geology within the Project site, and are particularly useful for hypothesizing about the thickness of Holocene-age deposits at the Project site. At the Solar Star photovoltaic energy generation facility, located ~4 miles west of the Project site, paleontological monitoring was recommended for all excavations that extended greater than 5 feet below existing grade. This recommendation was made primarily due to the lack of knowledge concerning the depth of the transition from Holocene-age to Pleistocene-age alluvial deposits in Antelope Valley (PaleoServices, 2014). However, during paleontological monitoring at Solar Star, potentially Pleistocene-age deposits were observed to occur more than 15 feet below the ground surface. Differentiating between Holocene

and Pleistocene-age deposits was difficult because deposition was mostly continuous throughout the Quaternary, and the contact is gradational. However, deposits tentatively identified as Pleistocene in age differed from Holocene-age deposits in their heavily oxidized nature, appearing as rusty, reddish brown in color, and were more heavily consolidated. In addition, certain horizons in the Pleistocene-age deposits were caliche-rich with root impressions, suggesting they represented paleosols (fossil soils).

4.1.2 Project Paleontology

Records searches of the paleontological collections at the SDNHM, SBCM, and LACM indicate that there are no known fossil localities within a 5-mile radius of the Project site (Appendix 1). However, fossil localities are known from Pleistocene-age alluvial and lacustrine deposits elsewhere in the Antelope Valley and the greater western Mojave Desert area. The SDNHM does not have any fossil localities in this region (unpublished SDNHM paleontological collections data), nor were any discovered during paleontological mitigation of the adjacent Solar Star project site (PaleoServices, 2014). The SBCM and LACM both report several localities discovered in Quaternary alluvial and lacustrine deposits of the western Mojave Desert (LACM, 2010; SBCM, 2017), and additional fossil localities are documented in the paleontological literature. These localities yielded fossil remains of large-bodied mammals (e.g., mammoth, horse, antilocaprid antelope, camel, bison, dog), small mammals (e.g., rodents, bats, shrews, rabbits), and other terrestrial vertebrates (e.g., snakes, lizards, tortoises, birds) (e.g., Whistler, 1990; Whistler et al., 1991; Jefferson 1991a; 1991b; Woodburne, 1991; LACM, 2010; SBCM, 2017).

Some of the most significant Pleistocene-age fossil assemblages from the greater Antelope Valley have been discovered in ancient lake deposits. While there are no lake deposits mapped at the surface within the Project site, it is possible that lake deposits may be present at depth. The most notable ancient lake in the Project vicinity is Pleistocene Lake Thompson, a once extensive lake located to the east of the Project site. Sedimentary deposits of Pleistocene Lake Thompson have produced a number of fossils of terrestrial vertebrates, especially large-bodied mammals (e.g., mammoth, horse, bison, deer, camel, saber-toothed cat, dog), as well as small mammals, freshwater fish, amphibians, reptiles, and birds (Jefferson, 1991a; Scott and Cox, 2008; Wilkerson et al., 2011). The SBCM reported four Lake Thompson fossil localities located about 5.25 miles east of the Project site that were discovered during mass grading excavations for a new housing development in Rosamond and produced remains of mammoth, ground sloth, camel, and bison (Wilkerson et al., 2011; SBCM, 2017). Similarly, paleontological mitigation of a landfill expansion in Lancaster, about 10 miles southeast of the Project site, resulted in the discovery of vertebrate fossils in Pleistocene deposits of Lake Thompson. Here, the lake deposits were discovered 7.5 feet below the ground surface, were overlain by dune sands, and yielded fossil remains of extinct camel, lizards, and a variety of rodents (Paleo Environmental Associates, Inc., 2012).

4.2 Results of the Paleontological Potential Analysis

4.3.1 Holocene & Holocene to late Pleistocene-age alluvial deposits (Qa, Qyf):

Following the SVP (2010) impact mitigation guidelines, as outlined in Section 2.2, late Holocene-age and Holocene to late Pleistocene-age alluvial deposits (i.e., Qa and Qyf) of the southern portion of the Project site are assigned a low paleontological potential based on their relatively young Holocene-age (less than about 10,000 years old), and the lack of known, scientifically significant paleontological resources from Holocene-age deposits in the western Mojave Desert (Figure 3).

However, the Holocene-age alluvial deposits transition to older, Pleistocene-age deposits in the subsurface, at a depth that may be as shallow as 15 feet below the current ground surface (see Section 4.1.1). Pleistocene alluvial deposits are assigned an undetermined paleontological potential, as discussed in greater detail below.

Because the contact between the Holocene-age alluvial deposits and the Pleistocene-age alluvial deposits may be as shallow as 15 feet below existing grade, Qa and Qyf deposits are specifically assigned a low paleontological potential from 0–15 feet below grade where they are assumed to be Holocene in age and an undetermined paleontological potential at depths greater than 15 feet where they may be Pleistocene in age.

4.3.2 Pleistocene-age older alluvial fan deposits (Qof):

Pleistocene older alluvial fan deposits (Qof) of the northern portion of the Project site are assigned an undetermined paleontological potential based on: 1) the lack of fossils known specifically from within a 5-mile radius of the Project site and the lack of fossil discoveries during paleontological mitigation of the nearby Solar Star facility; 2) the depositional environment of Pleistocene alluvial deposits that suggests the potential for preservation of terrestrial vertebrate fossils; and 3) the occurrence of fossils in similar deposits of Pleistocene-age exposed elsewhere in the western Mojave Desert.

4.3 Results of the Paleontological Impact Analysis

As discussed above, the Project site is immediately underlain by Holocene to Pleistocene-age alluvial deposits at the surface. Impacts to paleontological resources may occur only during excavations that will disturb alluvial deposits of Pleistocene-age. Therefore, in the northern half of the Project site (i.e., areas underlain by Pleistocene-age Qof deposits), excavations at all depths have the potential to impact paleontological resources (Figure 2, Figure 3, Table 1). In the southern half of the Project site (i.e., areas underlain by Holocene-age Qa or Qyf deposits), only excavations that will extend greater than about 15 feet below existing grade have the potential to impact paleontological resources.

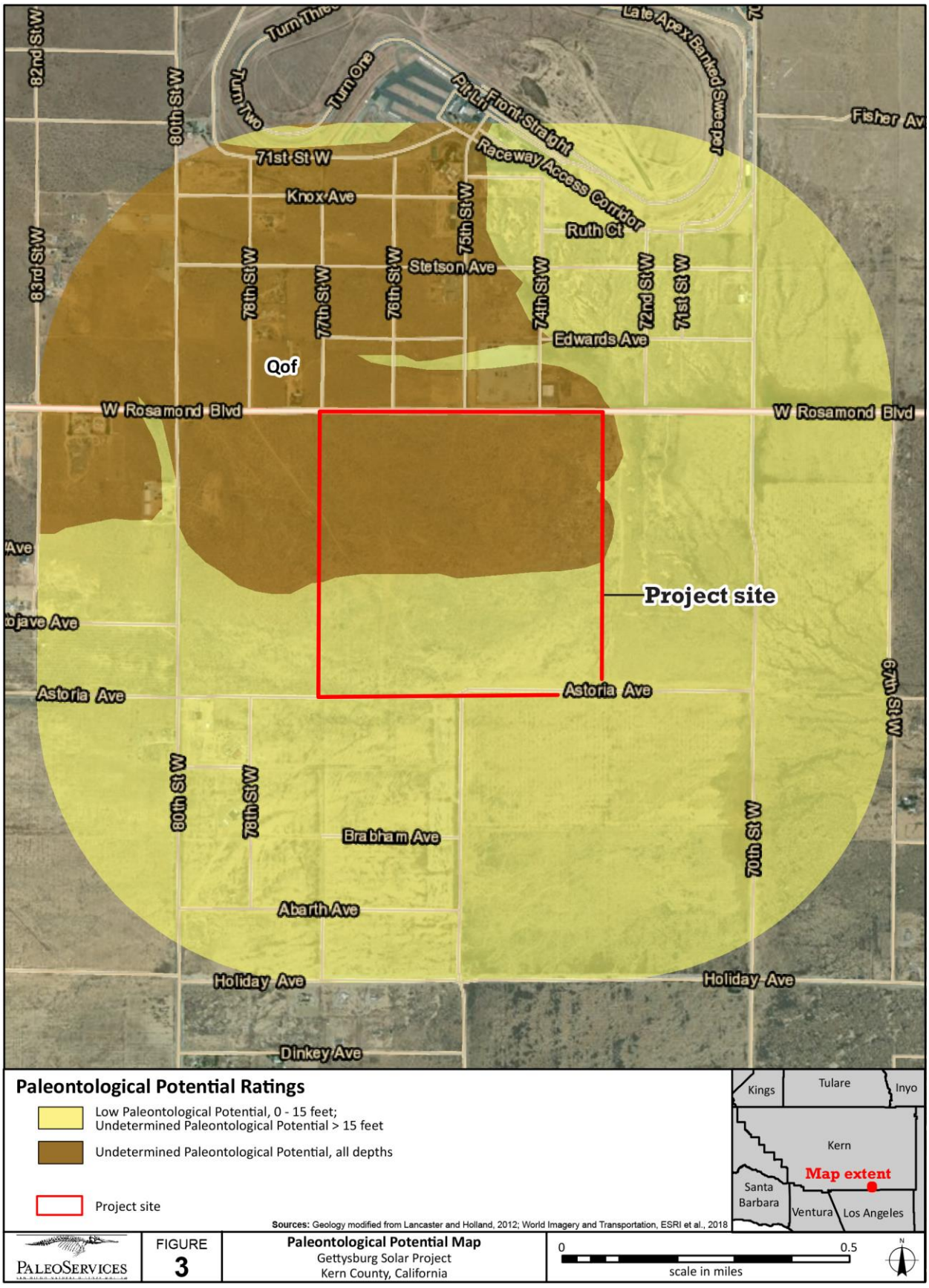
Notably, not all types of earthwork can be feasibly monitored for paleontological resources. Of relevance to the Project, it is not practical to monitor pile-driving and drilling with a small-diameter auger (less than about 18 inches) for unearthed paleontological resources. Paleontological monitoring of boreholes is typically conducted by examining spoils brought up during the drilling process for any contained fossil remains. For pile-driving, no spoils are produced, thus paleontological monitoring cannot occur. For small-diameter augering, though spoils are brought up, they are typically pulverized during the drilling process. Thus, any macrofossils that may be present within the spoils are destroyed.

Types of earthwork that may occur during construction of the Proposed project that can be monitored for paleontological resources include, but are not limited to, mass grading for creation of flat solar array surfaces, building pads, or access road, trenching for underground electrical lines or other utilities, large-diameter drilling (greater than about 18 inches in diameter) for foundation supports (e.g., electrical transmission towers), and other miscellaneous excavations (e.g., excavations for septic leach fields).

Table 1. Summary of geologic units underlying the Project site and paleontological monitoring recommendations for the Gettysburg Solar Project.

Geologic Unit	Age	Paleontological Potential	Monitoring recommended?‡
alluvial valley deposits (Qa)	late Holocene	low potential, 0 - 15 feet; undetermined potential, <15 feet	No, 0 - 15 feet; **Yes, <15 feet**
young alluvial fan deposits (Qyf)	Holocene - late Pleistocene	low potential, 0 - 15 feet; undetermined potential, <15 feet	No, 0 - 15 feet; **Yes, <15 feet**
old alluvial fan deposits (Qof)	middle - early Pleistocene	undetermined potential, all depths	**Yes, all depths**

‡excluding pile-driving and small diameter (<18 inches) augering which cannot feasibly be monitored for paleontological resources


Late Apex Banked Sweeper
Turn One
Pit Ln
Front Straight
Raceway Access Corridor
Fisher Av
82nd St W
80th St W
71st St W
Knox Ave
83rd St W
75th St W
Ruth Ct
78th St W
77th St W
76th St W
Stetson Ave
74th St W
72nd St W
71st St W
Edwards Ave
Qof
W Rosamond Blvd
W Rosamond Blvd
Project site
Mojave Ave
Astoria Ave
Astoria Ave
67th St W
80th St W
78th St W
Brabham Ave
70th St W
Abarth Ave
Holiday Ave
Holiday Ave
Dinkey Ave
Paleontological Potential Ratings
Low Paleontological Potential, 0 - 15 feet;
Undetermined Paleontological Potential > 15 feet
Undetermined Paleontological Potential, all depths
Project site
Sources: Geology modified from Lancaster and Holland, 2012; World Imagery and Transportation, ESRI et al., 2018
Kings
Tulare
Inyo
Kern
Map extent
Santa Barbara
Ventura
Los Angeles
PaleoServices
FIGURE 3
Paleontological Potential Map
Gettysburg Solar Project
Kern County, California
0
0.5
scale in miles
N

5.0 Recommendations

For the Project, surficial earthwork and deeper earthwork in areas underlain at the surface by Pleistocene-age Qof deposits (northern half of the Project site), as well as deep earthwork that will extend greater than about 15 feet below existing grade in areas underlain at the surface by Holocene-age Qa or Qyf deposits (southern half of the Project site) have the potential to impact paleontological resources. Implementation of a paleontological mitigation program centered around paleontological monitoring is recommended as the most reasonable mitigation strategy for the Project, should excavations occur that will disturb paleontologically sensitive strata (Table 1, Figure 3). Such a program would minimize impacts through recovery and conservation of fossils unearthed during construction.

For the Gettysburg Solar Project, paleontological monitoring is recommended specifically for earthwork operations that will extend greater than 15 feet below existing grade in the southern half of the Project (i.e., in areas underlain by Holocene-age Qa or Qyf deposits) and excavations at all depths in the northern half of the Project site (i.e., in areas underlain by Pleistocene-age Qof deposits), with the exception of pile-driving and small-diameter augering (less than 18 inch diameter auger), which cannot be feasibly mitigated. Table 1 summarizes the monitoring recommendations for the Project, and Figure 3 outlines the areas to be monitored.

Notably, because the subsurface depth of the contact between Holocene and Pleistocene-age alluvial deposits is not precisely known and may vary across the Project site, and because the Pleistocene-age deposits are assigned an undetermined paleontological potential, the paleontological potential of the impacted deposits should be routinely evaluated during monitoring of earthwork. If after ~50% of earthwork recommended for paleontological monitoring is completed, and either 1.) it is determined that the Holocene Pleistocene contact occurs deeper than Project earthwork, or 2.) no fossils are discovered, nor deposits that suggest the potential for fossils (e.g., paleosols) are observed, monitoring may be reduced or suspended at the discretion of the Project Paleontologist. Conversely, if it is discovered that the Holocene Pleistocene contact occurs less than 15 feet below the surface in areas mapped as Holocene-age alluvial deposits, paleontological monitoring may be increased to include more shallow excavations.

Recommended mitigation measures for implementing a paleontological monitoring program are outlined below.

Mitigation Measures

1. A qualified Project Paleontologist should be retained to oversee the paleontological mitigation program, the Project Paleontologist should attend the pre-construction meeting (or video-conference in) to consult with grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. (A qualified Project Paleontologist shall have 1.) a graduate degree in paleontology or geology, and/or a publication record in peer reviewed journals; 2.) demonstrated competence in necessary techniques pertaining to the recognition of, collection, preparation, identification, curation, and reporting of fossils in Kern County or the greater western Mojave Desert region; 3.) two years of professional experience as assistant to a qualified Project Paleontologist; and, 4.) expertise in the geology, stratigraphy, and biostratigraphy of the western Mojave Desert region.)
2. A paleontological monitor working under the direction of the Project Paleontologist should be on-site during earthwork operations that extend to all depths in areas underlain at the surface by Qof deposits, which occur in the northern half of the Project site. In the southern half of the Project site, which is underlain by Qa or Qyf deposits, paleontological monitor should be on-site during

earthwork operations that extend greater than 15 feet below grade. Pile driving and small diameter (<18 inches) drilling cannot be feasibly mitigated for paleontological resources and thus do not require monitoring. Paleontological monitoring may be reduced (e.g., part-time monitoring or spot-checking), eliminated, or increased, at the discretion of the qualified Project Paleontologist and in consultation with appropriate agencies (e.g., Project proponent, Kern County representative). Changes to the paleontological monitoring schedule shall be based on results of the mitigation program as it unfolds during site development, and current and anticipated conditions in the field. (A paleontological monitor shall have 1.) a bachelor's degree in geology or paleontology and one year of experience as a paleontological monitor in Kern County or the greater western Mojave Desert region, or an associate's degree and/or enrollment in upper division courses pertaining to geology or paleontology and two years of experience as a paleontological monitor in Kern County or the greater western Mojave Desert region; and 2.) a demonstrated proficiency in recognizing various types of fossils, fossil collection methods, and other paleontological field techniques.)

3. If fossils are discovered, the Project Paleontologist (or paleontological monitor) should recover them. All macrovertebrate fossils are considered to be significant and should be recovered (SVP, 2010), while representative samples of micro- fossils should be recovered. In the case of micro-vertebrates, SVP (2010) recommends that a standard sample of about 4.0 cubic yards (6,000 lbs.) be recovered, and a subsample tested to determine if the entire sample should be processed. In most cases this fossil salvage can be completed in a short period of time. However, some fossil specimens (e.g., a large mammal skeleton) may require an extended salvage period. In these instances, the paleontologist (or paleontological monitor) should be allowed to temporarily direct, divert, or halt earthwork to allow for recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains, such as isolated mammal teeth, it may be necessary to collect a bulk-matrix sample and/or set up a screen-washing operation on the site.

4. In the event that fossils are discovered during a period when a paleontological monitor is not on site, earthwork within the vicinity of the discovery site shall temporarily halt, and the qualified paleontologist be contacted to evaluate the significance of the discovery. If the inadvertent discovery is determined to be significant, the fossils shall be recovered, as outlined in Mitigation Measure 3.

5. Fossil remains collected during monitoring and salvage should be cleaned, repaired, sorted, identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen-washing for microfossils or other laboratory analyses (e.g., radiometric carbon dating), if applicable. Fossil preparation and curation activities may be conducted at the laboratory of the contracted qualified paleontologist, at an appropriate outside agency, and/or at the designated repository and shall follow the standards of the designated repository.

6. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, should be housed in a regional scientific repository with permanent paleontological collections (e.g., Natural History Museum of Los Angeles County, San Bernardino County Museum, or San Diego Natural History Museum). Curation of the fossils should be accompanied by financial support for initial specimen storage (e.g., purchase of storage cabinets).

7. A final summary report should be completed that outlines the results of the mitigation program. This report should include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. This report shall be submitted to appropriate agencies (e.g., project proponent, Kern County representatives), as well as to the designated repository (if fossils are recovered).

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APPENDIX I

NOISE MEMORANDUM

MEMO

Date: March 16, 2018 **Project No.:** 150447.15

To: John Wieland, Project Development Director

From: Jaymie Brauer, Principal Planner

Subject: Noise Memorandum for the Gettysburg Solar Project

This technical memorandum provides a quantitative analysis of the noise construction and operational impacts of developing the Gettysburg Solar Project (Project). This memorandum includes sections about the Project description, environmental and regulatory setting, methodology, thresholds of significance, and Project-related construction and operational impacts.

Project Description

The Project would develop a photovoltaic (PV) solar facility and associated infrastructure necessary to generate a 30 megawatt (MW) photovoltaic electric generating solar PV facility including approximately 30 MW of battery energy storage on approximately 160 acres of privately-owned land (Figure 1). A proposed gen-tie route will run east along Rosamond Blvd to connect to the existing Rosamond substation.

The Project would consist of approximately 125,000 crystalline-silicon modules or 100,000 thin-film modules arranged in a grid-pattern over the Project site. Power generated by the proposed project would be transferred directly to SCE's Antelope-Cal Cement-Rosamond 66-kV line. The PV solar generating facilities would consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts. The proposed solar facilities are intended to operate year-round, and would generate electricity during daylight hours when electricity demand is at its peak.

The construction activities for the Project generally fall into three main categories: 1) site preparation; 2) system installation; and 3) testing, commissioning, cleanup. The entire process is estimated to take up to 14 months. Site grading and earthwork is anticipated to begin during the fourth quarter of 2019, with operations beginning in the fourth quarter of 2020. Although the Project may be built in separate phases, for analysis and discussion in this document, construction would be analyzed for the worst-case scenario, which assumes all construction would be conducted concurrently.

The onsite construction workforce for the project is expected to peak at 150 individuals; however, the average workforce is expected to be 70 construction, supervisory, support, and

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construction management personnel onsite during construction. It is anticipated that the construction workforce would commute to the site each day from local communities.

Environmental Setting

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound. It is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (interference with communication, sleep, and learning);
- Physiological effects (a startled response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human response to typical environmental noise exposure is related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to effects that interrupt daily activities. Such effects include interference with human communication, such as having a normal conversation, watching television, or talking on the telephone, and interference with sleep. Sleep interference effects can include both awakening from sleep and arousal to a lesser state of sleep.

Sound is a physical phenomenon. It consists of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the sound's pitch (tone) and is measured in cycles per second (Hertz [Hz]), while amplitude describes the sound's pressure (loudness). Because the range of sound pressures that occur in the environment is extremely large, it is convenient to express these pressures on a logarithmic scale that compresses the wide range of pressures into a more useful range of numbers. The standard unit of sound measurement is the decibel (dB). Hz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point.

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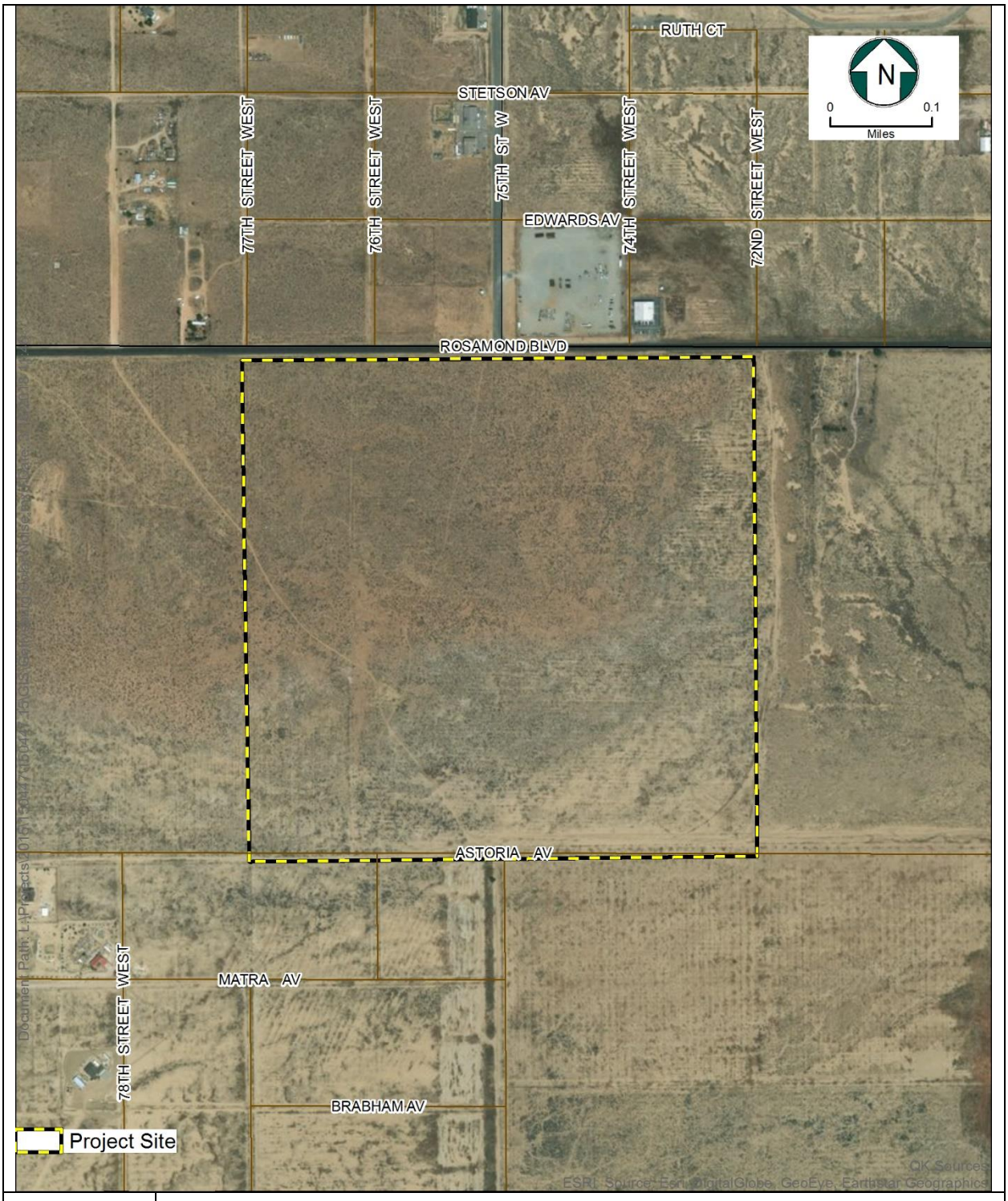


Figure 1
Project Site

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Sound levels are expressed by reference to a specified national/international standard. The sound pressure level is used to describe sound pressure (loudness) and is specified at a given distance or specific receptor location. In expressing sound pressure level on a logarithmic scale, sound pressure is referenced to a value of 20 micropascals (μPa). The sound pressure level depends not only on the power of the source but also on the distance from the source to the receiver and the acoustical characteristics of the sound propagation path (absorption, reflection, etc.).

Outdoor sound levels decrease logarithmically as the distance from the source increases. This decrease is due to wave divergence, atmospheric absorption, and ground attenuation. Sound radiating from a source in a homogenous and undisturbed manner travels in spherical waves. As the sound waves travel away from the source, the sound energy is dispersed over a greater area, decreasing the sound pressure of the wave. Spherical spreading of the sound wave from a point source reduces the noise level at a rate of 6 dB over hard surfaces (e.g., parking lots) and 7.5 dB over soft surfaces (e.g., soft dirt, grass, and scattered bushes and trees) for each doubling of the distance.

Atmospheric absorption also influences the sound levels received by an observer. The greater the distance traveled in the atmosphere, the greater the influence of the atmosphere and the resultant fluctuations. Atmospheric absorption becomes important at distances greater than 1,000 feet. The degree of absorption varies depending on the frequency of the sound as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high humidity and high temperatures, and lower frequencies are less readily absorbed (i.e., sound carries farther) than high frequencies. Over long distances, lower frequencies become dominant as the higher frequencies are more rapidly attenuated. Turbulence, gradients of wind, and other atmospheric phenomena also play a significant role in determining the degree of attenuation. For example, certain conditions, such as temperature inversions, can channel or focus the sound waves, resulting in higher noise levels than would result from simple spherical spreading.

Sound from a tuning fork contains a single frequency (a pure tone), but most sounds in the environment do not consist of a single frequency. Instead, they encompass a broad band of frequencies of differing sound levels. Because of this broad range of audible frequencies, methods have been developed to quantify these values as a single number, one that is representative of human hearing, which is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. The most common method used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that is reflective of human hearing characteristics. This process is termed "A weighting," and the resulting dB level is termed the "A-weighted" decibel (dBA).

Because A-weighting is designed to emulate the frequency response characteristics of the human ear and reflect the way people perceive sounds, it is widely used in local noise

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ordinances and State and federal guidelines. Unless specifically noted, the use of A-weighting is always assumed with respect to sound, even if the notation does not include the "A."

In terms of human perception, a sound level of 0 dBA is the threshold of human hearing and barely audible by a healthy ear under extremely quiet listening conditions. This threshold is the reference level against which the amplitude of other sounds is compared. Normal speech has a sound level of 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort, progressing to pain at still higher levels. Humans are much better at discerning relative sound levels than absolute sound levels. The minimum change in the sound level of individual events that an average human ear can detect is about 1 to 3 dBA. A 3 to 5 dBA change is readily perceived. An increase (or decrease) in sound level of about 10 dBA is usually perceived by the average person as a doubling (or halving) the sound's loudness.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor, termed the equivalent sound level (Leq), is used to describe sound that is constant or changing in level. Leq is the energy-mean dBA during a measured time interval. It is the "equivalent" sound level produced by a given constant source equal to the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum instantaneous (Lmax) and minimum instantaneous (Lmin) noise level indicators that represent the rootmean- square maximum and minimum noise levels measured during the monitoring interval. The Lmin value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L10, L50, and L90 may be used, which represent the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with L10 typically describe transient or short-term events, L50 represents the median sound level during the measurement interval, and L90 levels are typically used to describe background noise conditions.

The Day-Night Average Sound Level (Ldn or DNL) represents the average sound level for a 24-hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period (10:00 p.m. to 7:00 a.m.). The Ldn is the descriptor of choice and used by nearly all federal, state, and local agencies throughout the United States to define acceptable land use compatibility with respect to noise. Within California, the Community Noise Equivalent Level (CNEL) is sometimes used. CNEL is very similar to Ldn, except that an additional 5 dBA penalty is applied to the evening hours (7:00 p.m. to 10:00 p.m.). Because of the time-of-day penalties associated with the Ldn and CNEL descriptors, the Ldn or CNEL dBA value for a

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continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24-hour Leq. Thus, for a continuously operating noise source producing a constant noise level operating for periods of 24 hours or more, the Ldn will be 6 dBA higher than the 24-hour Leq value.

To provide a frame of reference, example noise sources and their respective sound levels are presented in Table 1.

Table 1
Sound Levels and Human Response

Example Noise Source	Sound Level (dBA)	Human Response
Jet Engine	140	Harmfully loud
Shotgun Firing	130	Pain threshold
Thunderclap	120	
Rock Music Band	110	Regular exposure over 1 minute risks permanent hearing loss
Garbage Truck	100	No more than 15-minute exposure recommended
Lawnmower	90	Annoying
Average City Traffic Noise	80	Annoying – interferes with conversation
Vacuum Cleaner	70	Telephone use difficult
Normal Conversation	60	Comfortable
Quiet Office	50	Quiet
Refrigerator Humming	40	
Whisper	30	Very quiet
Rustling Leaves	20	Just audible
Normal Breathing	10	
	0	Threshold of hearing

Source: Branch and Beland 1970.

The construction of the Project would require various pieces of construction equipment. Table 2 provides the anticipated construction equipment required for the Project and estimated sound generated by this equipment at 50 feet from the equipment.

Table 2
Estimated Construction Equipment Sound Levels at 50 Feet

Construction Equipment	Estimated Sound Level (dBA) at 50 Feet
Crane	85
Excavator	85
Grader	85
Roller	85

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Construction Equipment	Estimated Sound Level (dBA) at 50 Feet
Scraper	85
Tractor/Loader/Backhoe	80
Trencher	85

Source: FHWA 2011.

Most of the proposed construction equipment is estimated to emit sound of 85 dBA at 50 feet, which is considered "annoying – interferes with conversation" but below the dBA thresholds that could result in hearing loss, pain, or harm (see Table 1). Using the rule that sound reduces 7.5 dBA per a doubling of distance over soft surfaces, such as the flat desert plain in the Project area, Table 3 illustrates how sound would attenuate over distance for a piece of construction equipment that emits sound at 85 dBA at 50 feet within such a soft-surfaces environment.

Table 3
Sound Decrease on Soft Surfaces over Distance for Construction Equipment Emitting 85 dBA at 50 Feet

Distance (Feet)	Distance (Miles)	Sound Level (dBA)	Human Response
50	0.0095	85.0	Annoying – interferes with conversation
100	0.019	77.5	Telephone use difficult
200	0.038	70.0	Telephone use difficult
400	0.076	62.5	Comfortable
800	0.15	55.0	Quiet
1,600	0.30	47.5	Quiet
3,200	0.61	40.0	Quiet
6,400	1.2	32.5	Very quiet
12,800	2.4	25.0	Just audible
25,600	4.8	17.5	Just audible
51,200	9.7	10.0	Just audible
102,400	19.4	2.5	Threshold of hearing

Note: Assumes flat ground without any obstructions (e.g., manmade structures) or topographic relief that would absorb sound.

Land uses deemed sensitive by the State include schools, hospitals, rest homes, and long-term care and mental care facilities, which are more sensitive to ambient (i.e., of or relating to the immediate surroundings of something) noise levels than others. Many jurisdictions also consider residential uses particularly noise-sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also identify other noise-sensitive uses such as churches, libraries, and parks. Land uses that are generally not considered to be noise sensitive receptors include office, commercial, and retail developments as well as industrial, manufacturing, utilities, and agricultural land use.

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Figure 2, below, provides the location of the nearest sensitive noise receptors within 1,000 feet of any Project boundary in each direction. The 1,000-foot buffer was chosen for the analysis because: 1) the Kern County Noise Ordinance (see below) places limitations on hours of construction for projects located within 1,000 feet of an occupied residential dwelling and 2) the sound level of a piece of construction equipment that emits 85 dBA at 50 feet would be attenuated to a level that is considered "quiet" by the human ear beyond 800 feet (see Table 3). As shown in the figure, three residences are located within the 1,000-foot buffer of the Project site. Due to County required setbacks and natural topographic features, Project construction activity emanating sound at 85 dBA, would not be located at the Project boundary. Most of the construction activity would occur at a minimum of 100 feet to 1000 feet from the Project boundary. Based on the proposed site plan, Table 4 shows the distance from construction activities to the closest residence in each direction, anticipated sound levels at the residences because of construction, and anticipated human response at the residences to construction-related noise.

Table 4
Nearest Residence's Distances from Project Construction in Each Direction, Anticipated Sound Levels at Residences, and Human Response to Sound Levels Because of Project Construction

Direction[1]	Distance from Construction Activity	Anticipated Sound Level (dBA) at Residence[2]	Human Response
Northwest	323	62.5-70.0	Comfortable to telephone use difficult
Northwest	934	<55.0	Quiet
Southwest	989	<55.0	Quiet

[1]See Figure 2
[2]Estimated based on construction equipment with sound level of 85 dBA at 50 feet and distance of residence from Project construction

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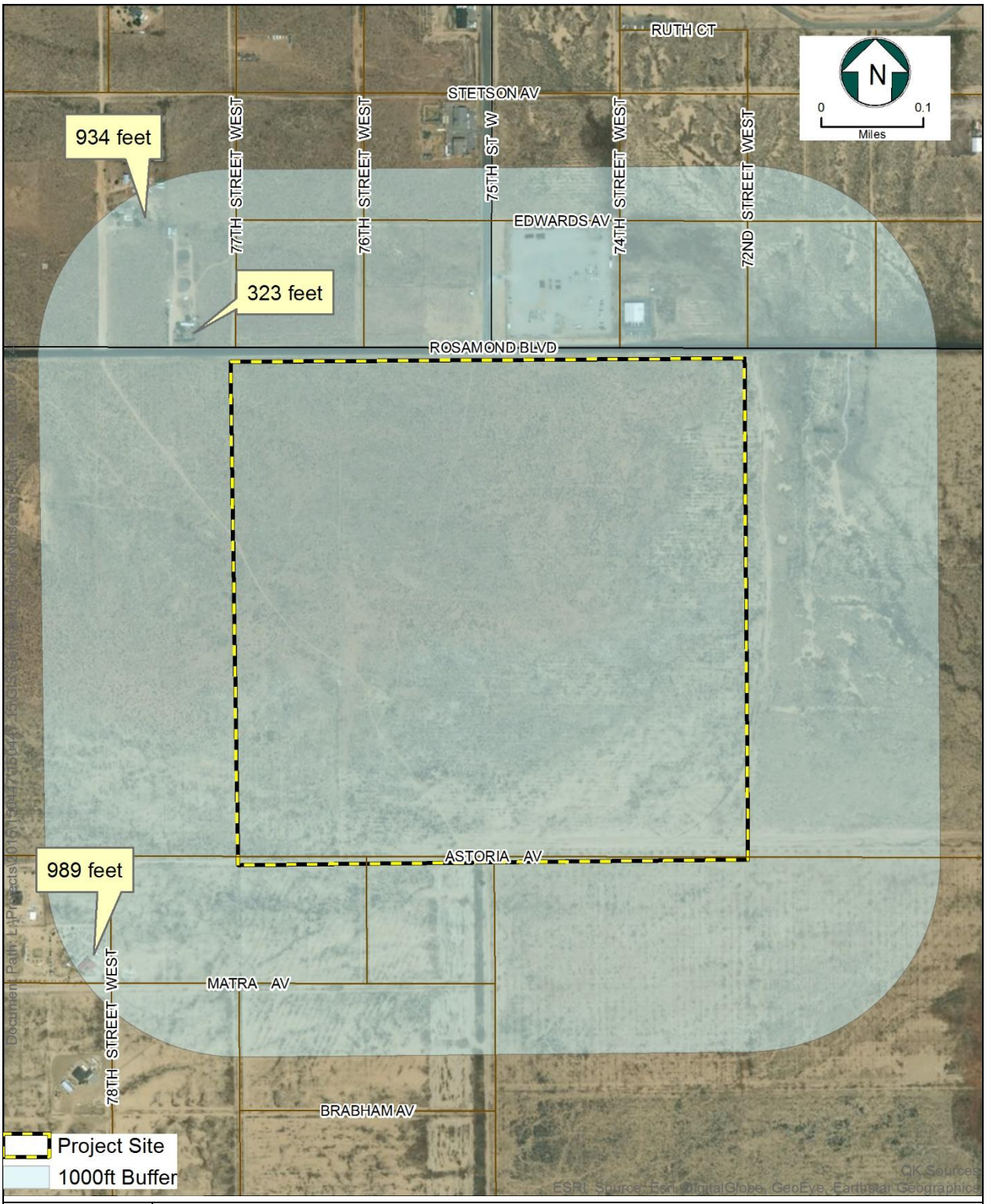


Figure 2
Sensitive Receptors

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Other sensitive noise receptors, such as schools, hospitals, rest homes, long-term care and mental care facilities, churches, libraries, and parks are not found within the 1,000-foot buffer.

Regulatory Setting

Federal

Noise Control Act of 1972 (42 USC 4910)

The Noise Control Act establishes a national policy to promote an environment for all Americans free of noise that jeopardizes their health and welfare. The Act serves to establish a means for effective coordination of Federal research and activities in noise control, it also authorizes the establishment of Federal noise emissions standards for products distributed in commerce, and provides information to the public with respect to the noise-emission and noise-reduction characteristics of such products.

Occupational Safety and Health Administration Occupational Noise Exposure; Hearing Conservation Amendment

The standard stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA [29 CFR 1910.95(c)(1)]. The Hearing Conservation Program requirements consider periodic area and personal noise monitoring, the performance and evaluation of audiograms, the provision of hearing protection, annual employee training, and record keeping.

State

The California Department of Health Services has studied the correlation of noise levels and their effects on various land uses and established guidelines for evaluating the compatibility of various land uses, for the noise elements of local general plans, as a function of community noise exposure. The guidelines are the basis for most noise element land use compatibility guidelines in California. The state requires all municipalities to prepare and adopt a comprehensive long-range general plan. General plans must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health Safety Code). The requirements for the noise element of the general plan include describing the noise environment quantitatively using a cumulative noise metric such as CNEL or DNL, establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise

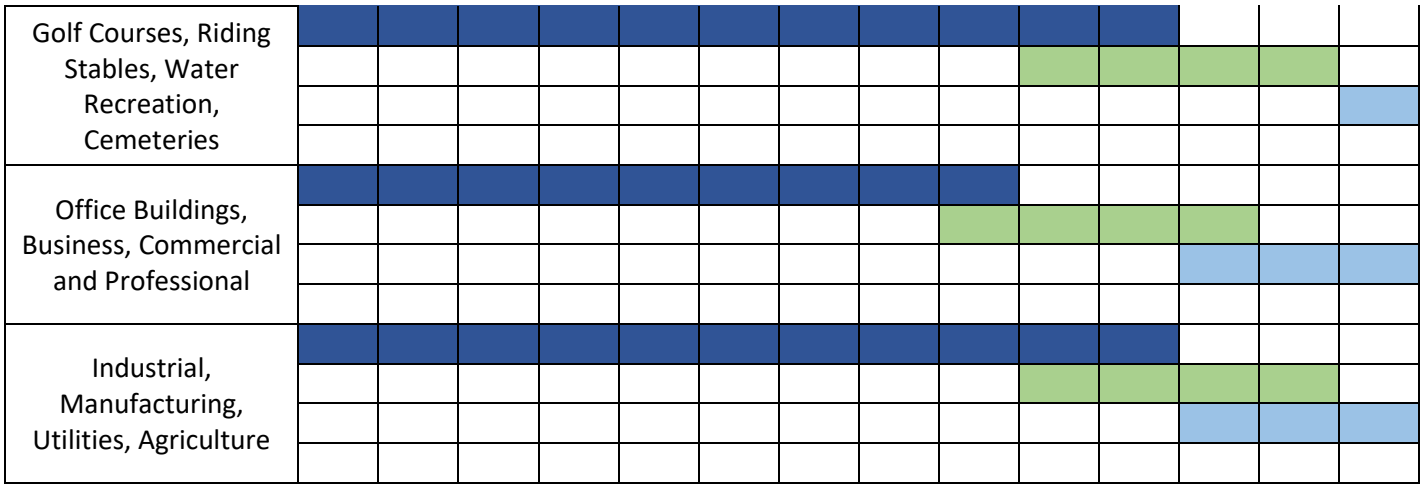
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sources in the community, including mobile and stationary noise sources. In California, most cities and counties have also adopted noise ordinances which serve as enforcement mechanisms for controlling noise. The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in Table 5. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and below are considered "acceptable." For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels go up to 70 dBA CNEL.

Table 5
Land Use Compatibility for Community Noise Environment

Land Use Category	Community Noise Exposure - Ldn or CNEL (dBA)													
	50		55		60		65		70		75		80	
Residential – Low Density Single Family, Duplex, Mobile Home														
Residential – Multi-Family														
Transient Lodging – Motel/Hotel														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														

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	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, 2003.

CEQA (PRC Section 21000 et seq.) requires the identification of "significant" environmental impacts and their feasible mitigation. Section XI of Appendix G to the CEQA Guidelines (CCR Title 14, Appendix G) lists some indicators of potentially significant impacts, which are included below under Thresholds of Significance.

CEQA does not define a threshold for "significant increase" with respect to noise exposure; however, based on human response and commonly applied industry standards, the following thresholds of significance would be applied to the proposed project, as set forth by the CEQA Guidelines:

- The project causes the ambient noise level measured at the property line of affected uses to increase by more than 3 dBA above the "normally unacceptable" noise/land use compatibility category; or

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- For operational activities, the project causes any 5 dBA or greater noise increase.

Local

Kern County Noise Ordinance

The Noise Control Ordinance in the Kern County Ordinance (Section 8.36.020 et seq.) prohibits a variety of nuisance noises. Construction-related noise is regulated by means of a limitation on the hours of construction activity for projects located within 1,000 feet of an occupied residential dwelling. In such cases, the ordinance limits the hours of allowable construction activities from 6:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to 9:00 p.m. on weekends, except as provided below:

- The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
- Emergency work is exempt from this section.

Kern County General Plan Noise Element

The Noise Element of the Kern County General Plan (General Plan) is a mandatory element as required by California Government Code Section 65302(f). The state requires that local jurisdictions prepare statements of policy indicating their intentions regarding noise and noise sources, establish desired maximum noise levels according to land use categories, set standards for noise emission from transportation and fixed-point sources, and prepare implementation measures to control noise. Noise Elements are prepared in accordance with Guidelines for the Preparation and Content of Noise Elements of the General Plan, published by the California Office of Noise Control in 1976.

The General Plan goals, policies, and implementation measures outlined below are applicable to the proposed project.

Chapter 3. Noise Element

3.2. Noise Sensitive Areas

Goal 1. Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.

Goal 2. Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policy 1. Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

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Policy 3. Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.

Policy 4. Utilize good land use planning principles to reduce conflicts related to noise emissions.

Policy 7. Employ the best available methods of noise control.

Implementation Measures

Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.

Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public arid private sectors, to ascertain and ensure their conformance to the policies outlined in this element.

Measure D: Review discretionary development plans for proposed residential or other noise sensitive land uses in noise-impacted areas to ensure their conformance with the noise standards of 65 dB L_{dn} or less in outdoor activity areas and 45 dB L_{dn} or less within interior living spaces.

Measure E: Review discretionary development plans to ensure compatibility with adopted Airport Land Use Compatibility Plans.

Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

a) Be the responsibility of the applicant.

b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.

Measure I: Noise analyses shall include recommended mitigation, if required, and shall:

a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10 - 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.

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c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process

Methodology

Potential significant impacts associated with the Project were evaluated on a qualitative basis through a review of existing literature and available information, and by using professional judgment in comparing the anticipated Project effects on noise with existing conditions. The evaluation of Project impacts is based on significance criteria established by Appendix G of the State CEQA Guidelines, which the Lead Agency has determined to be appropriate criteria for this draft EIR.

Thresholds of Significance

Appendix G of the CEQA Guidelines states that a project would have a significant impact on noise if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generate excessive ground borne vibration or ground borne noise levels;
- Lead to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Lead to a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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 expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

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Project Impacts

Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

Construction

The Project would generate noise during construction using construction equipment, such as a crane, excavator, grader, roller, scraper, tractor/loader/backhoe, and trencher. It is estimated that such equipment would generate sound levels between 80 and 85 dBA at 50 feet, which is considered "annoying" to the human ear. The Kern County Noise Control Ordinance regulates construction-related noise by limiting the hours of construction activity for projects located within 1,000 feet of an occupied residential dwelling. Specifically, the Ordinance limits noise from construction activities to the hours of 6:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 9:00 p.m. on weekends for persons with average hearing faculties or capacity to a distance of 150 feet from the site.

As shown in Figure 2, the closest residences within a 1,000-foot buffer are located to 323 feet northwest, 934 feet northwest, and 989 feet southwest of construction activity capable of generating noise levels in excess of 65 dBA. No other sensitive types of noise receptors are found within the 1,000-foot buffer.

The Project proponent would limit construction activities during the 14-month construction period to between 7:00 a.m. and 6:00 p.m. on Monday through Friday. Construction within 1,000 feet of a residential dwelling would occur in compliance with the Kern County Noise Ordinance.

Additionally, the Occupational Health and Safety Administration (OSHA) requires that a Hearing Conservation Program be instituted by employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA. Since Project construction would occur during 8-hour work days and because the equipment to be used generate 85 dBA at 50 feet, if construction workers were to be exposed to noise levels in excess of this standard, the impact would be significant.

The following recommended measure would reduce construction noise impacts to a to less-than-significant level.

Recommended Measures

Noise-1: The Project proponent shall establish a Hearing Conservation Program to be adhered to by employees exposed to noise levels equal to or exceeding an 8-hour time-weighted average sound level of 85 dBA. The Program shall include provisions for periodic noise monitoring, issuance and proper use of hearing protection, employee training, and log books kept on-site during all construction activities.

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Operation

Project operation would not generate appreciable noise. The hum of electrical generation from the facility would generate noise levels of 48 dBA at 40 feet, and would be "quiet" to "just audible" to the human ear. Project operation would not cause the ambient noise level measured at the property line of affected uses to increase by 3 dBA, to a level at or within the "normally unacceptable" or cause any 5 dBA or greater noise increase, which are significance criteria per the CEQA Guidelines. The Kern County General Plan provides maximum noise standards of 65 dBA Ldn at the exterior of a residence. Converting 48 dBA at 40 feet to the County day/night weighted dBA Ldn standard would produce a sound level of 53 dBA Ldn. This would be much lower than the 65 dBA Ldn County standard. Therefore, the Project would not expose persons to or generation of noise levels more than established standards during operation and impacts would be less than significant.

Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

Construction

Some groundborne vibration and groundborne noise would originate from earth movement and other construction activities during the construction phase of the Project. As shown in Figure 2 and described in Table 4, few residences are located within 1,000 feet of Project construction. Construction would be temporary and only occur near these residences at the closest point for no more than a few days (likely 5 days maximum) and during daylight hours. Additionally, the vibrations for pile driving, the construction activity with greatest vibration generation, attenuate within 300 feet (Kim and Lee 1999). The closest residences within a 1,000-foot buffer are located to 323 feet northwest, 939 feet northwest, and 989 feet southwest of construction activity utilizing equipment capable of creating groundbourne vibration.

The County of Kern does not have adopted vibration level thresholds. However, he California Department of Transportation (Caltrans) use certain criteria for determining impacts to structures and human annoyance. These thresholds measure the Peak Particle Value (PPV). The maximum PPV for continuous/frequent intermittent sources, used by Caltrans, for older residential structures is 0.30 PPV and 0.10 PPV for "strongly perceptible".

For this analysis it is assumed that pile driving activities would not occur closer than 323 feet from the nearest sensitive receptor. Other construction activities are less intensive than pile driving and would have lower PPV. Therefore, vibration levels from pile driving are considered worst case for the solar facility construction. Caltrans vibration guidance provides the following equation to calculate PPV at sensitive receptors, such as residences:

$$\text{PPV Impact Pile Driver} = PPV_{Ref} (25/D)^{n} \text{ (in/sec)}$$

Where:

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PPV_{Ref} = 0.65 in/sec for a reference pile driver at 25 ft.
D = distance from pile driver to the receiver in ft.
n = 1.1 is a value related to the vibration attenuation rate through ground

Using the referenced formula and an assumed 1,212 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence (323 feet) would be 0.06 PPV, which according to the Caltrans guidance would not damage buildings and would be less than strongly perceptible. Therefore, groundborne vibration from construction activities would be less than significant.

Operation
The Project operation would not generate any groundborne vibration and noise. Therefore, the Project would not result in the exposure of persons to or generation of excessive groundborne vibration and groundborne noise levels during operation, and there would be no impact.

A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project

Construction
By construction's temporary nature, it does not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. Therefore, the Project would have no impacts.

Operation
Once constructed, the Project would not permanently increase ambient noise levels above the baseline condition because a solar facility makes no appreciable noise. There would be the hum of electrical equipment and cooling fans, but this would be like existing electrical facilities in the Project area. The hum of electrical generation from the facility would generate noise levels of 48 dBA at 40 feet, and would be "quiet" to "just audible" to the human ear. Since the nearest sensitive receptor is located more than 263 feet from the project boundary, Project operation would not cause the ambient noise level measured at the property line of affected uses to increase by 5 dBA or greater noise increase, which are significance criteria per the CEQA Guidelines. The Kern County General Plan provides maximum noise standards of 65 dBA Ldn at the exterior of a residence. Converting 48 dBA at 40 feet to the County day/night weighted dBA Ldn standard would produce a sound level of 53 dBA Ldn. This would be much lower than the 65 dBA Ldn County standard. Therefore, the Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project, and impacts are less than significant.

A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

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Construction
Construction would cause a temporary or periodic increase in ambient noise levels during the construction, which could be considered significant. The nearest residences in each direction would experience sound levels considered "quiet" to "telephone use difficult" because of construction. The Project proponent would implement recommended measure Noise-1, thereby reducing noise impacts to less than significant levels.

Recommended Measures

Noise-1: To reduce temporary construction related noise impacts, the following shall be implemented by the project proponent:

1. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible.
2. The contractor shall ensure all construction equipment is equipped with manufacturers approved mufflers and baffles, where feasible.
3. The construction contractor shall establish a Noise Disturbance Coordinator (NDC) for the project during construction. The NDC shall be responsible for responding to any complaints about construction noise. The NDC shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the NDC shall be submitted to the Kern County Planning and Natural Resources Department prior to any ground disturbing activities commence.
4. During all construction or decommissioning phases of the project, the construction contractor shall limit all on-site noise-producing activities to the hours of 6:00 a.m. to 9:00 p.m., Monday through Friday, and to the hours of 8:00 a.m. and 9:00 p.m. on Saturdays and Sunday or as required through the Kern County Noise Ordinance (Municipal Ordinance Code 8.36.020).

Operation
As stated above, the Project operation would not cause a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. The hum of electrical generation equipment and fans from the facility would be "quiet" to "just audible" to the human ear. The Project is in a rural environment and it located near an airport and various highways and therefore, the humming sound emanating from the site would be far quieter than the existing noise generated from the nearby airport and highways. Project operation would not cause the ambient noise level measured at the property line of affected uses to increase by 5 dBA or greater noise increase, which are significance criteria per the CEQA Guidelines.

Activities associated with a potential decommissioning of the project would result in similar or lower noise levels than those that would be experienced under the loudest phases of

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construction. Therefore, decommissioning activity noise levels could result in disturbances of noise sensitive receptors in the project vicinity similar to those during the loudest construction phases if activities are not restricted to daytime hours. Therefore, to reduce any potential noise impact to off-site sensitive receptors, Recommended measure Noise-1 be implemented. Therefore, the Project would have less than significant impacts.

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 expose people residing or working in the project area to excessive noise levels

For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

Construction
The closest airport is the Rosamond Skypark located about 6.7-miles to the southeast of the Project site. The Project site is located entirely outside the airport's land use plan area (Kern County 2012). The construction of the Project would not expose construction workers to intermittent noises related to the landing and take of airplanes at the airport. Therefore, the project would have no impact.

Operation
The solar facility would be unmanned. Occasionally workers would come to the facility for as-needed and scheduled maintenance, and to regularly clean the solar panels. The Rosamond Skypark is designed to handle up to twin-engine propelled aircraft. At 6.7-miles, take-off and landings would not be audible over baseline conditions. Therefore, the Project would have no impact.

Conclusions

It is suggested that the above recommended measures Noise-1 through Noise-3 be incorporated into the environmental documentation as mitigation, or Project design features, and included in the building specifications. With implementation of the above refenced recommendations, noise impacts to sensitive receptors would be considered ***less than significant***.

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APPENDIX J

TRAFFIC EVALUATION

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5080 California Avenue, Suite 220
Bakersfield CA 93309

REF: Traffic Investigation and VMT Evaluation for Proposed Gettysburg Solar Project in Southern Kern County, CA

Dear Ms. Brauer:

This letter is in response to your request for a traffic investigation and vehicle miles traveled (VMT) evaluation for the Gettysburg Solar Project, a proposed 30-MW solar PV facility situated on approximately 160 acres of undeveloped land in the community of Rosamond, California. The project site is located approximately 5.25 miles west of State Route 14 on the south side of Rosamond Boulevard midway between 70th Street and 80th Street.

PROJECT TRIP GENERATION

Trip generation estimates were developed for project construction and project operation and maintenance based on information provided by the project applicant. These estimates include both ADT (average daily traffic) and peak hour (AM and PM) volumes.

Construction Phase

Construction traffic would consist of worker passenger vehicles and heavy trucks delivering parts, equipment and materials to the project site. It is anticipated that construction activities would take place primarily Monday through Friday during daylight hours. Construction traffic would access the project site from Rosamond Boulevard.

Project construction is estimated to take approximately eight to ten months to complete and would involve an average daily workforce of approximately 70 personnel. The daily workforce is anticipated to increase to approximately 150 personnel during the peak of project construction which is expected to occur over a period of a few weeks. Trip generation estimates for the project construction phase are shown in Tables 1a and 1b.

Table 1a
Trip Generation
Construction Phase: Non-Peak Period

			ADT	AM Peak Hour		PM Peak Hour	
				IN	OUT	IN	OUT
Trip Type	Vehicle Type	Variable	Daily Trips	% Split Trips	% Split Trips	% Split Trips	% Split Trips
Worker	Passenger	70 Workers	105	50 21	0 0	0 0	50 21
Delivery	Heavy Truck	2 Deliveries	6	25 2	0 0	0 0	25 2
		TOTAL	111	23	0	0	23

Table 1b
Trip Generation
Construction Phase: Peak Period

			ADT	AM Peak Hour		PM Peak Hour	
				IN	OUT	IN	OUT
Trip Type	Vehicle Type	Variable	Daily Trips	% Split Trips	% Split Trips	% Split Trips	% Split Trips
Worker	Passenger	150 Workers	225	50 45	0 0	0 0	50 45
Delivery	Heavy Truck	7 Deliveries	21	25 5	0 0	0 0	25 5
		TOTAL	246	50	0	0	50

It is anticipated that workers would commute from local communities, including Rosamond, Lancaster, Palmdale and Mojave, or stay at hotels located in these communities, during both peak and non-peak construction periods. The Federal Highway Administration (FHWA) average light vehicle occupancy rate of 1.67 was applied to worker trips to account for carpooling of construction personnel. In addition, it was assumed that 50 percent of the daily workforce would enter and exit the project site during the AM and PM peak hours, respectively. It was also assumed that 25 percent of the workforce would exit and return to the project site during the work day.

The number of daily deliveries made during peak and non-peak construction periods was estimated based on assumptions regarding parts, equipment and materials needed for project construction. Following guidelines contained in the Transportation Research Board's Highway Capacity Manual 2010 (HCM 2010), the daily volume of heavy trucks was converted to a passenger-car equivalent volume by applying a factor of 1.5 (Exhibit 11-10). This conversion accounts for the effective reduction in free-flow speed caused by the presence of heavy trucks in the traffic flow. It was also assumed that 25 percent of the heavy trucks would enter and exit the project site during the AM and PM peak hours, respectively.

Operation & Maintenance Phase

Upon completion, the proposed solar facility would be operated and monitored remotely 24 hours a day, seven days a week. The facility's regular maintenance program would be conducted on site primarily during daylight hours.

It is anticipated that seasonal washing of the PV panels would generate the greatest volume of project traffic during the operation and maintenance phase. Panel washing would occur up to four times a year and take approximately ten days to complete. It is expected that maintenance workers would commute from local communities. Trip generation estimates for panel washing are shown in Table 2.

Table 2
Trip Generation
Operation and Maintenance Phase: Panel Washing

			ADT	AM Peak Hour		PM Peak Hour	
				IN	OUT	IN	OUT
Trip Type	Vehicle Type	Variable	Daily Trips	% Split Trips	% Split Trips	% Split Trips	% Split Trips
Worker	Passenger	3 Workers	8	100 3	0 0	0 0	100 3
Delivery	Water Truck	3 Deliveries	9	25 2	0 0	0 0	25 2
		TOTAL	17	5	0	0	5

It is estimated that the washing of PV panels would require a maximum daily workforce of three maintenance personnel. A carpool rate was not applied to worker trips given the relatively low number of workers. In addition, it was assumed that all workers would enter and exit the project site during the AM and PM peak hours, respectively. It was also assumed that 25 percent of the workers would exit and return to the project site during the work day.

Similarly, it is estimated that three heavy trucks would deliver water to the project site every day. The HCM 2010 passenger-car equivalent factor of 1.5 was applied to the water truck trips. It was also assumed that 25 percent of the water trucks would enter and exit the project site during the AM and PM peak hours, respectively.

Traffic Impact Analysis Threshold

In compliance with California Department of Transportation traffic impact study guidelines, dated December 2002, the County of Kern's threshold for requiring a traffic impact analysis is the addition of 50 project trips to one or more intersections during the peak hour of adjacent street traffic. The peak hour of adjacent street traffic typically occurs on weekdays during the AM or PM peak hour for commuter traffic.

The project is estimated to generate 50 peak hour trips during the peak of construction, 23 peak hour trips during non-peak construction activities and five peak hour trips during the peak period of operation and maintenance, as shown in Tables 1a, 1b and 2, respectively. As shown on Figure 3, project trips will distribute east and west on Rosamond Boulevard. All three trip generation estimates are below the traffic impact analysis threshold of 50 peak hour trips at any one intersection. Therefore, the project is not expected to result in a significant transportation impact.

VEHICLE MILES TRAVELED (VMT) EVALUATION

An evaluation of vehicles miles traveled (VMT) was conducted based on applicable California Environmental Quality Act (CEQA) Guidelines. The VMT evaluation included both project construction and project operation and maintenance.

Guidelines for assessing project VMT as part of a transportation impact analysis under CEQA are contained in the State of California, Office of Planning and Research's "Technical Advisory on Evaluating Transportation Impacts in CEQA," dated December 2018. This advisory includes methodology recommendations for analyzing project VMT, including the following regarding vehicle type (page 4).

> **Vehicle Types.** Proposed (CEQA Guideline) Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks.

The Technical Advisory also contains screening thresholds for identifying whether a land use project should be expected to result in a less than significant transportation impact under CEQA. One such threshold pertains to project size. According to the Advisory, a project that generates fewer than 110 trips per day may be assumed not to cause a significant transportation impact.

As shown in Tables 1a and 2, the number of daily passenger vehicle trips generated during the non-peak period of project construction and the peak period of project operation and maintenance (105 and eight, respectively) satisfies the small project screening threshold. Therefore, the project is expected to have a less than significant transportation impact during these phases.

While, as shown in Table 1b, the number of daily passenger vehicle trips generated during the peak of project construction (225) exceeds the small project screening threshold, the duration of peak construction activities would be limited to a few weeks. Therefore, peak project construction is not expected to result in a long-term or permanent significant transportation impact.

SUMMARY AND CONCLUSION

Trip generation estimates for the peak of project construction and the peak period of project operation and maintenance fall below the County of Kern's traffic impact analysis threshold of 50 peak hour trips. Therefore, no significant transportation impacts related to project trip generation are anticipated.

Similarly, project VMT is not expected to result in a significant transportation impact under CEQA. The project satisfies the small project screening threshold of 110 trips per day during the non-peak period of construction and the peak period of operation and maintenance. And while this threshold condition is not met for the period of peak construction, the duration of peak construction activities would be limited to a few weeks.

Please contact me should you have any questions.

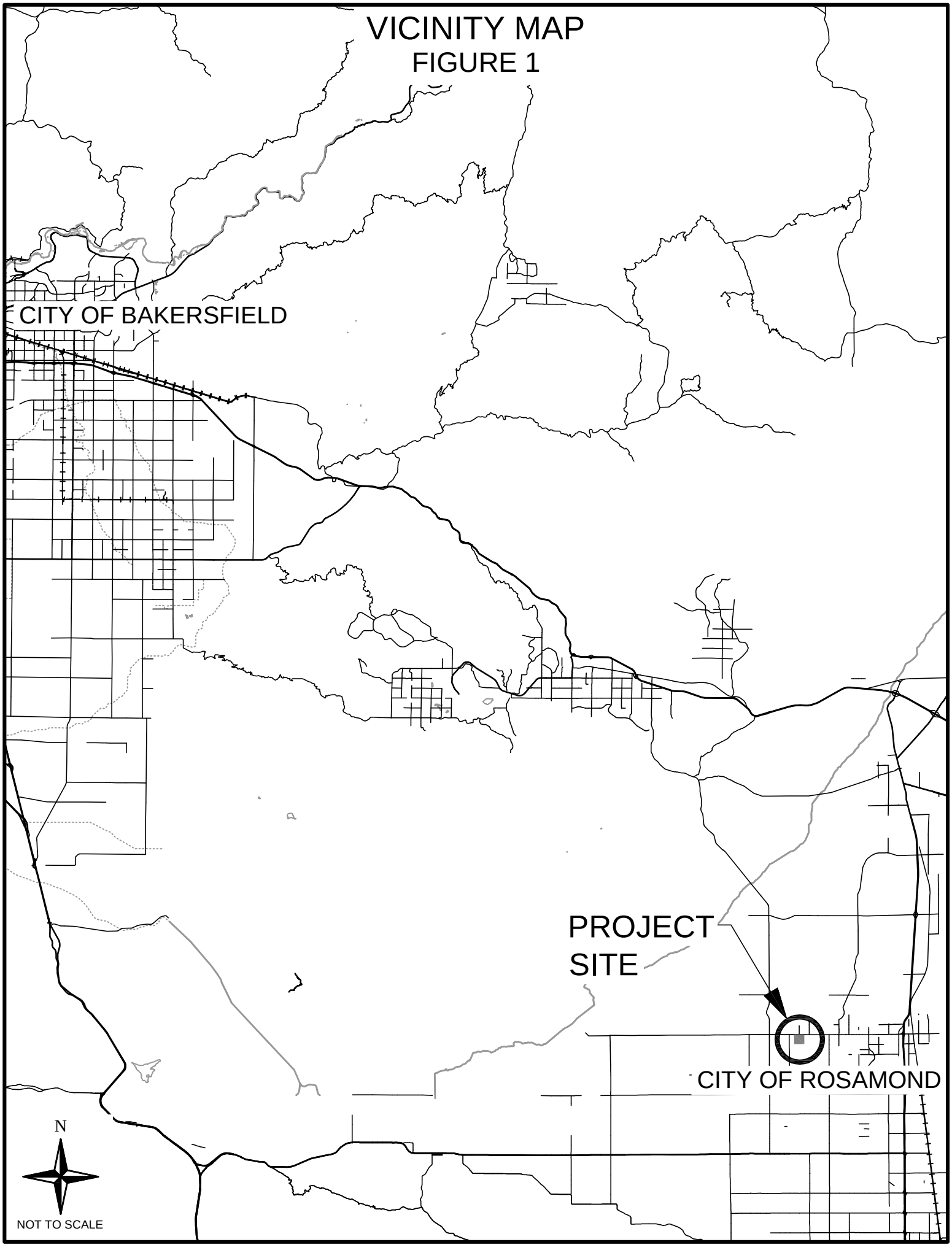
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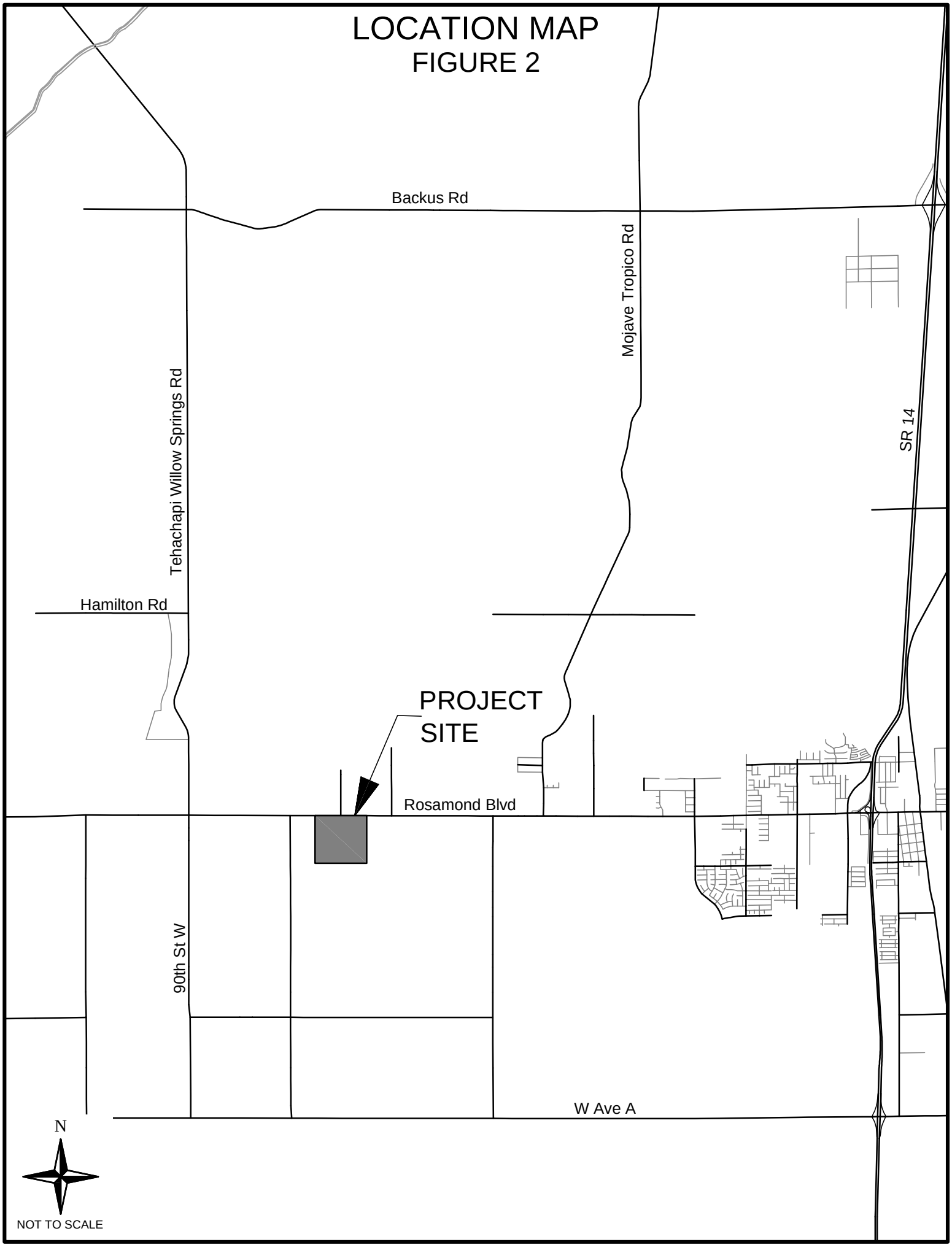
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VICINITY MAP
FIGURE 1



LOCATION MAP
FIGURE 2



PROJECT PEAK HOUR TRAFFIC
FIGURE 3

