Draft
Environmental Impact Report

SCH# 2017081038

Volume 2

Appendices

AV Apollo Solar Project
Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC

CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214; CUP 41, Map 214;
GPA 5, Map 214

Kern County
Planning and Natural Resources Department
Bakersfield, California

December 2019

Table of Contents

Appendices

Appendix A - ISNOP

Appendix B - Visual Sims

Appendix C - Ag Report

Appendix D - AQ Impact Analysis

Appendix E - Biological Analysis Report and Delineation of Waters Report

Appendix F - Cultural Resources Survey and Native American Consultation

Appendix G - Phase I Environmental Site Assessments

Appendix H - Prelim Geotechnical Report

Appendix I - Noise Memorandum

Appendix J - Prelim Hydro Study

Appendix K - Traffic

Appendix L - Water Demand

Appendix M1 - Energy Memo

Appendix M2 – Energy Calculations

Appendix N - Amicus Brief

Appendix A

Initial Study/Notice of Preparation and Comments

ESA

Lorelei H. Oviatt, AICP, Director
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PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning
Community Development
Administrative Operations

NOTICE OF PREPARATION

DATE: August 18, 2017

To: See Attached Mailing List

FROM: Kern County Planning and Natural Resources Department
Attn: Randall Cates
2700 "M" Street, Suite 100
Bakersfield, CA 93301
(661) 862-8612; CatesR@kerncounty.com

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

The Kern County Planning and Natural Resources Department as Lead Agency (per CEQA Guidelines Section 15052) has required that an Environmental Impact Report (per CEQA Guidelines Section 15161) be prepared for the project identified below. The Planning and Natural Resources Department solicits the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval of projects.

Due to the limits mandated by State law, your response must be received by **September 19, 2017 at 5:00 pm.** In addition, comments can be submitted at a **scoping meeting** that will be held at the Kern County Planning and Natural Resources Department on **September 7, 2017 at 1:30pm** at the address shown above.

PROJECT TITLE: EIR 06-17; AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC (PP17144); GPA 5, Map 214; CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214; CUP 40, Map 214; CUP 41, Map 214.

PROJECT LOCATION: The project site is located approximately nine miles southwest of the unincorporated community of Mojave and approximately eight miles northwest of the unincorporated community of Rosamond. State Route (SR) 14 is located approximately 7.3 miles east of the project site, and State Route (SR) 58 is located approximately 9.5 miles north of the project site. The project site is bordered by both Trotter Avenue and Backus Road to the north, Tehachapi Willow Springs Road to the east, Golden Gate Avenue to the south, and 100th Street West to the west. The site is located in Section 18 and 19, Township 10 North, Range 13 West; SBB&M, County of Kern, State of California.

PROJECT DESCRIPTION: The project proponents are requesting: (a) Amendment to the Circulation Element of the Kern County General Plan to eliminate road reservation along the mid-section line in Section 19, T10N/R13W SBB&M, in Zone Map 214 (General Plan Amendment 5, Map 214); (b) Three Conditional Use Permits, each to allow for the construction and operation of a 20 megawatt solar photovoltaic electrical generating facility (Section 19.12.030.G) in an A District (CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214); (c) Conditional Use Permit to allow for the installation and operation of a temporary concrete batch plant on the Syracuse Site during construction of solar facilities (CUP 40, Map 214); (d) Conditional Use Permit to allow for the construction and operation of a communication tower on the Syracuse Site (CUP 41, Map 214); (e) The project's permanent facilities would include, service roads, communication tower, communication cables, overhead and underground transmission lines, electrical switching station, project substations, operations and maintenance facilities, and a gen-tie line to transmit electricity from the project substation on the Sunbow Site to the electrical switching station. An existing gen-tie line would transmit electricity from the electrical switching station to the electrical grid.

Document can be viewed online at: http://pcd.kerndsa.com/planning/notices-of-preparation

Signature: _____
Name: Randall Cates, Planner III

GPA 5, CUP 37-41 Map 214
cc 07/25/2017
I:\Planning\WORKGRPS\WP\LABELS\
214gpa5cup37-41Agencies.docx

City of Arvin
P.O. Box 548
Arvin, CA 93203

Bakersfield City Planning Dept
1715 Chester Avenue
Bakersfield, CA 93301

Bakersfield City Public Works Dept
1501 Truxtun Avenue
Bakersfield, CA 93301

California City Planning Dept
21000 Hacienda Blvd.
California City, CA 93515

Delano City Planning Dept
P.O. Box 3010
Delano, CA 93216

City of Maricopa
P.O. Box 548
Maricopa, CA 93252

City of McFarland
401 West Kern Avenue
McFarland, CA 93250

City of Ridgecrest
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Ridgecrest, CA 93555

City of Shafter
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Shafter, CA 93263

City of Taft
Planning & Building
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Taft, CA 93268

City of Tehachapi
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Tehachapi, CA 93561-1722

City of Wasco
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Wasco, CA 93280

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Independence, CA 93526

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Hanford, CA 93230

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Los Angeles, CA 90012

San Bernardino Co Planning Dept
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San Bernardino, CA 92415-0182

San Luis Obispo Co Planning Dept
Planning and Building
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San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept
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Santa Barbara, CA 93101

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Visalia, CA 93291

Ventura County RMA Planning Div
800 South Victoria Avenue, L1740
Ventura, CA 93009-1740

U.S. Bureau of Land Management
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Ridgecrest, CA 93555

China Lake Naval Weapons Center
Tim Fox, RLA - Comm Plans & Liaison
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China Lake, CA 93555

Edwards AFB, Sustainability Office
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U.S. Fish & Wildlife Service
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Palm Springs, CA 92262

Eastern Kern Resource Cons Dist
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Ridgecrest, CA 93555-4436

Antelope Valley Resource Cons Dist
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Lancaster, CA 93534-3136

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San Francisco, CA 94105

U.S. Dept of Agriculture/NRCS
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Bakersfield, CA 93309-0711

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Regulatory Division
1325 "J" Street, #1350
Sacramento, CA 95814-2920

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Santa Clarita, CA 91383-9321

So. San Joaquin Valley Arch Info Ctr
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Bakersfield, CA 93311

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Planning/Land Bank Bldg.
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Fresno, CA 93778

Caltrans/Dist 9
Planning Department
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Bishop, CA 93514

State Clearinghouse
Office of Planning and Research
1400 - 10th Street, Room 222
Sacramento, CA 95814

State Dept of Conservation
Director's Office
801 "K" Street, MS 24-01
Sacramento, CA 95814-3528

State Dept of Conservation
Division of Oil & Gas
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Bakersfield, CA 93309

State Dept of Conservation
Office of Land Conservation
801 "K" Street, MS 18-01
Sacramento, CA 95814

California State University
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9001 Stockdale Highway
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California Energy Commission
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Mail Stop 17
Sacramento, CA 95814

California Fish & Wildlife
1234 East Shaw Avenue
Fresno, CA 93710

Public Utilities Comm Energy Div
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San Francisco, CA 94102

California Regional Water Quality
Control Board/Lahontan Region
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Victorville, CA 92392

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San Joaquin Dist.
3374 East Shields Avenue, Room A-7
Fresno, CA 93726

Kern County Administrative Officer

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County
Env Health Services Department

Kern County Fire Dept
Brian Marshall, Fire Chief

Kern County Fire Dept
Derek Tisinger, Fire Marshall

Kern County Library/Beale
Local History Room

Kern County Library/Beale
Andie Apple

Kern County Library
Mojave Branch
16916 1/2 Highway 14, Space D2
Mojave, CA 93501

Kern County Library
Wanda Kirk/Rosamond Branch
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Rosamond, CA 93560

Kern County Parks & Recreation

Kern County Sheriff's Dept
Administration

Kern County Public Works Department/
Building & Development/Development
Review

Kern County Public Works
Department/Operations &
Maintenance/Regulatory Monitoring &
Reporting

Kern County Public Works Department/
Building & Development/Code
Compliance

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Mojave, CA 93502-1113

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Mojave, CA 93501

Southern Kern Unified School Dist
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Rosamond, CA 93560

Tehachapi Unified School Dist
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Tehachapi, CA 93561

Kern County Superintendent of Schools
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Bakersfield, CA 93301

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Palmdale, CA 93551

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Bakersfield, CA 93302-0058

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Control District

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U.S. Air Force
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Western Regional Environmental Officer
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San Francisco, CA 94105-2230

U.S. Army
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Strategic Plans, S3, NTC
P.O. Box 10172
Fort Irwin, CA 92310

U.S. Army
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Office of Strategic Integration
721 - 19th Street, Room 427
Denver, CO 80202

U.S. Navy
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Regional Community Plans & Liaison Officer
1220 Pacific Highway
San Diego, CA 92132-5190

U.S. Marine Corps
Commanding General
MCIWEST-MCB CamPen
Attn: A/CS, G7
Box 555010
Camp Pendleton, CA 92055-5246

AT&T California
OSP Engineering/Right-of-Way
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Bakersfield, CA 93309

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13500 Powder River Avenue
Bakersfield, CA 93314

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926 Citrus Avenue
Los Angeles, CA 90036-4929

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Mojave, CA 93502

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1125 NW Couch St, Ste 700, 7th Fl
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Beyond Coal Campaign/Sierra Club
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Los Angeles, CA 90026

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Mojave, CA 93501

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Attn: Jaymie Brauer
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Bakersfield, CA 93311

Native American Heritage Council
of Kern County
Attn: Gene Albitre
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Bakersfield, CA 93312

Sunbow Solar I LLC, Syracuse Solar LLC, Tours Solar LLC APPLICANT
Attn: Lendlease Energy Development – John Wieland
909 Lake Carolyn Parkway, Suite 260
Irving, TX 75039

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # _____

Project Title: EIR 06-17; AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC and Tours Solar LLC

Lead Agency: Kern County Planning and Natural Resources Department — Contact Person: Randall Cates

Mailing Address: 2700 "M" Street Suite 100 — Phone: 661-862-8612

City: Bakersfield — Zip: 93301-2323 — County: Kern

Project Location: County: Kern — City/Nearest Community: Mojave

Cross Streets: Approximately nine miles southwest of the unincorporated community of Mojave and approximately eight miles northwest of the unincorporated community of Rosamond, being the N/2 of Section 19 and the W/2 of the W/2 of Section 18, T10N, R13W, SBB&M, County of Kern, State of California

Lat. / Long.: 34° 56′ 59.8094″ N/ 118° 18′ 8.8934″ W — Total Acres: 493.5

Assessor's Parcel No.: 346-022-03, 346-131-12, 13, 14, 15, 16, 17, 18 and 19 — Section: 18 & 19 — Twp.: 10N — Range: 13W — Base: SBB&M

Within 2 Miles: State Hwy #: N/A — Waterways: Oak Creek, Los Angeles Aqueduct

Airports: N/A — Railways: N/A — Schools: N/A

Document Type:

CEQA:
- ☒ NOP
- ☐ Early Cons
- ☐ Neg Dec
- ☐ Mit Neg Dec
- ☐ Draft EIR
- ☐ Supplement/Subsequent EIR (Prior SCH No.) _____
- Other _____

NEPA:
- ☐ NOI
- ☐ EA
- ☐ Draft EIS
- ☐ FONSI

Other:
- ☐ Joint Document
- ☐ Final Document
- ☐ Other _____

Local Action Type:

- ☐ General Plan Update
- ☒ General Plan Amendment
- ☐ General Plan Element
- ☐ Community Plan
- ☐ Specific Plan
- ☐ Master Plan
- ☐ Planned Unit Development
- ☐ Site Plan
- ☐ Rezone
- ☐ Prezone
- ☒ Use Permit
- ☐ Land Division (Subdivision, etc.)
- ☐ Annexation
- ☐ Redevelopment
- ☐ Coastal Permit
- ☐ Other _____

Development Type:

- ☐ Residential: Units _____ Acres _____
- ☐ Office: Sq.ft. _____ Acres _____ Employees _____
- ☐ Commercial: Sq.ft. Acres _____ Employees _____
- ☐ Mining: Mineral:
- ☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
- ☐ Educational _____
- ☐ Recreational _____
- ☐ Water Facilities: Type _____ MGD _____
- ☐ Transportation: Type _____
- ☒ Power: Type Solar PV MW 60
- ☐ Waste Treatment: Type _____ MGD _____
- ☐ Hazardous Waste: Type _____
- ☒ Other: communication tower, temporary concrete batch plant during construction of the solar facilities

---

Project Issues Discussed in Document:

- ☒ Aesthetic/Visual
- ☒ Agricultural Land
- ☒ Air Quality
- ☒ Archeological/Historical
- ☒ Biological Resources
- ☐ Coastal Zone
- ☒ Drainage/Absorption
- ☒ Economic/Jobs
- ☒ Other Greenhouse Gas Emissions, Tribal Cultural Resources
- ☐ Fiscal
- ☒ Flood Plain/Flooding
- ☒ Forest Land/Fire Hazard
- ☒ Geologic/Seismic
- ☒ Minerals
- ☒ Noise
- ☐ Population/Housing Balance
- ☒ Public Services/Facilities
- ☐ Recreation/Parks
- ☒ Schools/Universities
- ☒ Septic Systems
- ☒ Sewer Capacity
- ☒ Soil Erosion/Compaction/Grading
- ☒ Solid Waste
- ☒ Toxic/Hazardous
- ☒ Traffic/Circulation
- ☒ Vegetation
- ☒ Water Quality
- ☒ Water Supply/Groundwater
- ☒ Wetland/Riparian
- ☒ Wildlife
- ☒ Growth Inducing
- ☒ Land Use
- ☒ Cumulative Effects

Present Land Use/Zoning/General Plan Designation:

Syracuse Site: Undeveloped Land / *Zoning:* A FP (Exclusive Agriculture/Floodplain Combining District) / *Kern County General Plan:* 8.3 (Extensive Agriculture; minimum 20 acre parcel size, minimum 80 acre parcel size with a Williamson Act contract). Tours Site: Undeveloped Land / *Zoning*: A FP and A (Exclusive Agriculture) / *Kern County General Plan:* 8.3. Sunbow Site: Undeveloped Land / *Zoning:* A FPS (Exclusive Agriculture/Floodplain Secondary Combining District) / *Kern County General Plan*: 8.3

Project Description: *(please use a separate page if necessary)*

The project proponents are requesting: (a) an Amendment to the Circulation Element of the Kern County General Plan to eliminate road reservation along the mid-section line in Section 19, T10N/R13W SBB&M, in Zone Map 214 (General Plan Amendment 5, Map 214); (b) Three Conditional Use Permits, each to allow for the construction and operation of a 20 megawatt solar photovoltaic electrical generating facility (Section 19.12.030.G) in an A District (CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214); (c) a Conditional Use Permit to allow for the installation and operation of a temporary concrete batch plant on the Syracuse Site during construction of solar facilities (CUP 40, Map 214); and (d) a Conditional Use Permit to allow for the construction and operation of a communication tower on the Syracuse Site (CUP 41, Map 214). The project's permanent facilities would include service roads, a communication tower, communication cables, overhead and underground transmission lines, an electrical switching station, project substations, operations and maintenance facilities, and a gen-tie line to transmit electricity from the project substation on the Sunbow Site to the electrical switching station. An existing gen-tie line would transmit electricity from the electrical switching station to the electrical grid.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

_____	Air Resources Board	_____	Office of Emergency Services
_____	Boating & Waterways, Department of	_____	Office of Historic Preservation
_____	California Highway Patrol	_____	Office of Public School Construction
_____	CalFire	_____	Parks & Recreation
S	Caltrans District # 6 & 9	_____	Pesticide Regulation, Department of
_____	Caltrans Division of Aeronautics	S	Public Utilities Commission
_____	Caltrans Planning (Headquarters)	S	Regional WQCB # Lahontan
_____	Central Valley Flood Protection Board	_____	Resources Agency
_____	Coachella Valley Mountains Conservancy	_____	S.F. Bay Conservation & Development Commission
_____	Coastal Commission	_____	San Gabriel & Lower L.A. Rivers and Mtns Conservancy
_____	Colorado River Board	_____	San Joaquin River Conservancy
S	Conservation, Department of	_____	Santa Monica Mountains Conservancy
_____	Corrections, Department of	_____	State Lands Commission
_____	Delta Protection Commission	_____	SWRCB: Clean Water Grants
_____	Education, Department of	_____	SWRCB: Water Quality
S	Energy Commission	_____	SWRCB: Water Rights
S	Fish & Game Region # Fresno	_____	Tahoe Regional Planning Agency
_____	Food & Agriculture, Department of	_____	Toxic Substances Control, Department of
_____	General Services, Department of	S	Water Resources, Department of
_____	Health Services, Department of		
_____	Housing & Community Development	S	Other So. San Joaquin Arch. Info. Ctr.
_____	Integrated Waste Management Board	S	Other DOGGR - Bakersfield
_____	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date August 18, 2017 Ending Date September 19, 2017

Lead Agency (Complete if applicable):

Consulting Firm: _____ Applicant: _____
Address: _____ Address: _____
City/State/Zip: _____ City/State/Zip: _____
Contact: _____ Phone: _____
Phone: _____

Signature of Lead Agency Representative: _____ **Date:** August 18, 2017

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

INITIAL STUDY/NOTICE OF PREPARATION

AV Apollo Solar Project
by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC

General Plan Amendment 5, Map 214
Conditional Use Permit 37, Map 214
Conditional Use Permit 38, Map 214
Conditional Use Permit 39, Map 214
Conditional Use Permit 40, Map 214
Conditional Use Permit 41, Map 214

(PP17144)

LEAD AGENCY:

Kern County Planning and Natural Resources Department
2700 M Street, Suite 100
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Contact: Mr. Randall Cates
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August 2017

TABLE OF CONTENTS

1. Project Description 1
   1.1 Project Location 1
   1.2 Environmental Setting 4
   1.3 Project Description 11
   1.4 Project Objectives 24
   1.5 Proposed Discretionary Actions/Required Approvals 24
2. Kern County Environmental Checklist Form 27
   2.1 Environmental Factors Potentially Affected: 27
   2.2 Determination 27
3. Evaluation of Environmental Impacts 28
   Aesthetics 29
   Agriculture and Forest Resources 31
   Air Quality 33
   Biological Resources 36
   Cultural Resources 39
   Tribal Cultural Resources 40
   Geology and Soils 41
   Greenhouse Gas Emissions 45
   Hazards and Hazardous Materials 47
   Hydrology and Water Quality 52
   Land Use and Planning 56
   Mineral Resources 58
   Noise 59
   Population and Housing 61
   Public Services 63
   Recreation 65
   Transportation/Traffic 66
   Utilities and Service Systems 69
   Mandatory Findings of Significance 72

Figures

1 Site Vicinity 3
2 Existing Kern County General Plan Designations 7
3 Existing Zoning 8
4 Amendment to Kern County Circulation Element to Eliminate Future Road Reservation 9
5 Project Boundary 10
6 Overall Site Plan 14
7 Syracuse Solar 15
8 Tours Solar 16
9 Sunbow Solar 17

Tables

1 Project Assessor Parcel Numbers and Corresponding Map Codes, Zoning and Acreage 2
2 Project Site and Surrounding Land Uses 5

1. Project Description

1.1 Project Location

The proposed AV Apollo Solar Project (proposed project), which consists of the Syracuse, Tours, and Sunbow sites, would develop a photovoltaic (PV) solar facility and associated infrastructure necessary to generate a combined total of 60 megawatts (MW) of renewable electrical energy and/or energy storage capacity on approximately 493.5 acres of privately-owned land. The proposed project consists of three sites: Syracuse Solar Site, Tours Solar Site, and Sunbow Solar Site.

The project proponents propose that the project be built at the same time as a single 60-MW facility or alternatively could be developed as three independent 20-MW facilities on the approximately 160-acre Syracuse Site, 160-acre Tours Site, and the 173.5-acre Sunbow Site. Depending upon market conditions, the Syracuse, Tours and Sunbow sites may also include or be developed with 20-MW of advanced energy battery storage units. Electricity generated on the project site would be transmitted to a proposed Southern California Edison (SCE) switching station; from there, via interconnection, the electricity would be transmitted to an existing SCE 66-kilovolt (kV) generation tie (gen-tie) electrical distribution line that runs parallel to Backus Road and located on the Syracuse Site and Tours Site.

The proposed project is located within Sections 18 and 19, Township 10 North, Range 13 West, 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 near Mojave, California. The proposed project is bordered by both Trotter Avenue and Backus Road to the north, Tehachapi Willow Springs Road to the east, Golden Gate Avenue to the south, and 100th Street West to the west.

Land uses in the region include a mix of undeveloped land, agriculture, residential, recreational and public facilities, and renewable energy projects (solar and wind). The area east of the project site is known as the Middle Buttes, and was historically mined using underground as well as open pit mining methods. Mining at the Middle Buttes included the Shumake Mine (Conditional Use Permit [CUP] 11, Map 214), which has completed mining per the Conditional Use Permit, and that mine site is located approximately 4,000 feet to the east of the Sunbow Site and approximately 4,000 feet northeast of the Tours Site. An underground gold mine was permitted in 2016 (CUP 14, Map 214) to access the underground workings via a tunnel at the bottom of the Shumake open pit. However, as of this document's publication, mining has not commenced. Desert vegetation dominates the project site and region. Topography across the project site is relatively flat as the site is located on the bajada of the Tehachapi Mountains, which consists of overlapping alluvial fans with southern trending slopes. The major north-south route in the region is SR 14, a four-lane highway located approximately 7.3 miles east of the proposed project. The major east-west route near the proposed project is SR 58, which is also a four-lane highway, located approximately 9.5 miles north of the proposed project. SR 58 intersects with SR 14 approximately 10 miles northeast from the proposed project. Other roads serving the project include Oak Creek Road, Trotter Avenue, Maxwell Avenue and 100th Street West. Paved and unpaved roadways generally following section lines are found throughout the area.

The Assessor Parcel Numbers (APNs) are summarized in **Table 1,** *Proposed Project Assessor Parcel Numbers, and Corresponding Map Codes, Zoning and Acreage*. **Figure 1**, *Site Vicinity*, shows the regional location of the proposed project.

Table 1. Project Assessor Parcel Numbers and Corresponding Map Codes, Zoning and Acreage

	APN	Kern County General Plan Map Code Designation	Zoning	Acres
Syracuse Site	346-022-03 (western half)	8.3	A FP	160.00
Tours Site	346-022-03 (eastern half)	8.3	A & A FP	160.00
Sunbow Site	346-131-12	8.3	A FPS	21.88
	346-131-13	8.3	A FPS	21.88
	346-131-14	8.3	A FPS	21.77
	346-131-15	8.3	A FPS	21.76
	346-131-16	8.3	A FPS	21.65
	346-131-17	8.3	A FPS	21.65
	346-131-18	8.3	A FPS	21.05
	346-131-19	8.3	A FPS	21.84
Sunbow Site Total Acreage				173.48
Proposed Solar Project Total Acreage				493.48

8.3 = Extensive Agriculture (Minimum 20 Acre Parcel Size, 80 acres with Williamson Act contract) land use designation
A = Exclusive Agriculture zone district
FP = Floodplain Combining zone district
FPS = Floodplain Secondary Combining zone district

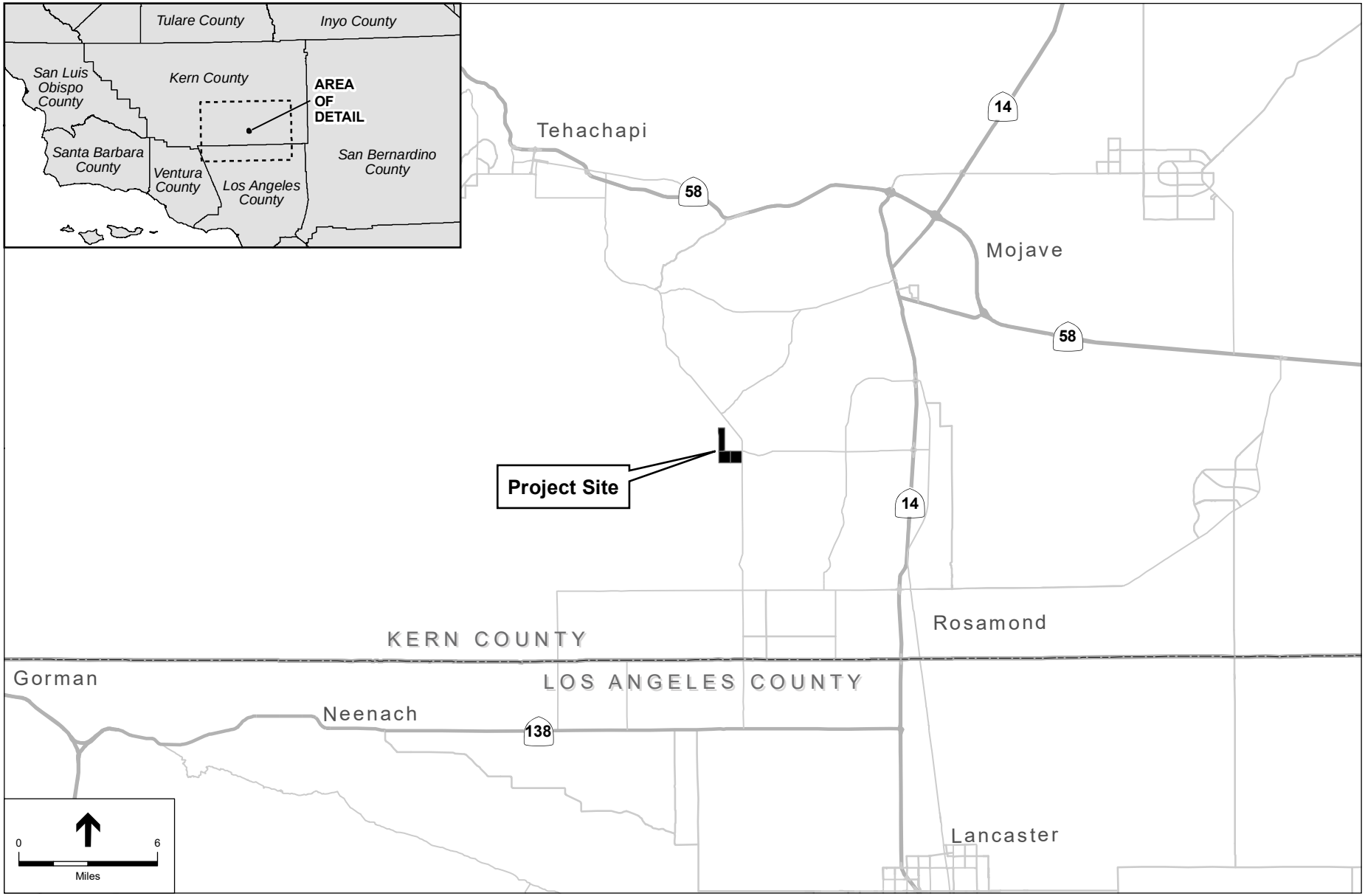


Figure 1: SITE VICINITY

1.2 Environmental Setting

The proposed project is located on approximately 493.5 acres of undeveloped, privately-owned land located in the western extent of the Mojave Desert near Mojave, California. The project is in the Mojave Basin and Range ecoregion and the Willow Springs United States Geological Survey (USGS) 7.5-minute topographical quadrangle. The project site is zoned for agriculture but is not currently cultivated. Development in the area surrounding the project site includes rural residences, active aggregate mining, agriculture, as well as renewable energy (solar and wind) facilities. The project consists mostly of Creosote scrub with a small matrix of dirt roads.

The Mojave Creosote Bush Scrub community and scattered Joshua trees dominate most the project. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes. Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation and extending into northwestern Arizona and southern Utah.

The creosote scrub vegetation on the project is dominated by creosote bush (*Larrea tridentata*). Other common shrubs occurring on the project include burrobush (*Ambrosia dumosa*), boxthorn (*Lycium andersonii*), silver cholla (*Opuntia echinocarpa*), allscale saltbush (*Atriplex polycarpa*), rubber rabbitbrush (*Ericameria nauseosa*) and scattered Joshua trees (*Yucca brevifolia*). Non-native and invasive annual grass species are a common understory component and include red brome (*Bromus madritensis* ssp. *rubens*) and cheatgrass (*Bromus tectorum*).

The foothills of the Tehachapi Range occur approximately 5.5 miles west of the project, and the Central Transverse Range occurs 20 miles south of the site. The project and surrounding land are mostly flat and exhibit little topographic variation. Land administered by the Bureau of Land Management (BLM) is located approximately 1 mile northeast of the project.

The project is located entirely within the Federal Emergency Management Agency (FEMA) designated Zone "A." Zone A is the 100-year floodplain. Oak Creek flows along the northeast corner of the Tours Site trending along a north-northwest and south-southeast axis. There are several drainage routes on the project site. All drainage routes are isolated episodic or ephemeral waters, which typically only flow for brief periods in response to rainfall.

Based on a review of records maintained by the California Department Conservation/Division of Oil, Gas and Geothermal Resources (DOGGR), wells were not identified on the project site, and the project is not within the jurisdictional boundaries of an oilfield (California Department of Conservation, 2017). Records maintained by the Kern County Assessor indicate there are two Mineral Rights APNs within the boundaries of the project site.

The project would be served by the Kern County Sheriff's Office for law enforcement and public safety. The closest sheriff station is the Mojave Substation, located approximately 9 miles northeast of the project, at 1771 Highway 58, in Mojave. The Kern County Fire Department (KCFD) provides fire protection and emergency medical and rescue services for the project area. The closest KCFD fire station is located approximately 9 miles northeast of the project at 1953 Highway 58. The closest school is Joshua Middle School, located approximately 9.2 miles northeast of the project. The nearest hospital is the Adventist Health Tehachapi Valley Hospital, located approximately 13 miles to the northwest in Tehachapi.

The nearest airports to the project are the privately owned Rosamond Skypark approximately 9 miles to the southeast, the Mojave Air and Space Port approximately 10.5 miles to the northeast, and the Mountain

Valley Airport (a private airport which allows public access) approximately 12 miles to the northwest of the project site.

According to the California Department of Conservation 2014 Farmland Mapping and Monitoring Program designations, the project is designated "Nonagricultural and Natural Vegetation" (CA Department of Conservation, 2014). Parcels within the project boundary or in the vicinity are not subject to a Williamson Act Land Use contract. Although the project is zoned for agricultural use, available crop data indicates that the project site was not under cultivation between 2010 through 2016.

The project is located within unincorporated Kern County and is designated as General Plan map code 8.3 (Extensive Agriculture (Minimum 20 Acre Parcel Size, 80 acres with Williamson Act contract)), and within the A (Exclusive Agriculture), A/FP (Exclusive Agriculture - Floodplain Combining) and A/FPS (Exclusive Agriculture – Floodplain Secondary Combining) zone districts. These Kern County General Plan designations are shown in **Figure 2,** *Existing Kern County General Plan Designations*. The existing land uses of the project and its surroundings are listed in **Table 2**, *Project Site and Surrounding Land Uses*, below, and depicted in **Figure 5**, *Project Boundary*. The entire project is also subject to the provisions of the Kern County Zoning Ordinance and is zoned as specified in **Table 2**, below, and depicted in **Figure 3**, *Existing Zoning*. **Figure 4**, *Amendment to Kern County General Plan Circulation Element to Eliminate Future Road Reservation*, shows the road along the mid-section line proposed to be eliminated from the General Plan Circulation Element, as requested by GPA 5, Map 214. GPA 5, Map 214 pertains to the south 45 feet of the Syracuse Site and the Tours Site, as well as the north 45 feet of the abutting offsite parcels to the south.

Table 2. Project Site and Surrounding Land Uses

	Existing Land Use	Existing Map Code Designation	Existing Zoning Classification
Syracuse and Tours Sites	Undeveloped,	8.3 (Extensive Agriculture (Minimum 20 Acre Parcel Size, 80 acres with Williamson Act Contract))	A (Exclusive Agriculture), A FP (Exclusive Agriculture - Floodplain Combining)
North	Undeveloped, sparse residential dwellings, dirt roads	8.3	A FP PL RS FP (Platted Lands - Residential Suburban Combining - Floodplain Combining) PL RS MH FP (Platted Lands - Residential Suburban Combining - Mobile home Combining - Floodplain Combining) PL RS MH (Platted Lands - Residential Suburban Combining - Mobile home Combining)
East	Undeveloped, sparse residential dwellings, dirt roads	8.3	PL RS FP PL RS

South	Undeveloped, sparse residential dwellings, dirt roads	8.3	A FPS (Exclusive Agriculture/Floodplain Secondary Combining) PL RS FP
West	Undeveloped, sparse residential dwellings, dirt roads	8.5 (Resource Management (Minimum 20 Acre Parcel Size, 80 acres with Williamson Act Contract))	PL RS
Sunbow Site	Undeveloped, disturbed land	8.3	A FPS
North	Undeveloped, sparse residential dwellings, dirt roads	8.3	PL RS FP
East	Undeveloped, sparse residential dwellings, dirt roads	8.3	A FP PL RS FP
South	Undeveloped, sparse residential dwellings, dirt roads	8.3	A FP
West	Undeveloped, sparse residential dwellings, dirt roads	8.3	A FPS PL RS FPS

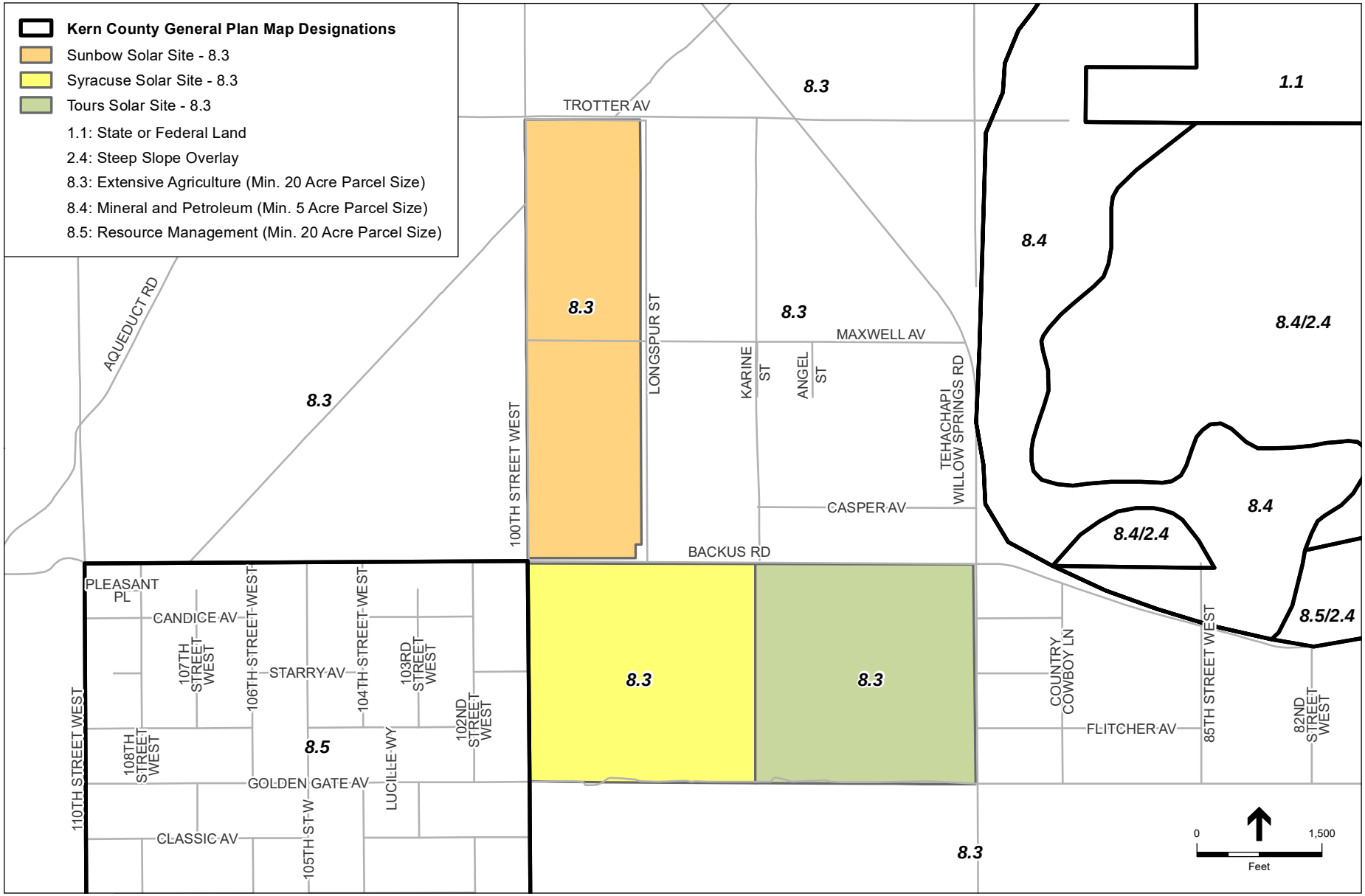


Figure 2: EXISTING KERN COUNTY GENERAL PLAN DESIGNATIONS

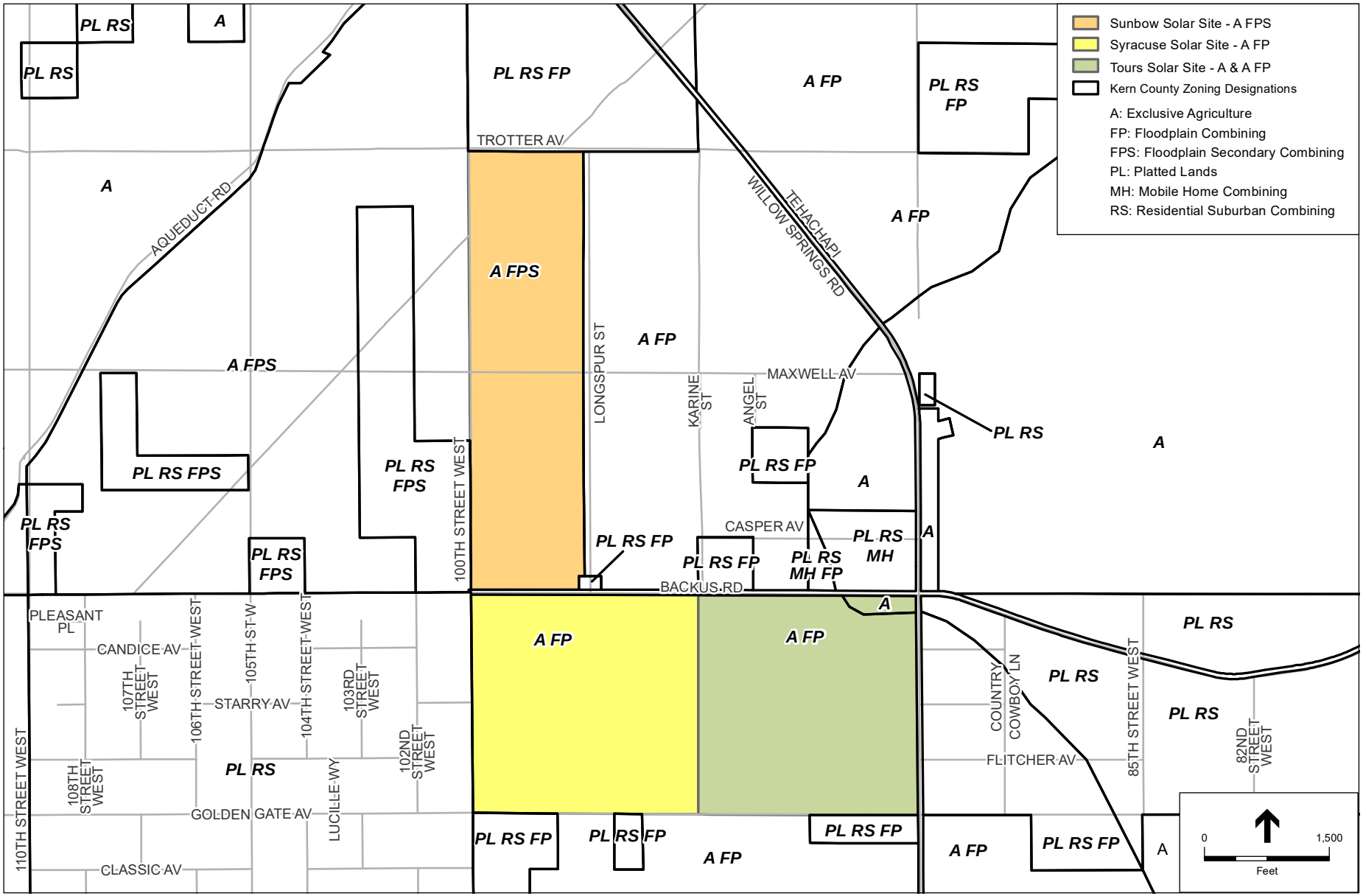


Figure 3: EXISTING ZONING

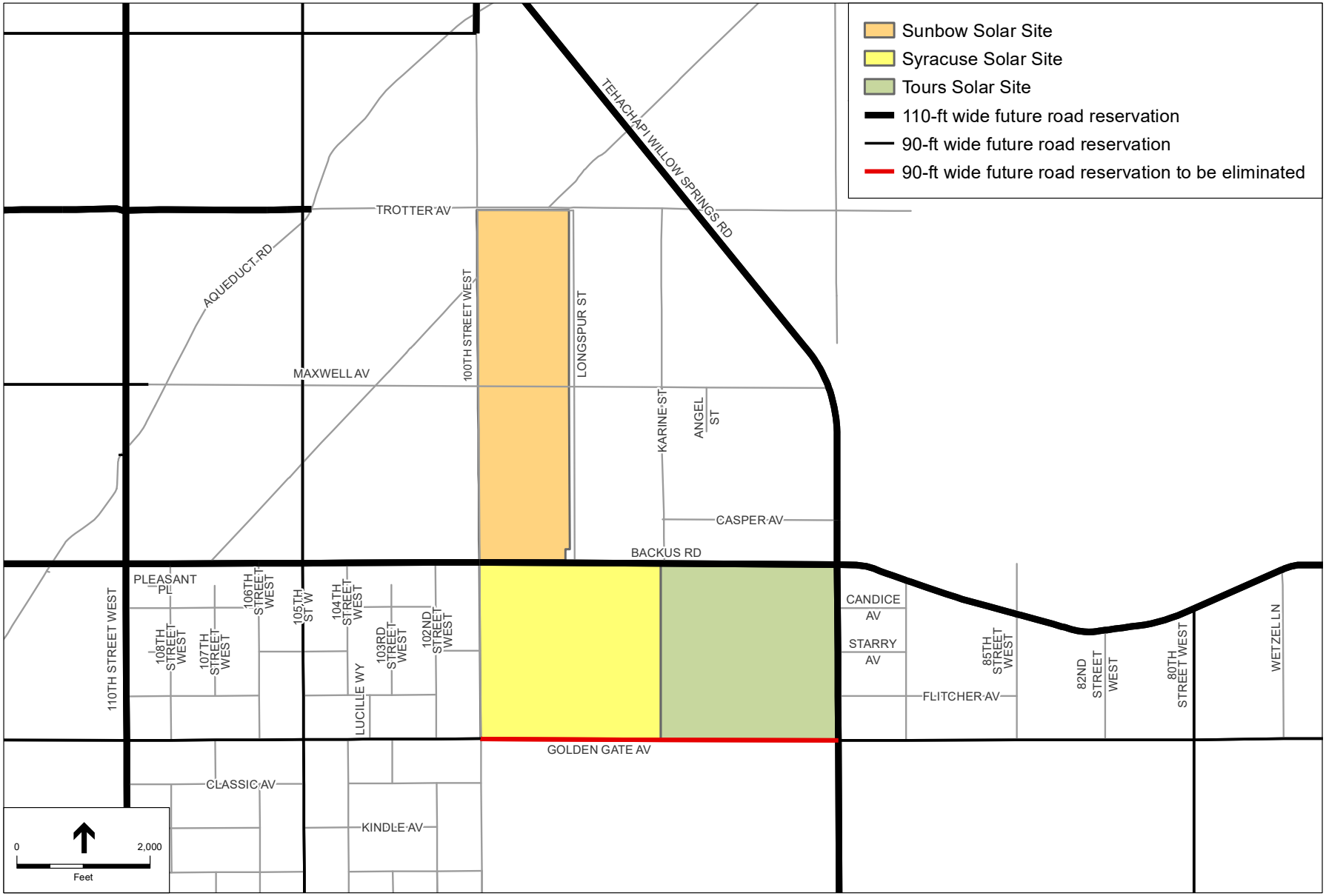


Figure 4: AMENDMENT TO KERN COUNTY GENERAL PLAN CIRCULATION ELEMENT TO ELIMINATE FUTURE ROAD RESERVATION

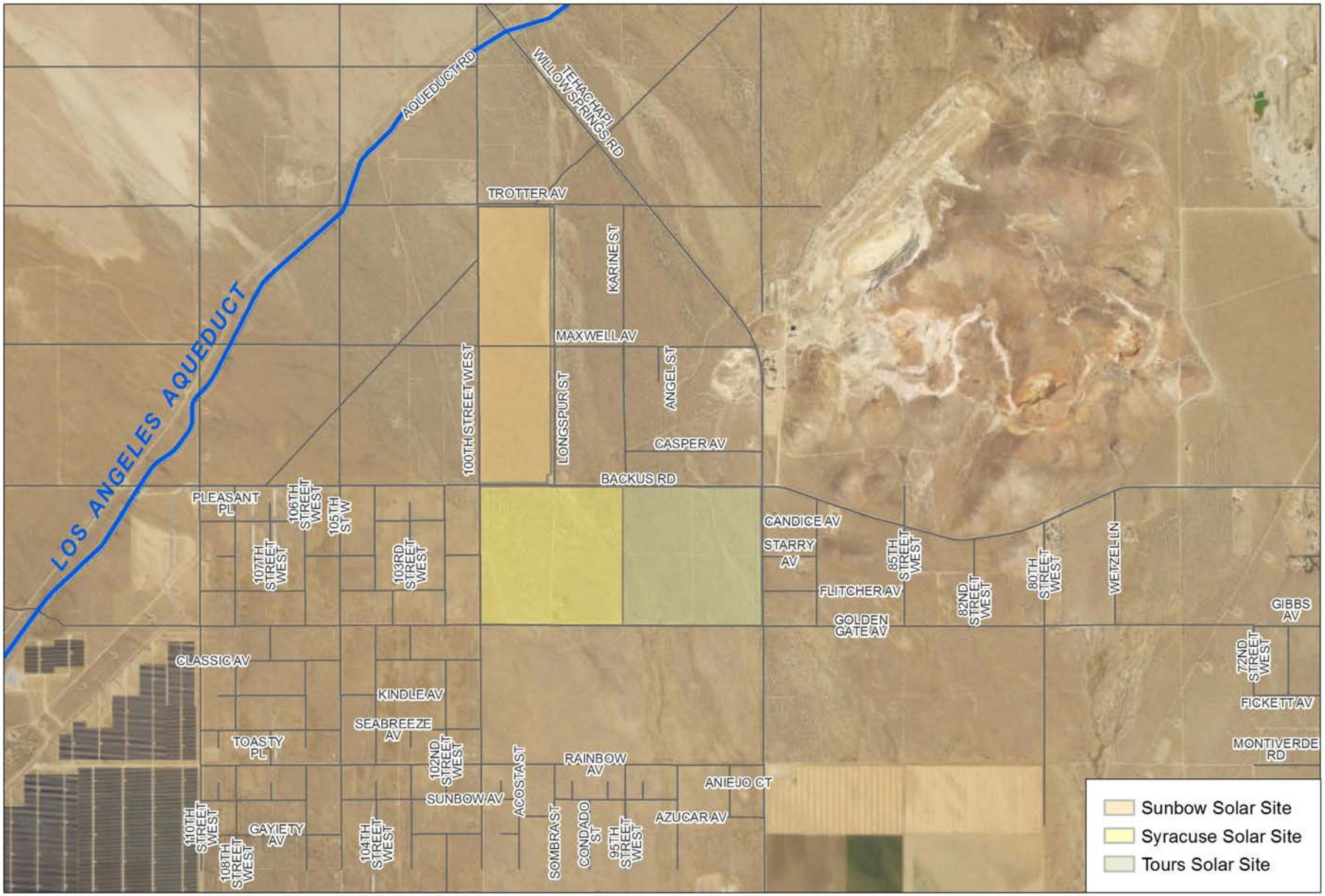


Figure 5: PROJECT BOUNDARY

1.3 Project Description

The proposed project would develop a PV solar facility and associated infrastructure necessary to generate 60-MW of renewable electrical energy and/or energy storage capacity on 493.5 acres of privately-owned land in the eastern high desert region of unincorporated Kern County.

The AV Apollo Solar Project consists of the following requests:

a) Syracuse Site (Syracuse Solar by Syracuse Solar LLC):
   - CUP 39, Map 214 (solar facility)
   - CUP 40, Map 214 (concrete batch plant during construction of the solar facility)
   - CUP 41, Map 214 (communication tower in conjunction with the solar facility)

b) Tours Site (Tours Solar by Tours Solar LLC):
   - CUP 38, Map 214 (solar facility)

c) Sunbow Site (Sunbow Solar by Sunbow Solar I LLC):
   - CUP 37, Map 214 (solar facility)

d) GPA 5, Map 214. A request to eliminate the future road reservation along the east-west Midsection line within Section 19, T.10N., R. 13W., SBB&M., as shown on the attached Figure 4, *Amendment to Kern County General Plan Circulation Element to Eliminate Future Road Reservation*.

Figure 5; *Project Boundary*, shows the boundaries of the proposed project.

The project is located within the jurisdictional boundaries of the Kern County General Plan (Kern County, 2009), and is designated as 8.3 (Extensive Agriculture (Minimum 20 Acre Parcel Size, 80 acres with Williamson Act contract)) (Kern County, 2009) and within the A FP (Exclusive Agriculture - Floodplain Combining) zone district per the Kern County Zoning Ordinance (Kern County, 2016). Therefore, pursuant to Chapter 19.12.030.G, CUPs are required to allow for the construction and operation of the PV solar facilities, the installation of a communication tower, and the use of a temporary concrete batch plant. The proposed project includes a request for a General Plan Amendment to amend the Circulation Element of the Kern County General Plan (GPA 5, Map 214) to eliminate the future road reservation along the midsection lines of Sections 19 T10N R13W, SBBM.

As shown in Table 1, *Project Assessor Parcel Numbers, and Corresponding Map Codes, Zoning and Acreage*, the proposed solar facility consists of nine parcels. The proposed project could be built as a single 493.5-acre, 60-MW facility or, alternatively, could be developed as three, independent 20-MW facilities on the approximately 160-acre Syracuse Site, 160-acre Tours Site and the 173.5-acre Sunbow Site, depending upon market conditions. The proposed project would interconnect to an existing SCE 66-kV electrical distribution line that runs parallel to Backus Road.

The proposed project would consist of approximately 258,000 crystalline-silicon modules or 490,000 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 66-kV line. The route for associated gen-tie transmission lines for the Sunbow Site (shown on **Figure 6,** *Overall Site Plan*) is partially along the Backus Road right-of-way, and as such will require a Franchise Agreement with the County of Kern.

The PV solar facility would consist of solar arrays mounted on either fixed tilt racking or single axis tracking structures (or a combination thereof) mounted to vertical posts. The proposed facility is intended to operate year-round, and would generate electricity during daylight hours when electricity demand is at its peak.

The power generated on the project site would be sold to California investor-owned utilities, municipalities, community choice aggregators, or other purchasers in the furtherance of the goals of the California Renewable Energy Portfolio Standard and other similar renewable programs in the State. The project proponents may eventually choose to decommission and remove all or none of the systems from the project site. If any site (Syracuse, Tours, Sunbow) is decommissioned, it would be converted to another use consistent with the applicable land use regulations in effect at that time.

The combined project facilities would include the following components:

- Installation of up to a total combined 60-MW of solar PV modules made of crystalline-silicon or thin-film material covered by glass, mounted on a galvanized metal fixed tilt racking or single axis tracking systems embedded into the ground;
- If fixed tilt technology is not used, a solar tracking system consisting of drive motors, drive arms and hydraulic systems that allow for rotation of solar panels from east to west, tracking the suns position over the course of the day;
- Underground and above ground medium voltage collections systems throughout the project site;
- Medium voltage inverters and step-up transformers;
- Onsite solar substation(s) including circuit breakers, switches, remote terminal units, telecommunication equipment, and main step-up transformer(s);
- Onsite switchyard(s);
- Onsite access roads;
- Perimeter security fencing 7- to 8-feet high with barbed wire;
- Concrete pads sized and installed to accommodate the associated equipment (inverters, switchgear, transformers, etc.);
- Meteorological data collection systems and supervisory control and data acquisition (SCADA);
- Up to three unmanned Operations and Maintenance (O&M) buildings;
- Up to three 2-acre battery energy storage facilities and associated appurtenances;
- Telecommunication equipment including underground and overhead fiber optics and wireless communications infrastructure such as cell, satellite, or microwave tower (for which a CUP (CUP 41, Map 214) application has been submitted). This equipment will be both onsite and offsite. The offsite telecommunication infrastructure will be installed in Southern California Edison's (SCE) existing right of ways;
- A 66-kV gen-tie route (partially onsite and partially offsite) from the Sunbow site to the proposed SCE switching station (located between the Syracuse Site and Tours Site).This gen-tie route would traverse Backus Road;
- On the Tours Site, there is an approximately 35-acre no-build area to avoid any disturbance to Oak Creek; and

- Upgrades to the SCE system including a new onsite 66-kV switching station as detailed below:
    - Multiple dead-end substation structures
    - Multiple Potential transformers with steel pedestal support structures
    - Multiple 66-kV line drops
    - Box rack structures, circuit breakers, disconnect switches, and requisite foundations
    - Mechanical electrical equipment room (MEER) measuring approximately 30 feet by 20 feet to be built onsite and house the following equipment:
        - Batteries and battery charger (which are separate from the Energy Storage System as described below)
        - Light and power selector switch
        - Light and power panel
        - AC distribution panel
        - Direct current (DC) distribution panel,
        - Relay protection
        - Telecommunication equipment
        - Appurtenant facilities
    - Current differential relays via diversely routed dedicated communications channels to the proposed project.
    - Perimeter fence which includes two strands of barbed wire and a double door 18-foot gate around the new onsite switching station
    - Grounding grid to cover the substation area and an additional 10 feet outside the perimeter fence
    - Perform grading and site preparation for the substation area and additional 10 feet outside the perimeter fence
    - All required control cable trenches from the relay room to the switchyard
    - Metering equipment and appurtenant equipment
    - Power system controls, including Remote Terminal Units (RTUs) and appurtenant equipment
    - Several 66-kV transmission tower structures located onsite and within SCE's existing right of way, including insulator/hardware assemblies, appropriate number of spans of conductor and All-Dielectric Self Supporting (ADSS) fiber optic cable
    - Underground conduit, cable, and appurtenant facilities.

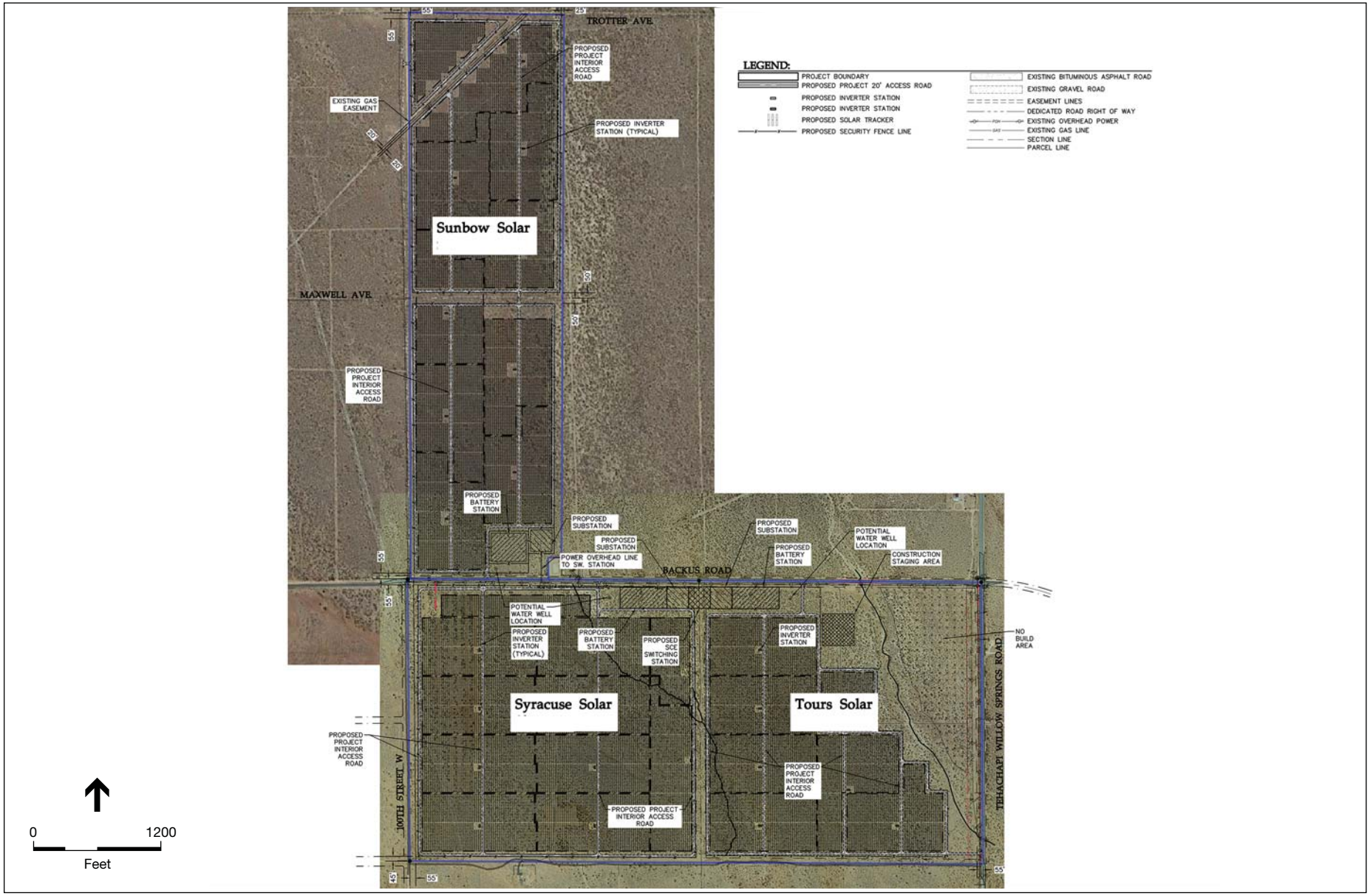
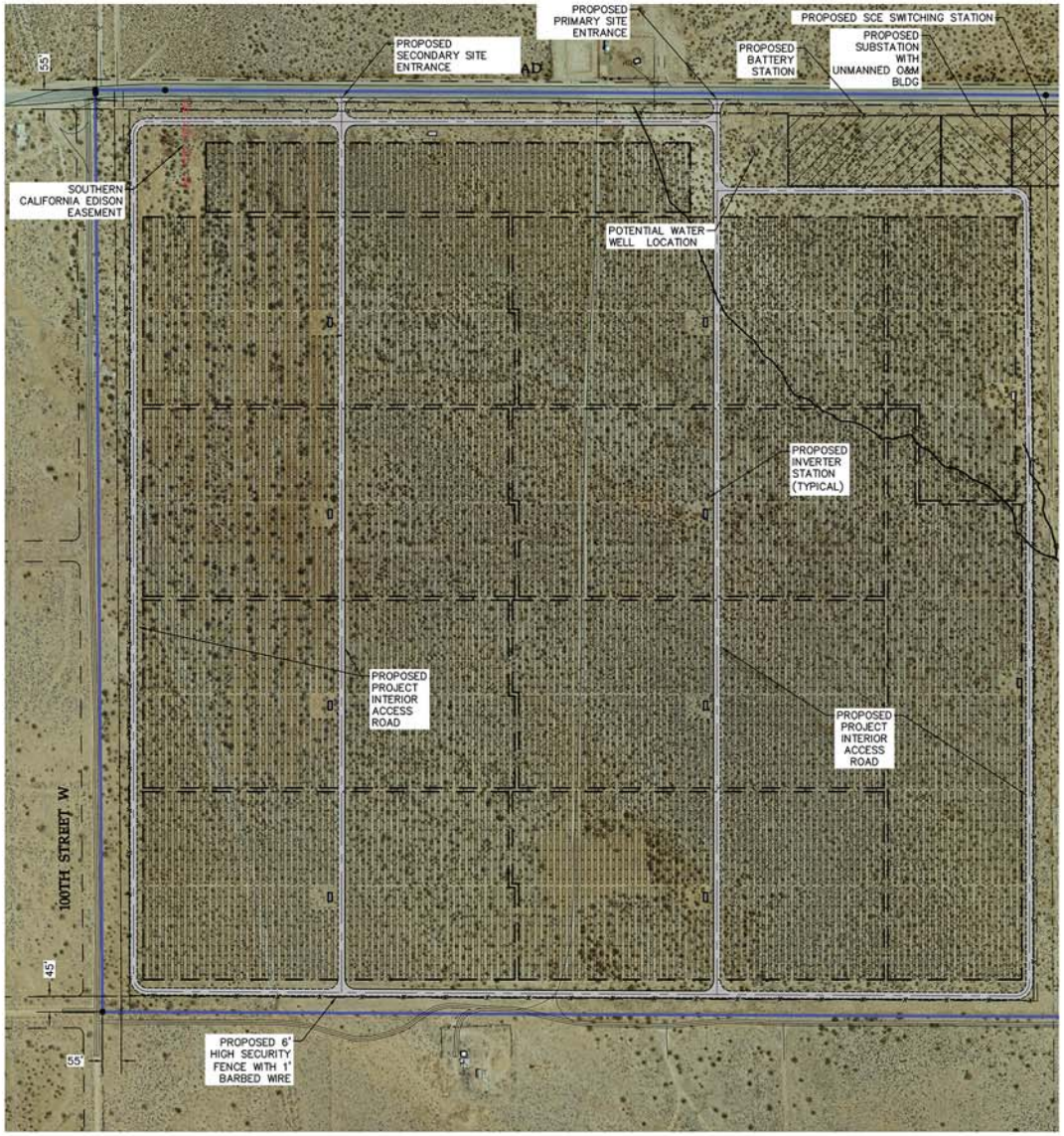


Figure 6: OVERALL SITE PLAN



LEGEND:

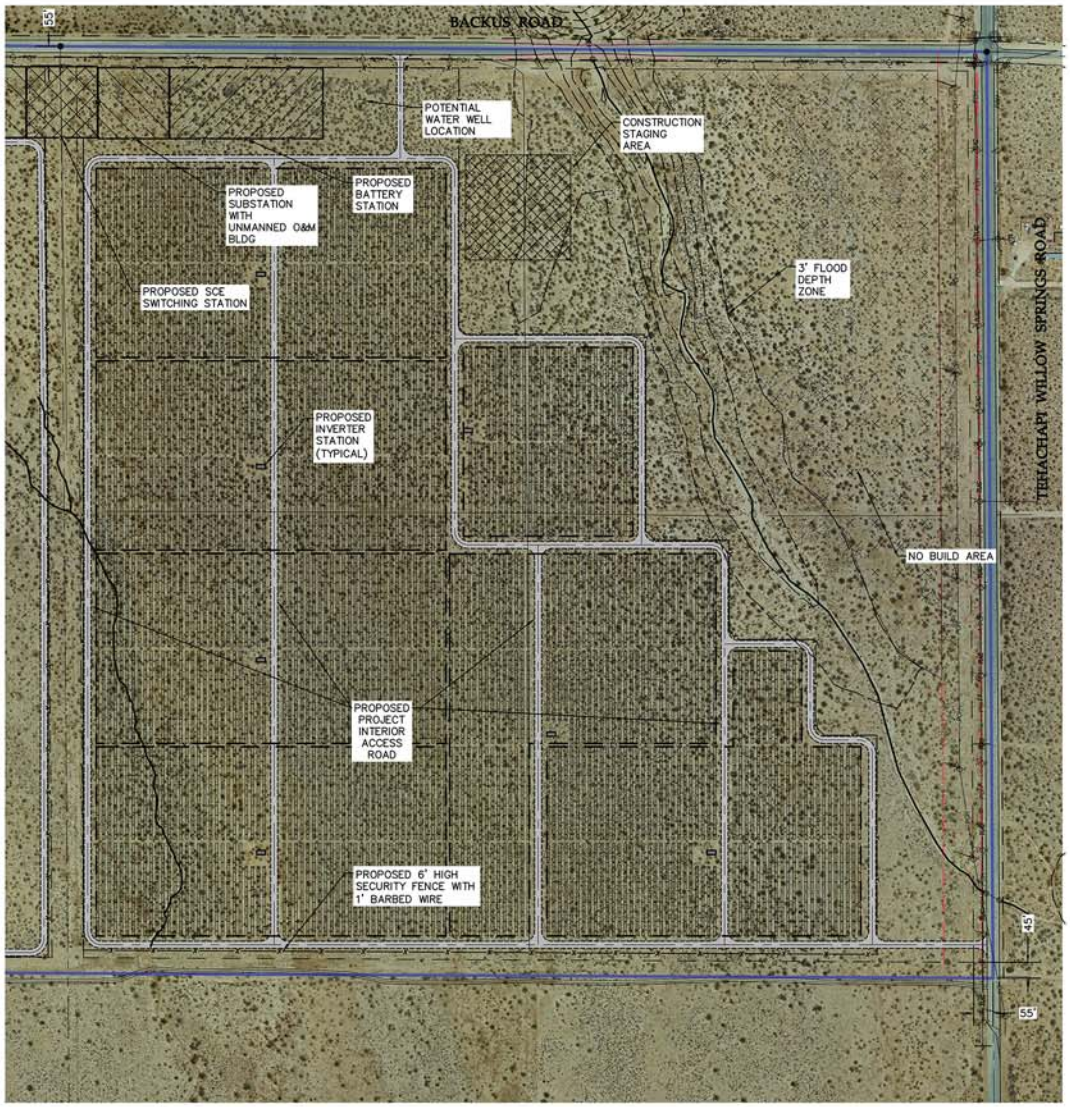
- PROJECT BOUNDARY
- PROPOSED PROJECT 20' ACCESS ROAD
- PROPOSED INVERTER STATION
- PROPOSED INVERTER STATION
- PROPOSED SOLAR TRACKER
- PROPOSED SECURITY FENCE LINE
- EXISTING BITUMINOUS ASPHALT ROAD
- EXISTING GRAVEL ROAD
- EASEMENT LINES
- DEDICATED ROAD RIGHT OF WAY
- EXISTING OVERHEAD POWER
- EXISTING GAS LINE
- SECTION LINE
- PARCEL LINE

GENERAL NOTES

1. PV FACILITY RATING IS 20MWac
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

0 600
Feet

Figure 7: SYRACUSE SOLAR



LEGEND:

- PROJECT BOUNDARY
- PROPOSED PROJECT 20' ACCESS ROAD
- PROPOSED INVERTER STATION
- PROPOSED INVERTER STATION
- PROPOSED SOLAR TRACKER
- PROPOSED SECURITY FENCE LINE
- EXISTING BITUMINOUS ASPHALT ROAD
- EXISTING GRAVEL ROAD
- EASEMENT LINES
- DEDICATED ROAD RIGHT OF WAY
- EXISTING OVERHEAD POWER
- EXISTING GAS LINE
- SECTION LINE
- PARCEL LINE

GENERAL NOTES

1. PV FACILITY RATING IS 13MWac.
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.

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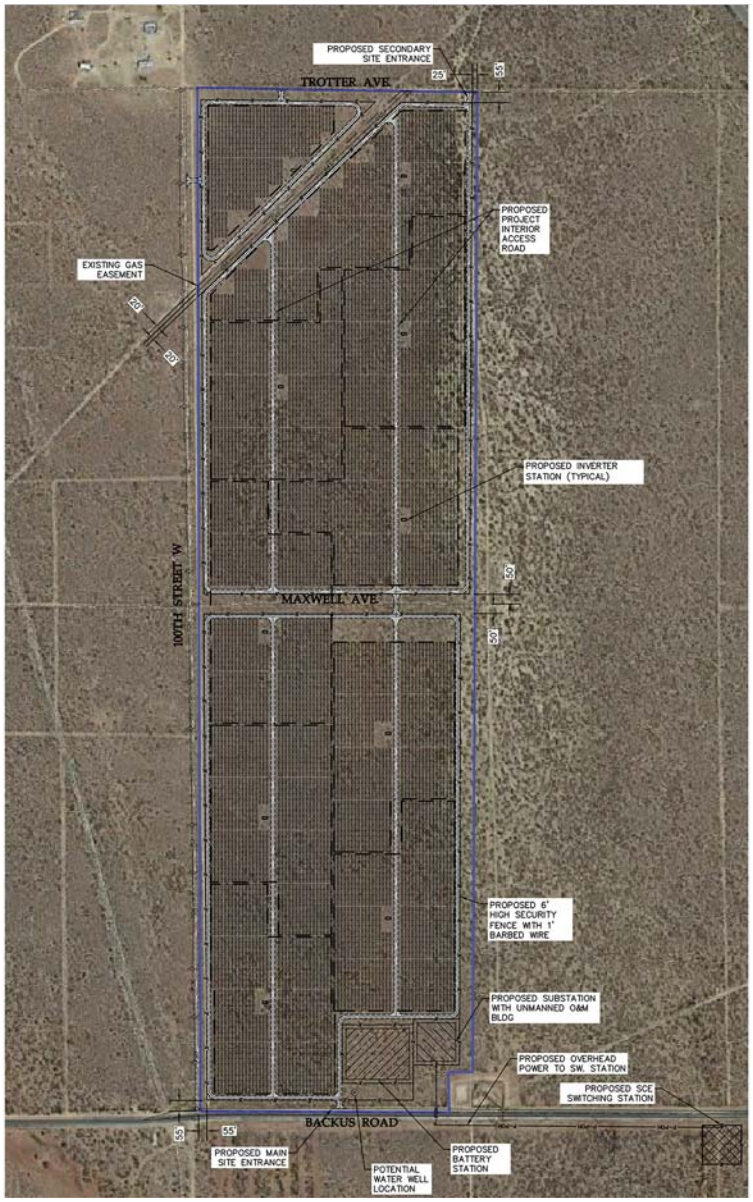
Feet

Figure 8: TOURS SOLAR



LEGEND:

- PROJECT BOUNDARY
- PROPOSED PROJECT 20' ACCESS ROAD
- PROPOSED INVERTER STATION
- PROPOSED SOLAR TRACKER
- PROPOSED SECURITY FENCE LINE
- EASEMENT LINES
- EXISTING BITUMINOUS ASPHALT ROAD
- EXISTING GRAVEL ROAD
- DEDICATED ROAD RIGHT OF WAY
- EXISTING OVERHEAD POWER
- EXISTING GAS LINE
- SECTION LINE
- PARCEL LINE

GENERAL NOTES

1. PV FACILITY RATING IS 20MWac.
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.

0 1200
Feet

Figure 9: SUNBOW SOLAR

Project Facilities

Solar PV Panels

Solar energy would be captured by PV panels.

Should thin-film modules be installed, up to an estimated 490,000 individual panels would be installed onsite, as follows:

- Syracuse Site would have an estimated 163,000 panels;
- Tours Site would have an estimated 163,000 panels; and
- Sunbow Site would have an estimated 163,000 panels

Should crystalline-silicon modules be installed, up to an estimated 258,000 crystalline-silicon panels would be installed onsite, as follows:

- Syracuse Site would have an estimated 86,000 panels;
- Tours Site would have an estimated 86,000 panels; and
- Sunbow Site would have an estimated 86,000 panels

The layout of the single-axis tracker solar panels would be aligned in rows in the north-south direction (or in an east-west direction if a fixed tilt racking system were used instead). The maximum height of the single-axis tracker solar panels would be up to 12-feet above grade, at the beginning and end of each day. A fixed tilt racking system would be less than 12-feet high. Each solar panel would be attached to embedded piers using a support structure. Module layout and spacing is typically optimized to balance energy production versus peak capacity, and depends on the sun angles and shading due to the surrounding horizon of the site. Individual arrays of modules would be combined to generate the total plant capacity.

Solar Trackers

The PV module rows would be oriented north-to-south if single-axis trackers are used. A solar tracking mechanism is used to maximize the solar energy conversion efficiency by keeping the modules perpendicular to the sun's energy rays throughout the day. This completed assembly of PV modules mounted on a framework structure is called a "tracker" because it tracks the sun from east to west. If used, single-axis trackers would increase the efficiency of energy production from the arrays relative to a fixed tilt system. The exact tracker manufacturer and model would be determined in the final design. All trackers are intended to function identically in terms of following the motion of the sun.

Module layout and spacing is optimized to balance energy production versus peak capacity and would depend on the sun angles and shading caused by the horizon surrounding the project. The spacing between the rows of trackers is dependent on site-specific features and would be identified in the final design. The final configuration would allow for sufficient clearance for maintenance vehicles and panel access.

Fixed Tilt Racking System

If the fixed tilt racking system is used, the solar panels would be in a fixed tilt position that allows for the most sunlight specific to the geography of the project.

Electrical Collector System and Inverters

The AC-DC electrical collection system includes all cables and combiners that collect electricity from the panels, delivers it to the inverters, collects it from the inverters, and ultimately delivers it to the proposed project switching station(s). The collection system would likely be installed along internal access roads to collect power from the rows of modules and deliver it to the switching station. This collection system would

likely be installed in subsurface trenches, though in some areas of the site, part or all of the collection system may be housed in above-grade raceways mounted on supports approximately 24 to 36 inches above ground level. The collection system would be rated at between 1,000 to 2,000 volts DC until it reached the inverters and a 33-kV AC intermediate voltage system between the inverters and the proposed project switching station.

The proposed project would use a typical unmanned field control system. The controls generally include a field supervisory controller in a central location and local microprocessor controllers connected to each tracker, if trackers are to be used. The field control system monitors solar insolation, wind velocity, and tracker performance and status, and communicates with all the local microprocessor controllers. When the appropriate conditions exist, the field supervisory controller initiates the trackers' daily tracking of the sun, and at the end of the day stows the trackers in the solar array.

The DC electricity produced by the solar panels is converted to three-phase alternating current by a series of inverters. The three 20-MW facilities would require up to 60 inverters. Alternating current is the type of electricity usable by the electric utility and is the form required to connect to the transmission system. The inverter pad equipment includes a transformer that steps up the electricity in its new form to an output voltage of 33-kV. This electricity is then transmitted via the medium voltage collection system to the switching station.

Energy Storage System

The project may have up to three onsite Energy Storage Systems (ESS) (one for each facility developed). Each 20-MW ESS will be able to provide approximately 120-MWh of energy storage. Each ESS would occupy approximately two acres within the project boundaries and would consist of batteries, inverters, switches, cooling equipment, and other appurtenant equipment placed in multiple prefabricated enclosures or containers near the onsite substation. The ESS would either be installed contemporaneously or after the installation of the PV facilities. The final locations are dependent on final design and may require construction of vaults or other supporting foundations.

Generation-Tie Line and Interconnection to the Statewide Grid

The proposed project would include one proposed electrical gen-tie line (66-kV), from the proposed project substation on Sunbow Site to the proposed SCE switching station. After electricity generated on the project site reaches the proposed SCE switching station, it would be transmitted via the existing gen-tie line (running parallel with Backus Road) to the electrical grid.

Operation and Maintenance Facilities

The project also would include up to three unmanned O&M buildings (one on each site). The O&M buildings would measure approximately 25 x 25 feet. Each site would also include a separate, an unmanned communication building approximately 20 x 30 feet, and a gravel parking area of approximately 2,000 square feet in size. The proposed substation area for each site would also encompass the O&M building, communications building, and parking area. The O&M buildings would include storage space for spare parts and materials for the day-to-day operations and maintenance of the solar facility. Communications would be provided by a local utility. Bottled water would be provided for maintenance crews during onsite activities.

Maintenance personnel are expected to visit the project site several times per year for routine maintenance and to clean the PV modules up to four times a year. Project traffic volumes are expected to be minimal during operation of the facility.

Onsite Meteorological Station

Each site would include an onsite solar meteorological station located near the O&M buildings, which would consist of solar energy (irradiance) meters, as well as an air temperature sensor and wind anemometer. This equipment, specifically the wind anemometer, would have an estimated height of approximately 15 feet.

Site Access and Security

During construction and operation, the Syracuse Site would be accessed from Backus Road, and the Tours Site would be accessed from either Tehachapi Willow Springs Road or Backus Road. Access to the Sunbow Site would be from Backus Road, Maxwell Avenue, 100th Street West, and Trotter Avenue. The necessary road improvements would be completed per County code and regulations. Typical site access would be approximately 20-foot wide, accommodating 56-foot turning radii in both directions. The rows of solar panels would be separated by access ways. Internal site circulation would include approximately 20-foot-wide access roads consisting of crushed stone and approximately 15- to 20-foot-wide O&M roads among the solar arrays consisting of compacted native soil.

Chain-link security fencing would be installed around the site perimeter, switchyard(s), substation(s), and other areas requiring restriction of public access during construction and operation. The security fence would be 7- to 8-feet tall, with two strings of barbed wire along the top. The fence posts would be set in concrete. Additional security may be provided using closed-circuit video surveillance cameras and intrusion systems. Signs would be installed to achieve appropriate safety and security as expected in a solar power facility.

The project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting would be directed downward and shielded to focus illumination on the desired areas only and to avoid light spillage onto adjacent properties. Lighting would be no brighter than required to meet safety and security requirements, and lamp fixtures and lumens would be selected accordingly.

Construction Activities

Schedule and Workforce

The construction activities for the proposed project fall into three main categories: (1) site grading and earthwork; (2) solar array construction; and (3) electrical interconnection to transmission owner infrastructure. The entire construction process is estimated to take approximately 300 construction days, over the course of a 14-month period. Site grading and earthwork is anticipated to begin during the fourth quarter of 2019, with operations beginning in the third quarter of 2020. Construction would primarily occur during daylight hours, Monday through Friday. Additional hours/days may be necessary to facilitate the schedule.

The construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. The average workforce is expected to be approximately 200 construction, supervisory, support, and construction management personnel onsite during construction. The onsite workforce has been conservatively estimated to peak at approximately 300 individuals for short periods of time, which is typically a few weeks. The project construction crews would have a staggered work day, with multiple shifts of workers coming onsite between the hours of 6:00 am and 10:00 am in the mornings, and leaving between 2:00 pm and 6:00 pm. It is anticipated that the construction workforce would

commute to the site each day from local communities. Construction personnel not drawn from the local labor pool are anticipated to stay in nearby hotels.

During construction, dusk-to-dawn security lighting would be required for the temporary construction staging area, parking area, construction office trailer entries, and site access points. Lighting is not planned for typical construction activities because construction activities would occur primarily during daylight; however, if required, any lighting would temporary and be limited to that needed to ensure safety and security.

Multiple portable toilets would be used during construction, and wastewater would be trucked offsite for disposal in accordance with all applicable regulations by a licensed sewage disposal company.

Site Grading and Earthwork

Beginning work on the project would involve preparing the land for installation of arrays, related infrastructure, access driveways, and temporary construction staging area.

Site preparation would involve the removal and proper disposal of existing vegetation and debris that would unduly interfere with project construction or the health and safety of onsite personnel. Dust minimizing techniques would be employed, such as maintaining natural vegetation where possible, utilizing "mow-and-roll" vegetation clearance strategy, application of water, and applying dust suppressants. Conventional grading would be minimized to the maximum extent possible to reduce unnecessary soil movement that may result in dust. Earthworks scrapers, excavators, dozers, water trucks, paddlewheels, haul vehicles and graders may all be used to perform grading. Land-leveling equipment, such as a smooth steel drum roller, would be used to even the surface of the ground and to compact the upper layer of soil to a value recommended by a geotechnical engineer for structural support. Access roads may be additionally compacted to 90% or greater, as required, to support construction and emergency vehicles. Certain access roads may also require the use of aggregate to meet emergency access requirements. Soil movement from grading would be balanced on the site, and it is anticipated that no import or export of soils would occur.

Trenching would be required for placement of underground electrical and communications lines, and may include the use of trenchers, backhoes, excavators, haul vehicles, compaction equipment and water trucks. After preparation of the site, the pads for structures, equipment enclosures and equipment vaults would be prepared per geotechnical engineer recommendations.

Solar Array Assembly

Erection of the solar arrays would include support structures and associated electrical equipment. First, steel piles would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. If shallow bedrock or other obstructions are encountered, the pile locations would be predrilled and then grouted in place with concrete. The piles would likely be spaced approximately 10-20 feet apart. Once the piles have been installed, the horizontal array support structures would be installed. The final design of the horizontal array support structures may vary, depending on the final selection of the PV technology, as well as whether a fixed tilt or tracking system is selected. Once the support structures are installed, workers would begin to install the solar modules. Solar array assembly and installation would require trenching machines and excavators, compactors, concrete trucks and pumpers, vibrators, forklifts, boom trucks, graders, pile drivers, drilling machines, and cranes.

Concrete would be required for the footings, and pads for the medium voltage transformers, inverters, O&M buildings, and communications buildings. Concrete may also be required for pile foundation support depending on the proposed mounting system chosen for installation and whether obstructions are

encountered when trying to drive piles. Final concrete specifications would be determined during detailed design engineering. Concrete may be produced on the site with the use of a temporary batch plant located on the Syracuse Site, and would be poured throughout the three sites (Syracuse, Tours and Sunbow) by truck, or purchased from an offsite supplier and trucked onto the project site.

During this work, there would be multiple crews working on the site with vehicles, including special vehicles for transporting the modules and other equipment. As the solar arrays are installed, the solar switchyard would be constructed and the electrical collection and communication systems would be installed. Within the solar fields, the electrical and communication wiring would be installed in underground trenches, although some of the mid-voltage collection runs and communications may be on overhead lines. Collection trenches would likely be mechanically excavated, though in some cases targeted shallow trench blasting may be required as a construction technique due to near-surface bedrock.

The wiring would connect to the appropriate electrical and communication terminations and the circuits would be checked and electrical service would be verified. Additionally, if a tracker system is utilized, the motors would be checked and control logic verified. Once all the individual systems have been tested, the overall project would be ready for testing under fully integrated conditions.

Electrical Interconnection to Transmission Owner Infrastructure

The project would connect with an existing SCE 66-kV electrical distribution line via a new loop-in switch station to be built onsite and which would include: box rack structure and foundations, circuit breakers, disconnect switches, overhead conductors and insulators, wood/steel transmission poles, a perimeter barbed wire fence, a mechanical electrical equipment room (approximately 30 x 20 feet), telecommunication equipment, bus-work, potential transformers with steel pedestal support structures, and a grounding grid. The SCE owned and operated switching station would be located at the northern portion of the Syracuse Site and Tours Site, adjacent to Backus Road, as shown on Figure 6. Each of the three project sites would have its own project substation approximately 1 to 2 acres in size.

Construction Water Use

Water needed for construction is expected to be trucked from an offsite water purveyor and/or pumped from a potential onsite well. The entire construction process is estimated to take approximately 300 construction days, over the course of a 14-month period. Construction water demands are estimated to be approximately 147 acre-feet, which is equivalent to approximately 48,000,000 gallons (40,000 gallons/day x approximately 300 days = 12,000,000 gallons for dust control and 120,000 gallons/day x 300 days = 36,000,000 gallons for site preparation and miscellaneous construction). Bottled water would be provided for crews during construction activities.

Initial construction water usage would be in support of site preparation and grading activities. During earthwork for grading of access road foundations, equipment pads and project components, the main use of water would be for compaction and dust control. Smaller quantities would be required for preparation of the concrete required for foundations and other minor uses. After the earthwork activities, water usage would be used for dust suppression and normal construction water requirements that are associated with construction of the building, internal access roads, revegetation and solar arrays.

Project Operation and Maintenance

The project would include up to three onsite O&M buildings, to be unmanned and monitored remotely 24 hours per day, seven days a week. During the operational phase, the project would have up to two full-time

equivalent (FTE) staff (or personnel hours totaling two FTE positions, i.e. an average of 80 personnel hours per week).

The PV panel surfaces may be washed seasonally to increase the average optical transmittance of the flat panel surface. Panel washing is expected to take 10 days per site to complete per wash, up to four times per year or a total of 40 days per year to complete. Additional staff of two to five people would be required during panel washing and are expected to be hired from the local community.

The facility's regular maintenance program would be largely conducted onsite during daytime hours as a safety precaution. Equipment repairs would typically take place in the early morning or evening when the plant is producing the least amount of energy.

Prudent security measures would be taken to ensure the safety of the public and facility. The proposed project would be fenced along all borders with locking gates at the specified points of ingress and egress. The security fence would be approximately 7- to 8-feet tall, with two strings of barbed wire along the top. Offsite security personnel may be dispatched during nighttime hours or be onsite depending on security risks and operating needs. The project site would provide illumination for both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed.

The project site would produce a small amount of waste associated with maintenance activities. PV solar system wastes typically include broken and rusted metal, defective or malfunctioning modules, electrical materials, and empty containers and other miscellaneous solid materials, including typical household refuse generated by workers. Most of these materials would be collected and delivered back to the manufacturer for recycling.

Long-term operational water demand is anticipated to be approximately 652,000 gallons/year (2.0 acre-feet/year) of water per site. Water would be used during PV panel washing activities, which is anticipated to occur up to four times a year, as needed. Water for panel washing is expected to come from a local purveyor or an onsite well.

Project Decommissioning

The project proponents expect to sell the renewable energy produced by the product under the terms of a long-term Power Purchase Agreement (PPA) or directly into the wholesale market. The life of the solar facility is anticipated to be up to 35 years; however, the project proponents may choose to extend the life of the facility, update technology and re-commission, or decommission and remove the system and its components. When a decommissioning event occurs, the solar site could then be converted to other uses in accordance with applicable land use regulations in effect at that time.

When project decommissioning occurs, project structures would be removed from the project site. Above-ground and underground equipment would be removed. The substation would be removed if it is owned by the project; however, if a public or private utility assumes ownership of the substation, the substation may remain onsite to be used as part of the utility service to supply other applications. Project roads would be restored to their pre-construction condition unless the landowner elects to retain the improved roads for access throughout that landowner's property. The area would be thoroughly cleaned and all debris removed. As discussed above, most materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable regulations. A collection and recycling program would be executed in the event system components are manufactured with hazardous materials

A collection and recycling program would be executed to promote recycling of project components and minimize disposal of project components in landfills. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, state, and county regulations. The project proponents expect a secondary market for PV modules to develop over time. Although energy output may diminish, PV modules are expected to continue to have a productive life and can be decommissioned from a prime location or re-commissioned in another location.

1.4 Project Objectives

The project proponents have defined the following objectives for the project:

- Maximize renewable energy production and economic viability through the installation of 60-MW of solar PV panels on approximately 493.5 acres of private lands with high solar insolation values.
- Locate the project on private lands with few landowners to minimize transaction costs.
- Avoid costly transmission upgrades and infrastructure expenses by locating adjacent to an existing, uncongested transmission line instead of constructing a lengthy generator intertie transmission line from the project to the transmission grid.
- Reduce environmental impacts by using contiguous lands located near existing solar projects.
- Reduce environmental impacts by locating adjacent to an existing transmission line instead of constructing a lengthy generator intertie transmission line from the project to the transmission grid.
- Generate substantial direct and indirect economic opportunities in Kern County during construction and operation.
- Assist the State of California in reducing fossil fuel air quality pollution and in achieving the greenhouse gas emission reductions required by the California Global Warming Solutions Act (Assembly Bill 32).
- Develop a viable source of clean energy to assist California and its utilities in fulfilling 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).
- Use proven and established PV technology that is efficient and requires low maintenance.

1.5 Proposed Discretionary Actions/Required Approvals

To implement this project, the following discretionary and ministerial permits/approvals may be required, including but not limited to the following:

Federal

- U.S. Fish and Wildlife Service (USFWS)
- United States Army Corps of Engineers Section 404 Permit

State

- California Public Utilities Commission
    - Section 851 Permit

- California Department of Fish and Wildlife (CDFW)
    - Section 1600 et seq. permits (Streambed Alteration Agreements)
    - Section 2081 Permit (State-listed endangered species)
- Lahontan Regional Water Quality Control Board (RWQCB)
- Waste Discharge Requirements
    - Regional Water Quality Certification (401 Permit)
- National Pollution Discharge Elimination System (NPDES) Construction General Permit
- General Construction Stormwater Permit (Preparation of a SWPPP)
- Regional Water Quality Certification (401 Permit)
- California Department of Transportation (Caltrans)
    - Right-of-Way Encroachment Permit
    - Oversized Loads Permit

Other additional permits or approvals from responsible agencies may be required for the project

Local

Kern County Board of Supervisors/Kern County Planning Commission

- Certification of Final Environmental Impact Report
- Adoption of Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Approval of Kern County General Plan Amendment 5, Map 214
- Approval of Kern County Conditional Use Permits (CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214; CUP 40, Map 214; and CUP 41, Map 214
- Approval of applicable Franchise Agreement(s).

Kern County Public Works

- Approval of Kern County Grading Permits
- Approval of Kern County Building Permits
- Approval of Kern County Encroachment Permits

Kern County Fire Department

- Fire Safety Plan

Eastern Kern Air Pollution Control District (EKAPCD)

- Fugitive Dust Control Plan

- Any other permits as required

Other additional permits or approvals from responsible agencies may be required for the proposed project.

2. Kern County Environmental Checklist Form

2.1 Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "potentially significant impact" as indicated by the Kern County Environmental Checklist on the following pages.

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

2.2 Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

Signature — Date: August 18, 2017

Randall Cates, Planner III
Printed Name — For:

3. Evaluation of Environmental Impacts

(1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

(2) All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

(3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

(4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measure and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

(5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration, Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   (a) Earlier Analysis Used. Identify and state where they are available for review.

   (b) Impacts Adequately Addressed. Identify which effects from the above checklist where within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   (c) Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

(6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

(7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

(8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

(9) The explanation of each issue should identify:

   (a) The significance criteria or threshold, if any, used to evaluate each question; and

   (b) The mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
AESTHETICS. *Would the project:*				
a. Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

Discussion:

(a) The project is located in a sparsely developed, rural area of Kern County. The project site is not located within an area designated for or identified as having a scenic vista or scenic views. However, because the project would substantially change views, impacts to scenic vistas may occur and will be evaluated in the EIR.

(b) According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, the closest eligible scenic highway is the portion of SR 14 north of SR 58, which is approximately 10 miles northeast of the project. Because of this distance, the PV solar facilities would not be visible from SR 14. Therefore, project impacts to scenic resources within a state scenic highway would not occur, and will not be evaluated in the EIR.

(c) The aesthetic features of the existing visual environment in the project boundaries are relatively uniform, with broad, dry, flat landscapes. Outside of the project boundaries include a mix of undeveloped land, rural residential development, the Shumake Mine (located approximately 4,000 feet to the east of the Sunbow Site, and approximately 4,000 feet to the northeast of the Tours Site) as well as existing solar and wind electrical generation facilities and infrastructure. Desert vegetation dominates the project and region. Due to the flat topography of the project and height of the panels, visual impacts would most likely be limited to the small number of persons traveling along nearby roads such as Tehachapi Willow Springs Road and Backus Road. Views of the proposed project would also be visible from the scattered residences in the project vicinity. Placement of PV solar panels and associated structures on the project site would alter the character of the area. Residents and travelers on adjacent roads would observe alterations to the existing landscape. Changes to the visual quality and character of the project site may be significant, and impacts will be further evaluated in the EIR.

(d) The project is located in area that contains scattered rural residential development, mining activities, as well as permitted solar and wind electrical generation facilities and infrastructure. The PV modules are designed to absorb sunlight to maximize electrical output; therefore, they would not create significant reflective surfaces or the potential for glint/glare during the day. All lighting at the proposed solar facilities would be designed to meet Kern County Zoning Ordinance Chapter 19.81- Outdoor Lighting- Dark Skies requirements. However, further analysis of the specific lighting and effects of nighttime light and glare from the project will be provided in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or Williamson Act contract?	☐	☐	☒	☐
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Productions (as defined in Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☒	☐	☐	☐
f. Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code?	☐	☐	☐	☒

Discussion:

(a) There is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area. The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program (FMMP), designates the project site as nonagricultural and natural vegetation. Surrounding properties are designated as either: (a) vacant or disturbed, (b) rural residential, or (c) nonagricultural and natural vegetation (California Department of Conservation, 2014). As such, the project is not considered to be prime, unique, or important farmland. Construction and/or operation of the project would not result in the conversion of designated Farmland to a nonagricultural use; therefore, further analysis is not warranted in the EIR.

(b) According to available data, none of the parcels included as part of the proposed project or any property in the vicinity of the project are subject to a Williamson Act Land Use contract (Kern County, 2017). Additionally, there is limited available water, and aerial photography dating back to at least 1952 shows that none of the project site nor any of the surrounding area has been under agricultural cultivation. Although impacts on agricultural zoning and a Williamson Act Land Use are not anticipated and are considered less than significant, the impacts will be discussed further in the EIR.

(c)-(d) The Syracuse Site is in the A FP zone district. The Tours Site is in the A and A FP zone districts. The Sunbow Site is within the A FPS zone district (Kern County, 2016). The existing zoning is consistent with the Kern County General Plan land use designation of 8.3. According to the Kern County Zoning Ordinance, a commercial solar facility is a compatible use in the exclusive agricultural zone district. The construction and operation of a solar energy generating facility on the site would require the approval of CUPs (Kern County Ordinance 19.12.030.G). The proposed discretionary actions are consistent with the Kern County Zoning Ordinance regulations for solar uses.

The project is not situated on forest or timberland with areas that are currently under production. There is no land in the vicinity of the project that is zoned as forest land, timberland, or lands zoned for timberland production. Therefore, there would not be impacts related to conflicts with current zoning, the rezoning of forest land, timberland, or timberland zoned for timberland production and further analysis is not warranted in the EIR.

(e) The project site consists of largely undeveloped desert land, with scattered residential uses in the project vicinity. The project site is comprised of non-agricultural uses, and no agricultural uses are adjacent to the project site. This impact will be further discussed in the EIR.

(f) As noted in response (b), above, the project is not under a Williamson Act Contract and implementation of the project would not result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Public Resources Code Section 15206(b)(3)). Therefore, no impacts are anticipated, and further discussion is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b. Violate any air quality standard as adopted in (c)i or (c)ii, or as established by EPA or air district or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? Specifically, would implementation of the project exceed any of the following adopted thresholds:	☒	☐	☐	☐
i. San Joaquin Valley Unified Air Pollution Control District:				
Operational and Area Sources:				
Reactive Organic Gases (ROG) 10 tons per year.	☐	☐	☐	☒
Oxides of Nitrogen (NO_x) 10 tons per year.	☐	☐	☐	☒
Particulate Matter (PM_{10}) 15 tons per year.	☐	☐	☐	☒
Stationary Sources as Determined by District Rules:				
Severe Nonattainment 25 tons per year.	☐	☐	☐	☒
Extreme Nonattainment 10 tons per year.	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
ii. Eastern Kern Air Pollution Control District:				
Operational and Area Sources:				
Reactive Organic Gases (ROG) 25 tons per year.	☒	☐	☐	☐
Oxides of nitrogen (NO_x) 25 tons per year.	☒	☐	☐	☐
Particulate Matter (PM_{10}) 15 tons per year.	☒	☐	☐	☐
Stationary Sources as Determined by District Rules: 25 tons per year.	☒	☐	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion:

(a) The project is located entirely within the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD), in the Mojave Desert Air Basin (MDAB). EKAPCD is designated as a nonattainment area for both the State and federal ozone standards and the state particulate matter (PM_{10}) standard. Project construction would generate emissions of reactive organic gases (ROG) and oxides of nitrogen (NOX), both of which are known as ozone precursors, and PM_{10} that could result in significant impacts to air quality in the area. EKAPCD's most recently adopted air quality management plan as its Ozone Air Quality Attainment Plan (AQAP). As the project would generate emissions of ozone precursors (along with PM_{10}) during construction, the project could potentially conflict with EKAPCD's Ozone AQAP. Thus, further analysis of the project's air quality impacts is warranted to determine whether the project would conflict with or obstruct implementation of EKAPCD's applicable air quality plan for attainment and, if so, to determine the reasonable and feasible mitigation measures that could be imposed. These issues will be evaluated in the EIR.

(b) Project operational emissions are anticipated to be minimal. However, the short-term construction emissions generated at the project could significantly contribute to an existing or projected air quality violation of criteria pollutant (ROG, NOx, PM_{10}, and $PM_{2.5}$) standards established by EKAPCD, requiring the consideration of mitigation measures. The sources of construction emissions at the project would include off-road heavy equipment (e.g., graders, loaders, backhoes, dozers, etc.) used during the various construction phases for the project and on-road motor vehicles for equipment and material deliveries and workers commuting to and from the project site. The use of a temporary concrete batch plant could also contribute to air quality effects during construction. This impact is potentially significant and will be evaluated further in the EIR.

(c) The project is not located within the San Joaquin Valley Unified Air Pollution Control District and its adopted thresholds do not apply. However, the project is located within the EKAPCD, which is designated as a nonattainment area for the State and federal ozone standards and the State PM_{10} standard. As such, the emissions of ozone precursors (ROG and NOx) and PM_{10} during construction and operation of the project could result in a cumulatively considerable net increase of these criteria pollutants in the MDAB. Thus, the project's contribution to cumulative air quality impacts in the MDAB could be potentially significant. The project's contribution of construction and operational emissions to the MDAB will be analyzed in the EIR.

(d) The land uses surrounding the project consists primarily of undeveloped land, scattered residential and mining uses. The nearest sensitive receptors to the project are residential structures located within 200 feet, specifically located: (a) south of Golden Gate Avenue, east of Tehachapi Willow Springs Road, and northwest of the intersection of Trotter Avenue and 100th Street West. Nearby sensitive receptors could be exposed to pollutant emissions during construction of the project. The project's construction-related activities would result in diesel exhaust emissions and dust that could adversely affect air quality for the nearest sensitive receptors.

Exposure to Valley Fever from fugitive dust generated during construction is a potentially significant impact. There is the potential that cocci spores could be stirred up during excavation, grading, and earth-moving activities, exposing construction workers and nearby sensitive receptors to these spores and thereby to the possibility of contracting Valley Fever. Thus, impact to sensitive receptors via pollutant concentrations is potentially significant and will be evaluated further in the EIR.

(e) The project would not have any stationary sources or equipment located onsite that would generate objectionable odors. During construction activities, only short-term, temporary odors from vehicle exhaust and construction equipment engines would occur. However, these odors would not affect a substantial number of people because the site is located in sparsely inhabited areas, and any odors would be temporary and would be dispersed rapidly. Therefore, it is not anticipated there would be an impact; therefore, further analysis is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES. Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion:

(a) The project is located in the eastern high desert region of unincorporated Kern County in the Mojave Desert, approximately nine miles southwest of the unincorporated community of Mojave and approximately eight miles northwest of the unincorporated community of Rosamond. The project is comprised of desert scrub with a minimal level of anthropogenic disturbances. The project may contain

sensitive or special-status species. There is a potential for special-status plants and wildlife species to be present in project vicinity. The proposed project's potential to have a substantial adverse effect, either directly or through habitat modifications, on any candidate, sensitive, or special-status species in local or regional plans or regulations by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS) will be evaluated in the EIR.

(b) The project is undeveloped and comprised of desert scrub, scattered Joshua trees and grassland habitat. The site does not appear to support any riparian habitat but Joshua trees, a CDFW sensitive plant community, are scattered throughout the project. Field surveys for sensitive natural communities will be completed for the proposed project, and the results included in the EIR.

The USFWS does not identify any critical habitats on or near the project (USFWS, 2016). The nearest critical habitat is located approximately 15 miles west of the site, in the Tehachapi Mountains, for California condor (*Gymnogyps californianu*). The next closest critical habitat is Desert Tortoise Critical Habitat located approximately 40 miles east of the project.

A biological assessment protocol surveys, soils characterization, and hydrologic analysis will be prepared for the project. These studies will be used to evaluate potential project-related impacts to sensitive natural communities in the EIR.

(c) The project is in the high desert region of Kern County. It is highly unlikely to contain any federally protected wetlands, marshes or vernal pools, or other protected waterways, as defined by Section 404 of the Clean Water Act because local waters do not drain to a traditionally navigable water of the United States; therefore, project implementation is not likely to result in impacts related to wetlands. However, the project does have several drainage routes that may be considered jurisdictional waters of the State. Oak Creek runs along the easterly border of the Tours Site. On the Tours Site, there is an approximately 35-acre no-build area to avoid any disturbance to Oak Creek. Further analysis of these issues will be discussed in the EIR.

(d) The project site and surrounding areas may be used for migration or dispersal by some species. Project construction and operation could remove foraging habitat. This impact may be significant and will be evaluated in the EIR.

(e) Although local policy or ordinance protecting biological resources, Joshua trees are a CDFW sensitive plant community. There are scattered Joshua trees located on the project site. The proposed gen-tie along Backus Road is devoid of trees. Potential impacts to Joshua trees and other similar resources will be analyzed in the EIR.

(f) The proposed project is located within the West Mojave Plan (WMP) planning area. However, the WMP only applies to federal public lands managed by the Bureau of Land Management (BLM) and is not an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). The site is also located within a Development Focus Area of the Desert Renewable Energy Conservation Plan (DRECP) planning area, which means that the area is expected to support fewer sensitive status species than areas identified with conservation potential and is therefore more likely to be appropriate for renewable energy development. However, the DRECP at this time only applies to federal public lands managed by the BLM and is not an adopted HCP or NCCP. The proposed project occurs on private land and, therefore, is not subject to the WMP or the DRECP. There are no impacts because the proposed project would not conflict with the provisions of an adopted habitat conservation plan, and no further analysis is warranted in the EIR. (Note: While the project is not subject to the conservation management actions or any other regulations associated with

implementation of the WMP or DRECP, biological resources data generated by the WMP and DRECP that are relevant to the project site will be considered in the EIR).

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES. Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?	☒	☐	☐	☐
b. Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074	☒	☐	☐	☐
c. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	☒	☐	☐	☐
d. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐
e. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Discussion:

(a) - (c) The project consists of undeveloped land. Development of the project would require ground disturbance for grading, installation of the solar arrays, gen-tie line, and placement of underground electrical and communications lines; this development could potentially impact historical resources, tribal cultural resources, and archaeological resources. A cultural resources survey will be conducted for the project. Further evaluation in the EIR is warranted to identify potential impacts to historical, archaeological resources and tribal cultural resources and to formulate avoidance or mitigation measures, if applicable.

(d) Kern County is rich in paleontological resources. If paleontologically sensitive formations are located underground on the project site, ground disturbance could result in potentially significant impacts to paleontological resources. Thus, submittal of a Cultural Resources Phase I Survey, including a paleontological resources review, for the project is required. Further evaluation in the EIR is warranted to identify potential impacts and to formulate avoidance or mitigation measures, if applicable.

(e) There is no evidence to indicate the project is located within an area likely to contain human remains and discovery of human remains during earthmoving activities is not anticipated. However, the potential for human remains to be encountered will be further analyzed in the EIR.

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

Discussion:

(a)(i–ii) Evidence is not present to suggest the project site has been previously developed or used as farmland, which has the potential to disturb any cultural resources, including tribal cultural resources. All tribes with possible cultural affiliation and interest within the project area will be notified, per Assembly Bill 52. The potential for tribal cultural resources to be encountered will be evaluated further in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS. Would the project:				
a. Expose 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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion

(a) (i) Primary ground rupture is ground deformation that occurs along the surface trace of the causative fault during an earthquake. The project is not transected by known active or potentially active faults. The Garlock fault zone, located approximately 8 miles northeast of the project is the closest fault. The project is not located in an Alquist-Priolo Special Studies Zone. Due to the distance from the nearest active fault to the project site, the potential for surface fault rupture at the project is considered negligible.

In addition, although the project does not include any habitable structures, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the California Building Code (CBC) 2016 Edition (CCR Title 24) effective January 1, 2017, which imposes substantially the same requirements as the International Building Code (IBC), 2015 Edition, with some modifications and amendments. Adherence to all applicable regulations would mitigate any potential impacts associated with the project. Impacts would be less than significant; however, further analysis in the EIR is warranted.

(ii) Due to the location of active fault in the region, strong seismic ground shaking could occur at the project, resulting in damage to structures that are not properly designed to withstand strong ground shaking. The project would include the construction of solar PV panel arrays, transmission lines, and other associated infrastructure. As described above, the project also would include the construction of up to three unmanned O&M buildings for equipment storage. Should strong seismic ground shaking occur at the project, damage to the PV modules and other ancillary facilities (e.g., O&M buildings) could result. However, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08), and IBC and CBC earthquake construction standards, including those relating to soil characteristics.

Adherence to all applicable regulations would mitigate any potential impacts associated with seismic ground shaking at the project site. Although the project site would potentially be subject to moderate to strong ground shaking from regional earthquakes, the project would not expose substantial numbers of people to adverse impacts as a result of code compliance and the fact that the project would be unmanned. Adherence to all applicable regulations would reduce potential impacts associated with seismic groundshaking at the project site. Although potential impacts for this issue area are anticipated to be less than significant; nevertheless, further analysis in the EIR is warranted.

(iii) Seismically induced liquefaction occurs when loose, water-saturated sediments of relatively low density are subjected to cyclic shaking that causes soils to lose strength or stiffness, because of increased pore water pressure. Liquefaction generally occurs when the depth to groundwater is less than 50 feet. Based on review of available groundwater data in the site vicinity, groundwater in the area is reported to be more than 50 feet below ground surface. Thus, the potential for liquefaction at the surface is low. Furthermore, the project is not located within a current, mapped California Liquefaction Hazard Zone. Structures constructed as part of the project would be required by State law to be constructed in accordance with all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Building code requirements may include, but are not limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate

structural systems to accommodate anticipated displacements, or any combination of these measures. Adherence to all applicable regulations would avoid any potential impacts to structures resulting from liquefaction at the project. Potential impacts for this issue area would not be anticipated, and therefore, further analysis is not warranted in the EIR.

(iv) The project is located in a relatively flat-lying plain, does not contain any steep slopes, and the likelihood of landslides is very low. Therefore, impacts related to landslides are not anticipated to occur or pose a hazard to the project or surrounding area and further analysis of this issue is not warranted in the EIR.

(b) Removal of vegetation and excavation would be required for array foundations at the project, and trenching would be required for the installation of underground cables and circuits. The project would employ disk-and-roll grading, micrograding, and land-leveling equipment for soil compaction. As a result, project construction would have the potential to result in erosion, sedimentation, and discharge of construction debris from the site. Vegetation clearing and grading activities, for example, could lead to exposed or stockpiled soils susceptible to peak stormwater runoff flows and wind forces. The compaction of soils by heavy equipment may reduce the infiltration capacity of soils (exposed during construction) and increase runoff or erosion potential. The presence of large amounts of raw materials for construction, including aggregate base course material, may lead to stormwater runoff contamination. However, the project proponents would be required to obtain a NPDES permit because the project would disturb more than 1 acre of soil. As required, a Stormwater Pollution Prevention Plan (SWPPP) would be developed to specify best management practices (BMPs) to prevent construction pollutants, including erosion of soils (such as topsoil), from moving offsite. Impacts related to soil erosion or the loss of topsoil are considered to be potentially significant and will be evaluated in the EIR.

(c) The project lies in a relatively flat-lying plain where landslides, lateral spreading, subsidence, liquefaction, and collapse are not expected to occur. Therefore, impacts related to geologic instability are not anticipated to occur or pose a hazard to the proposed project or surrounding area, and further analysis of this issue is not warranted in the EIR.

According to available data, depth to groundwater at the project is over 50 feet, and onsite soils do not appear to be susceptible to soil liquefaction. Thus, liquefaction is not a potentially significant impact related to the proposed project. Seismic settlement, lateral spreading and collapse are not expected to result in significant impacts. Furthermore, the structures would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08), as well as all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Impacts would be less than significant and further analysis is not required in the EIR.

(d) Expansive soils are fine-grained soils (generally high plasticity clays) that can undergo a significant increase in volume with an increase in water content and a significant decrease in volume with a decrease in water content. Changes in the water content of a highly expansive soil can result in severe distress to structures constructed on or against the soil. The expansion potential of onsite soils may be classified as very low to low, and special design is not necessary. Nevertheless, the project would be designed to comply with applicable building codes and structural improvement requirements to withstand the effects of expansive soils. The implementation of Kern County Building Code requirements, as applicable, would minimize the potential impact of expansive soils. Impacts related to expansive soils would be less than significant and therefore, further analysis is not warranted in the EIR

(e) The project includes construction of up to three unmanned O&M buildings, which will not require any permanent employees onsite. Although maintenance workers would visit the project site sporadically throughout the year for routine maintenance of the facility, the project will not include septic systems or wastewater disposal facilities and there would be no impact. Therefore, further evaluation in the EIR is not warranted.

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

Discussion:

(a) Greenhouse gas (GHG) emissions emitted by human activity are implicated in global climate change or global warming. The principal GHGs are CO_2, methane (CH_4), NOX, ozone, water vapor, and fluorinated gases. The temporary construction activities associated with the project, which would involve operation of heavy off-road equipment, on-road trucks (for deliveries and hauling), and construction worker commute trips, would generate GHGs. However, as a solar facility, the project is expected to displace traditional sources of electricity production that involves combustion energy sources (e.g., burning coal, fuel oil, or natural gas). As such, the provision of solar energy by the project would produce GHG-free electricity that is anticipated to offset GHGs that would otherwise be generated by traditional sources of electricity. The potential impacts associated with GHG emissions generated during construction of the project and the potential GHG offsets resulting from operation of the project will be further evaluated in the EIR.

(b) California has passed several bills and the governor has signed at least three executive orders regarding GHGs. Assembly Bill (AB) 32 (the Global Warming Solutions Act) was passed by the California legislature on August 31, 2006 that require the State's global warming emissions to be reduced to 1990 levels by 2020. The reduction will be accomplished through an enforceable statewide cap on GHG emissions that was phased in starting in 2012.

In 2002, California established its Renewable Portfolio Standards (RPS) Program, with the goal of increasing the percentage of renewable energy in the State's electricity mix to 20 percent renewable energy by 2017. In 2006, under SB 107, the RPS Program codified the 20 percent goal. The RPS Program requires electric utilities and providers to increase procurement from eligible renewable energy resources by at least one percent of their retail sales annually until they reach 20 percent by 2017. On November 17, 2008, the governor signed Executive Order S-14-08, requiring California utilities to reach the 33 percent renewable goal by 2020. In 2015, SB 350 was enacted to increase the RPS to 50 percent and reduce greenhouse gas emissions by 40 percent by the year 2030. The project is intended to: (1) reduce importation of power from fossil fuel power plants; and (2) contribute to a reduction in GHGs. Heavy equipment operation, truck deliveries, and construction worker commute trips associated with construction of the proposed project would temporarily generate GHGs; however, operation of the project would offset GHGs generated by traditional sources of electricity. The

project's potential GHG impacts and the potential GHG offsets resulting from operation of the project will be further evaluated in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☒	☐	☐	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☒	☐	☐	☐

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
i. Would implementation of the project generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste? Specifically, would the project exceed the following qualitative threshold:				
The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:				
i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and	☐	☐	☐	☒
ii. Are associated with design, layout, and management of project operations; and	☐	☐	☐	☒
iii. Disseminate widely from the property; and	☐	☐	☐	☒
iv. Cause detrimental effects on the public health or well being of the majority of the surrounding population.	☐	☐	☐	☒

Discus:

(a) The project would not involve the routine transport, use, or disposal of hazardous materials as defined by the Hazardous Materials Transportation Uniform Safety Act and is not expected to create a significant hazard to the public or the environment. During construction, the project would include the transport of general construction materials (i.e., concrete, wood, metal, fuel, etc.) as well as materials necessary to construct the proposed PV arrays. Project-related infrastructure would not emit hazardous materials, or be constructed of acutely hazardous materials or substances that could adversely impact the public or onsite workers. The majority of wastes to be generated during construction of the project would also be non-hazardous, and would consist of cardboard, wood pallets, copper wire, scrap steel, common trash, and wood wire spools. However, the project could generate small quantities of hazardous waste during project construction, including waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Field equipment used during construction activities could contain various hazardous materials (i.e., hydraulic oil, diesel fuel, grease, lubricants, solvents, adhesives, paints, etc.). These materials are not considered to be acutely hazardous and would be used in accordance with the manufacturer's specifications and all applicable regulations. In addition, although it is unlikely that large quantities will be stored onsite, hazardous fuels and lubricants used on field equipment would be subject to a Material Disposal and Solid Waste Management Plan, and a Spill Prevention, Containment and Countermeasure (SPCC) Plan.

The project would be subject to all local, State, and federal laws pertaining to the use of hazardous materials onsite and would be subject to review by the Kern County Environmental Health Services Division/Hazardous Materials Section. Through the review process, the project would be required to submit hazardous materials business plan, which would include a complete list of all materials used onsite, an explanation of how the materials would be transported, and a discussion on the chemical forms in which the materials would be used in order to maintain safety and prevent possible environmental contamination or worker exposure. During construction of the project, Material Safety Data Sheets (MSDS) for all applicable materials present at the site would be made readily available to onsite personnel. During construction of the facilities, non-hazardous construction debris would be generated and disposed of in approved facilities. Also, during construction of the facility, sanitary waste would be managed using portable toilets located at reasonably accessible onsite locations.

The PV panels may include solid materials that are considered hazardous, such as cadmium telluride. While in operation, the solar panels are solid and non-leachable; however, broken panels could result in a slight hazard. To dispose of properly, the project manager would use the manufacturer's collection and recycling program to ensure the proper collection and recycling of PV panels, as needed. While it is not anticipated that transport and disposal of such panels would result in a significant hazard, this issue will be considered in the EIR.

Concern over electromagnetic field (EMF) exposure generally pertains to human-made sources of electromagnetism and the degree to which they may have adverse biological effects or interfere with other electromagnetic systems. Commonly known human-made sources of EMF are electrical systems, such as electronics and telecommunications, as well as electric motors and other electrically powered devices. Radiation from these sources is invisible, non-ionizing, and of low frequency. Generally, in most environments, the levels of such radiation when added to natural background sources are low. Electric voltage (electric field) and electric current (magnetic field) from transmission lines create EMFs, dangers associated with high-voltage electrical transmission lines (including EMF hazards), though anticipated to be less than significant, will be discussed in the EIR as well.

Dust palliatives and herbicides, if used, may be transported to and stored at the project. These materials would be stored in appropriate containers that would prevent their accidental release at the site. There are no designated routes for the transport of hazardous materials located within or adjacent to the project; however, SR 14 and SR 58 are designated routes for the transport of hazardous materials. SR 14 is located approximately 7.3 miles east of the project site, while SR 58 is 9.5 miles northeast. These roadways are equipped to handle the transport of hazardous materials and both SR 14 and SR 58 would provide regional access to the project. Impacts resulting from the transport, use or disposal of hazardous materials during construction and operation of the proposed project will be evaluated further in the EIR.

(b) The project is not located within or near a Department of Oil, Gas and Geothermal Resources (DOGGR) identified oil field. Additionally, the site contains no known active or abandoned oil wells and there are no known active or abandoned oil wells in the project's immediate vicinity.

Construction and operation of the project may include the accidental release of hazardous materials, such as cleaning fluids and petroleum products including lubricants, fuels, and solvents. The project would be subject to all local, state, and federal laws pertaining to the use of hazardous materials onsite and would be subject to review by the Kern County Environmental Health Services Division/Hazardous Materials Section. Through the review process, the project proponents would be required to submit a hazardous materials business plan, which would include a complete list of all

materials used onsite, how the materials would be transported, and in what form they would be used. This would be recorded to maintain safety and prevent possible environmental contamination or worker exposure. This would also include submission of MSDS for all applicable materials present at the site. The MSDS would be made readily available to onsite personnel. It is anticipated that adherence to regulations and standard protocols during foreseeable upset and accident conditions involving the release of hazardous materials into the environment would avoid significant impacts. However, potential impacts will be evaluated further in the EIR.

(c) The project is located approximately nine miles southwest of the unincorporated community of Mojave and approximately eight miles northwest of the unincorporated community of Rosamond. The closest school to the project site is Joshua Middle School, located approximately 9.2 miles northeast. No schools are proposed in the vicinity of the project site. The project consists of solar energy generation facilities that involve using PV panels to generate electricity. Project-related infrastructure would not emit hazardous materials or involve handling hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school, and further analysis is not warranted in the EIR.

(d) The project site is not identified in any of the California hazardous materials databases. Searches were completed for the subject parcels in the following hazardous materials lists: California Environmental Protection Agency's (CalEPA) Cortese List including the California Department of Toxic Substances and Control's EnviroStor database of hazardous substances release sites; and Geotracker, the California database of leaking underground storage tanks. Finally, as provided by CalEPA, there are no active Cease and Desist Orders or Clean Up and Abatement Orders for hazardous materials/facilities in the immediate project vicinity of the project site. Therefore, significant impacts are not anticipated, and further analysis is not warranted in the EIR.

(e) The project site is not located within two miles of a public use airport and is not within an area covered by the ALUCP of Kern County. The nearest airports to the project are the Rosamond Skypark 9 miles to the southeast, the Mojave Air and Space Port 10.5 miles to northeast, and the Mountain Valley Airport (a private airport which allows public access) 12 miles to the northwest. Therefore, safety hazards are not anticipated for people residing or working in the project area with respect to the project's proximity to a public or public use airport. As such, impacts would occur, and further analysis is not warranted in the EIR.

(f) The nearest private airstrip is the Lloyd's Landing airport, located approximately 2.5 miles south of the project. The project is not located within two miles of a private airstrip. Therefore, safety hazards related to proximity to a private airstrip are not anticipated. Significant impacts are not anticipated and further analysis of this issue is not warranted in the EIR.

(g) The project would not physically impede an existing emergency response plan, emergency vehicle access, or personnel access to the project site. The project site is located in an area with several alternative access roads allowing access in the event of an emergency. Access would be maintained throughout construction, and appropriate detours would be provided in the event of potential road closures. Therefore, no significant impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would occur. Further analysis of this issue is not warranted in the EIR.

(h) The project would not increase the potential for wildland fires or expose people or structures to a significant risk of loss, injury, or death involving wildland fires. According to the California Department of Forestry and Fire Protection (CalFire), Kern County Fire Hazards Severity Zone Maps

for the Local Responsible Areas, the project site is classified as Local Responsibility Area (LRA) Moderate. The project site is outside of areas identified by the California Department of Forestry and Fire Protection as having substantial or very high risk. Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior. The project site consists of undeveloped desert lands. The surrounding land is primarily undeveloped land with some rural residential and commercial development. The project would comply with all applicable wildland fire management plans and policies established by CalFire and the KCFD. Accordingly, the project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. However, further analysis of this issue will be discussed in the EIR.

(i)(i-iv) Project-related infrastructure is not expected to result in features or conditions (such as standing water, agricultural products, agricultural waste, or human waste) that would provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents. During construction and operation, workers would generate small quantities of solid waste (i.e., trash) that would be appropriately stored for permanent disposal. Construction and operation of the proposed solar arrays and associated facilities would not produce excessive wastes, standing water, or other features that would attract nuisance pests or vectors. Therefore, impacts would not occur, and further analysis is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY. Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☒	☐	☐	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?	☒	☐	☐	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	☒	☐	☐	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☒	☐	☐	☐
f. Otherwise substantially degrade water quality?	☒	☐	☐	☐
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☒	☐	☐	☐

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion:

(a) The project site is within the Lahontan Regional Water Quality Control Board (RWQCB) jurisdiction. Project construction activities have the potential to result in erosion, sedimentation, and discharge of construction debris, and could result in the discharge of wastewater and urban runoff at the project site. If not properly managed, this wastewater could violate the water quality standards or waste discharge requirements of the RWQCB. However, as noted in Geology (b), above, in compliance with the Kern County NPDES permit requirements, appropriate BMPs would be implemented to reduce potential water quality impacts. Because the project would disturb more than 1 acre and at least two mapped drainage routes cross the project area, the project proponents would be required to prepare a SWPPP that would include implementation of (Best Management Practices) BMP erosion-control measures to control stormwater runoff, including eroded soils, from causing a violation of any water quality standards. Therefore, impacts related to water quality during construction would be considered less than significant. Although significant impacts related to water quality are not anticipated during construction, a comprehensive hydrologic and water quality impact analysis will be included in the EIR.

The project would develop areas of impervious surfaces on the currently undeveloped project site, including foundation pads for inverters, switchgear, transformers, as well as three O&M buildings, each with an unpaved parking area. These impacts will be addressed further in the EIR.

(b) Water use for the project would be needed primarily during construction activities, and non-potable water would be pumped from an onsite well or brought to the site for soil conditioning and dust suppression. It is anticipated that approximately 147 acre-feet of water would be required for the project during the construction phase, which would be trucked to the site or provided by a potential onsite groundwater well. Water use during operation of the project would be limited primarily for panel washing. It is expected that operation of the project would require approximately 2 acre-feet of water per year per site. During construction, potable water would be provided for drinking and domestic needs for construction workers.

The project is undeveloped, relatively flat, and covered with soils that allow for stormwater percolation. The impervious surfaces required for the inverters, transformers, and other infrastructure would be minimized as much as possible. Impacts related to groundwater supplies and the drainage patterns of the site, as well as the potential for increased erosion or siltation, will be evaluated in the EIR.

(c) Construction of the concrete pads for the switchyard, inverters, transformers, O&M buildings, etc., as well as foundational supports for panel installation, soil compaction, and any grading may alter the existing drainage pattern of the site. As noted in item (a), above, a SWPPP and WQMP would be

prepared for the project and the appropriate permits would be obtained from the Lahontan RWQCB. A hydrologic study will be prepared for the project in accordance with Kern County requirements, and potential impacts to existing drainage patterns and flooding conditions on the project site will be analyzed in the EIR.

(d) There are no rivers that traverse the project, however, Oak Creek is located along the easterly boundary of the Tours Site. Additionally, there are several drainage routes on the project site. On the Tours Site, there is an approximately 35-acre no-build area to avoid any disturbance to Oak Creek. The proposed project would not result in an increase in the rate or amount of surface runoff that would cause the course alteration of a river to cause offsite flooding.

Construction and operational activities associated with the proposed project could result in an increase in the rate or amount of surface runoff, however, it is anticipated that most of the stormwater would infiltrate into the onsite soils similar to existing conditions. Although the project site is located within a Flood Zone A (no base flood elevations determined), it is in a predominantly rural area and the project is not anticipated to result in potentially significant impact in regards to flooding onsite or offsite. However, alterations of drainage patterns will be further evaluated in the EIR.

(e) During construction and following installation of the solar arrays and other associated project infrastructure, the majority of the site would remain as pervious surface. The design of the project will be required to retain stormwater on the project site and infiltration would occur similar to existing conditions. Components of the project would not concentrate runoff and/or exceed the capacity of existing onsite drainage and percolation. Similarly, components of the project is not anticipated to generate a substantial source of polluted runoff. The SWPPP would provide proper control and treatment, if necessary, of any stormwater prior to discharge. With adherence to site-specific BMPs, potential pollutants would be minimized to the extent practicable and should not exceed numeric thresholds for water quality protection. Impacts will be discussed further in the EIR.

(f) Project construction activities (such as grading) could potentially degrade water quality through erosion and subsequent sedimentation of drainage routes. Additionally, accidental release of potentially harmful materials, such as engine oil, diesel fuel, and cement slurry could degrade the water quality of nearby streams. As mentioned above, implementation of a SWPPP would include BMPs, which would reduce the impact of project activities on surrounding water quality. Potential impacts to water quality will be evaluated further in the EIR.

(g) The site is located within the Flood Hazard Zone A as identified by FEMA, which is defined as areas subject to inundation by the 1 percent chance flood event generally determined using appropriate methodologies. As detailed hydraulic analyses have not been conducted, Base Flood Elevations (BFEs) or flood depths are not shown. However, the project does not include construction of housing. As a result, impacts would not occur and further analysis is not warranted in the EIR.

(h) As described above in (g), the project is located within Flood Zone A, meaning the area is subject to inundation by the 1 percent chance flood event. As detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. The project would be reviewed by the Kern County Public Works Department for adherence to all floodplain management standards if deemed necessary. Further analysis is required in the EIR.

(i) The project is not located an area that is subject to flooding due to failure of a levee or dam. Isabella Lake Dam is located approximately 50 miles north, and the project is located outside of a flood inundation zone. Therefore, the project would not expose people or structures to a significant risk of

loss, injury, or death due to flooding from failure of a levee or dam and no impact is anticipated. Further analysis related to failure of a levee or dam is not warranted in the EIR.

(j) The project is not located near an ocean or enclosed body of water, and therefore would not be subject to inundation by seiche or tsunami. Mudflows are a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity, and are often triggered by heavy rainfall and soil that is not able to sufficiently drain or absorb water and the super-saturation results in soil and rock materials to become unstable and slide away. Due to the relatively flat topography of the project and surrounding area, the potential to be inundated by mudflow is considered remote. Therefore, impacts are not anticipated and further analysis is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING. Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

(a) The project would be constructed on undeveloped desert lands. There are scattered residentially-developed properties to the east, south, and northwest of the project. Residences or other structures are not located on the project site. The nearest community (Mojave) is located approximately 9 miles northeast of the project site. The project would not physically divide or restrict access to the Mojave community, or any other community. Therefore, impacts related to the physical division of an established community would not occur, and this issue will not be discussed further in the EIR.

(b) The proposed project is located within the Kern County General Plan area and has a land use designation of 8.3 (Extensive Agriculture (Minimum 20 Acre Parcel Size, 80 Acres with Williamson Act Contract), as shown in Figure 2. Solar energy-generating facilities are an allowable use under the 8.3 map code designation.

The site is zoned A, A FP and A FPS, as shown in Figure 3. According to the Kern County Zoning Ordinance Section 19.12.030 G, solar energy electrical generators when not accessory to a permitted or conditionally permitted use, are permitted within the A Zone District subject to securing a CUP. Additionally concrete batch plants and communications towers are also permitted within the A Zone District subject to securing a CUP. The project proponents are requesting three CUPs to allow for the construction and operation of three, 20-MW solar facilities, one CUP to allow a temporary concrete batch plant during solar facility construction, and one CUP to allow a communication tower in conjunction with the solar facilities. The project proponents also requested a General Plan Amendment to amend the Circulation Element of the Kern County General Plan, to eliminate the future road reservation along the midsection line of Sections 19 T10N R13W. The zoning classification of the project site is consistent with its Kern County General Plan map code designation. Therefore, with approval of the requested CUPs and the potential franchise agreement as described above, the project would not have the potential to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

The Lead Agency notes that with the implementation of numerous renewable energy projects, cumulative effects of utility-sized solar power generation facilities, there is the potential for outside factors – such as the development of newer technology, changes in state or national policy that encourages the construction of such facilities, or other economic factors – to result in the abandonment of such facilities by the project proponents. Discussion of potential impacts associated with the abandonment of solar facilities will be discussed in the EIR. Additionally, the military has identified potential conflicts of users of the radio frequency spectrum located both on and off military installations as an area to be reviewed for compatibility issues. Operations of unmanned radio-controlled aircraft flights can have electronic interference from other sources of radio signals from telemetry equipment associated with the solar facility. The impacts of the project with regard to its consistency with the Kern County General Plan and ALUCP adopted for the purpose of avoiding or mitigating an environmental effect would be potentially significant and will be further discussed in the EIR.

(c) The project site is not located within the boundaries of any habitat conservation plan or natural community conservation plan; therefore, no impact would occur and no further analysis of this issue is warranted in the EIR.

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

Discussion:

(a) The project is not located within any designated mineral resources area or Department of Oil, Gas and Geothermal Resources (DOGGR) recognized oil field. However, the Shumake Mine is located approximately 4,000 feet to the east of the Sunbow Site and approximately 4,000 feet northeast of the Tours Site (although mining in accordance with its issued CUP is completed). An underground gold mine was permitted in 2016 (CUP 14, Map 214), to access the underground workings via a tunnel at the bottom of the Shumake open pit, however, as of this writing mining has not commenced. An area designated as 8.5 (Resource Management [minimum 20 acre parcel size]) by the Kern County General Plan abuts the Syracuse Site to the west. An area designated as 8.4 (Mineral and Petroleum [minimum 5 acre parcel size]) is located approximately 500 feet northeast of the Tours Site. In addition, there are areas of the project site that have been identified for subsurface exploration and extraction by subsurface mineral rights holders, and adequate provisions will be made to ensure access to mineral rights. Nonetheless, this issue will be further analyzed in the EIR.

(b) The project does not contain locally important mineral resources recovery sites as delineated in the Kern County General Plan. Impacts are anticipated to be less than significant; however, this issue will be analyzed further in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
NOISE. Would the project result in:				
a. Exposure of 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?	☒	☐	☐	☐
b. Exposure of persons to, or generate, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e. For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. 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?	☐	☐	☐	☒

Discussion:

(a) Land uses determined to be "sensitive" to noise as defined by the Kern County General Plan include residential areas, schools, convalescent and acute care hospitals, parks and recreational areas, and churches. The Kern County General Plan Noise Element sets a 65 dBA (A-weighted decibels) Ldn limit on exterior noise levels for stationary sources (i.e., non-transportation) at sensitive receptors. The closest offsite noise sensitive receptors to the project are residential structures located within 200 feet, specifically located: (a) south of Golden Gate Avenue, (b) to the east across of Tehachapi Willow Springs Road, and (c) northwest of the intersection of Trotter Avenue and 100th Street West. Noise generated by the project would occur primarily during the construction phase, as the long-term operation of the solar facility would be relatively quiet. There would not be any substantial noise-generating equipment located at the project during operations. The project proponents would be required to adhere to the provisions outlined in the Noise Control Ordinance in the Kern County Ordinance Code Section 8.36.020 and the General Plan Noise Element. This impact will be analyzed in the EIR.

(b) Ground borne vibration and ground borne noise could originate from the operation of heavy off-road equipment during the construction phase of the project. Erection of the solar arrays would include support structures that may potentially need to be driven into the soil using pneumatic techniques. As such, the installation of these support structures may cause localized vibration. As such, the installation of these support structures may cause localized vibration. This issue will be further analyzed in the EIR.

(c) Due to the quiet nature of solar facilities, it is unlikely that long-term noise generated by the project will exceed existing ambient noise levels. Traffic on the project access roads would be for routine maintenance activities and would primarily consist of personal vehicles, and would only occur several times per year. Therefore, the majority of operations would not produce noise discernible above ambient conditions. Although general maintenance activities would be conducted, they would be subject to applicable Kern County Noise Control Ordinance requirements and comply with the General Plan Noise Element, which would minimize impacts to receptors. This issue will be evaluated further in the EIR.

(d) Heavy equipment used during construction would cause a temporary or periodic increase in ambient noise levels and be considered a significant impact. Therefore, the potential for the project's construction activities to result in a substantial temporary or periodic increase in ambient noise levels at the nearest offsite sensitive receptors will be further evaluated in the EIR.

(e) The proposed project is not located within an area covered by the Kern County ALUCP, and the proposed project would not result in development of new residences. The nearest airport is the Rosamond Skypark, which is located approximately 9 miles to the southeast of the project. Therefore, the project would not result in people residing or working in the proposed project area to be exposed to excessive noise levels. Impacts are not expected, and further analysis related to airports is not warranted in the EIR.

(f) The nearest private airstrip is the Lloyd's Landing Airport, located approximately 2.5 miles south of the project. Lloyd's Landing Airport is a private facility with an approximately 1,370-foot long dirt runway. The facility receives no regularly scheduled flights and is not publicly accessible. Due to its distance from the site, there would be no exposure to people working in the project area to excessive noise levels. Impacts are not expected and further analysis is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING. Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

(a) Although the project would provide new employment, long-term employment opportunities would be minimal. The project would include the construction of up to three unmanned O&M buildings; no permanent onsite employees are proposed or required to maintain the facilities. Maintenance personnel are expected to visit the project site several times per year for routine maintenance and PV modules may be cleaned up to four times a year. During the operational phase, the project would have up to two full-time equivalent (FTE) staff (or personnel hours totaling two FTE positions, i.e. an average of 80 personnel hours per week).

The entire construction process is estimated to take approximately 300 construction days, over the course of a 14-month period. The average daily workforce is expected to consist of 200 construction, supervisory, support, and construction management personnel, with a peak workforce of 300 individuals for short periods of time. Construction workers are expected to travel to the project site from various local communities, and the majority would likely come from the existing labor pool. The number of workers anticipated to relocate to the area is not expected to be substantial. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby hotels in Mojave, Rosamond, Lancaster, or other local cities. Therefore, the project would not directly or indirectly induce the development of any new housing or businesses.

Typically, established local thresholds of significance for housing and population growth pursuant to the State *CEQA Guidelines*, Section 15064.7, include effects that would induce substantial growth or concentration of a population beyond County projections, alter the location, distribution, density, or growth rate of the population beyond that projected in the General Plan Housing Element, result in a substantial increase in demand for additional housing, or create a development that significantly reduces the ability of the County to meet housing objectives set forth in the General Plan Housing Element. The effects of the project in relation to these local thresholds are minimal. Impacts would not occur. This issue will not be discussed in the EIR.

Although the project would produce additional electricity, it is intended to meet the demand for energy that is already projected based on growth in communities around California. As such, the generation of electricity by the project would be considered growth-accommodating, rather than growth-inducing. In addition, state law requires utility companies to produce a certain percentage of electricity from green or renewable sources. Solar electricity is considered a renewable product and would help the utility companies meet this State law. The project's electricity would replace electricity generated by fossil fuel-burning facilities, thereby contributing to California's renewable energy goals, and would not contribute to induced growth. Significant impacts related to population growth are not expected from the project, and further analysis of this issue is not warranted in the EIR.

(b-c) The project is currently undeveloped, as such no households would be required to relocate as a result of the proposed project. Therefore, displacement of existing housing would not occur. This issue will not be discussed in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
PUBLIC SERVICES. Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services:				
i) Fire protection?	☒	☐	☐	☐
ii) Police protection?	☒	☐	☐	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion:

(a) (i) **Fire Protection:** Fire suppression and emergency medical services are provided by the Kern County Fire Department (KCFD). The closest KCFD station is located approximately 9 miles northeast of the project at 1953 Highway 58. Adherence to all applicable regulations would reduce wildfire ignitions and prevent the spread of wildfires. However, project construction and operation activities may result in increased need for fire-fighting personnel and facilities. Given the location of the project in the rural environment and KCFD's obligation to respond to all structure fires in their jurisdiction, fire-fighting capacity in the project area could result in potential impacts on fire services from construction and operation of the solar facilities. This will be evaluated in the EIR.

(ii) **Police Protection:** Police protection services are provided by the Kern County Sheriff's Office. The closest sheriff station is the Mojave Substation, located approximately 9 miles northeast of the project, at 1771 Highway 58, in Mojave. Although the potential is low, the project may attract vandals or other security risks, and construction activities would result in increases in traffic volumes along surrounding roads, which could increase demand on law enforcement services. Access would be limited to the project during construction and operation, thereby minimizing the need for police services; nonetheless, the project's impacts on sheriff services are potentially significant and will be evaluated in the EIR.

(iii) **Schools:** The entire construction process is estimated to take approximately 300 construction days, over the course of a 14-month period. An average of 200 daily construction workers and

a peak workforce of 300 workers could be required. It is expected most of these workers would live in the region and would commute to the project site from where their children are already enrolled in school. Even if workers came from out of the area, they would likely return to their out-of-town residences once the facilities were built and would not take their children out of their current schooling situation. Therefore, temporary increases in population are not expected to adversely affect local school populations. Additionally, operation of the project would not require any permanent employees to operate the O&M building. Maintenance personnel would be expected to visit the project site several times per year for routine maintenance. Employees would likely commute to the project from their existing permanent residences, however, even if the maintenance employees were hired from out of the area and had to relocate to eastern Kern County, the resulting addition of potential families to this area would not result in a substantial increase in the number of users at local schools. Significant impacts would not occur and further analysis of this issue is not warranted in the EIR.

(iv-v) **Parks and Other Public Facilities:** The temporary workers during construction (an average of 200 daily construction workers and a peak workforce of 300 workers which could be required) during the construction period would not result in a substantial additional demand for park facilities, nor would this adversely affect local public facilities, such as post office, courthouse, and/or library services. It is expected that most of these workers would live in the region and would commute to the project site. Operation of the project would not require any permanent onsite employees for maintenance and monitoring activities. Maintenance personnel are expected to visit the project site several times per year for routine maintenance, but would likely be drawn from the local labor force and would commute from existing permanent residences to the project during those times. However, even if the maintenance employees were hired from out of the area and relocated to eastern Kern County, the resulting potential addition of families to the area would not result in a substantial increase in the number of users of local parks. As a result, significant impacts to parks or other public services are not anticipated to occur, and further analysis of this issue is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
RECREATION. Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

(a)-(b) The project does not include new recreational facilities, and would not appreciably increase demands on existing facilities. The average daily workforce during construction is expected to consist of 200 personnel, with a peak workforce of 300 personnel for short periods of time. The temporary increase in use of recreation facilities during construction that might be caused by an influx of workers would be minimal. Operation of the project would not require any permanent onsite employees for maintenance and monitoring activities. Maintenance personnel would be expected to visit the project several times per year for routine maintenance, but would likely be drawn from the local labor force and would commute from their existing permanent residences to the project site during those times. However, even if the maintenance employees were hired from out of the area and relocated to eastern Kern County, the resulting addition of families to this area would not result in a substantial increase in the number of users at local parks. As a result, there would not be a detectable increase in the use of parks or other recreational facilities. Impacts would not occur, and further analysis is not warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
TRANSPORTATION AND TRAFFIC. Would the project:				
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b. Conflict with an applicable congestion management program, including, but not limited to, level of service (LOS) standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				
i. Metropolitan Bakersfield General Plan LOS "C"	☐	☐	☐	☒
ii. Kern County General Plan LOS "D"	☒	☐	☐	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e. Result in inadequate emergency access?	☐	☐	☒	☐
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Discussion:

(a) Construction activities associated with the proposed project could potentially affect traffic volumes on nearby roadways. The average daily workforce during construction is expected to consist of 200 personnel, with a peak workforce of 300 personnel for short periods of time.

During the operational phase, the project would have up to two full-time equivalent (FTE) staff (or personnel hours totaling two FTE positions, i.e. an average of 80 personnel hours per week). Trip generation during the operational phase, which also includes occasional truck deliveries during maintenance activities, would not likely result in a substantial increase in traffic in relation to the existing roadway capacity nor congestion at intersections. Nonetheless, this impact will be analyzed further in the EIR.

The project also requests to amend the Circulation Element of the Kern County General Plan to eliminate the future road collector (90-foot-wide) reservation along the east-west midsection line of Sections 19 T10N R13W, SBBM. There are no access easements or dedications along the future road reservation area proposed for elimination. The proposed project would not obtain access from the east-west midsection line of Section 19, but would obtain access from existing roads as shown on Figures 6 through 9. This issue will be discussed further in the EIR.

(b) (i) The project is not located in or near the metropolitan Bakersfield area. Therefore, further analysis of this topic will not be included in the EIR.

(ii) Construction of the project would generate construction trips and may require roadway lane closures, which could temporarily increase the daily traffic volumes on local roadways and intersections. Once constructed, operation of the project would also generate minimal trips on local roadways. The potential impacts of these conditions on Level of Service (LOS) of area roadways will be evaluated in the EIR.

(c) The nearest airports to the project are the Rosamond Skypark (a public-use airport, although privately owned) approximately 9 miles to the southeast, the Mojave Air and Space Port approximately 10.5 miles to the northeast, and the Mountain Valley Airport (a private airport which allows public access) approximately 12 miles to the northwest of the Project. The nearest private airstrip is the Lloyd's Landing airport, located approximately 2.5 miles south of the project. The project is not in line with the flight path for the airstrip. The proposed project would comply with all applicable safety standards and guidelines for airports and airfields. As such, there would be a less than significant impact related to proximity to a public or public use airport and no further analysis is warranted. The proposed project would not interfere with airspace at the aforementioned airports or airstrip, due to the relatively large distances between them and the proposed project and because the non-reflective surfaces used for the solar modules would have about half the reflectance of standard residential and commercial glass. The proposed project would not result in an increase in air traffic levels or a change in location of air traffic patterns that would result in a substantial safety risks, because air traffic patterns would not be affected (i.e., the only mode of transport proximately affected by the proposed project is automobile/truck operations). Therefore, impacts related to a change in air traffic patterns will be analyzed further in the EIR.

(d) Roadway modifications are not needed or proposed as part of the project. The project proposes access to be available from Tehachapi Willow Springs Road, Backus Road, 100th Street West, Maxwell Avenue, and Trotter Road. The facilities would be surrounded by boundary fences and would require little maintenance upon full build-out.

Additionally, the project would not be accessible to unauthorized members of the public during operation, and would not include the development of sharp curves, dangerous intersections or other hazardous design features. The project would be setback from the roadways as required by Kern

County Zoning Ordinance. Therefore, the project would not substantially increase hazards due to a design feature or incompatible uses. Impacts would be less than significant and further analysis is warranted in the EIR.

(e) As described in item (a) above, construction of the project would generate traffic trips, which could temporarily increase the daily traffic volumes on local roadways and intersections. However, the project would not physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The project site and vicinity are accessible via a number of existing roads, with alternative access roads allowing easy access in the event of an emergency. Therefore, no adverse impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan is anticipated. Impacts would be less than significant and further analysis is warranted in the EIR.

(f) Operation of the project would not require any permanent onsite employees for maintenance and monitoring activities. Maintenance personnel are expected to visit the project site several times per year for routine maintenance, but would likely be drawn from the local labor force and would commute from permanent residences to the project during those times. Due to the rural nature of the project area, bicycle traffic is limited. The project is not located along an existing bus route and few bus stops exist on the roadways likely to be used during construction and operation. The project would not house residents or employees and therefore would not have characteristics that could influence alternative means of transportation. Impacts would be less than significant; however, further analysis is warranted in the EIR.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS. Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	☒	☐	☐	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☒	☐	☐	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☒	☐	☐	☐

Discussion:

(a) The project would generate a minimal volume of wastewater. The average construction workforce for the project is 200 workers (expected to peak at 300 individuals). Wastewater generated during construction would be contained within portable toilet facilities. The Kern County Environmental Health Services Division of the Kern County Public Health Services Department is responsible for monitoring the use of portable toilet facilities, and therefore a condition of approval would be required for the project proponents to provide documentation of a portable toilet pumping contract.

As proposed, the project would include up to three unmanned O&M buildings; hence, permanent onsite staff are not proposed and would not be required. Maintenance personnel are expected to visit the project site several times a year for routine maintenance. Therefore, the project would not exceed wastewater treatment requirements of the Lahontan RWQCB. Impacts would be less than significant and further analysis is not warranted in the EIR.

(b) The project would not require new water or wastewater disposal systems to be constructed, as permanent operation or maintenance staff would not be onsite. Potable water would be brought to the site for drinking and other domestic needs during construction. Water for panel washing would be brought in by trucks or pumped from an onsite well. Although the project is not proposing construction of any new or expanded water or wastewater treatment facilities, this issue will be further addressed in the EIR.

(c) The project would create additional impervious surfaces on the project site and may require imported water for dust suppression during construction and panel washing. These changes would not substantially increase the amount of stormwater runoff. The pattern and concentration of runoff could be altered by project activities, such as grading of the site and roads. However, the project must comply with the Lahontan RWQCB and NPDES requirements with approval of a SWPPP that includes BMPs for runoff control. Additionally, a drainage plan would be required to be approved by the Kern County Public Works Department-Building & Development-Floodplain Division prior to issuance of building permits. With adherence to all applicable regulations, it is anticipated that the project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. This issue will be further considered in the EIR.

(d) Water for construction and panel washing would be trucked in or obtained from a potential onsite water well. Potable water would be brought to the site for drinking and domestic needs during construction. Construction of the project would require approximately 147 acre-feet of water. It is expected that operation of the project would require approximately 2 acre-feet of water per year per site. The project is not anticipated to impact water supplies and new or expanded entitlements would not be required. Further analysis is warranted in the EIR.

(e) The proposed project is not expected to generate a significant amount of wastewater. The proposed project does not include construction of a septic system. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. Once operational, no daily employees would be present onsite. Therefore, wastewater generated would be negligible and would not exceed wastewater treatment capacity of the treatment provider. Impacts would be less than significant, and no further analysis is warranted in the EIR.

(f) The proposed project is not expected to generate a substantial amount of waste that would exceed the capacity of local landfills. Materials brought to the project site would be used to construct facilities, and few residual materials are expected. Non-hazardous construction refuse and solid waste would be either collected and recycled or disposed of at a local Class III landfill, while any hazardous waste generated during construction would be disposed of at an approved location. The closest Class III municipal landfill is the Mojave Recycling and Sanitary Landfill (RSLF), which is located approximately 9 miles northeast of the project. It is not anticipated that the amount of solid waste generated by the proposed project would exceed the capacity of local landfills. Further analysis of this issue will be included in the EIR.

(g) The project would generate solid waste during construction and operation, thus requiring the consideration of waste reduction and recycling measures. The 1989 California Integrated Waste Management Act (AB 939) requires Kern County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. The project would comply with the 1989 California Integrated Waste Management Act and the 1991 California Solid Waste Reuse and Recycling Access Act of 1991, as amended. Therefore, this will be further analyzed in the EIR.

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

Discussion:

(a) The EIR's biological and cultural and tribal cultural resources sections will discuss specific impacts from the project on plants and wildlife, as well as archaeological and historical cultural resources. The document will also evaluate the project's contribution to cumulative resource impacts and propose mitigation that is designed to reduce the impacts to less-than-significant levels, where feasible.

(b) The project has the potential to cumulatively contribute to aesthetics, air quality, biological resources, cultural resources, greenhouse gas emissions, and traffic impacts. The EIR will evaluate the project's contribution to cumulative impacts in these and other resource areas.

(c) Although there may be significant air quality impacts during construction, the long-term air quality impacts could be beneficial if fossil fuel use is reduced. The short-term cumulative contribution to air quality impacts from the project will be evaluated in the EIR.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

August 21, 2017

Regulatory Division (SPK-2017-00706)

Kern County Planning and Community Development
Attn: Mr. Randall Cates
2700 M Street
Bakersfield, California 93301

Dear Mr. Cates:

We are responding to your August 18, 2017, request for comments on the Apollo Solar project. The U.S. Army Corps of Engineers project identification number is SPK-2017-00706. The approximately 494-acre project site is located in Township 10 North, Range 13 West, Sections 18 and 19, Latitude 34.95836°, Longitude -118.3010°, Kern County, California.

The Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters on the project site, the applicant should prepare a wetland delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Wetlands Delineations" and "Final Map and Drawing Standards for the South Pacific Division Regulatory Program" under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

Please refer to identification number SPK-2017-00706 in any correspondence concerning this project. If you have any questions, please contact Alyssa Smith at 1325 J Street, Room 1350, Sacramento, California 95814, by email at *Alyssa.K.Smith@usace.army.mil*, or telephone at (916)-557-7617. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Kathleen A. Dadey, PhD
Chief, California South Section
Regulatory Division

September 19, 2019

Kern County Planning and Natural Resources Department
Attn: Randall Cates
2700 "M" Street, Suite 100
Bakersfield, CA 93301
Filed Electronically: catesr@kerncounty.com

Dear Mr. Cates:

On behalf of National Audubon Society (Audubon) and Defenders of Wildlife (Defenders) and our combined 3 million members and supporters in the U.S., over 300,000 of those in California, we thank you for the opportunity to submit comments on the scope and content of the Draft Environmental Impact Report (DEIR) for the Apollo Solar Project (the Project) in the Antelope Valley of Kern County.

PROJECT LOCATION: The project site in located approximately nine miles southwest of the unincorporated community of Mojave and approximately eight miles northwest of the unincorporated community of Rosamond. State Route (SR) 14 is located approximately 7.3 miles east of the project site, and State Route (SR) 58 is located approximately 9.5 miles north of the project site. The project site is bordered by both Trotter Avenue and Backus Road to the north, Tehachapi Willow Springs Road to the east, Golden Gate Avenue to the south, and 100th Street West to the west.

PROJECT DESCRIPTION: The project proponents are requesting Conditional Use Permits to allow for the construction, installation and operation of a solar photovoltaic electrical generating facility as well as a temporary concrete batch plant and communication tower and gen-tie line. The project's permanent facilities would include service roads, communication tower, communication tower, communication cables, overehead and underground transmission lines, electrical switching station, project substations, operations and maintenance facilities, and a gen-tie line to transmit electricity from the project substation on the Sunbow Site to the electrical switching station.

National Audubon Society has recognized Antelope Valley as a Globally Important Bird Area[1]. The Important Bird Areas Program, administered by the National Audubon Society in the United States, is part of an international effort by BirdLife International[2] to designate and support efforts at high conservation value sites that provide significant breeding, wintering, or migratory habitats for specific species or concentrations of birds. Sites are designated based on specific and standardized criteria and supporting data. Antelope Valley was labeled as "globally important" due to three criteria the area meets: 1) the presence of 18 sensitive species of birds; 2) high concentrations of shorebirds in migration (over 10,000 shorebirds possible on a 1 day count at seasonal lakes and water treatment plants); and 3) over 5,000 waterfowl possible on a 1 day count. Additionally, from the IBA report:

> *"the remnant Joshua Tree Woodland in this area supports one of the farthest-west populations of Le Conte's Thrasher in the state. The grassland bird community is most impressive in winter, when large numbers of raptors concentrate in the area. Winter brings Mountain Plover, whose flocks are among the last in southern California. After wet winters, nesting grassland species like Northern Harrier linger well into spring, and occasionally even breed. Swainson's Hawk maintains its southernmost breeding outpost in the state here. As this IBA lies in the path of a major spring migrant route for songbirds, windbreaks can host hundreds of vireos, thrushes and warblers during April and May. Fields that receive effluent from local water treatment facilities can support hundreds of White-faced Ibis and shorebirds, and these fields support a group of around 200 Long-billed Curlews in fall and winter."*

Sensitive species of birds in the Antelope Valley include White-faced Ibis, Redhead, Northern Harrier, Ferruginous Hawk, Swainson's Hawk, (State Threatened), Prairie Falcon, Western Snowy Plover, Mountain Plover, Long-billed Curlew, Burrowing Owl, Short-eared Owl, Long-eared Owl, Loggerhead Shrike, Le Conte's Thrasher, Yellow Warbler, Yellow-breasted Chat, Tricolored Blackbird (State Threatened), Yellow-headed Blackbird.

Our comments follow:

The analysis in the DEIR must include the entirety of the Project including construction and operation and all of the temporary and permanent infrastructure including any gen-tie transmission line, roads, fences, other operation facilities, sub-station or infrastructure associated with the Project and should provide:

1. An analysis of the direct and indirect impacts of the Project on Biological Resources including plants and animals, migratory pathways, wildlife corridors

[1] https://www.audubon.org/important-bird-areas
[2] http://www.birdlife.org

and wildlife connectivity. For wildlife corridors and connectivity, we recommend a review of the following publication for spatial and relevant data:
Spencer, Wayne & Beier, Paul & Penrod, Kristine & Winters, Karen & Paulman, C & Rustigian-Romsos, Heather & Strittholt, James & Parisi, M & Pettler, A. (2010). California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California.
The document and Appendices can be found at
https://www.wildlife.ca.gov/Conservation/Planning/Connectivity/CEHC

2. Protocol level surveys, impact avoidance, minimization and mitigation measures with monitoring and management provisions for those measures for Swainson's hawk (Buteo swainsoni), a California state threated species under the California Endangered Species Act, as outlined in the June 2, 2010 document prepared by California Energy Commission and Department of Fish & Game https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83991&inline and attached herein.
From the document:
> *The Department considers a nest site to be active if it was used at least once during the past 5 years. Impacts to suitable habitat or individual birds within a five-mile radius of an active nest will be considered significant and to have the potential to "take" Swainson's hawks as that term is defined in §86 of the Fish and Game Code. (p. 3)*

The DEIR must include an analysis and mitigation of the loss or disturbance of nests or the loss of foraging habitat within five miles of nests that are known in the area as mapped by data from the last five years that can be obtained from California Fish & Wildlife Department. The June 2, 2010 document also states
> *"Foraging habitat includes dry land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, new orchards, and cereal grain crops. Swainson's hawks may also forage in grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base. Gophers dominate the prey base of agriculturally based pairs while Swainson's hawks nesting in natural desert habitats consume a wider variety of prey species". (p. 1)*

Spatial data from the California Department of Fish & Wildlife reveals as many as five possible active Swainson's hawk nests recorded from 2013-2017 within a five mile radius of the Project site.
Recommendation: A Conservation Plan for Swainson's Hawk in the Antelope Valley should be prepared by a qualified biologist and reviewed by California Department of Fish & Wildlife to identify a conservation strategy for Swainson's Hawk in the AV that includes the ability for rapid and efficient permitting of solar energy through Advanced Mitigation credits within the nesting and foraging areas of Swainson's Hawk in the Antelope Valley. Audubon and Defenders of Wildlife are willing to facilitate and participate in this effort.

3. Protocol level surveys for Burrowing owl as outlined in the March 7, 2012 document Staff Report on Burrowing Owl Mitigation, State of California, Natural

Resources Agency, Department of Fish & Game found here https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843.

4. Surveys and analysis of impacts on migratory birds, nests and eggs protected by the California Fish & Game Code sections § 2000 , § 3503; § 3503.5, 3511; § 3800 and the Federal Migratory Bird Treaty Act with avoidance and minimization measures during all phases of the Project – construction, operation and decommissiong.
   The analysis should focus on the 18 sensitive species identified by Audubon and any species identified by California Department of Fish & Wildlife and U.S. Fish & Wildlife Service as sensitive or species of conservation concern.
   - Data should be collected and provided according to standardized protocols by species by California Department of Fish & Wildlife and U.S. Fish & Wildlife Service if those protocols have been determined.
   - The analysis should cover all seasons - including Spring and Fall migration periods, breeding and nesting periods in Summer and full seasons of wintering birds that use the Antelope Valley and the Region.
5. Project alternatives including alternative locations, reduced project size, reconfigured project, and "no project" to avoid or minimize impacts to Biological Resources. Contractual requirements of the Applicant should not limit potential project alternatives.
6. The potential cumulative impacts of the proposed Project on Biological Resources in conjunction with other renewable energy, residential, commercial, industrial, and transportation projects located or substantially engaged in a planning process in the Antelope Valley and surrounding region of Kern County and within the region including the wind development in the Tehachapi Mountains and Mojave and including but not limited to High Speed Rail.

We look forward to reviewing the DEIR.

Sincerely

Garry George
Clean Energy Director
National Audubon Society
ggeorge@audubon.org

Jeff Aardahl
California Representative
Defenders of Wildlife
jaardahl@defenders.org

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*
Department of Conservation
Division of Oil, Gas, and Geothermal Resources – District 4
4800 Stockdale Highway • Suite 100
Bakersfield, CA 93309
(661) 322-4031 • FAX (661) 861-0279

August 21, 2017

Mr. Randall Cates, Planner III
Kern County Planning and Natural Resources Department
2700 "M" Street, Suite 100
Bakersfield, CA 93301

Subject: GPA #5, Map #214; CUP #s 37, 38, 39, 40, 41

Dear Mr. Cates:

The Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division) has received and reviewed the above referenced Notice of Preparation and submits the following evaluation.

The project is located in Kern County, outside of any of the Division's oil field administrative boundaries. Division records indicate there are no known oil, gas, or geothermal wells located within the project boundary as identified in the notice, and therefore, no further review by the Division is required.

If during development activities, any wells are encountered that were not part of this review, the property owner/developer shall immediately notify the Division's construction site well review engineer in the Bakersfield district office. The district office will send a follow-up well evaluation letter to the property owner and local permitting agency. Remedial plugging and abandonment operations may be required.

For additional information please check the Division's website at:

http://www.conservation.ca.gov/dog/for_operators/Pages/construction_site_review.aspx

Thank you for the opportunity to comment on this project. Should any questions arise, please contact me in the Bakersfield district office at **(661) 334-3662**.

Sincerely,

Michael Toland

For Michael Toland
Senior Oil and Gas Engineer
Environmental Unit Supervisor

Office Memorandum - Kern County

TO: [Distribution List] **PLEASE SIGN AND DATE BELOW AS SOON AS RECEIVED AND RETURN TO PLANNING & NATURAL RESOURCES DEPARTMENT**

FROM: LORELEI H. OVIATT, DIRECTOR
Planning & Natural Resources Department

DATE: August 18, 2017

By: Randall Cates, Planner III

SUBJECT: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

Attached is the Notice of Preparation of a Draft Environmental Impact Report for the **AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC (PP17144).** Per CEQA requirements, your agency has 30 days to submit comments regarding the project and the upcoming Environmental Impact Report. Any comments should be addressed to Randall Cates at the Planning and Natural Resources Department. The comment period ends ***September 19, 2017 at 5:00 pm.***

In order to verify that this document was received by your department, **please date and sign this memo** and return by office mail to the Planning and Natural Resources Department, Attn: Randall Cates. Thank you in advance for your cooperation.

Distribution List (Kern County):

RECEIVED
AUG 18 2017
EASTERN KERN AIR
POLLUTION CONTROL DIST.

Administrative Office
Environmental Health Services
East Kern Air Pollution Control District
Fire Department, Chief – Brian Marshall
Fire Department – Derek Tisinger
Library/Beale – Local History Room
Library Director
Parks and Recreation
Sheriff
PWD- Building & Development – Floodplain
PWD- Building & Development – Survey
PWD- Building & Development- Development Review
PWD- Operations & Maintenance- Regulatory Monitoring & Reporting
PWD- Code Compliance

RECEIVED: 8/22/17 **By:** Samuel Johnson **Dept.:** EKAPCD

KERN COUNTY
Public Health Services
DEPARTMENT

MATTHEW CONSTANTINE
DIRECTOR

2700 M STREET, SUITE 300 BAKERSFIELD, CALIFORNIA 93301-2370 VOICE: 661-862-8740 FAX: 661-862-8701 WWW.CO.KERN.CA.US/EH

INTEROFFICE MEMORANDUM

To: Randall Cates
From: Evelyn Elizalde
Date: August 29, 2017
Subject: Draft EIR for AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC (PP17144)

The Kern County Environmental Health Division has reviewed the above referenced project. This Division has the local regulatory authority to enforce state regulations and local codes as they relate to waste discharge, water supply requirements, and other items that may affect the health and safety of the public or that may be detrimental to the environment.

The Environmental Health Division requests that the following conditions be placed on the subject project and be satisfied prior to issuance of building permits:

1. Please log in to the California Environmental Reporting System (CERS) at http://cers.calepa.ca.gov/ and create an account and facility. If you have questions on what needs to be uploaded please contact Bilal Korin at (661)862-8730 or korinb@kerncounty.com
2. The method of water supply and sewage disposal for the proposed project shall be approved by Kern County Environmental Health Division.

Printed on Recycled Paper

Kern Audubon Society
PO Box 3581
Bakersfield CA 93385

RECEIVED
SEP - 6 2017
Kern County Planning &
Natural Resources Dept.

August 22, 2017

Kern County Planning and Natural Resources Dept.
Attention: Randall Gates, Planner
2700 M St. Suite 100
Bakersfield, CA 93301

RE: Scoping for the proposed AV Apollo Solar Project

Dear Mr. Cates:

The Kern Audubon Society wishes to make the following request for information to be incorporated into the DEIR and FEIR for the project.

1) Survey of the area searching for roosting of birds in the Joshua trees. Swainson's hawks and other birds of prey use these trees as foraging platforms and for nesting. Since many birds of prey have a five miles radius of range, it is important that trees within the 5 miles radius, even if mot on the site property, must be identified and evaluate.

2) Since this area of the Antelope Valley has many established solar projects, these projects must be used as a baseline measurement for the effect of solar projects on both animal and vegetative species. These earlier projects offer a very important value to the proposed project. Thus a project of similar size and close to the proposed site must be selected. The environmental data used to prepare that project's EIR is important. This earlier project's initial data must be compared to data collected during the operation of the solar farm. This can then be used to measure the long term biological effects of an established and operational solar farm. This will provide data on the effect of a project on the environment after a given time of operation. Such an analysis should be used to extrapolate as to what might occur during the operation of the proposed project. The best method of displaying this data and analysis is by developing a lineal chart that

shows the types of plant and animal species, size and distribution before the project was built, and periodic analysis of the building and operation of the project over time.

3) Photographs of the proposed sites need to be included in the DEIR. Two types need to be included: 1) aerial 2) on the ground, taken from a variety of locations and perspectives.

4) Mitigation options: The DEIR must address the loss of open space. Even though the project is near currently operating facilities, the area does include areas of undisturbed land. The loss of this land must be offset by the project proponent finding similar land in the Antelope Valley and purchasing conservation easements on the property. These lands must be administered by an accredited land conservation trust.

5) Buffer zone: The DEIR must address the need for a buffer zone between structures large enough to provide allowance for ground species to migrate within their normal range for food and nesting. Such zones need to be of the width and location as directed by Californian Department of Fish and Wildlife protocol.

Thank you for giving the Kern Audubon Society to offer input into the preparation of the standards for the project's DEIR.

Sincerely,

Harry Love

Harry Love, Conservation Chair
13500 Powder River Ave.
Bakersfield, CA 93314

Office Memorandum - Kern County

TO: [Distribution List] **PLEASE SIGN AND DATE BELOW AS SOON AS RECEIVED AND RETURN TO PLANNING & NATURAL RESOURCES DEPARTMENT**

FROM: LORELEI H. OVIATT, DIRECTOR
Planning & Natural Resources Department

DATE: August 18, 2017

By: Randall Cates, Planner III

SUBJECT: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

Attached is the Notice of Preparation of a Draft Environmental Impact Report for the **AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC (PP17144).** Per CEQA requirements, your agency has 30 days to submit comments regarding the project and the upcoming Environmental Impact Report. Any comments should be addressed to Randall Cates at the Planning and Natural Resources Department. The comment period ends ***September 19, 2017 at 5:00 pm.***

In order to verify that this document was received by your department, **please date and sign this memo** and return by office mail to the Planning and Natural Resources Department, Attn: Randall Cates. Thank you in advance for your cooperation.

Distribution List (Kern County):

Administrative Office
Environmental Health Services
East Kern Air Pollution Control District
Fire Department, Chief – Brian Marshall
Fire Department – Derek Tisinger
Library/Beale – Local History Room
Library Director
Parks and Recreation
Sheriff
PWD- Building & Development – Floodplain
PWD- Building & Development – Survey
PWD- Building & Development- Development Review
PWD- Operations & Maintenance- Regulatory Monitoring & Reporting
PWD- Code Compliance

RECEIVED
2017 AUG 29 AM 2:45
KERN COUNTY
PUBLIC SERVICES BUILDING

RECEIVED: 8/22 **By:** John A Taylor **Dept.:** GS / Parks & Rec

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Lahontan Regional Water Quality Control Board

September 15, 2017

File: Environmental Doc Review
Kern County

Randall Cates,
Kern County Planning Department
2700 "M" Street, Suite 100
Bakersfield, CA 93301
CatesR@kerncounty.com

Comments on the Notice of Preparation of a Draft Environmental Impact Report for the AV Apollo Solar Project, Kern County, State Clearinghouse Number 2017081038

The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff received a Notice of Preparation (NOP) for a Draft Environmental Impact Report (DEIR) for the above-referenced project (Project) on August 18, 2017. The NOP was prepared by Kern County Planning Department (County) and submitted in compliance with provisions of the California Environmental Quality Act (CEQA). Water Board staff, acting as a responsible agency, is providing these comments to specify the scope and content of the environmental information germane to our statutory responsibilities pursuant to CEQA Guidelines, California Code of Regulations, title 14, section 15096. Based on our review of the NOP, we recommend the following: (1) natural drainage channels and flow paths should be maintained through the Project site to ensure no net loss of function and value of waters of the state; and (2) a site-specific Storm Water Pollution Prevention Plan (SWPPP) should be prepared that identifies a combination of sediment and erosion control best management practices (BMPs) to effectively treat storm water runoff during the life of the Project. Our comments on the Project are outlined below.

WATER BOARD'S AUTHORITY

All groundwater and surface waters are considered waters of the State. All waters of the State are protected under California law. State law assigns responsibility for protection of water quality in the Lahontan Region to the Lahontan Water Board. Some waters of the State are also waters of the United States. The Federal Clean Water Act (CWA) provides additional protection for those waters of the State that are also waters of the United States.

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) contains policies that the Water Board uses with other laws and regulations to protect the quality of waters of the State within the Lahontan Region. The Basin Plan sets forth water quality standards for surface water and groundwater of the Region, which include designated beneficial uses as well as narrative and numerical objectives which must be maintained or attained to protect those uses. The Basin Plan can be accessed via the Water Board's web site at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml.

GENERAL COMMENTS AND RECOMMENDATIONS

Based on our review of the information provided, we recommend that the following issues be considered in preparation of the DEIR.

1. In general, the installation of Photovoltaic (PV) grid systems for these types of projects has the potential to hydrologically modify natural drainage systems. Of particular concern is the collection of onsite storm water runoff and the concentrated discharge of that storm water to natural drainage channels. Design alternatives that are compatible with low impact development (LID) should be considered. LID components include: maintaining natural drainage paths and landscape features to slow and filter runoff and maximize groundwater recharge; managing runoff as close to the source as possible; and maintaining vegetated areas for storm water management and onsite infiltration. We recommend natural drainage channels and flow paths be maintained through the Project site to avoid no net loss of function and value of waters of the state as a result of Project implementation.

2. A Project-specific SWPPP and implementation of site-specific erosion and sediment control BMPs is an effective way to reduce potentially significant water quality impacts to a less than significant level. To that end, we recommend the development and implementation of a Project-specific SWPPP during both the construction and post-construction phases of the Project. The SWPPP should be applicable to all areas of the Project site, including the solar fields, access roads to and through the site, and the gen-tie line. Please note that temporary BMPs need to be implemented for the Project until such time that vegetation has been restored to pre-Project conditions or permanent BMPs are in place and functioning.

3. The DEIR should identify post-construction storm water management as a significant Project component, and a variety of BMPs that effectively treat post-construction storm water runoff, particularly maintaining native vegetation, should be evaluated as part of the Project. Based on our experience with other solar developments in the Mojave Desert, native vegetation is the most efficient and cost-effective post-construction BMP to treat storm water runoff. Because revegetating disturbed soils in the desert is particularly challenging due to low rainfall, extreme climatic conditions, and relatively slow growth rates, we encourage Project proponents to maintain and mow existing vegetation rather than clear and grub the entire site during construction. For those projects where native vegetation is maintained, we have observed that the need to implement temporary BMPs is greatly minimized and the costs associated with implementation and maintenance of post-construction BMPs is significantly reduced.

4. All surface waters are waters of the State. The DEIR will need to fully delineate the extent of waters of the State and evaluate potential impacts to these resources with respect to hydrology and water quality as a result of Project implementation

5. The Project site is located within the Neenach Hydrologic Area of the Antelope Hydrologic Unit (626.40), and groundwater beneath the Project site is contained within the Antelope Valley Groundwater Basin (6-44). The beneficial uses of these water resources are listed either by watershed (for surface waters) or by

groundwater basin (for groundwater) in Chapter 2 of the Basin Plan. We request that the DEIR identify and list the beneficial uses of the water resources within the Project area, and include an analysis of the Project's potential impacts to water quality and hydrology with respect to those beneficial uses.

6. The DEIR should identify the water quality standards that could potentially be violated by the Project and consider these standards when evaluating thresholds of significance for impacts. Water quality objectives and standards, both numerical and narrative, for all waters of the State within the Lahontan Region, including surface waters and groundwater, are outlined in Chapter 3 of the Basin Plan. Implementation of the proposed Project must comply with all applicable water quality standards and prohibitions, including provisions of the Basin Plan.

7. All temporary impacts to water resource and upland areas should be restored (recontoured and revegetated) to match pre-Project conditions in accordance with a Restoration and Revegetation Plan. The DEIR should include a mitigation measure that requires the preparation and implementation of a Restoration and Revegetation Monitoring Plan, or equivalent document. At a minimum, the plan should include a detailed description of the methods and materials that will be used, a schedule for plan implementation, annual monitoring for a period of no less than 3 years, performance measures that must be met in order for the restoration/revegetation to be deemed successful, and adaptive management criteria in the event performance measures are not being met.

8. Equipment staging areas, excavated soil stockpiles, and hazardous materials (i.e. oils and fuels) should be sited in upland areas outside surface waters and adjacent flood plain areas. The DEIR should include a mitigation measure for the preparation and implementation of a comprehensive Spill Prevention and Response Plan that outlines the site-specific monitoring requirements and lists the BMPs necessary to prevent hazardous material spills or to contain and cleanup a hazardous material spill, should one occur.

9. Buffer areas should be identified and exclusion fencing used to protect water resources and to prevent unauthorized vehicles or equipment from entering or otherwise disturbing the surface waters. Equipment should use existing roadways to the extent feasible.

PERMITTING REQUIREMENTS FOR INDIVIDUAL PROJECTS

A number of activities implemented by individual projects in accordance with the General Plan amendment have the potential to impact waters of the State and, therefore, may require permits issued by either the State Water Resources Control Board (State Water Board) or Lahontan Water Board. The required permits may include the following.

10. Streambed alteration and/or discharge of fill material to a surface water may require a CWA, section 401 water quality certification for impacts to federal waters (waters of the U.S.), or dredge and fill waste discharge requirements for impacts to non-federal waters, both issued by the Lahontan Water Board.

11. Land disturbance of more than 1 acre may require a CWA, section 402(p) storm water permit, including a *National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit*, Water Quality Order (WQO) 2009-0009-DWQ, obtained from the State Water Board, or individual storm water permit obtained from the Lahontan Water Board.

12. Depending on the Standard Industrial Classification (SIC) code for industrial-type activities at a specific site, individual projects may require an *NPDES General Industrial Storm Water Permit*, WQO-2014-0057-DWQ, obtained from the State Water Board, or individual storm water permit obtained from the Lahontan Water Board.

13. Discharge of waste to land (i.e. evaporation ponds) may require waste discharge requirements (WDRs) issued by the Lahontan Water Board in compliance with the CCR, title 27, section 20005 et seq. If the Project includes wastes that can be characterized as either designated and/or non-hazardous, and a planned discharge to land would occur, the discharger will be required to submit the Report of Waste Discharge application, Form 200, to the Water Board.

We request that the DEIR recognize the potential permits that may be required for the Project, as outlined above, and identify the specific activities that may trigger these permitting actions in the appropriate sections of the environmental document. Information regarding these permits, including application forms, can be downloaded from our web site at http://www.waterboards.ca.gov/lahontan/. Early consultation with Water Board staff regarding potential permitting is recommended.

Thank you for the opportunity to comment on the NOP. If you have any questions regarding this letter, please contact me at (760) 241-7305 tiffany.steinert@waterboards.ca.gov or Jan Zimmerman, Senior Engineering Geologist, at (760) 241-7404 or jan.zimmerman@waterboards.ca.gov. Please send all future correspondence regarding this Project to the Water Board's email address at Lahontan@waterboards.ca.gov and and Project name in the subject line.

Tiffany Steinert

Tiffany Steinert
Engineering Geologist

cc: State Clearinghouse (SCH 2017081038) (state.clearinghouse@opr.ca.gov)
All Aghili, CA Dept. of Fish and Wildlife (Ali.Aghili@wildlife.ca.gov)
Jeff Brandt, CA Dept. of Fish and Wildlife (Jeff.Brandt@wildlife.ca.gov

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Office Memorandum - Kern County

TO: [Distribution List] **PLEASE SIGN AND DATE BELOW AS SOON AS RECEIVED AND RETURN TO PLANNING & NATURAL RESOURCES DEPARTMENT**

FROM: LORELEI H. OVIATT, DIRECTOR
Planning & Natural Resources Department

DATE: August 18, 2017

By: Randall Cates, Planner III

SUBJECT: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

Attached is the Notice of Preparation of a Draft Environmental Impact Report for the **AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC (PP17144).** Per CEQA requirements, your agency has 30 days to submit comments regarding the project and the upcoming Environmental Impact Report. Any comments should be addressed to Randall Cates at the Planning and Natural Resources Department. The comment period ends ***September 19, 2017 at 5:00 pm.***

In order to verify that this document was received by your department, **please date and sign this memo** and return by office mail to the Planning and Natural Resources Department, Attn: Randall Cates. Thank you in advance for your cooperation.

Distribution List (Kern County):

Administrative Office
Environmental Health Services
East Kern Air Pollution Control District
Fire Department, Chief – Brian Marshall
Fire Department – Derek Tisinger
Library/Beale – Local History Room ✓
Library Director
Parks and Recreation
Sheriff
PWD- Building & Development – Floodplain
PWD- Building & Development – Survey
PWD- Building & Development- Development Review
PWD- Operations & Maintenance- Regulatory Monitoring & Reporting
PWD- Code Compliance

RECEIVED
OCT 09 2017
Kern County Planning & Natural Resources Dept.

RECEIVED: 10/2/17 **By:** Katherine Ross **Dept.:** Library

COUNTY OF KERN
PUBLIC WORKS DEPARTMENT
Office Memorandum

To: Lorelei H. Oviatt, AICP, Director
Planning and Natural Resources Department
Attn: Randall Cates, Planner III

September 14, 2017

From: Warren D. Maxwell, Development Review Engineer
Building & Development Division

Subject: 7-8.5c General Plan Amendment #5, Map 214;
7-5.3 Conditional Use Permit 37 Map 214;
7-5.3 Conditional Use Permit 38 Map 214;
7-5.3 Conditional Use Permit 39 Map 214;
7-5.3 Conditional Use Permit 40 Map 214;
7-5.3 Conditional Use Permit 41 Map 214;
Notice of Preparation of Draft Environmental Impact Report for the AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC

This Department has reviewed the NOP of the DEIR for the subject project and recommends the following:

1. Provide project trip generation associated with the construction phase of the project. The information shall quantify the proposed daily trips and the duration of the impact upon the routes to be utilized by this project

2. Project construction timing may coincide with other neighboring projects. Coordinate construction traffic to avoid possible conflicts during the project construction phases.

3. Enter into a secured agreement with the Kern County Public Works Department, Building and Development Division to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

4. Provide a Traffic Control Plan that addresses the routes, duration and manner of traffic control that will be implemented to accommodate construction and project related traffic.

5. Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits may be obtained from our Permits Engineer.

6. Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilize County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.

7. Contact the California Department of Transportation regarding this project.

Thank you for the opportunity to comment on this project. If you have any questions or comment, please contact Paul Candelaria of this Department.

Office Memorandum

KERN COUNTY

To: Planning Department
Randall Cates

Date: August 22, 2017

From: Public Works Department
Floodplain Management Section
Kevin Hamilton, by Brian Blase

Phone: (661) 862-5098
Email: BlaseB@kerncounty.com

Subject: Draft Environmental Impact Report
AV Apollo Solar Project

Our section has reviewed the attached subject documents and has the following comments:

The runoff of storm water from the site will be increased due to the increase in impervious surface generated by the proposed development.

The subject property is subject to flooding.

Therefore, this section recommends the following be included as Conditions of Approval for this project:

The applicant shall provide a plan for the disposal of drainage waters originating on site and from adjacent road right-of-ways (if required), subject to approval of the Engineering, Surveying and Permit Services Department, per the Kern County Development Standards.

Associated flood hazard requirements will need to be incorporated into the design of this project per the Kern County Floodplain Management Ordinance.

Office Memorandum - Kern County

TO: [Distribution List] **PLEASE SIGN AND DATE BELOW AS SOON AS RECEIVED AND RETURN TO PLANNING & NATURAL RESOURCES DEPARTMENT**

FROM: LORELEI H. OVIATT, DIRECTOR
Planning & Natural Resources Department

DATE: August 18, 2017

By: Randall Cates, Planner III

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PWD- Operations & Maintenance- Regulatory Monitoring & Reporting
PWD- Code Compliance

RECEIVED
2017 AUG 29 AM 2:45
KERN COUNTY
PUBLIC SERVICES BUILDING

RECEIVED: 8/24/17 **By:** Kevin Hamilton **Dept.:** PW - Floodplain

Office Memorandum - Kern County

TO: [Distribution List] **PLEASE SIGN AND DATE BELOW AS SOON AS RECEIVED AND RETURN TO PLANNING & NATURAL RESOURCES DEPARTMENT**

FROM: LORELEI H. OVIATT, DIRECTOR
Planning & Natural Resources Department

DATE: August 18, 2017

By: Randall Cates, Planner III

SUBJECT: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

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PWD- Building & Development – Survey
PWD- Building & Development- Development Review
PWD- Operations & Maintenance- Regulatory Monitoring & Reporting ✓
PWD- Code Compliance

RECEIVED: 8/18-17 **By:** [illegible] **Dept.:** PWD

Office Memorandum - Kern County

TO: [Distribution List] **PLEASE SIGN AND DATE BELOW AS SOON AS RECEIVED AND RETURN TO PLANNING & NATURAL RESOURCES DEPARTMENT**

FROM: LORELEI H. OVIATT, DIRECTOR
Planning & Natural Resources Department

DATE: August 18, 2017

By: Randall Cates, Planner III

SUBJECT: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

Attached is the Notice of Preparation of a Draft Environmental Impact Report for the **AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC (PP17144).** Per CEQA requirements, your agency has 30 days to submit comments regarding the project and the upcoming Environmental Impact Report. Any comments should be addressed to Randall Cates at the Planning and Natural Resources Department. The comment period ends ***September 19, 2017 at 5:00 pm.***

In order to verify that this document was received by your department, **please date and sign this memo** and return by office mail to the Planning and Natural Resources Department, Attn: Randall Cates. Thank you in advance for your cooperation.

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Sheriff
PWD- Building & Development – Floodplain
PWD- Building & Development – Survey No comment DF
PWD- Building & Development- Development Review
PWD- Operations & Maintenance- Regulatory Monitoring & Reporting
PWD- Code Compliance

RECEIVED: 8/18/17 **By:** Donna Fujihara **Dept.:** Survey

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

August 18, 2017

To: Reviewing Agencies

Re: EIR 06-17; AVE Apollo Solar Project by Sunbow Solar I LLC, Syracuse SOlar LLC and Tours Solar LLC
SCH# 2017081038

Attached for your review and comment is the Notice of Preparation (NOP) for the EIR 06-17; AVE Apollo Solar Project by Sunbow Solar I LLC, Syracuse SOlar LLC and Tours Solar LLC draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Randall Cates
Kern County
2700 M street, Suite 100
Bakersfield, CA 93301-2323

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2017081038
Project Title EIR 06-17; AVE Apollo Solar Project by Sunbow Solar I LLC, Syracuse SOlar LLC and Tours Solar LLC
Lead Agency Kern County

Type **NOP** Notice of Preparation

Description Project proponents are requesting: a) an Amendment to the Circulation Element of the Kern County General Plan to eliminate road reservation along the mid-section line in Section 19, T10N/R13W SBBM, in Zone Map 214 (General Plan Amendment 5, Map 214); b) Three Conditional Use Permits, each to allow for the construction and operation of a 20 megawatt solar photovoltaic electrical generating facility (Section 19.12..030.G) in an A District (CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214); c) a CUP to allow for the installation and operation of a temporary concrete batch plant on the Syracuse Site during construction of solar facilities (CUP 40, Map 214); and d) a CUP to allow for the construction and operation of a communication tower, communication cables, overhead and underground transmission lines, an electrical switching station, project substations, operations and maintenance facilities, and a gen-tie line to transmit electricity from the project substation on the Sunbow Site to the electrical switching station. An existing gen-tie line would transmit electricity from the electrical switching station to the electrical grid.

Lead Agency Contact

Name Randall Cates
Agency Kern County
Phone 661-862-8612 **Fax**
email
Address 2700 M street, Suite 100
City Bakersfield **State** CA **Zip** 93301-2323

Project Location

County Kern
City Mojave
Region
Cross Streets ~9 miles SW of Mojave and ~ 8 miles NW of Rosamond
Lat / Long 34° 56' 59.8094" N / 118° 18' 8.8934" W
Parcel No. 346-022-03, 346-131-12, 13, 14, 15, 16, 17, 18, 19
Township 10N **Range** 13W **Section** 18,19 **Base** SBBM

Proximity to:

Highways
Airports
Railways
Waterways Oak Creek, LA Aqueduct
Schools
Land Use Syracuse Site: Undeveloped Land / Zoning: A FP (Exclusive Agriculture/Floodplain Combining District) / Kern County General Plan: 8.3 (Extensive Agriculture; minimum 20 acre parcel size, a minimum 80 acre parcel size with a Williamson Act contract). Tours Site: Undeveloped Land / Zoning: A FP and A (Exclusive Agriculture) / Kern County General Plan: 8.3 Sunbow Site: Undeveloped Land / Zoning: A FPS (Exclusive Agriculture/Floodplain Secondary Combining District) / Kern County General Plan: 8.3

Project Issues Aesthetic/Visual; Air Quality; Agricultural Land; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Other Issues; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Public Services; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Landuse; Wildlife; Growth Inducing; Cumulative Effects

Note: Blanks in data fields result from insufficient information provided by lead agency.

Reviewing Agencies	Resources Agency; Department of Conservation; Central Valley Flood Protection Board; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 4; Office of Emergency Services, California; Delta Protection Commission; Delta Stewardship Council; California Energy Commission; Public Utilities Commission; Native American Heritage Commission; Caltrans, District 6; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Fresno)

Date Received 08/18/2017 ***Start of Review*** 08/18/2017 ***End of Review*** 09/18/2017

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 2017081038

Project Title: EIR 06-17; AV Apollo Solar Project by Sunbow Solar I LLC, Syracuse Solar LLC and Tours Solar LLC

Lead Agency: Kern County Planning and Natural Resources Department
Contact Person: Randall Cates
Mailing Address: 2700 "M" Street Suite 100
Phone: 661-862-8612
City: Bakersfield
Zip: 93301-2323
County: Kern

Project Location: County: Kern
City/Nearest Community: Mojave

Cross Streets: Approximately nine miles southwest of the unincorporated community of Mojave and approximately eight miles northwest of the unincorporated community of Rosamond, being the N/2 of Section 19 and the W/2 of the W/2 of Section 18, T10N, R13W, SBB&M, County of Kern, State of California

Lat. / Long.: 34° 56′ 59.8094″ N/ 118° 18′ 8.8934″ W
Total Acres: 493.5

Assessor's Parcel No.: 346-022-03, 346-131-12, 13, 14, 15, 16, 17, 18 and 19
Section: 18 & 19 Twp.: 10N Range: 13W Base: SBB&M

Within 2 Miles: State Hwy #: N/A
Waterways: Oak Creek, Los Angeles Aqueduct
Airports: N/A
Railways: N/A
Schools: N/A

Document Type:

CEQA:
- ☒ NOP
- ☐ Early Cons
- ☐ Neg Dec
- ☐ Mit Neg Dec
- ☐ Draft EIR
- ☐ Supplement/Subsequent EIR (Prior SCH No.)
- Other

NEPA:
- ☐ NOI
- ☐ EA
- ☐ Draft EIS
- ☐ FONSI
- ☐ Draft Document
- ☐ Final Document
- ☐ Other

Governor's Office of Planning & Research
AUG 18 2017
STATE CLEARINGHOUSE

Local Action Type:

- ☐ General Plan Update
- ☒ General Plan Amendment
- ☐ General Plan Element
- ☐ Community Plan
- ☐ Specific Plan
- ☐ Master Plan
- ☐ Planned Unit Development
- ☐ Site Plan
- ☐ Rezone
- ☐ Prezone
- ☒ Use Permit
- ☐ Land Division (Subdivision, etc.)
- ☐ Annexation
- ☐ Redevelopment
- ☐ Coastal Permit
- ☐ Other

Development Type:

- ☐ Residential: Units Acres
- ☐ Office: Sq.ft. Acres Employees
- ☐ Commercial: Sq.ft. Acres Employees
- ☐ Mining: Mineral:
- ☐ Industrial: Sq.ft. Acres Employees
- ☐ Educational
- ☐ Recreational
- ☐ Water Facilities: Type MGD
- ☐ Transportation: Type
- ☒ Power: Type Solar PV MW 60
- ☐ Waste Treatment: Type MGD
- ☐ Hazardous Waste: Type
- ☒ Other: communication tower, temporary concrete batch plant during construction of the solar facilities

Project Issues Discussed in Document:

- ☒ Aesthetic/Visual
- ☒ Agricultural Land
- ☒ Air Quality
- ☒ Archeological/Historical
- ☒ Biological Resources
- ☐ Coastal Zone
- ☒ Drainage/Absorption
- ☒ Economic/Jobs
- ☒ Other Greenhouse Gas Emissions, Tribal Cultural Resources
- ☐ Fiscal
- ☒ Flood Plain/Flooding
- ☒ Forest Land/Fire Hazard
- ☒ Geologic/Seismic
- ☒ Minerals
- ☒ Noise
- ☐ Population/Housing Balance
- ☒ Public Services/Facilities
- ☐ Recreation/Parks
- ☒ Schools/Universities
- ☒ Septic Systems
- ☒ Sewer Capacity
- ☒ Soil Erosion/Compaction/Grading
- ☒ Solid Waste
- ☒ Toxic/Hazardous
- ☒ Traffic/Circulation
- ☒ Vegetation
- ☒ Water Quality
- ☒ Water Supply/Groundwater
- ☒ Wetland/Riparian
- ☒ Wildlife
- ☒ Growth Inducing
- ☒ Land Use
- ☒ Cumulative Effects

Present Land Use/Zoning/General Plan Designation:

Syracuse Site: Undeveloped Land / *Zoning:* A FP (Exclusive Agriculture/Floodplain Combining District) / *Kern County General Plan:* 8.3 (Extensive Agriculture; minimum 20 acre parcel size, minimum 80 acre parcel size with a Williamson Act contract). Tours Site: Undeveloped Land / *Zoning:* A FP and A (Exclusive Agriculture) / *Kern County General Plan:* 8.3. Sunbow Site: Undeveloped Land / *Zoning:* A FPS (Exclusive Agriculture/Floodplain Secondary Combining District) / *Kern County General Plan:* 8.3

NOP Distribution List CK **County:** Kern **SCH#** 2017081038

Resources Agency

- ■ **Resources Agency**
  Nadell Gayou
  - ☐ **Dept. of Boating & Waterways**
    Denise Peterson
  - ☐ **California Coastal Commission**
    Allyson Hitt
  - ☐ **Colorado River Board**
    Lisa Johansen
  - ■ **Dept. of Conservation**
    Crina Chan
  - ☐ **Cal Fire**
    Dan Foster
  - ■ **Central Valley Flood Protection Board**
    James Herota
  - ☐ **Office of Historic Preservation**
    Ron Parsons
- ■ **Dept of Parks & Recreation**
  Environmental Stewardship Section
  - ☐ **S.F. Bay Conservation & Dev't. Comm.**
    Steve Goldbeck
  - ■ **Dept. of Water Resources**
    Resources Agency
    Nadell Gayou

Fish and Game

- ☐ **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- ☐ **Fish & Wildlife Region 1**
  Curt Babcock
- ☐ **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- ☐ **Fish & Wildlife Region 2**
  Jeff Drongesen
- ☐ **Fish & Wildlife Region 3**
  Craig Weightman
- ■ **Fish & Wildlife Region 4**
  Julie Vance
- ☐ **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6 I/M**
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- ☐ **Dept. of Fish & Wildlife M**
  William Paznokas
  Marine Region

Other Departments

- ☐ **California Department of Education**
  Lesley Taylor
- ■ **OES (Office of Emergency Services)**
  Monique Wilber
- ☐ **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- ☐ **Dept. of General Services**
  Cathy Buck
  Environmental Services Section
- ☐ **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- ■ **Delta Protection Commission**
  Erik Vink
- ■ **Delta Stewardship Council**
  Kevan Samsam
- ■ **California Energy Commission**
  Eric Knight
- ■ **Native American Heritage Comm.**
  Debbie Treadway
- ■ **Public Utilities Commission**
  Supervisor
- ☐ **Santa Monica Bay Restoration**
  Guangyu Wang
- ☐ **State Lands Commission**
  Jennifer Deleong
- ☐ **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- ☐ **Caltrans - Division of Aeronautics**
  Philip Crimmins
- ☐ **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- ☐ **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- ☐ **Caltrans, District 1**
  Rex Jackman
- ☐ **Caltrans, District 2**
  Marcelino Gonzalez
- ☐ **Caltrans, District 3**
  Eric Federicks – South
  Susan Zanchi - North
- ☐ **Caltrans, District 4**
  Patricia Maurice
- ☐ **Caltrans, District 5**
  Larry Newland
- ■ **Caltrans, District 6**
  Michael Navarro
- ☐ **Caltrans, District 7**
  Dianna Watson
- ☐ **Caltrans, District 8**
  Mark Roberts
- ☐ **Caltrans, District 9**
  Gayle Rosander
- ☐ **Caltrans, District 10**
  Tom Dumas
- ☐ **Caltrans, District 11**
  Jacob Armstrong
- ☐ **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- ☐ **Airport & Freight**
  Jack Wursten
  - ■ **Transportation Projects**
    Nesamani Kalandiyur
  - ☐ **Industrial/Energy Projects**
    Mike Tollstrup
- ☐ **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- ☐ **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- ☐ **State Water Resources Control Board**
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- ☐ **State Water Resources Control Board**
  Div. Drinking Water #_____
- ☐ **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- ☐ **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- ☐ **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- ☐ **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- ☐ **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- ☐ **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- ☐ **RWQCB 3**
  Central Coast Region (3)
- ☐ **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- ☐ **RWQCB 5S**
  Central Valley Region (5)
  - ■ **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - ☐ **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- ☐ **RWQCB 6**
  Lahontan Region (6)
  - ☐ **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- ☐ **RWQCB 7**
  Colorado River Basin Region (7)
- ☐ **RWQCB 8**
  Santa Ana Region (8)
- ☐ **RWQCB 9**
  San Diego Region (9)

☐ **Other** _____

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☐ _____
Conservancy

Last Updated 8/3/17

Appendix B
Visual Simulations

ESA

Apollo Solar

Key Map

VisionScape IMAGERY
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Existing View

Proposed View

Apollo Solar

View 1

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Existing View

Proposed View

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View 2

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Existing View

Proposed View

Apollo Solar

View 3

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Existing View

Proposed View

Apollo Solar

View 4

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Existing View

Proposed View

Apollo Solar

View 5

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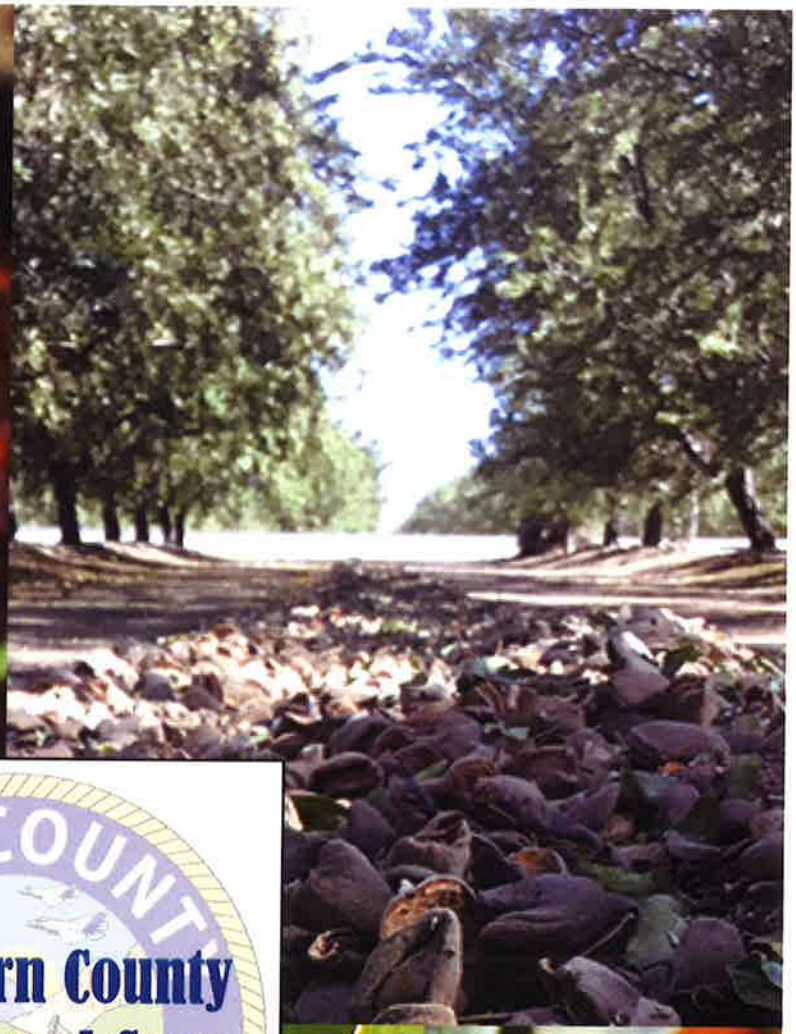
Appendix C
Agriculture Report

ESA



2017 Kern County Agricultural Crop Report

DEPARTMENT OF AGRICULTURE AND MEASUREMENT STANDARDS

GLENN FANKHAUSER
Agricultural Commissioner
Sealer of Weights and Measures

1001 South Mount Vernon Avenue · Bakersfield, California 93307
Telephone 661-868-6300 · Fax 661-868-6301 · agcomm@kerncounty.com
website - www.kernag.com

September 18, 2018

THE HONORABLE BOARD OF SUPERVISIORS
COUNTY OF KERN

Mike Maggard, Chairman
David Couch — Zack Scrivner
Mick Gleason — Leticia Perez

AND

Ryan Alsop
County Administrative Officer

KAREN ROSS, SECRETARY
CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

It is my pleasure to submit the 2017 Kern County Agricultural Crop Report. This annual report presents statistical information on acreage, yield and gross values of Kern County agricultural products in accordance with Sections 2272 and 2279 of the Food and Agricultural Code. The figures in this report represent only gross values and do not take into account the costs of production, marketing, transportation, or other ancillary costs. No attempt is made to reflect net income or loss to the producers of these commodities.

The 2017 gross value of all agricultural commodities produced in Kern County is $7,254,168,000. This represents a one percent (1%) increase from the 2016 crop value ($7,187,944,340).

The top five commodities for 2017 are Grapes, Almonds, Citrus, Milk and Pistachios which make up more than $4.5 Billion (63%) of the Total Value; with the top twenty commodities making up more than 75% of the Total Value.

The 2017 Kern County Crop Report can be found on the Department of Agriculture and Measurement Standards website: www.kernag.com

I would like to thank all the members of the Agriculture and Measurement Standards staff who helped with the compilation and preparation of this report, especially Cerise Montanio and Ella Pike, Agricultural Biologist/Inspectors. Most of all, I extend my thanks and appreciation to all of the agricultural producers, contributing organizations and those individuals who provided the necessary information for this report.

Respectfully Submitted,

Glenn Fankhauser
Agricultural Commissioner/Sealer of Weights and Measures

Table of Contents - 2017

Letter from the Commissioner	page i
Top 20 Commodities	page 1
Permanent Acreage	page 2
Fruit & Nut Crops	page 4
Seed Crops	page 6
Field Crops	page 7
Vegetable Crops	page 8
Nursery Crops	page 10
Industrial & Wood Crops	page 10
Livestock & Poultry	page 11
Livestock & Poultry Products	page 11
Apiary Products	page 12
Summary	page 13
Pest Prevention & Control	page 14
Direct Marketing, Organic Farming, Exports & Pests	page 15

Note: Numbers published in this report may not compute exactly due to rounding.
Permanent Acreage may differ from actual Harvested Acreage for some commodities.

Kern County Department of Agriculture and Measurement Standards
1001 S. Mount Vernon Avenue, Bakersfield, California 93307
(661) 868-6300 phone, (661) 868-6301 fax
website: www.kernag.com
E-mail address: agcomm@kerncounty.com

Top 20 Commodities - 2017

	COMMODITY	VALUE	2016 RANKING
1.	Grapes, All	$ 1,747,529,000	1
2.	Almonds, Including By-Products	1,261,738,000	2
3.	Citrus, Fresh & Processing	942,926,000	3
4.	Milk, Market & Manufacturing	618,845,000	5
5.	Pistachios	555,524,000	4
6.	Carrots, Fresh & Processing	424,432,000	6
7.	Cattle & Calves	318,019,000	7
8.	Potatoes, Fresh & Processing	112,853,000	8
9.	Alfalfa	101,200,000	11
10.	Apiary	93,493,000	13
11.	Cherries	88,430,000	9
12.	Nursery, Fruit and Nut Trees & Vines	83,074,000	14
13.	Cotton, Including Processed Cottonseed	74,394,000	17
14.	Silage & Forage	70,505,000	12
15.	Tomato, Fresh & Processing	67,433,000	15
16.	Garlic, Fresh & Processing	63,051,000	16
17.	Onion, Fresh & Processing	60,902,000	19
18.	Pomegranates, Fresh & Processing	60,633,000	10
19.	Eggs & Egg Products	41,409,000	21
20.	Watermelon	40,587,000	23

Permanent Acreage - 2017

CROP	YEAR	BEARING	NON-BEARING	TOTAL
Almonds	2017	214,000	11,520	225,520
	2016	217,000	7,760	224,760
Apples	2017	540	87	627
	2016	1,075	60	1,135
Apricots	2017	156	11	167
	2016	210	21	231
Blueberries	2017	1,090	665	1,755
	2016	865	494	1,359
Cherries	2017	4,657	664	5,321
	2016	5,528	889	6,417
Figs	2017	425	0	425
	2016	461	0	461
Grapefruit	2017	770	20	790
	2016	853	27	880
Grapes, All	2017	115,600	2,470	118,070
	2016	106,900	4,100	111,000
Raisin	2017	13,700	10	13,710
	2016	13,400	390	13,790
Table	2017	69,700	2,370	72,070
	2016	63,800	3,300	67,100
Wine	2017	32,200	90	32,290
	2016	29,700	410	30,110
Kiwi	2017	128	0	128
	2016	48	0	48
Lemons	2017	4,010	10	4,020
	2016	3,740	1	3,741
Nectarines	2017	332	13	345
	2016	410	23	433
Olives	2017	271	130	401
	2016	489	5	494

Permanent Acreage - 2017

CROP	YEAR	BEARING	NON-BEARING	TOTAL
Oranges, All	2017	35,780	547	36,327
	2016	35,680	484	36,164
Navels	2017	30,400	547	30,947
	2016	30,300	484	30,784
Valencias	2017	5,380	0	5,380
	2016	5,380	0	5,380
Peaches	2017	908	48	956
	2016	911	1	912
Pears	2017	30	0	30
	2016	26	0	26
Pecans	2017	551	0	551
	2016	554	0	554
Persimmons	2017	321	63	384
	2016	319	55	374
Pistachios	2017	121,800	18,200	140,000
	2016	109,600	17,400	127,000
Pomegranates	2017	8,508	10	8,518
	2016	8,570	1,705	10,275
Prunes	2017	5	0	5
	2016	5	0	5
Tangerines & Tangelos	2017	23,900	1,780	25,680
	2016	21,900	3,580	25,480
Walnuts	2017	610	1,265	1,875
	2016	1,070	854	1,924
Miscellaneous	a/2017	312	5	317
	b/2016	163	53	216
Totals	**2017**	**534,704**	**37,508**	**572,212**
	2016	**516,377**	**37,512**	**553,888**

Note: Bearing acreage may not always be harvested.
a/ Includes: Avocado, Jujube, Lime, Plum and Plumcot.
b/ Includes: Avocado, Jujube, Lime, Plum, Plumcot and Quince.

Fruit & Nut Crops - 2017

CROP	YEAR	HARVESTED ACRES	PRODUCTION PER ACRE	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Almonds	**2017**	**214,000**	**1.23**	**a/264,000**	**Ton**	**$4,680.00**	**$1,234,724,000**
	2016	217,000	1.19	a/259,000	Ton	$4,920.00	$1,275,520,000
Almond	**2017**	**---**	**---**	**341,000**	**Ton**	**79.00**	**27,014,000**
By- Products	2016	---	---	282,000	Ton	73.00	20,503,000
Apples	**2017**	**---**	**---**	**---**	**Ton**	**---**	**---**
	2016	1,030	1.81	1,860	Ton	900.00	1,674,000
Apricots	**2017**	**---**	**---**	**---**	**Ton**	**---**	**---**
	2016	210	9.76	2,050	Ton	1,090.00	2,242,000
Blueberries	**2017**	**1,090**	**4.32**	**4,710**	**Ton**	**6,560.00**	**30,885,000**
	2016	865	5.13	4,440	Ton	7,380.00	32,785,000
Cherries	**2017**	**4,630**	**4.21**	**19,500**	**Ton**	**4,530.00**	**88,430,000**
	2016	4,690	5.93	27,800	Ton	3,810.00	105,794,000
Citrus, All	**2017**	**64,460**	**16.04**	**1,033,800**	**Ton**	**---**	**942,926,000**
	2016	62,173	16.30	1,013,600	Ton	---	824,530,000
Grapefruit	**2017**	**770**	**13.51**	**10,400**	**Ton**	**913.00**	**9,498,000**
	2016	853	13.01	11,100	Ton	853.00	9,465,000
Lemons	**2017**	**4,010**	**13.02**	**52,200**	**Ton**	**1,310.00**	**68,334,000**
	2016	3,740	14.73	55,100	Ton	1,330.00	73,162,000
Oranges,	**2017**	**30,400**	**13.75**	**418,000**	**Ton**	**836.00**	**349,871,000**
Navels	2016	30,300	13.76	417,000	Ton	725.00	301,896,000
Oranges,	**2017**	**5,380**	**17.51**	**94,200**	**Ton**	**918.00**	**86,440,000**
Valencia	2016	5,380	14.20	76,400	Ton	702.00	53,634,000
Tangerine &	**2017**	**23,900**	**9.62**	**230,000**	**Ton**	**1,710.00**	**394,311,000**
Tangelo	2016	21,900	9.95	218,000	Ton	1,580.00	345,454,000
Processing,	**2017**	**---**	**---**	**229,000**	**Ton**	**151.00**	**34,472,000**
All Citrus	2016	---	---	236,000	Ton	173.00	40,919,000
Grapes, All	**2017**	**115,600**	**11.04**	**1,276,120**	**Ton**	**---**	**1,747,529,000**
	2016	106,900	11.18	1,194,790	Ton	---	1,659,431,000
Raisin Variety	**b/2017**	**13,700**	**16.96**	**232,420**	**Ton**	**---**	**112,110,000**
	b/2016	13,400	15.70	210,390	Ton	---	68,171,000
Fresh Market	**2017**	**---**	**---**	**16,100**	**Ton**	**1,670.00**	**26,835,000**
	2016	---	---	10,900	Ton	1,490.00	16,287,000
Raisins	**c/2017**	**---**	**---**	**44,900**	**Ton**	**1,800.00**	**80,893,000**
	c/2016	---	---	41,800	Ton	1,100.00	46,012,000

Fruit & Nut Crops - 2017

CROP	YEAR	HARVESTED ACRES	PRODUCTION PER ACRE	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Processing	**2017**	---	---	**4,820**	**Ton**	**$ 353.00**	**1,700,000**
	2016	---	---	5,190	Ton	568.00	2,950,000
Crushed	**2017**	---	---	**10,800**	**Ton**	**248.00**	**2,682,000**
	2016	---	---	15,400	Ton	190.00	2,922,000
Table Variety	**2017**	**69,700**	**11.00**	**766,700**	**Ton**	---	**1,549,210,000**
	2016	63,800	11.78	751,400	Ton	---	1,521,701,000
Fresh Market	**2017**	---	---	**677,000**	**Ton**	**2,270.00**	**1,533,690,000**
	2016	---	---	676,000	Ton	2,230.00	1,510,387,000
Crushed	**2017**	---	---	**89,700**	**Ton**	**173.00**	**15,520,000**
	2016	---	---	75,400	Ton	150.00	11,314,000
Wine Variety	**2017**	**32,200**	**8.60**	**277,000**	**Ton**	---	**86,209,000**
	2016	29,700	7.85	233,000	Ton	---	69,559,000
Crushed	**2017**	---	---	**277,000**	**Ton**	**311.00**	**86,209,000**
	2016	---	---	233,000	Ton	299.00	69,559,000
Pistachios	**2017**	**122,000**	**1.17**	**d/143,100**	**Ton**	**3,880.00**	**555,524,000**
	2016	110,000	1.62	d/178,200	Ton	4,320.00	769,258,000
Plums	**2017**	---	---	---	**Acre**	---	---
	2016	---	---	---	Acre	---	---
Tomatoes,	**2017**	---	---	---	**Acre**	---	---
Fresh	2016	---	---	---	Acre	---	---
Tomatoes,	**2017**	**8,600**	**51.28**	**441,000**	**Acre**	**70.60**	**31,121,000**
Processed	2016	13,900	46.40	645,000	Acre	72.50	46,760,000
Walnuts	**2017**	**610**	**1.90**	**d/1,160**	**Ton**	**2,520.00**	**2,924,000**
	2016	1,070	1.50	d/1,600	Ton	2,030.00	3,249,000
Miscellaneous	**e/2017**	**15,300**	---	**201,000**	**Ton**	---	**141,087,000**
	f/2016	12,400	---	181,000	Ton	---	159,244,000
Totals	**2017**	**546,290**	---	**3,725,390**	**Ton**	---	**$ 4,802,164,000**
	2016	530,238	---	3,791,340	Ton	---	$ 4,900,990,000

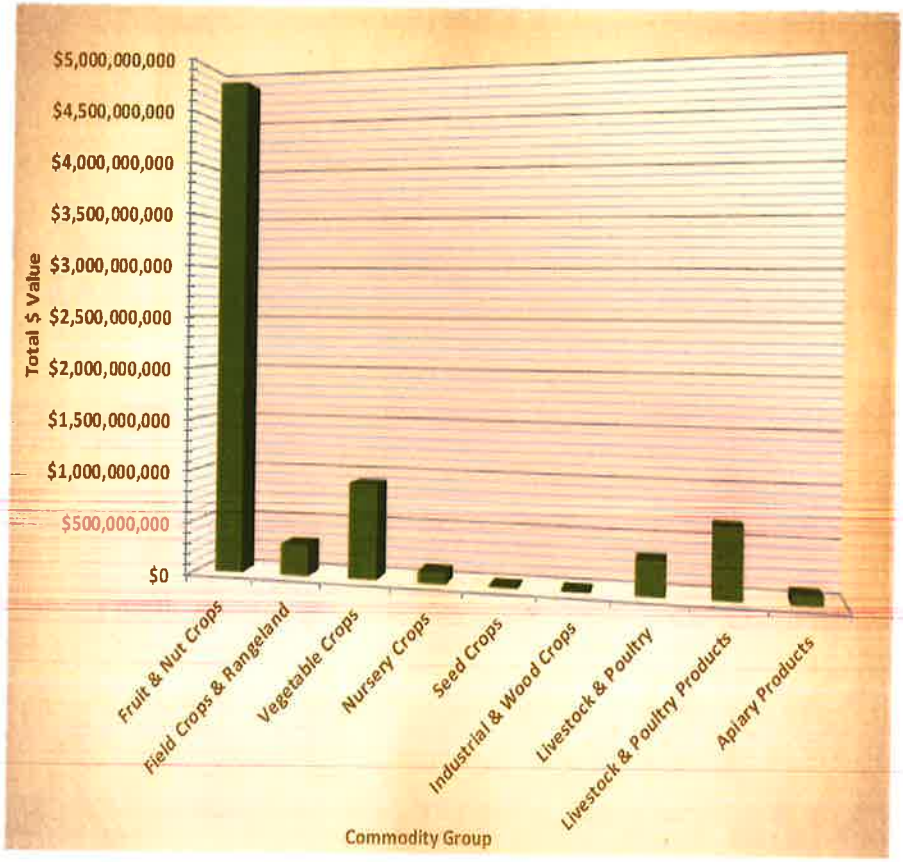
Note: Organic commodities included
a/ Almond production stated in terms of Nut Meat Equivalents.
b/ Total production includes raisins on a Fresh Equivalent basis.
c/ A combined value reflecting free tonnage and reserve tonnage: Dry Ratio: 2017-4.47 to 1 2016-4.28 to 1
d/ Pistachio and Walnut production stated in terms of In-Shell Equivalents.
e/ Includeds: Apples (Fresh & Processed), Apricot (Fresh & Processed), Avocado, Blackberry, Blueberry (Processed), Cactus Pear, Cherry (Processed), Chestnut, Fig (Fresh& Dry), Jujube, Nectarines, Olive (Fresh & Processed), Peach (Fresh & Processed), Pear, Pecan, Persimmon, Plum, Plumcot, Pomegranate (Fresh & Juice), Prune, Raspberry, Strawberry, Tomato (Fresh) and Quince.
f/ Includes: Apricots (Processed), Avocado, Blackberry, Cactus Pear, Cherry (Processed), Chestnut, Fig (Fresh & Dry), Jujube, Kiwi, Kumquat, Lime, Nectarines, Olive (Fresh & Processed), Peach (Fresh & Processed), Pear, Pecan, Persimmon, Plum, Plumcot, Pomegranate (Fresh & Juice), Prune, Raspberry, Strawberry, Tomato (Fresh) and Quince.

Seed Crops - 2017

CROP	YEAR	HARVESTED ACRES	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Cotton	**2017**	---	---	**Ton**	---	**$ ---**
	2016	30	40	Ton	a/$ 244.00	$ 9,750
Field	**2017**	---	---	**Ton**	---	---
	b/2016	50	50	Ton	---	29,700
Vegetable	**c/2017**	**1,200**	**460**	**Ton**	---	**14,932,000**
	d/2016	1,100	4,690	Ton	---	9,371,000
Totals	**2017**	**e/1,200**	**460**	**Ton**	---	**14,932,000**
	2016	e/1,150	4,780	Ton	---	$ 9,410,450

Note: Organic commodities included.
a/ Includes a per acre approval.
b/ Includes: Barley, Safflower and Wheat Seed.
c/ Includes: Broccoli, Carrot, Lettuce, Onion and Tomato Seed.
d/ Includes: Broccoli, Cabbage, Carrot, Lettuce, Onion, Potato and Tomato Seed.
e/ Does not include cotton acreage.

Total Value Comparison by Commodity Group



Field Crops - 2017

CROP	YEAR	HARVESTED ACRES	PRODUCTION PER ACRE	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Barley	**a/2017**	**3,540**	**1.06**	**3,760**	**Ton**	**$ 202.00**	**$ 760,000**
	a/2016	4,540	1.87	8,490	Ton	$ 182.00	$ 1,545,000
Beans, Dry	**2017**	**1,086**	**1.37**	**1,490**	**Ton**	**900.00**	**1,335,000**
Edible	2016	2,838	1.30	3,690	Ton	800.00	2,952,000
Cotton Lint,	**2017**	**2,880**	**b/1,370**	**7,900**	**Bale**	**d/0.85**	**3,354,000**
Upland & Acala	2016	3,480	b/1,840	12,800	Bale	d/0.67	4,285,000
Cotton Lint,	**2017**	**27,815**	**b/1,290**	**c/72,000**	**Bale**	**d/1.60**	**57,493,000**
Pima	2016	20,205	b/1,580	c/64,000	Bale	d/1.38	44,224,000
Cottonseed	**2017**	**---**	**---**	**34,300**	**Ton**	**395.00**	**13,547,000**
Processing	2016	---	---	28,500	Ton	452.00	12,880,000
Hay, Alfalfa	**2017**	**72,900**	**7.93**	**578,000**	**Ton**	**175.00**	**101,200,000**
	2016	84,200	7.14	601,000	Ton	153.00	91,931,000
Hay, Grain	**2017**	**4,600**	**2.90**	**13,400**	**Ton**	**110.00**	**1,468,000**
	2016	6,400	3.95	25,300	Ton	140.00	3,545,000
Hay, Other	**2017**	**6,400**	**3.50**	**22,400**	**Ton**	**134.00**	**3,002,000**
	2016	5,840	3.20	18,700	Ton	127.00	2,374,000
Pasture,	**2017**	**6,000**	**---**	**---**	**Acre**	**140.00**	**840,000**
Irrigated	2016	7,000	---	---	Acre	140.00	980,000
Pasture, Other	**2017**	**---**	**---**	**---**	**Acre**	**---**	**1,172,000**
	2016	---	---	---	Acre	---	1,153,000
Pasture, Range	**2017**	**1,446,000**	**---**	**---**	**Acre**	**20.60**	**29,781,000**
	2016	1,444,000	---	---	Acre	15.00	21,664,000
Silage and	**2017**	**97,000**	**15.66**	**1,519,000**	**Ton**	**46.40**	**70,505,000**
Forage	2016	102,000	19.37	1,976,000	Ton	46.40	91,704,000
Wheat	**2017**	**16,300**	**2.29**	**37,400**	**Ton**	**198.00**	**7,416,000**
	2016	18,900	2.70	51,100	Ton	175.00	8,925,000
Miscellaneous	**e/2017**	**9,500**	**---**	**70,000**	**Ton**	**---**	**11,202,000**
	e/2016	15,900	---	129,000	Ton	---	16,550,000
Totals	**2017**	**f/248,021**	**---**	**---**	**---**	**---**	**$303,075,000**
	2016	f/271,303	---	---	---	---	$304,712,000

Note: Organic commodities included
a/ May contain dryland. b/ Pounds per Acre.
c/ 500 Pounds Net Weight Bale. d/ Price per Pound
e/ Includes: Field Corn (Grain), Rape, Rye, Sorghum-Milo, Safflower, and Triticale.
f/ Does not include Range acreage.

Vegetable Crops - 2017

CROP	YEAR	HARVESTED ACRES	PRODUCTION PER ACRE	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Garlic,	**2017**	**5,560**	**7.43**	**41,300**	**Ton**	**1,530.00**	**63,051,000**
Fresh & Process	2016	5,530	7.90	43,700	Ton	1,460.00	63,637,000
Lettuce, Head	**2017**	**---**	**---**	**---**	**Ton**	**---**	**---**
	2016	588	19.56	11,500	Ton	470.00	5,459,000
Onions,	**2017**	**4,660**	**23.50**	**109,500**	**Ton**	**290.00**	**31,746,000**
Fresh	2016	4,190	23.75	99,500	Ton	200.00	19,897,000
Onions,	**2017**	**3,810**	**45.01**	**171,500**	**Ton**	**170.00**	**29,156,000**
Dehydrator	2016	3,430	23.06	79,100	Ton	190.00	15,004,000
Peppers, Bell	**2017**	**1,920**	**20.99**	**40,300**	**Ton**	**870.00**	**34,992,000**
Fresh	2016	2,050	20.68	42,400	Ton	970.00	41,076,000
Potatoes, All	**2017**	**14,590**	**23.88**	**348,400**	**Ton**	**---**	**112,853,000**
	2016	14,700	24.67	362,700	Ton	---	109,811,000
Potatoes, Spring	**2017**	**12,380**	**26.01**	**322,000**	**Ton**	**---**	**102,918,000**
	2016	12,380	26.27	325,200	Ton	---	96,999,000
Fresh Market	**2017**	**---**	**---**	**148,000**	**Ton**	**470.00**	**69,495,000**
	2016	---	---	141,000	Ton	457.00	64,430,000
Processing	**2017**	**---**	**---**	**137,000**	**Ton**	**237.00**	**32,499,000**
	2016	---	---	149,000	Ton	213.00	31,690,000
Culls	**2017**	**---**	**---**	**37,000**	**Ton**	**25.00**	**924,000**
	2016	---	---	35,200	Ton	25.00	879,000
Potatoes,Winter	**2017**	**2,210**	**11.95**	**26,400**	**Ton**	**---**	**9,935,000**
	2016	2,320	16.16	37,500	Ton	---	12,812,000
Fresh Market	**2017**	**---**	**---**	**21,100**	**Ton**	**465.00**	**9,803,000**
	2016	---	---	30,000	Ton	421.00	12,626,000
Culls	**2017**	**---**	**---**	**5,300**	**Ton**	**24.90**	**132,000**
	2016	---	---	7,500	Ton	24.80	186,000
Watermelons,	**2017**	**2,790**	**40.50**	**113,000**	**Ton**	**359.00**	**40,587,000**
Seeded/Seedless	2016	1,790	34.30	61,400	Ton	327.00	20,104,000
Miscellaneous	**a/2017**	**53,500**	**---**	**1,245,000**	**Ton**	**---**	**604,251,000**
	b/2016	49,300	---	1,203,000	Ton	---	561,682,000

Vegetable Crops - 2017

CROP	YEAR	HARVESTED ACRES	PRODUCTION PER ACRE	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Totals	**2017**	**86,830**	**---**	**2,069,000**	**Ton**	**---**	**$ 916,636,000**
	2016	81,578	---	1,903,300	Ton	---	$ 836,670,000

Note: Organic commodities included

a/ Includes: Artichoke, Arugula, Asparagus, Beans Succulent (Fresh & Processed), Bok Choy, Broccoli, Butter Lettuce, Cabbage (Fresh & Processed), Cantaloupe, Carrots (Fresh & Processed), Cauliflower, Chard, Celery, Chive, Cilantro, Collard, Corn (Sweet), Cucumber, Daikon, Dandelion Red, Dill, Eggplant, Fennel, Gai Choy, Gai Lon, Gourd, Green Onions, Kale, Kohlrabi, Head & Leaf Lettuce, Leeks, Melons (Other), Mustard, Napa Cabbage, Parsley (Fresh & Processed), Peas (Fresh & Processed), Peppers (Chili & Processed), Pumpkin, Radishes, Red Beets, Romaine Lettuce, Rutabaga, Spinach, Squash, Sweet Potatoes and Turnips.

b/ Includes: Artichoke, Arugula, Asparagus, Basil, Beans Succulent (Fresh & Processed), Bok Choy, Broccoli, Butter Lettuce, Cabbage (Fresh & Processed), Cantaloupe, Carrots (Fresh & Processed), Cauliflower, Chard, Celery, Chive, Cilantro, Collard, Corn (Sweet), Cucumber, Daikon, Dandelion Greens, Dill, Eggplant, Fennel, Gai Lon, Gourd, Green Onions, Herbs, Kale, Kohlrabi, Leaf Lettuce, Leeks, Melons (Other), Mustard, Napa Cabbage, Parsley (Fresh & Processed), Peas (Fresh & Processed), Peppers (Chili & Processed), Pumpkin, Radishes, Red Beets, Romaine Lettuce, Rutabaga, Spinach, Squash, Sweet Potatoes and Turnips.

Kern County Certified Farmers' Markets

LOCATION	SEASON	DAY	TIME
Brimhall Farmers' Market *NE Corner of Brimhall & Calloway, 9500 Brimhall Rd.*	*Year Round*	*Saturday*	*9am - 1:30pm*
Valley Farmers Market *3201 F St., Bakersfield CA*	*January through December*	*Saturday*	*8am-12pm*
Clinica Sierra Vista/Delano *Community Health Center, 1508 Garces Hwy.*	*June through November*	*Every other Tuesday*	*3pm - 5pm*
Clinica Sierra Vista/Lamont *Community Health Center, 8787 Hall Rd*	*June through November*	*Every other Tuesday*	*3pm - 5pm*
Clinica Sierra Vista/Bakersfield *815 Martin Luther King*	*June through November*	*Every other Tuesday*	*9am - 11am*
Omni Family Health/Shafter *659 S. Central Valley Hwy*	*March through December*	*Every other Saturday*	*8am - 1pm*
Omni Family Health/Wasco *2101 7th St.*	*March through December*	*Every other Saturday*	*8am - 1pm*
Haggin Oaks Farmers' Market *Corner of Ming & Haggin Oaks, 8800 Ming Ave.*	*Year Round*	*Sunday*	*9am - 2pm*
Main Street Farmers' Market Tehachapi *N. Green St., Tehachapi Blvd.*	*May through August*	*Thursday*	*4pm - 7:30pm*
Wasco Farmers Market *Hwy 43 between 7th & 8th Streets*	*June through August*	*Wednesday*	*2pm - 6pm*
Kernville Farmers Market *Kernville Rd, Kernville Ca.*	*April through October*	*Saturday*	*8am - 12pm*

Nursery Crops - 2017

CROP	YEAR	HARVESTED ACRES	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Christmas Trees	**2017**	---	---	**Tree**	---	**$ ---**
	2016	---	180	Tree	---	$ 9,890
Fruit and Nut	**a/2017**	**1,290**	**23,821,000**	**Plant**	---	**83,074,000**
Trees & Vines	a/2016	820	24,071,000	Plant	---	72,709,000
Herbaceous	**2017**	---	---	---	---	**1,530,000**
Plants	2016	---	---	---	---	1,213,000
Ornamental	**a/2017**	**129**	**643,000**	**Plant**	---	**1,089,000**
Trees & Shrubs	a/2016	89	252,000	Plant	---	877,000
Propagative	**2017**	---	---	---	---	**4,005,000**
Material	2016	---	---	---	---	2,962,000
Roses	**2017**	**460**	**8,260,000**	**Plant**	**$ 2.29**	**18,903,000**
	2016	510	8,288,000	Plant	$ 2.40	19,885,000
Turf	**2017**	**351**	---	**Sq Ft**	---	**5,104,000**
	2016	269	---	Sq Ft	---	4,662,000
Totals	**2017**	**2,230**	---	---	---	**$ 113,705,000**
	2016	1,688	---	---	---	$ 102,317,890

a/ Includes: Container grown plants.

Industrial & Wood Crops - 2017

CROP	YEAR	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Almond Hulls & Shells	**2017**	**241,000**	**Ton**	---	**$ 5,522,000**
	2016	190,000	Ton	---	$ 3,962,000
Biomass &	**2017**	**218,000**	**Ton**	---	**4,545,000**
Composting	2016	215,000	Ton	---	4,518,000
Timber	**a/2017**	**2,257**	**Brd Ft**	---	**163,000**
	a/2016	1,265	Brd Ft	---	62,000
Wood for Fuel	**2017**	**1,781**	**Cord**	---	**534,000**
	2016	1,291	Cord	---	503,000
Totals	**2017**	---	---	---	**$ 10,764,000**
	2016	---	---	---	$ 9,045,000

a/ Production and value based on information provided by: Timber Tax Division, Property Tax Department, State Board of Equalization.

Livestock & Poultry - 2017

COMMODITY	YEAR	NUMBER OF HEAD	TOTAL LIVEWEIGHT	UNIT	UNIT VALUE	TOTAL VALUE
Cattle & Calves	**2017**	**339,000**	**---**	**Head**	**$ 940.00**	**$ 318,019,000**
	2016	344,000	---	Head	$ 900.00	$ 308,924,000
Sheep & Lambs	**2017**	**91,000**	**90,000**	**Cwt**	**155.00**	**13,950,000**
	2016	89,000	90,000	Cwt	180.00	16,200,000
Hogs	**2017**	**2,132**	**5,370**	**Cwt**	**53.60**	**288,000**
	2016	2,070	5,220	Cwt	49.60	259,000
Ostriches	**2017**	**---**	**---**	**---**	**---**	**---**
	2016	---	---	---	---	---
Miscellaneous	**a/2017**	**---**	**---**	**---**	**---**	**721,000**
	a/2016	---	---	---	---	1,125,000
Totals	**2017**	**---**	**---**	**---**	**---**	**332,978,000**
	2016	---	---	---	---	$ 326,508,000

a/ Includes: Game Birds for Meat, Registered Freshwater Aquaculturists, Ostrich and Other.

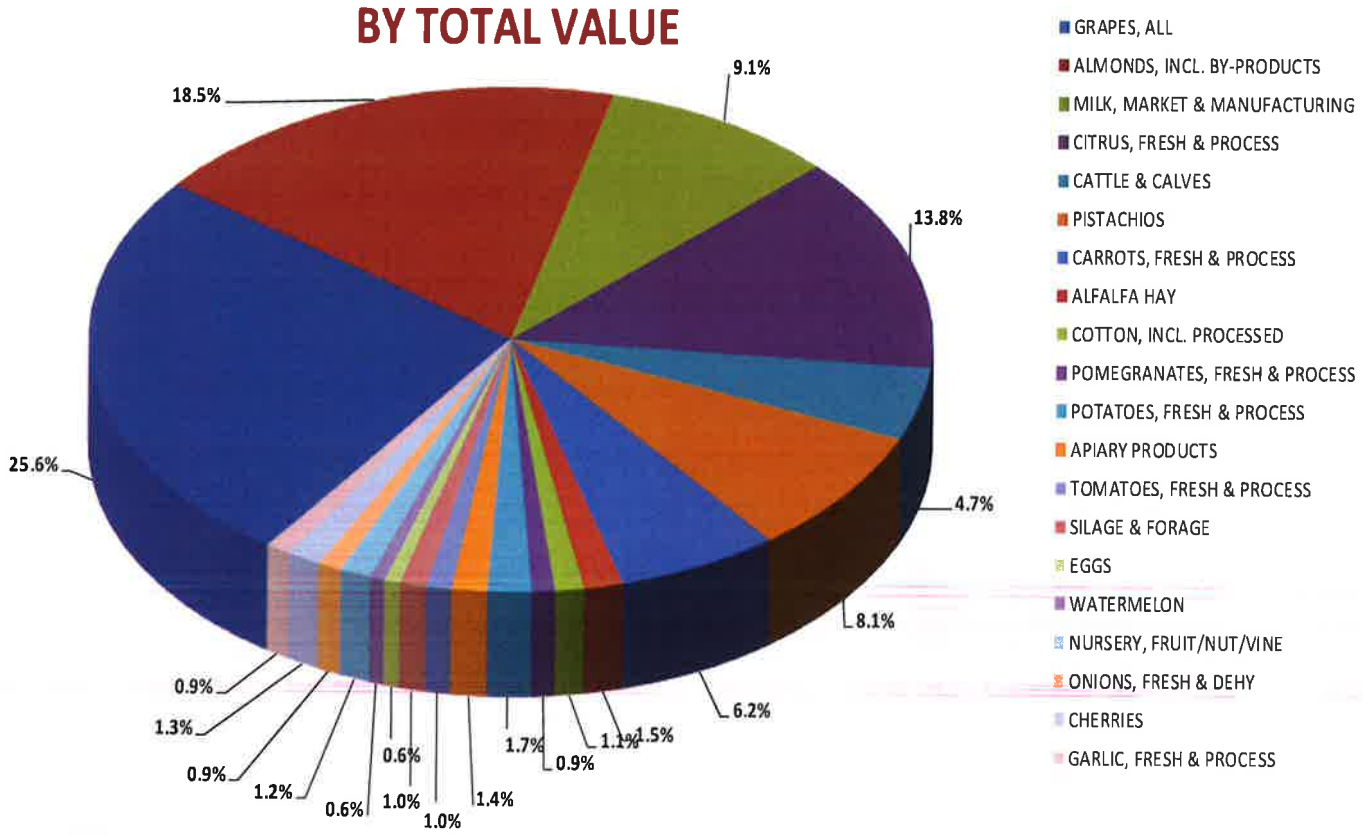
Livestock & Poultry Products - 2017

PRODUCT	YEAR	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Milk, Market	**2017**	**37,176,000**	**Cwt**	**$ 16.60**	**$ 618,674,000**
	2016	38,256,000	Cwt	$ 15.10	$ 579,444,000
Milk, Manufacturing	**2017**	**9,300**	**Cwt**	**18.40**	**171,000**
	2016	16,800	Cwt	16.10	270,000
Manure	**2017**	**773,000**	**Ton**	**---**	**5,132,000**
	2016	733,000	Ton	---	4,514,000
Wool	**2017**	**450,000**	**Lb.**	**2.30**	**1,035,000**
	2016	450,000	Lb.	2.00	900,000
Eggs & Egg Product	**2017**	**---**	**---**	**---**	**41,409,000**
	2016	---	---	---	24,385,000
Totals	**2017**	**---**	**---**	**---**	**666,421,000**
	2016	---	---	---	$ 609,513,000

Apiary Products - 2017

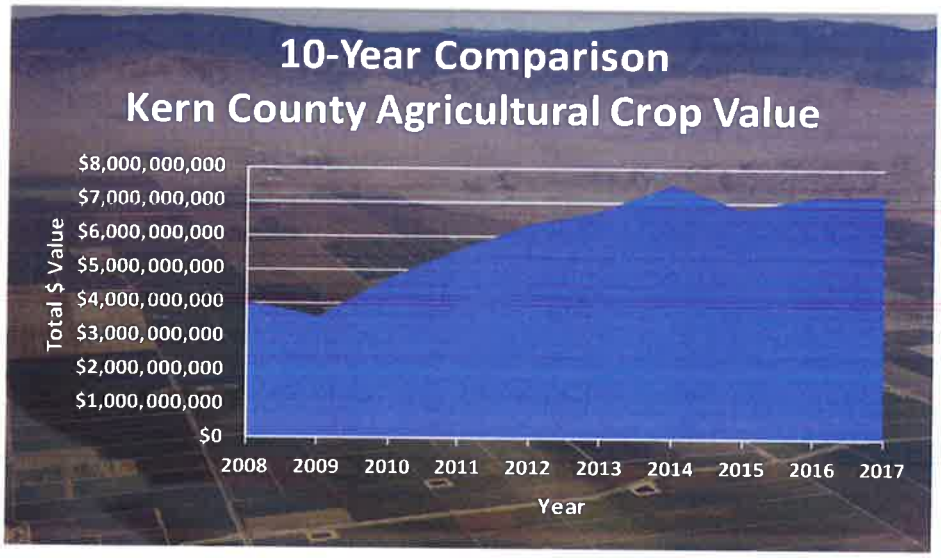
COMMODITY	YEAR	TOTAL PRODUCTION	UNIT	UNIT VALUE	TOTAL VALUE
Honey	**2017**	**3,969,000**	**Lb**	**$ 2.09**	**$ 8,296,000**
	2016	3,362,000	Lb	$ 2.06	$ 6,926,000
Beeswax	**2017**	**496,000**	**Lb**	**3.50**	**1,737,000**
	2016	420,000	Lb	3.17	1,332,000
Pollination	**2017**	**461,000**	**Colony**	**181.00**	**83,460,000**
	2016	462,000	Colony	174.00	80,520,000
Other Apiary	**2017**	---	---	---	---
Products	2016	---	---	---	---
Totals	**2017**	---	---	---	**$ 93,493,000**
	2016	---	---	---	$ 88,778,000

TOP 20 COMMODITIES BY TOTAL VALUE



Summary - 2017

COMMODITY	YEAR	HARVESTED ACRES	RANGE	TOTAL VALUE
Fruit & Nut Crops	**2017**	**546,290**	---	**$ 4,802,164,000**
	2016	530,238	---	$ 4,900,990,000
Field Crops & Rangeland	**2017**	**248,021**	**1,446,000**	**303,075,000**
	2016	271,303	1,444,000	304,712,000
Vegetable Crops	**2017**	**86,830**	---	**916,636,000**
	2016	81,578	---	836,670,000
Nursery Crops	**2017**	**2,230**	---	**113,705,000**
	2016	1,688	---	102,317,890
Industrial & Wood Crops	**2017**	---	---	**10,764,000**
	2016	---	---	9,045,000
Seed Crops	**2017**	**1,200**	---	**14,932,000**
	2016	1,150	---	9,410,450
Livestock & Poultry	**2017**	---	---	**332,978,000**
	2016	---	---	326,508,000
Livestock & Poultry Products	**2017**	---	---	**666,421,000**
	2016	---	---	609,513,000
Apiary Products	**2017**	---	---	**93,493,000**
	2016	---	---	88,778,000
Totals	**2017**	**884,571**	**1,446,000**	**$ 7,254,168,000**
	2016	885,957	1,444,000	$ 7,187,944,340
Total Value without Timber	**2017**			**$ 7,254,005,000**
	2016			$ 7,187,882,340



Pest Prevention & Control - 2017

PEST EXCLUSION

INSPECTION TYPE	PREMISES VISITED	SHIPMENTS INSPECTED	PESTS/NOR's
Express Carriers	205	2,578	0/10
U. S. Post Office	21	57	0
UPS	41	288	0
Federal Express	180	2,513	0/15
Federal Express Ground	79	1,225	0
Air Freight	0	0	0
Gypsy Moth	9	4	0
Florida/Southern States	2	2	0
Hawaii	0	0	0
Truck	371	449	0
High Risk Market	81	117	0/5
Beehives	19	44	0
Other	5	2	0

EXPORT TRAPPING

CROP	TRAPS DEPLOYED	COUNTRY	PEST
Apples	20	Various	Apple Maggot (Rhagoletis pomonella)

PEST DETECTION & TRAPPING

TRAP NAME	NUMBER OF TRAPS DEPLOYED
Jackson Trap	
Light Brown Apple Moth (Epiphyas postvittana)	496
Mediterranean Fruit Fly (Ceratitis capitata)	491
Melon Fruit Fly (Bactrocera curcurbitae)	265
Oriental Fruit Fly (Bactrocera dorsalis)	492
McPhail Trap	
Mexican Fruit Fly (Anastrepha ludens)	263
Delta Trap	
Gypsy Moth (Lymantria dispar)	501
Japanese Beetle Trap (Popillia japonica)	425
Trogotrap Khapra Beetle (Trogoderma granarium)	0
European Corn Borer Trap (Ostrinia nubilalis)	26
European Pine Shoot Moth Trap (Rhyacionia buoliana)	10
Glassy-winged Sharpshooter (Homalodisca coagulata)	200
Champ Trap	393
Mexican Fruit Fly (Anastrepha ludens)	
Yellow Panel Trap	
Asian Citrus Psyllid (Diaphorina citri)	7,972
Delta Trap	
European Grapevine Moth (Lobesia botrana)	3,882

Direct Marketing, Organic Farming, Exports & Pests - 2017

DIRECT MARKETING

DIRECT MARKETING PROGRAM

Direct Marketing is a system that allows Certified Producers to market their produce directly to consumers via Certified Farmers Markets. The Department of Agriculture & Measurement Standards regulates this program to ensure that only certified produce is sold at Certified Farmers Markets. See a list of current Certified Farmers' Markets on Page 9 of this report.

ORGANIC FARMING

REGISTERED ORGANIC GROWER PROGRAM

Producers and growers who market their produce as "Organic" or "Organically Grown" must be certified by an accredited certifying agency and are required to register their organic fields with the state. The Department of Agriculture & Measurement Standards inspects these fields to ensure compliance with applicable laws and regulations.

Registered Growers and Handlers - 68

Partial listing of registered crops: Citrus, Grapes (Table,Wine,Raisins), Strawberries, Broccoli, Carrots, Celery, Lettuce (Head, Leaf, Spring/Salad Mixes), Spinach (Fresh and Processed), Tomatoes, Almonds, and Seed Crops.

EXPORTS

Phytosanitary Certification is one of the largest programs within the Department of Agriculture. Depending on the agricultural commodity and destination country, Phytosanitary Certification may be required, which attests to the freedom from insects and diseases, by an Accredited Certifying Official (ACO).

Phytosanitary Certificates Issued	33,981

TOP 10 DESTINATION COUNTRIES & PHYTOSANITARY CERTIFICATES ISSUED (listed greatest to least):
China (4,514), Hong Kong (3,479), Mexico (2,651), Japan (2,232), Republic of Korea (2,133), Australia (2,094), Canada (2,080), India (1,742), Vietnam (1,633), and Philippines (1,237)

MAJOR COMMODITIES EXPORTED:

Grapes, Almonds, Pistachios, Oranges, Potatoes, Carrots, Cotton, Lemon, Tangelos and Other Citrus

PEST ERADICATION

Pink Bollworm Program For Kern County, Cooperative Pink Bollworm Project

Trapping*	0	Natives Detected
Sterile Release*	0	Moths
Plowdown*	30,695	Acres

*Cooperative Pink Bollworm Project

Appendix D
Air Quality Impact Analysis

ESA

Air Quality Impact Analysis

AV Apollo Solar Project
Tehachapi Willow Springs Road
Eastern Kern County, California

Project # 170505.0096

Prepared for:

QK, Inc.
5080 California Avenue, Suite 220
Bakersfield, CA 93309

Prepared by:

5500 Ming Avenue, Suite 140
Bakersfield, California 93309
661-282-2200

July 2017

Table of Contents

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1
2.0 GENERAL PROJECT DESCRIPTION 1
3.0 BACKGROUND OF AIR QUALITY STANDARDS 2
4.0 EXISTING SETTING 4
5.0 CLIMATE 9
6.0 SIGNIFICANCE CRITERIA 10
7.0 PROJECT-RELATED EMISSIONS 12
8.0 CUMULATIVE IMPACTS 17
9.0 IMPACTS TO GLOBAL CLIMATE CHANGE 23
10.0 CONSISTENCY WITH THE AIR QUALITY ATTAINMENT PLAN 26
11.0 MITIGATION AND OTHER RECOMMENDED MEASURES 30
12.0 LEVEL OF SIGNIFICANCE AFTER MITIGATION 31
13.0 APPENDICES 33
14.0 REFERENCES 34

EXECUTIVE SUMMARY

Insight Environmental Consultants, Inc., a Trinity Consultants Company, has completed an Air Quality Impact Analysis (AQIA) for the AV Apollo Solar Project (Project). The Project would be located in the eastern high desert region of unincorporated Kern County, north and south of Backus Road and west of Tehachapi – Willow Springs Road. The Project includes the Sunbow, Syracuse and Tours Solar Project sites (individually, "Sunbow", Syracuse" and "Tours", collectively "Project"). The Project is to be developed by Lendlease Energy Development LLC.

The proposed 492 acre 60 megawatt (MW) Project may be combined and constructed at the same time as a single 60MW (AC) facility or alternatively developed as three independent 20 MW facilities depending on market conditions. The Project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on the Syracuse and Tours project sites.

The Project 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 2016.3.1 (California Air Pollution Control Officers Association (CAPCOA) 2016), the California EPA's EMFAC 2014 Web database (California Air Resources Board (CARB) 2016) and the California Climate Action Registry General Reporting Protocol (Climate Action Registry 2009).

Tables 7-1, 7-2 and 9-1 present the Project's construction, operational and GHG emissions and provide substantial evidence to support a *less than significant* air quality impact in Eastern Kern Air Pollution Control District's (EKAPCD) portion of the Mojave Desert Air Basin (MDAB).

A records search of the Kern County GIS Geocortex IMP Map Viewer and information from Kern County identified fourteen (14) solar projects and seven (7) 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.

1.0 INTRODUCTION

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).

2.0 GENERAL PROJECT DESCRIPTION

The Project would be located in the eastern high desert region of unincorporated Kern County, north and south of Backus Road and west of Tehachapi – Willow Springs Road. The Project includes the Sunbow, Syracuse and Tours Solar Project sites (individually, "Sunbow", Syracuse" and "Tours", collectively "Project"). The Project is to be developed by Lendlease Energy Development LLC.

The proposed 492 acre 60 megawatt (MW) Project may combined and constructed at the same time as a single 60MW (AC) facility or alternatively developed as three independent 20 MW facilities depending on market conditions. The Project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on the Syracuse and Tours project sites. The Project would consist of approximately 258,000 crystalline modules or 490,000 thin film modules arranged in a grid pattern. Site grading and earthwork is anticipated to begin during the first quarter of 2019, with operations beginning in the fourth quarter of 2019. **Figure 2-1** depicts the Project location.

Figure 2-1 - Project Location

Figure 2-2 depicts the Project site's topography based on United States Geological Survey's (USGS) National Map (USGS 2012). The Project site is located at an elevation of approximately 2,950 feet above mean sea level and is surrounded by open high desert scrub lands to the north, south, east, and west. Currently the Project site is essentially an open field.

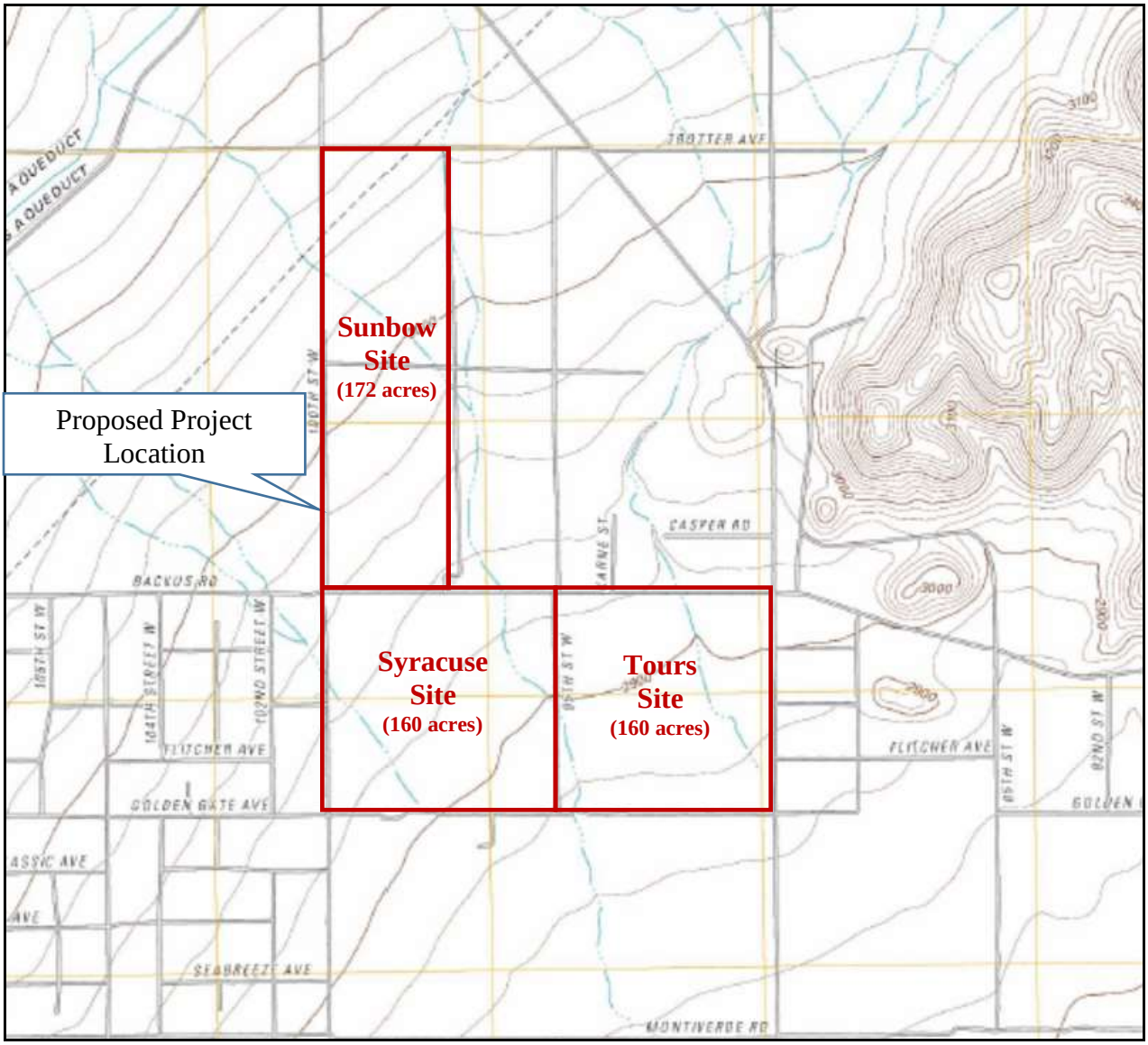


Figure 2-2 – Project Site Topography (USGS – Willow Springs, 2012)

3.0 BACKGROUND OF AIR QUALITY STANDARD

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 (H_2S), 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 4.0** below and further details are included in **Attachments A, B, C** and **D**.

Responsibility for regulation of air quality in California lies with the California Air Resources Board (CARB), 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.

4.0 EXISTING SETTING

The Project area is located in the northwestern portion of the MDAB for which the EKAPCD has jurisdiction to regulate air pollutant emissions.

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 4-1** provides the EKAPCD's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS. **Table 4-2** provides the NAAQS and CAAQS.

Table 4-1 - EKAPCD 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]	Nonattainment / Marginal	Part of EKAPCD Area	Unclassifiable/ Attainment	Nonattainment
PM10	Unclassifiable/ Attainment	Serious Nonattainment	Attainment Maintenance	Nonattainment
PM2.5	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 2016
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.
[8] Attainment for 1997 8-hour Ozone NAAQS (0.08 ppm), Nonattainment/Marginal for 2008 NAAQS (0.075 ppm), and Nonattainment State 8-hour standard (0.070 ppm)

Table 4-2 - Federal & California Standards

		NAAQS	CAAQS
Pollutant	**Averaging Time**	**Concentration**	
O_3	8-Hour	0.070 ppm (137 μg/m³) [a]	0.070 ppm (137 μg/m³)
	1-Hour		0.09 ppm (180 μg/m³)
CO	8-Hour	9 ppm (10 mg/m³)	9 ppm (10 mg/m³)
	1-Hour	35 ppm (40 mg/m³)	20 ppm (23 mg/m³)
NO_2	Annual Average	53 ppb (100 μg/m³)	0.030 ppm (57 μg/m³)
	1-Hour	100 ppb (188.68 μg/m³)	0.18 ppm (339 μg/m³)
SO_2	3-Hour	0.5 ppm (1,300 μg/m³)	
	24 Hour	0.14 ppm (365 μg/m³)	0.04 ppm (105 μg/m³)
	1-Hour	75 ppb (196 μg/m³)	0.25 ppm (655 μg/m³)
Particulate Matter (PM10)	Annual Arithmetic Mean		20 μg/m³
	24-Hour	150 μg/m³	50 μg/m³
Fine Particulate Matter (PM2.5)	Annual Arithmetic Mean	12 μg/m³	12 μg/m³
	24-Hour	35 μg/m³	
Sulfates	24-Hour		25 μg/m³
Pb [d]	Rolling Three-Month Average	0.15 μg/m³	
	30 Day Average		1.5 μg/m³
H_2S	1-Hour		0.03 ppm (42 μg/m³)
Vinyl Chloride (chloroethene)	24-Hour		0.010 ppm (26 μg/m³)
Visibility Reducing particles	8 Hour (1000 to 1800 PST)		[b]
ppm = parts per million ppb = parts per billion	mg/m3 = milligrams per cubic meter	μg/m ³= micrograms per cubic meter	

Source: CARB 2016b

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, the 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.

As noted above in **Table 4-1**, the EKAPCD has been designated as unclassifiable/attainment for the NAAQS for CO, PM_{10}, $PM_{2.5}$, and Lead, nonattainment/marginal 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 PM_{10}, unclassified $PM_{2.5}$ and CO, and attainment for NO_X, SO_X and Lead. A state designation for hydrogen sulfide (H_2S) 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 Mojave Desert Air Basin is provided in **Figure 4-1** below.

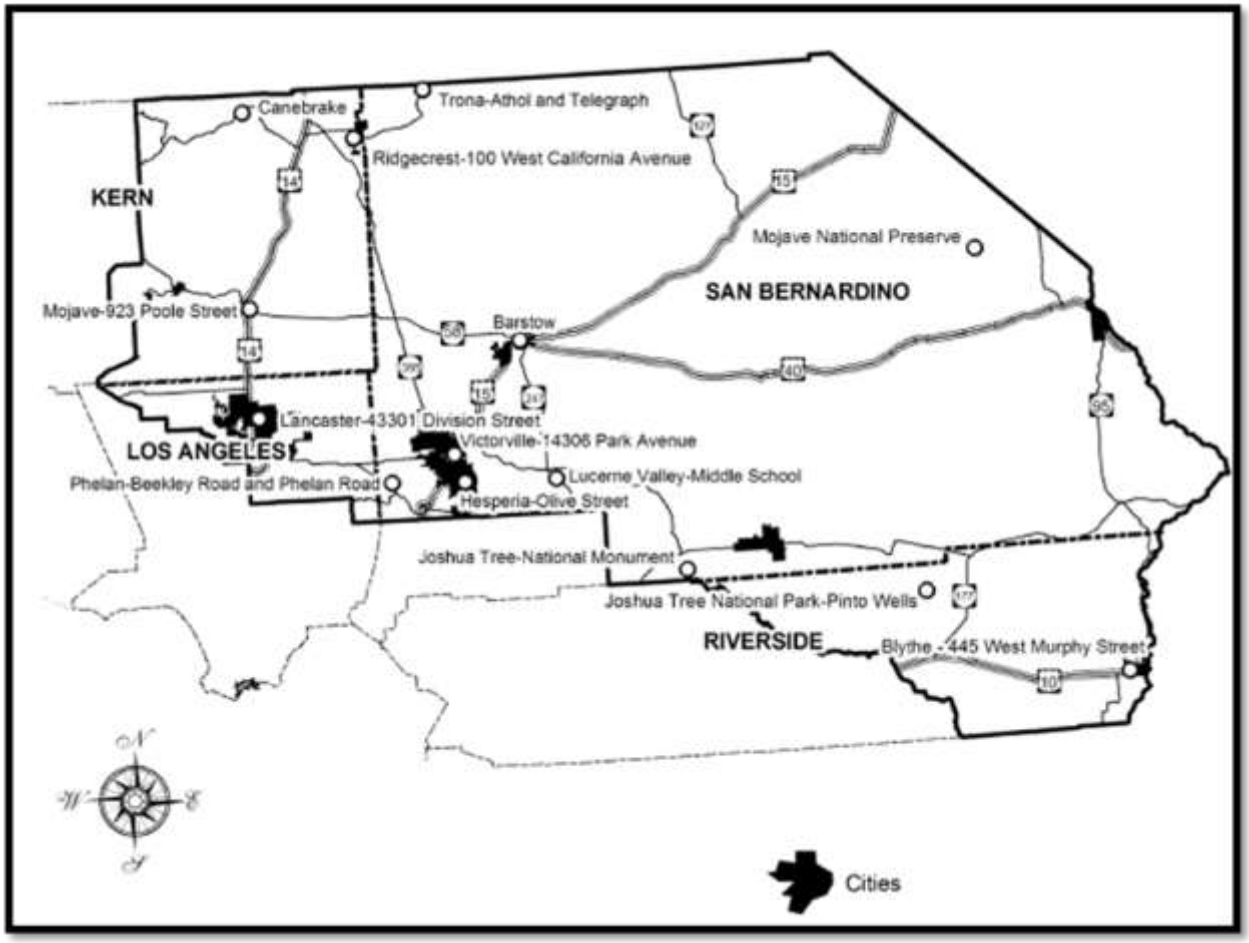


Figure 4-1 – CARB Monitoring Network

Existing Air Quality

For the purposes of background data and this air quality assessment, this analysis relied on data collected between 2013 and 2015 at the CARB monitoring stations that are located in the closest proximity to the Project site. **Table 4-3** provides the background concentrations for O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, and Pb as of November 2016. Information is provided for the Mojave – 923 Poole Street, Mojave National Preserve, Barstow, Trona – Athol and Telegraph, Canebrake, Ridgecrest – 100 West California Avenue, Lancaster – 43301 Division Street, and Bakersfield – 5558 California Avenue Monitoring Stations. No data

is available for CO, SO_2, H_2S, Vinyl Chloride or other toxic air contaminants in eastern Kern County.

Table 4-3 - Existing Air Quality Monitoring Data in Project Area

	Maximum Concentration			Days Exceeding Standard		
Pollutant and CARB Monitoring Station Location	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**
O_3 – 1-hour CAAQS (0.09 ppm)						
Mojave – 923 Poole Street	0.104	0.104	0.104	9	1	2
Mojave National Preserve	0.085	*	0.106	0	*	2
Barstow	0.094	0.090	0.089	0	0	0
Trona - Athol and Telegraph	0.076	0.076	0.100	0	0	1
O_3 – 8-hour CAAQS (0.07 ppm)						
Mojave – 923 Poole St.	0.096	0.085	0.093	95	33	60
Mojave National Preserve	0.082	*	0.083	13	*	21
Barstow	0.087	0.083	0.084	37	20	27
Trona - Athol and Telegraph	0.072	0.072	0.077	1	2	11
O_3 – 8-hour NAAQS (0.07 ppm)						
Mojave – 923 Poole St.	0.095	0.084	0.093	88	31	52
Mojave National Preserve	0.081	*	0.082	10	*	18
Barstow	0.087	0.082	0.083	33	18	25
Trona - Athol and Telegraph	0.071	0.071	0.077	1	2	10
PM10 – 24-hour CAAQS (50 µg/m3)						
Canebrake	78.9	59.4	52.9	2	1	1
Ridgecrest – 100 West California Avenue	47.6	43.2	59.0	0	0	1
Trona - Athol and Telegraph	*	*	*	*	*	*
PM10 – 24-hour NAAQS (150 µg/m^3)						
Canebrake	86.6	67.1	58.9	0	0	0
Ridgecrest – 100 West California Avenue	51.8	44.5	66.2	0	0	0
Trona - Athol and Telegraph	184.9	112.1	138.0	2	0	0
PM2.5 - 24-hour NAAQS (35 µg/m3)						
Mojave – 923 Poole St.	36.5	42.2	25.7	1	2	0
Lancaster – 43301 Division Street	42.0	10.4	64.8	1	0	2
Ridgecrest – 100 West California Avenue	10.5	12.5	25.8	0	0	0
CO - 8-Hour CAAQS & NAAQS (9.0 ppm)						
Lancaster – 43301 Division Street	*	*	*	*	*	*
Victorville – 14306 Park Avenue	*	*	*	*	*	*
NO2 - 1-Hour CAAQS (0.18 ppm)						
Barstow	0.069	0.061	0.066	0	0	0
Trona - Athol and Telegraph	0.045	0.068	0.223	0	0	2
NO2 - 1-Hour NAAQS (0.10 ppm)						
Barstow	0.069	0.061	0.066	0	0	0
Trona - Athol and Telegraph	0.045	0.068	0.223	0	0	4
SO2 – 24-hour Concentration - CAAQS (0.04 ppm) & NAAQS (0.14 ppm)						
Trona - Athol and Telegraph	*	*	*	*	*	*
Victorville – 14306 Park Avenue	*	*	*	*	*	*
Pb - Maximum 30-Day Concentration CAAQS (1500 ng/m3)						
Bakersfield – 5558 California Avenue	14	9.5		*	*	

Source: CARB 2016a.
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.

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 (NOx). 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 4-3** shows that the Mojave, Barstow and Trona area monitoring stations exceeded the 1-hour average ambient O_3 CAAQS and the 8-hour average ambient O_3 NAAQS and CAAQS between 2013 through 2015.

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 PM_{10} and $PM_{2.5}$ 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 4-3** shows that PM_{10} levels exceeded the CAAQS during 2013 through 2015, exceeded the NAAQS in 2014, and exceeded the $PM_{2.5}$ NAAQS between 2013 and 2015. Similar levels can be expected to occur in the vicinity of the Project site.

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 San Joaquin 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 4-3** reports insufficient data for the CO monitoring at the Lancaster or Victorville monitoring stations during the three-year period from 2013 through 2015.

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 NOx 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 4-3** shows that neither the Federal or State NO_2 standards were exceeded at the Lancaster or Trona area-monitoring stations over the three-year period of 2013 through 2015. Hydrocarbons are not currently monitored.

Sulfur Dioxide (SO_2)

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 (SOx), 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. SOx can also react to produce sulfates that reduce visibility and sunlight. **Table 4-3** shows no exceedances were recorded over the three-year period at the Trona and Victorville monitoring stations.

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 4-3** 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.

5.0 CLIMATE

Climate of the project area is a high desert type, characterized by moderate, dry winters and hot, dry summers. Evening temperatures drop to the mid to upper 60s and rise to the upper 90s during the summers. Mean monthly temperature for the year is reported to be 75.8°F with extremes of 118°F and 53°F. The mean annual precipitation in Mojave, California is 5.93 inches, the bulk of which falls during the period November through March. Snowfall rarely occurs from November through March.

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 Mojave, California monitoring station. **Table 5-1** presents average precipitation data recorded at the Mojave, California monitoring station from January 1904 through June 2016 (the most recent data available).

Table 5-1 – Mojave, California Weather Data

Period of Record Monthly Climate Summary for the Period 1/1/1904 to 6/8/2016													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Maximum Temp (F)	57.8	61.2	64.7	71.3	79.9	89.9	97.6	96.4	89.0	78.5	65.7	57.2	75.8
Average Minimum Temp (F)	34.2	37.1	41.0	46.3	55.1	63.8	69.7	68.0	60.3	50.3	40.2	32.9	49.9
Average Total Precip.(in.)	1.20	1.27	0.93	0.30	0.09	0.03	0.11	0.15	0.21	0.24	0.53	0.87	5.93
Average Snowfall (in.)	0.8	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.7
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.: 65.4% Min. Temp.: 65.2% Precipitation: 97.3% Snowfall: 97.1% Snow Depth: 96.5%													

Source: Western Regional Climate Center, 2017.

6.0 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 used 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.

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 NO_X 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 6-1.

Table 6-1 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
PM10	-	15 tons/yr
PM2.5	-	15 tons/yr

Sources: EKAPCD1999 and EKAPCD2000/c2017.

Thresholds 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 4-2) 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.

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 6-2.

Table 6-2 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		

Global Climate Change Thresholds of Significance

On March 8, 2012, the EKAPCD adopted *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 32or 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.

7.0 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.

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 2016); this fleet mix was adjusted by factoring the 20 MW solar project equipment to reflect equipment for three phased 20 MW installations comprising a 60MW project. EMFAC2014 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 1,385 heavy duty truck trips delivering the 748,000 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 60 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; and
- Reduce vehicle speed to less than 15 miles per hour.

Table 7-1 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 EMFAC2014 and AP-42 are available in **Attachment E.**

TABLE 7-1 – Short-Term Project Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2019 Mitigated Emissions						
Panel Delivery from Port of Los Angeles	0.052	1.998	0.203	0.006	0.052	0.029
Panel Delivery – on-site fugitive dust					0.379	0.038
Construction Equipment & Worker Travel	0.474	4.488	3.335	0.009	0.549	0.276
Total Construction Emissions	0.526	6.486	3.538	0.015	0.981	0.342
EKAPCD Threshold	25	25	NA	27	15	15
Is Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Source: Insight Environmental Consultants 2017						

As calculated with CalEEMod, EMFAC 2014, and AP-42 emission factors using the specified equipment listing (see **Attachment E**), the estimated short-term construction-related emissions would *not exceed*

EKAPCD significance threshold levels during the construction year of 2019 and would therefore be *less than significant*.

Long-Term Operations Emissions

Long-term emissions are caused by operational mobile sources from periodic maintenance and cleaning of the solar panels. There were three categories of mobile sources generating long-term emissions: water trucks, maintenance trucks and employee vehicles.

Water Truck Emissions

Water trucks would clean the solar panels quarterly and would be a source of ROG, NOx, SOx, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. The client estimated that water trucks would travel four miles from the Project site for 56 round trips each quarter. EMFAC2014 was used to estimate off-site and on-site water truck emissions; the year 2019 was conservatively applied (Project operations are anticipated to start in the Year 2020). 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 three round trip truck trips per quarter and would be a source of ROG, NOx, SOx, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. EMFAC2014 was used to estimate maintenance truck emissions; the year 2019 was conservatively applied (Project operations is anticipated to start in the Year 2020). 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 five round 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. EMFAC2014 was used to estimate employee vehicle emissions; the year 2019 was conservatively applied (Project operations is anticipated to start in the Year 2020). 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).

Projected Emissions

The proposed Project's long-term air quality emissions are shown in **Tables 7-2**. The emission calculation based on the emission factors from EMFAC2014 and AP-42 are available in **Attachment E.**

Table 7-2 summarizes the Project emissions at full buildout which will occur in year 2020.

TABLE 7-2 – Post-Project (Full Buildout Operational) Emissions

Emissions Source	Pollutant (tons/year)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Mitigated Emission Estimates						
Water Truck Off-Site Emissions	0.0002	0.0043	0.0009	0.0001	0.0008	0.0003
Water Truck On-Site Emissions	0.0004	0.0103	0.0020	0.0000	0.0000	0.0000
Water Truck On-Site Fugitive Dust Emissions					0.0756	0.0076
Maintenance Truck Off-Site Emissions	0.0000	0.0001	0.0009	0.0000	0.0000	0.0000
Maintenance Truck On-Site Fugitive Dust Emissions					0.0033	0.0003
Employee Vehicle Off-Site Emissions	0.0000	0.0001	0.0010	0.0000	0.0000	0.0000
Employee Vehicle On-Site Fugitive Dust Emissions					0.0050	0.0005
Mitigated Operational Emissions	0.0006	0.0149	0.0048	0.0001	0.0848	0.0088
EKAPCD Threshold	25	25	---[2]	27	15	15
Is Threshold Exceeded After Mitigation?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: Insight Environmental Consultants 2016
Notes: 1) Emissions equaling 0.0000 could represent emissions <0.00005.
2) The EKAPCD has no established threshold.

As shown in **Table 7-2**, operational-related emissions, as estimated with EMFAC2014 and AP-42 emissions factors (see **Attachment E**), would be below the EKAPCD significance threshold levels. Therefore, the proposed Project would have *a less than significant long term air quality impact.*

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.

<u>Potential Impacts on Sensitive Receptors</u>

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 proposed residential sensitive receptors are immediately west of the proposed Project site. There are no known non-residential sensitive receptors within 2 miles of the Project site as detailed below in **Table 7-3**.

Table 7-3 – Sensitive Receptors Located ≤ 2 Miles from Project

Receptor	Type of Facility	Distance from Project in Miles	Direction from Project
NONE	-	-	-

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.

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 PM10 emissions increase are predicted to be less than the PSD threshold levels, an impact at any Class 1 area 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.

Potential Impacts from Carbon Monoxide (CO) – Mobile Sources

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.

Predicted Health Risk Impacts

Projects are considered for potential health risks wherein a new or modified source of 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 is a photovoltaic solar generation facility and is not anticipated to generate any additional sources of toxic air contaminates with the exception of increased diesel particulate matter (DPM) from construction, facility maintenance and solar panel cleaning activities. However, despite

being estimated conservatively, the quantity of increased on-site DPM from the Project is well below any typical screening levels for air toxics. Therefore, the project would not be expected to generate a health risk impact due to its activity and size. Its potential health risk impacts would therefore be considered *less than significant* and no further health risk assessment is required.

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 7-3** lists no known sensitive receptors that are in relative 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.

Impacts to the 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.

8.0 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.*"[1] 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 PM_{10} if several projects conduct grading or earthmoving activities at the same time; and
- Hazardous Air Pollutant (HAP) Impacts on sensitive receptors from within the recommended screening radius of one mile.

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

The cumulative analysis is based on a quantitative cumulative analysis of projects located within a six-mile radius of the proposed Project. A six-mile radius is for cumulative project analysis is required within Kern County.

The cumulative analysis quantifies operational and area impacts proposed by the project as well as all identified projects within close proximity (six-miles) 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, NOx, CO and PM_{10}.

Cumulative Regional Air Quality Impacts

The most recent, certified MDAB Emission Inventory data available from the EKAPCD is based on data gathered for the 2012 annual inventory (see **Attachment F**).[2] This data will be used to assist the EKAPCD in demonstrating attainment of Federal 1-hour O_3 Standards. **Table 8-1** provides a comparative look at the impacts proposed by the proposed Project to the MDAB Emissions Inventory.

Table 8-1 – Comparative Analysis Based on MDAB 2012 Inventory

Emissions Inventory Source	Pollutant (tons/year)					
	ROG	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Kern County – 2012	15,148	13,140	64,532	1,205	9,746	5,804
MDAB – 2012	41,282	63,839	175,346	3,139	53,728	18,141
Proposed Project	0.0006	0.0149	0.0048	0.0001	0.0848	0.0088
Proposed Project's % of Kern	0.0000	0.0000	0.0000	0.0000	0.0009	0.0002
Proposed Project's % of MDAB	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000

Source: CARB 2017
Notes: 1) Percentages equaling 0.0000 could represent a percent <0.00005.
2) This is the latest inventory available as of August 2017.

As shown in **Table 8-1** the proposed Project does not pose a significant increase to basin emissions, as such basin emissions would be essentially the same if the Project is approved.

Tables 8-2 through **8-4** provide CARB Emissions Inventory projections for the year 2020 for both the MDAB and the Kern County portion of the air basin (see **Attachment G**). Looking at the MDAB Emissions predicted by the CARB year 2020 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.

[2] EKAPCD Emissions for Aggregated Stationary, Area-Wide, Mobile and Natural Sources

Table 8-2 – Emission Inventory MDAB 2020 Projection – Tons per Year

	ROG	NO_X	PM_{10}
Total Emissions	41,501	57,415	59,459
Percent Stationary Sources	21.37	52.89	26.21
Percent Area-Wide Sources	13.46	1.14	58.81
Percent Mobile Sources	23.31	45.33	5.16
Percent Natural Sources	41.86	0.70	9.82
Total Stationary Source Emissions	8,870	30,368	15,586
Total Area-Wide Source Emissions	5,585	657	34,967
Total Mobile Source Emissions	9,673	26,025	3,066
Total Natural Source Emissions	17,374	402	5,840

Source: CARB 2017
Note: Total may not add due to rounding.

Table 8-3 – Emission Inventory MDAB – Kern County Portion 2020 Estimate Projection – Tons per Year

	ROG	NO_X	PM_{10}
Total Emissions	14,746	12,629	9,819
Percent Stationary Sources	3.22	60.69	17.84
Percent Area-Wide Sources	3.96	0.87	29.37
Percent Mobile Sources	16.34	37.57	12.64
Percent Natural Sources	76.49	0.87	40.15
Total Stationary Source Emissions	475	7,665	1,752
Total Area-Wide Source Emissions	584	110	2,884
Total Mobile Source Emissions	2,409	4,745	1,241
Total Natural Source Emissions	11,279	110	3,942

Source: CARB 2017
Note: Total may not add due to rounding.

Table 8-4 – 2020 Emissions Projections – Proposed Project, Kern County and MDAB

	ROG	NO_X	PM_{10}
Proposed Project	0.0006	0.0149	0.0848
Kern County	14,746	12,629	9,819
MDAB	41,501	57,415	59,459
Proposed Project Percent of Kern County	0.0000	0.0000	0.0009
Proposed Project Percent of MDAB	0.0000	0.0000	0.0001
Kern County Percent of MDAB	35.5317	21.9960	16.5139

Source: CARB 2017

Note:
1) The emission estimates for Kern County and the MDAB are based on 2020 projections. The Proposed Project emission estimates are for the proposed emissions that are not already included in the MDAB Emissions Inventory. Project emissions are conservatively based year 2019 (Project operations are anticipated to start in the Year 2020). The Project's emissions are expected to decline as cleaner, less polluting vehicles replace vehicles with higher emissions.
2) Percentages equaling 0.0000 could represent a percent <0.00005.

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.

The most recent, certified MDAB Emission Inventory data available from the CARB is based on data gathered for the 2012 annual inventory (CARB 2016). This data will be used to assist the EKAPCD in demonstrating attainment of Federal 8-hour O_3 Standards and contained 41,282 tons per year ROG and 63,839 tons per year NOx from all sources. On a regional basis, the proposed Project represents less than 0.00005% of the ROG and NOx emissions of the 2012 inventory of the MDAB. The projected emissions posed by the Project upon the air basin would be *less than significant* because basin emissions would be essentially the same whether or not the Project is built.

Cumulative Localized Air Quality Impacts

There are fourteen (14) other planned developments found within a six-mile radius of the Project based on a review of the Kern County GIS database as well as a list provided by the Kern County including any known solar projects in the area. **Tables 8-5 and 8-6** provides a summary of the construction and operational emissions of the cumulative projects list (see **Attachment H**). The cumulative projects listed in **Tables 8-5 and 8-6** is only a 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.

TABLE 8-5 – Cumulative Construction Emissions

Solar Projects Within Six Miles (Approved, Not Built Yet)	Pollutant (tons/year)1					
	ROG	NO_X	CO	SO_X	PM10	PM2.5
Kern County						
Aurora Solar, 320 acres	0.318	3.301	2.208	0.007	0.440	0.192
First Rosemond Solar, 150 MW, 1296 acres	1.224	12.688	8.487	0.026	1.691	0.738
Morgan Hills Wind Energy Project, 200 MW, 3808 acres	1.632	16.918	11.316	0.035	2.254	0.984
Willow Springs Solar Array, 160 MW, 1402 acres	1.306	13.534	9.053	0.028	1.804	0.787
Valentine Solar, 115 MW, 1430 acres	0.938	9.728	6.507	0.020	1.296	0.566
IP Solar, 15 MW, 40 acres	0.122	1.269	0.849	0.003	0.169	0.074
WOG Solar Project, 20 MW, 120 acres	0.163	1.692	1.132	0.004	0.225	0.098
GE Energy, 20 MW, 820 acres	0.163	1.692	1.132	0.004	0.225	0.098
Gettysburg Solar, 20 MW, 159 acres	0.163	1.692	1.132	0.004	0.225	0.098
Pigott/Windhub Solar, 20 MW, 304 acres	0.163	1.692	1.132	0.004	0.225	0.098
Bender/Mojave Solar Park, 29 acres	0.029	0.299	0.200	0.001	0.040	0.017
Monte Vista Solar, 1040 acres	1.035	10.728	7.176	0.022	1.430	0.624
Sinarpower, 17.5 acres	0.143	1.480	0.990	0.003	0.197	0.086
Aeromen Solar, 25 MW, 237 acres	0.204	2.115	1.415	0.004	0.282	0.123
Other Projects within Six Mile						
Blue Eagle Lode Mining Company, 1.75 acres	1.056	1.217	0.975	0.008	0.100	0.078

Renhong Qu Dog Kennels, 4.7 acres	0.274	2.387	1.823	0.004	0.211	0.145
AT&T Wireless Tower, 1.25 acres	0.812	1.188	0.973	0.002	0.100	0.078
Dmohowski Animal Shelter, 50 additional dogs	0.355	0.699	0.470	0.001	0.056	0.045
Frieling Animal Keeping, 40 acres	20.269	8.427	7.337	0.026	1.749	0.694
Ojeda Recycling Collection, no data	0.000	0.000	0.000	0.000	0.000	0.000
Garcia, one mobile home	0.068	0.662	0.431	0.001	0.047	0.042
Cumulative Emissions	31.008	115.311	66.965	0.269	17.499	6.398
Project Emissions	*0.526*	*6.486*	*3.538*	*0.015*	*0.981*	*0.342*
Total Cumulative Plus Project	31.534	121.796	70.504	0.284	18.480	6.741

Source: Insight Environmental Consultants 2017

1. These emissions are overestimated and include all years of construction not just a single year, as they are discretionary projects that are subject to various mitigation measures that have not yet been determined nor their impacts reduced herein.

TABLE 8-6 – Cumulative Operational Emissions

Solar Projects Within Six Miles (Approved, Not Yet Built)	**Pollutant (tons/year)**					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Aurora Solar, 320 acres	0.000	0.010	0.003	0.000	0.055	0.006
First Rosemond Solar, 150 MW, 1296 acres	0.001	0.037	0.012	0.000	0.212	0.022
Morgan Hills Wind Energy Project, 200 MW, 3808 acres	0.002	0.050	0.016	0.000	0.283	0.029
Willow Springs Solar Array, 160 MW, 1402 acres	0.002	0.040	0.013	0.000	0.226	0.023
Valentine Solar, 115 MW, 1430 acres	0.001	0.028	0.009	0.000	0.162	0.017
IP Solar, 15 MW, 40 acres	0.000	0.004	0.001	0.000	0.021	0.002
WOG Solar Project, 20 MW, 120 acres	0.000	0.005	0.002	0.000	0.028	0.003
GE Energy, 20 MW, 820 acres	0.000	0.005	0.002	0.000	0.028	0.003
Gettysburg Solar, 20 MW, 159 acres	0.000	0.005	0.002	0.000	0.028	0.003
Pigott/Windhub Solar, 20 MW, 304 acres	0.000	0.005	0.002	0.000	0.028	0.003
Bender/Mojave Solar Park, 29 acres	0.000	0.001	0.000	0.000	0.005	0.001
Monte Vista Solar, 1040 acres	0.001	0.031	0.010	0.000	0.179	0.019
Sinarpower, 17.5 acres	0.000	0.004	0.001	0.000	0.025	0.003
Aeromen Solar, 25 MW, 237 acres	0.000	0.006	0.002	0.000	0.035	0.004
Other Projects within Six Mile						
Blue Eagle Lode Mining Company, 1.75 acres	0.571	2.309	1.744	0.009	0.426	0.125
Renhong Qu Dog Kennels, 4.7 acres	0.015	0.167	0.118	0.001	0.028	0.008

AT&T Wireless Tower, 1.25 acres	0.431	1.905	1.550	0.008	0.407	0.119
Dmohowski Animal Shelter, 50 additional dogs	0.235	1.039	0.845	0.004	0.222	0.065
Frieling Animal Keeping, 40 acres	8.944	1.506	1.114	0.005	0.273	0.078
Ojeda Recycling Collection, no data	0.000	0.000	0.000	0.000	0.000	0.000
Garcia, one mobile home	0.072	0.035	0.113	0.000	0.019	0.013
Cumulative Emissions	10.278	7.192	5.558	0.028	2.691	0.544
Project Emissions	*0.001*	*0.015*	*0.005*	*0.000*	*0.085*	*0.009*
Total Cumulative Plus Project	10.278	7.207	5.562	0.028	2.776	0.553
Source: Insight Environmental Consultants 2017						

As details regarding the various projects listed above were not readily available, the emissions estimates presented were modeled using the CalEEMod computer model to predict cumulative impacts using default model settings (see **Attachment H** for output results). Emissions for the construction and operational phases of each project were based on total number of lots or square footage for maximum project build-out as noted on the Kern County GIS Geocortex Online Mapping information. No mitigation measures were applied to any of the projects as it is not known which, if any, would be required by Kern County or which may be voluntarily proposed by each developer or required by code or regulation. Additionally, no cumulative significance thresholds are shown since no cumulative thresholds have been established by the EKAPCD, CARB or other regulatory authority. These projects represent all known and reasonably foreseeable projects in the area. 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).

Cumulative Hazardous Air Pollutants (HAPs)

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.

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.

9.0 IMPACTS TO GLOBAL CLIMATE CHANGE

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 BAU. This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from BAU. 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 6.0 Significance Criteria, the EKAPCD 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.

Global Climate Change Impacts from the Proposed Project

The Earth's atmosphere naturally includes a number of gases, including CO_2, methane, and nitrous oxides (N_2O) that are referred to as GHGs. These gases trap some amount of solar radiation and the Earth's own radiation, preventing it from passing through Earth's atmosphere and into space. GHGs are vital to life on Earth; without them Earth would be an icy planet. CO_2 is also a trace element that is essential to the cycle of life. It is essential to plant growth and studies have shown that vegetation growth has increased in North America commensurate with the increase in CO_2 over the past decades. However, increasing GHG concentrations tend to warm the planet. A warming trend of about 0.7°F to 1.5°F reportedly occurred during the 20th century, and a number of scientific analyses indicate that rising levels of GHGs in the atmosphere may be contributing to climate change.

As the average temperature of the Earth increases, weather may be affected, including changes in precipitation patterns, accumulation of snow pack, and intensity and duration of spring snowmelt. There may be rises in sea level, resulting in coastal erosion and inundation of coastal areas. Emissions of air pollutants and ambient levels of pollutants also may be affected in areas. Climate zones may change, affecting the ecology and biological resources of a region. There may be changes in fire hazards due to the changes in precipitation and climate zones.

While scientists have established a connection between increasing CO_2 concentrations and increasing average temperatures, important scientific questions remain about how much warming will occur, how fast it will occur, and how the warming will affect the rest of the climate system. At this point, scientific efforts are unable to quantify the degree to which human activity impacts climate change. The phenomenon is worldwide, yet it is expected that there will be substantial regional and local variability in climate changes. It is not possible with today's science to determine the effect of global climate change in a specific locale, or whether the effect of one aspect of climate change may be counteracted by another aspect of climate change, or exacerbated by it.

Human activities generate GHGs. Since pre-industrial times, there has been a build-up of levels of gases like CO_2 in the atmosphere. The human contribution to the increase in atmospheric CO_2 concentrations largely has resulted from the burning of fossil fuels. Fossil fuel combustion accounts for approximately 98 percent of CO_2 emissions from human activity.

The United States has the second highest emissions of GHGs of any nation on Earth, though CO_2 emissions in California are less than the national average, both in per capita emissions and in emissions per gross state product. Transportation is the largest source of CO_2 emissions in California, accounting for approximately 41 percent of total emissions. Electricity generation accounts for approximately 22 percent of CO_2 emissions in California, and the industrial sector accounts for approximately 20.5 percent.

There are a number of factors available for estimating the GHG emissions. Not all GHGs exhibit the same ability to induce climate change; as a result, GHG contributions are commonly quantified in carbon dioxide equivalents (CO_2e). The proposed Project's construction and operational GHG emissions were estimated using the CalEEMod and EMFAC2014 programs. Additionally, the GHG savings from a 32 MW solar project were estimated through applying the California Climate Action Registry Reporting Protocol (Version 3.1) GHG emissions savings for solar projects. These Project's annualized construction and operations emissions as well as GHG savings are summarized in **Table 9-1** (**Attachment E)**.

Table 9-1 – Estimated Annual GHG Emissions (Tons/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Emissions -2019	1405.514	0.207	0.002	1411.218
Annualized Construction Emissions[1]	46.850	0.007	0.000	47.041
Total Project Operational Emissions	13.211	0.000	0.000	7.012
Total Project Emissions	60.061	0.007	0.000	54.052
GHG Savings from Solar Project[2]	(47,844.98)	(0.365)	(0.201)	(47,915.00)
Net Project Savings	(47784.92)	(0.358)	(0.201)	(47,861.19)
EKACPD's Significance Threshold	**-**	**-**	**-**	**25,000**
Significance Threshold Exceeded?	**-**	**-**	**-**	**NO**

*Note: 0.00 could represent <0.00
[1] Per South Coast AQMD's Methodology: Construction emissions are annualized over a 30 year period.
[2] California Climate Action Registry Reporting Protocol (Version 3.1).

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 9-1,** 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 47,875 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.

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 CO_2 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 9-2 – 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 9-1** 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.*

10.0 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.

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 EKAPCD has implemented the current, modified, AQAP as approved by the CARB. The current AQAP is under review by the U.S. EPA.
2. *The proposed Project must be consistent with the growth assumptions of the applicable AQAP*. The proposed Project is included within the population and employment increases projected in the Kern County General Plan (**Tables 10-1 and 10-2**).
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.

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 population and household increases are planned for the project area (**Table 10-1** 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*.

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 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 "E-A-FP" for Exclusive Agriculture - Floodplain and would be included in the regional growth forecast (see **Figure 10-1 and Table 10-1**).

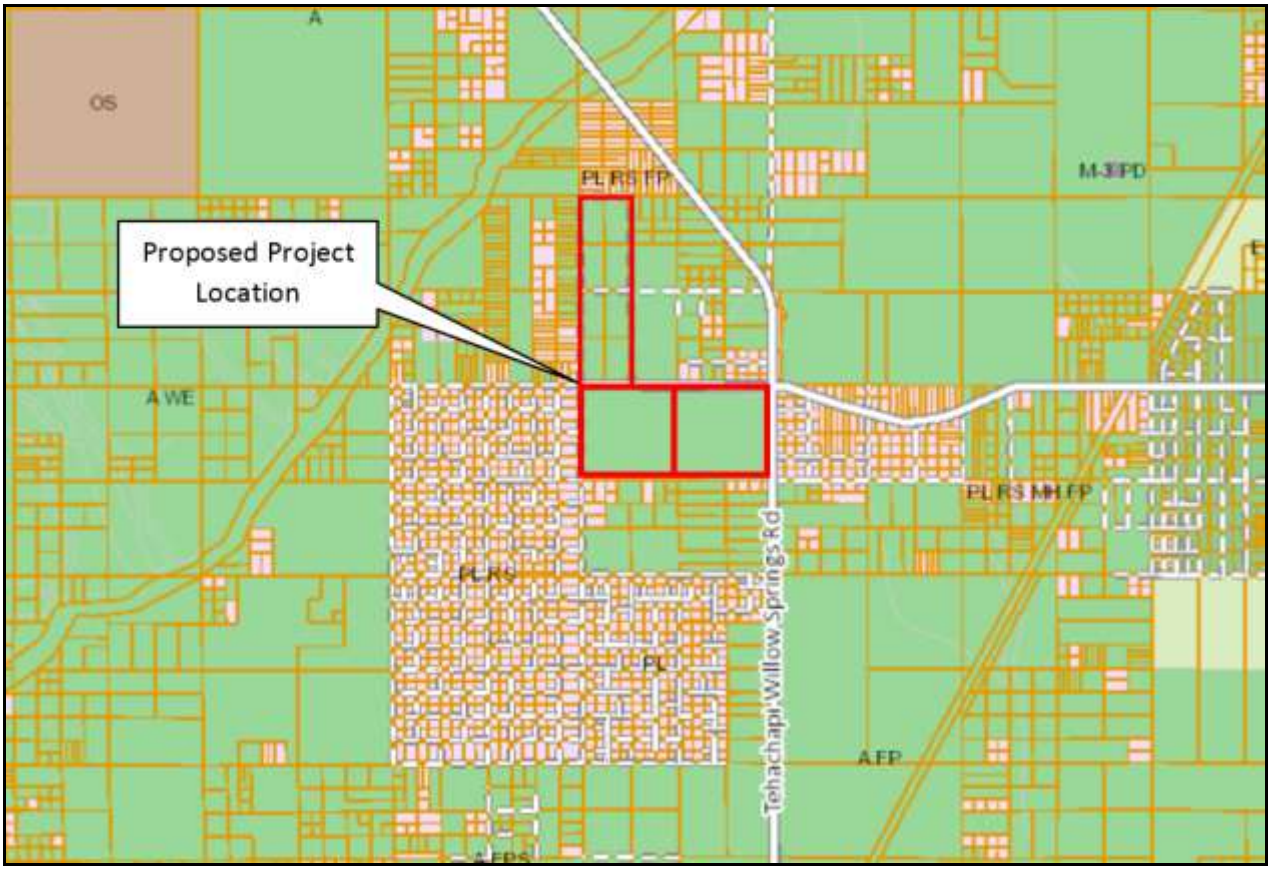


Figure 10-1 – Kern County Zoning

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 10-2**); 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: 755, 781, 824-827, 829-833, 1588, 1589, 1593, 1594 and 1615.

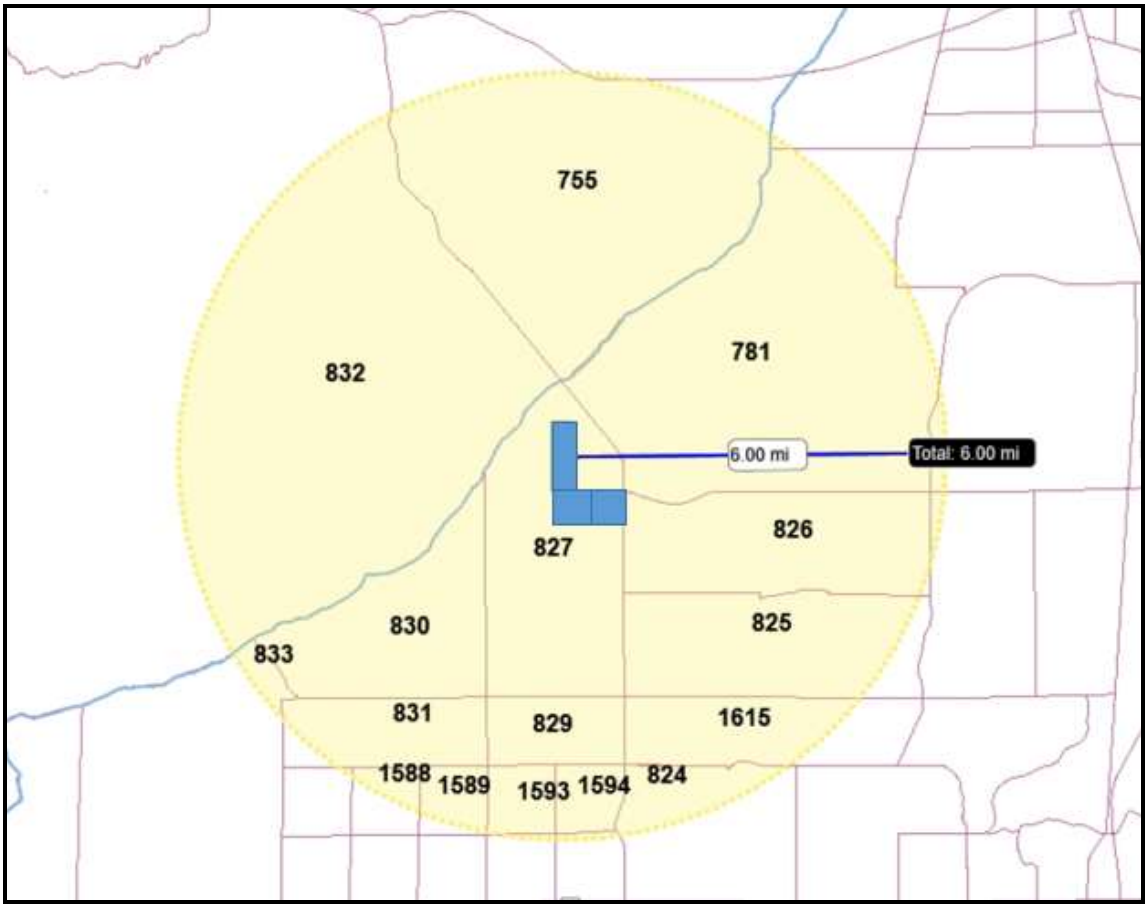


Figure 10-2 – 6-Mile TAZ Map

Table 10-1 – TAZ Analysis Area Projected Growth Analysis

Years:	2015	2020	2030
Population	1,117	1,222	1,463
Households	430	470	562
Employment	554	719	1,072

Table 10-2 provides the percent increase/decrease for the analysis area population, households and employment. This comparison contrasts both 2020 and 2030 to baseline year 2015.

Table 10-2 – Percent Increase/Decrease on TAZ Analysis Area

Years	Percent Increase / Decrease		
	Population	Households	Employment
2015*	0	0	0
2020	9	9	30
2030	20	20	49

*Baseline year of 2015 was valued at "0" to measure net percent increase/decrease.

Given there is already enough population and employment to account for the proposed solar facility, the Project is consistent with the regional growth forecast (see **Figure 10-1 and Tables 10-1 and 10-2**).

11.0 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:

Suggested 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.

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.

- 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.

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

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

Dust

- Onsite vehicle speed should be limited to 15 mph.
- 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.

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.

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).

12.0 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 required.

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 required.

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 will create a reduction in GHG emissions and would be considered *less than significant.*

13.0 ATTACHMENTS

A. Ozone Concentration Data
B. PM_{10} and $PM_{2.5}$ Concentration Data
C. NOx Concentration Data
D. Lead Concentration Data
E. Project Emissions Calculations
    - Proposed Project Construction Emissions Estimates - CalEEMod v.2016.3.1 Output & EMFAC2014 & AP-42 emissions estimates
    - Proposed Project Operations Emissions Estimates - EMFAC2014 & AP-42 emissions estimates
    - GHG EMFAC2014 Project-related emissions & Climate Action Registry savings
F. California Air Resources Board 2012 Estimated Annual Average Emissions
    - MDAB
    - Kern County
G. California Air Resources Board 2020 Forecasted Annual Average Emissions Estimated Annual Average Emissions
    - MDAB
    - Kern County
H. Cumulative Projects - CalEEMod v.2016.3.1 Output

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Attachment A

Ozone Concentration Data

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

iADAM

at Trona-Athol and Telegraph

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 6	0.071	Jun 18	0.071	Jul 15	0.077
Second High:	Jun 5	0.069	Aug 22	0.071	Jul 23	0.075
Third High:	Apr 21	0.068	Jun 17	0.070	Jun 26	0.074
Fourth High:	Jun 9	0.068	Aug 20	0.068	Jul 16	0.073
California Std (0.070 ppm):						
First High:	Jun 6	0.072	Jun 18	0.072	Jul 15	0.077
Second High:	Jun 5	0.070	Aug 22	0.071	Jun 26	0.075
Third High:	Apr 21	0.069	Jun 17	0.070	Jul 23	0.075
Fourth High:	Jun 9	0.069	May 30	0.068	Jul 16	0.074

National 2015 Std (0.070 ppm):			
# Days Above the Standard:	1	2	10
Nat'l Standard Design Value:	*	*	*
National Year Coverage:	91	97	96
California Std (0.070 ppm):			
# Days Above the Standard:	1	2	11
California Designation Value:	0.078	0.072	0.077
Expected Peak Day Concentration:	*	0.073	0.077
California Year Coverage:	89	94	94

◄ Shift Backward [1 year] Shift Forward ►

Notes:

Eight-hour ozone averages and related statistics are available at Trona-Athol and Telegraph between 1997 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

orange exceeds a national ambient air quality standard.

yellow exceeds a California ambient air quality standard.

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.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Mojave-923 Poole Street

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 5	0.095	Jun 24	0.084	Jul 28	0.093
Second High:	Jun 4	0.090	Jun 17	0.081	Jul 29	0.086
Third High:	Apr 21	0.089	Jun 30	0.081	Jul 27	0.085
Fourth High:	Jun 8	0.089	May 30	0.080	Jun 20	0.084
California Std (0.070 ppm):						
First High:	Jun 5	0.096	Jun 24	0.085	Jul 28	0.093
Second High:	Jun 4	0.090	Jun 17	0.081	Jul 29	0.086
Third High:	Apr 21	0.089	Jun 30	0.081	Jul 27	0.085
Fourth High:	Jun 8	0.089	May 30	0.080	Aug 13	0.085

National 2015 Std (0.070 ppm):			
# Days Above the Standard:	88	31	52
Nat'l Standard Design Value:	0.084	0.083	0.084
National Year Coverage:	90	97	96
California Std (0.070 ppm):			
# Days Above the Standard:	95	33	60
California Designation Value:	0.090	0.090	0.093
Expected Peak Day Concentration:	0.093	0.095	0.094
California Year Coverage:	90	96	92

◄ Shift Backward 1 year Shift Forward ►

Notes:

Eight-hour ozone averages and related statistics are available at Mojave-923 Poole Street between 1993 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

orange exceeds a national ambient air quality standard.

yellow exceeds a California ambient air quality standard.

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.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Mojave National Preserve

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 4	0.081		*	Jun 26	0.082
Second High:	Jun 7	0.081		*	Jul 14	0.081
Third High:	Jun 6	0.079		*	Jul 5	0.079
Fourth High:	Jun 11	0.077		*	Jul 6	0.078
California Std (0.070 ppm):						
First High:	Jun 7	0.082		*	Jun 26	0.083
Second High:	Jun 4	0.081		*	Jul 14	0.082
Third High:	Jun 6	0.080		*	Jul 5	0.080
Fourth High:	Jun 11	0.077		*	Jul 6	0.079
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		10		*		18
Nat'l Standard Design Value:		0.078		*		*
National Year Coverage:		99		*		100
California Std (0.070 ppm):						
# Days Above the Standard:		13		*		21
California Designation Value:		0.094		*		0.083
Expected Peak Day Concentration:		*		*		*
California Year Coverage:		98		*		100

◄ Shift Backward [1 year] Shift Forward ►

Notes:
Eight-hour ozone averages and related statistics are available at Mojave National Preserve between 2012 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

orange exceeds a national ambient air quality standard.

yellow exceeds a California ambient air quality standard.

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.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Barstow

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 29	0.087	Jun 24	0.082	Aug 9	0.083
Second High:	Jun 7	0.085	Jun 17	0.079	Aug 10	0.082
Third High:	Jun 5	0.084	Jun 16	0.078	Jul 23	0.081
Fourth High:	Jun 11	0.084	Aug 21	0.077	Jul 7	0.080
California Std (0.070 ppm):						
First High:	Jun 29	0.087	Jun 24	0.083	Aug 9	0.084
Second High:	Jun 7	0.086	Jun 17	0.080	Aug 10	0.082
Third High:	Jun 5	0.084	Jun 16	0.078	Jul 23	0.081
Fourth High:	Jun 11	0.084	Aug 21	0.077	Jul 7	0.080

National 2015 Std (0.070 ppm):			
# Days Above the Standard:	33	18	25
Nat'l Standard Design Value:	0.080	0.079	0.080
National Year Coverage:	100	100	99
California Std (0.070 ppm):			
# Days Above the Standard:	37	20	27
California Designation Value:	0.087	0.087	0.087
Expected Peak Day Concentration:	0.090	0.089	0.087
California Year Coverage:	100	100	98

◄ Shift Backward [1 year] Shift Forward ►

Notes:
Eight-hour ozone averages and related statistics are available at Barstow between 1973 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

orange exceeds a national ambient air quality standard.

yellow exceeds a California ambient air quality standard.

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.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Attachment B

PM_{10} and $PM_{2.5}$ Concentration Data

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

iADAM

at Trona-Athol and Telegraph

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Mar 26	184.9	Nov 16	112.1	Mar 28	138.0
Second High:	Apr 22	178.1	Nov 24	93.5	Nov 16	86.5
Third High:	May 10	151.9	Aug 6	89.6	Jul 30	85.3
Fourth High:	Jun 16	125.4	Jun 1	72.7	Aug 24	63.7
California:						
First High:		*		*		*
Second High:		*		*		*
Third High:		*		*		*
Fourth High:		*		*		*
National:						
Estimated # Days > 24-Hour Std:		2.1		0.0		*
Measured # Days > 24-Hour Std:		2		0		0
3-Yr Avg Est # Days > 24-Hr Std:		*		1.0		*
Annual Average:		26.8		21.1		23.3
3-Year Average:		25		24		24
California:						
Estimated # Days > 24-Hour Std:		*		*		*
Measured # Days > 24-Hour Std:		*		*		*
Annual Average:		*		*		*
3-Year Maximum Annual Average:		*		*		*
Year Coverage:		0		0		0

◄ Shift Backward 1 Shift Forward ►

Notes:

Daily PM10 averages and related statistics are available at Trona-Athol and Telegraph between 1997 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in italics or italics.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Ridgecrest-100 West California Avenue

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jun 16	51.8	Dec 8	44.5	Aug 22	66.2
Second High:	May 11	42.6	Aug 22	36.3	Aug 28	44.8
Third High:	Dec 31	40.6	Dec 2	32.6	Sep 3	39.5
Fourth High:	Aug 9	38.8	Sep 3	32.0	Aug 4	37.9
California:						
First High:	Jun 16	47.6	Dec 8	43.2	Aug 22	59.0
Second High:	Dec 31	40.0	Aug 22	32.1	Aug 28	40.1
Third High:	May 11	39.6	Dec 2	32.0	Sep 3	35.3
Fourth High:	Aug 9	35.0	Jan 6	29.2	Apr 26	33.6

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:	23.6	19.3	23.2
3-Year Average:	23	22	22
California:			
Estimated # Days > 24-Hour Std:	0.0	0.0	*
Measured # Days > 24-Hour Std:	0	0	1
Annual Average:	21.8	17.8	*
3-Year Maximum Annual Average:	22	22	22
Year Coverage:	92	89	91

◄ Shift Backward 1 year Shift Forward ►

Notes:
Daily PM10 averages and related statistics are available at Ridgecrest-100 West California Avenue between 2000 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in italics or italics.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

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State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Canebrake

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jun 16	86.6	Aug 28	67.1	Aug 22	58.9
Second High:	Sep 26	61.3	Aug 22	39.0	Aug 28	47.3
Third High:	Oct 8	44.1	Mar 31	37.0	Jul 23	46.5
Fourth High:	Oct 26	42.5	Sep 9	33.8	Jun 5	41.1
California:						
First High:	Jun 16	78.9	Aug 28	59.4	Aug 22	52.9
Second High:	Sep 26	56.0	Aug 22	34.9	Aug 28	42.1
Third High:	Oct 8	40.2	Mar 31	34.1	Jul 23	41.0
Fourth High:	Oct 26	40.0	Sep 9	30.0	Jun 5	36.1

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	0.0	*
Annual Average:	16.8	14.0	16.1
3-Year Average:	14	15	16
California:			
Estimated # Days > 24-Hour Std:	12.6	6.1	*
Measured # Days > 24-Hour Std:	2	1	1
Annual Average:	15.3	12.6	*
3-Year Maximum Annual Average:	15	15	15
Year Coverage:	98	96	86

◄ Shift Backward 1 year Shift Forward ►

Notes:
Daily PM10 averages and related statistics are available at Canebrake between 2009 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in italics or italics.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Ridgecrest-100 West California Avenue

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Aug 9	10.5	Aug 22	12.5	Aug 22	25.8
Second High:	Dec 7	10.3	Jan 18	11.2	Aug 28	15.9
Third High:	Dec 19	10.0	Dec 8	10.7	Dec 8	12.2
Fourth High:	Jan 5	8.8	Jan 12	10.0	Aug 4	12.0
California:						
First High:	Aug 9	10.5	Aug 22	12.5	Aug 22	25.8
Second High:	Dec 7	10.3	Jan 18	11.2	Aug 28	15.9
Third High:	Dec 19	10.0	Dec 8	10.7	Dec 8	12.2
Fourth High:	Jan 5	8.8	Jan 12	10.0	Aug 4	12.0

National:			
Estimated # Days > 24-Hour Std:	*	0.0	*
Measured # Days > 24-Hour Std:	0	0	0
24-Hour Standard Design Value:	*	*	*
24-Hour Standard 98th Percentile:	*	11.2	*
2006 Annual Std Design Value:	*	*	*
2013 Annual Std Design Value:	*	*	*
Annual Average:	*	5.0	*
California:			
Annual Std Designation Value:	*	*	*
Annual Average:	*	*	*
Year Coverage:	90	89	90

◄ Shift Backward 1 year Shift Forward ►

Notes:
Daily PM2.5 averages and related statistics are available at Ridgecrest-100 West California Avenue between 1999 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Mojave-923 Poole Street

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	May 10	36.5	Apr 14	42.2	Jul 28	25.7
Second High:	May 9	33.5	Mar 23	37.1	Jul 30	23.8
Third High:	Jun 26	30.6	Mar 24	26.3	Nov 16	23.0
Fourth High:	Mar 10	28.8	Dec 14	16.7	Aug 22	22.8
California:						
First High:	May 10	36.5	Apr 14	42.2	Jul 28	25.7
Second High:	May 9	33.5	Mar 23	37.1	Jul 30	23.8
Third High:	Jun 26	30.6	Sep 12	14.8	Nov 16	23.0
Fourth High:	Mar 10	28.8	Aug 25	14.7	Aug 22	22.8

National:			
Estimated # Days > 24-Hour Std:	1.0	2.0	0.0
Measured # Days > 24-Hour Std:	1	2	0
24-Hour Standard Design Value:	*	*	20
24-Hour Standard 98th Percentile:	25.4	12.7	20.6
2006 Annual Std Design Value:	*	*	6.2
2013 Annual Std Design Value:	*	*	6.2
Annual Average:	5.9	5.1	7.5
California:			
Annual Std Designation Value:	7	6	6
Annual Average:	6.1	*	*
Year Coverage:	97	99	96

◄ Shift Backward 1 year Shift Forward ►

Notes:

Daily PM2.5 averages and related statistics are available at Mojave-923 Poole Street between 1999 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Lancaster-43301 Division Street

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Feb 23	42.0	Aug 22	10.4	Jul 24	64.8
Second High:	May 23	27.9	Feb 18	9.8	Jul 25	49.1
Third High:	Dec 19	24.0	Dec 2	9.3	Jun 28	33.3
Fourth High:	Dec 25	24.0	Jul 17	8.6	Jul 30	30.1
California:						
First High:	Feb 23	42.0	Aug 22	10.4	Jul 24	64.8
Second High:	May 23	27.9	Feb 18	9.8	Jun 28	33.3
Third High:	Dec 19	24.0	Dec 2	9.3	Jul 30	30.1
Fourth High:	Dec 25	24.0	Jul 17	8.6	May 14	23.9

National:			
Estimated # Days > 24-Hour Std:	6.9	*	2.0
Measured # Days > 24-Hour Std:	1	0	2
24-Hour Standard Design Value:	*	*	*
24-Hour Standard 98th Percentile:	27.9	*	20.5
2006 Annual Std Design Value:	*	*	*
2013 Annual Std Design Value:	*	*	*
Annual Average:	7.2	*	7.7
California:			
Annual Std Designation Value:	*	*	*
Annual Average:	*	*	*
Year Coverage:	93	86	93

◄ Shift Backward [1 year] Shift Forward ►

Notes:

Daily PM2.5 averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2016. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Decisions Pending and Opportunities for Public Participation
Conditions of Use | Privacy Policy | Accessibility
How to Request Public Records

The Board is one of five boards, departments, and offices under the umbrella of the California Environmental Protection Agency.
Cal/EPA | ARB | DPR | DTSC | OEHHA | SWRCB

Attachment C

NOx Concentration Data

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

iADAM

at Trona-Athol and Telegraph

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Jul 25	45.6	Apr 1	68.4	Sep 15	223.1
Second High:	Aug 19	42.1	Apr 3	57.8	Sep 14	213.4
Third High:	Jul 22	38.2	Apr 2	51.3	Sep 13	174.4
Fourth High:	Jul 23	37.5	Jun 23	48.1	Sep 12	140.2
California:						
First High:	Jul 25	45	Apr 1	68	Sep 15	223
Second High:	Aug 19	42	Apr 3	57	Sep 14	213
Third High:	Jul 22	38	Apr 2	51	Sep 13	174
Fourth High:	May 15	37	Jun 23	48	Sep 12	140

National:			
1-Hour Standard Design Value:	*	*	*
1-Hour Standard 98th Percentile:	37.0	48.1	38.7
# Days Above the Standard:	0	0	4
Annual Standard Design Value:	3	*	4
California:			
1-Hour Std Designation Value:	60	60	60
Expected Peak Day Concentration:	59	59	56
# Days Above the Standard:	0	0	2
Annual Std Designation Value:	3	3	4
Annual Average:	3	*	4
Year Coverage:	94	60	97

◄ Shift Backward 1 year Shift Forward ►

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Trona-Athol and Telegraph between 1997 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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

iADAM

at Barstow

	2014 Date	2014 Measurement	2015 Date	2015 Measurement	2016 Date	2016 Measurement
National:						
First High:	Jan 6	69.3	Apr 29	61.3	Sep 27	66.7
Second High:	Apr 8	63.1	Dec 18	61.2	Nov 26	64.3
Third High:	Sep 24	63.0	Aug 9	57.8	Nov 8	59.4
Fourth High:	Feb 2	61.6	May 28	57.4	Oct 13	59.1
California:						
First High:	Jan 6	69	Apr 29	61	Sep 27	66
Second High:	Apr 8	63	Dec 18	61	Nov 26	64
Third High:	Sep 24	63	May 28	57	Oct 13	59
Fourth High:	Feb 2	61	Aug 9	57	Nov 8	59

National:			
1-Hour Standard Design Value:	*	*	56
1-Hour Standard 98th Percentile:	59.1	54.6	55.7
# Days Above the Standard:	0	0	0
Annual Standard Design Value:	16	15	14
California:			
1-Hour Std Designation Value:	80	70	60
Expected Peak Day Concentration:	89	67	64
# Days Above the Standard:	0	0	0
Annual Std Designation Value:	17	16	16
Annual Average:	16	15	14
Year Coverage:	100	99	98

◄ Shift Backward 1 year Shift Forward ►

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Barstow between 1973 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

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.

Available Pollutants:
8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Decisions Pending and Opportunities for Public Participation
Conditions of Use | Privacy Policy | Accessibility
How to Request Public Records

The Board is one of five boards, departments, and offices under the umbrella of the California Environmental Protection Agency.
Cal/EPA | ARB | DPR | DTSC | OEHHA | SWRCB

Attachment D

Lead Concentration Data

Welcome to California

Air Resources Board

View a Different Site
View a Different Substance
Order a Data CD

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
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

Attachment E

Project Emissions Calculations

Appollo 60 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	492.00	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**	2019
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

Appollo 60 MW Solar contruction - Kern-Mojave Desert County, Annual

Project Characteristics - Construction phase

Land Use - 60 MW total of three 20 MW solar projects. Worst case assessment of combined contruction of all three projects in one year.

Construction Phase - Project construction description

Off-road Equipment -

Off-road Equipment - project construction equipment for 60 MW project

Off-road Equipment - Project Description

Off-road Equipment - Project Description

Off-road Equipment - Project Description

Trips and VMT - Project description stated an average of 200 employees during panel assembly

Grading - project description

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

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	7,750.00	132.00
tblConstructionPhase	NumDays	775.00	22.00
tblConstructionPhase	NumDays	550.00	22.00

Appollo 60 MW Solar contruction - Kern-Mojave Desert County, Annual

tblConstructionPhase	NumDays	300.00	22.00
tblConstructionPhase	PhaseEndDate	9/6/2019	9/9/2019
tblConstructionPhase	PhaseEndDate	3/7/2019	3/6/2019
tblConstructionPhase	PhaseEndDate	10/4/2019	10/8/2019
tblConstructionPhase	PhaseEndDate	2/4/2019	1/31/2019
tblGrading	AcresOfGrading	103.50	344.00
tblGrading	AcresOfGrading	36.00	148.00
tblLandUse	LotAcreage	0.00	492.00
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	LoadFactor	0.50	0.74
tblOffRoadEquipment	LoadFactor	0.56	0.20
tblOffRoadEquipment	LoadFactor	0.43	0.42
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.40	0.37

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Panel Assembly
tblOffRoadEquipment	PhaseName		Panel Assembly
tblOffRoadEquipment	PhaseName		Gravel Road
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	PhaseName		Trenching and Electrical
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	0.00	200.00

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					
2019	0.4743	4.4877	3.3351	8.9000e-003	0.6475	0.1877	0.8352	0.1899	0.1727	0.3626	0.0000	800.4264	800.4264	0.2048	0.0000	805.5461
Maximum	**0.4743**	**4.4877**	**3.3351**	**8.9000e-003**	**0.6475**	**0.1877**	**0.8352**	**0.1899**	**0.1727**	**0.3626**	**0.0000**	**800.4264**	**800.4264**	**0.2048**	**0.0000**	**805.5461**

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					
2019	0.4743	4.4877	3.3351	8.9000e-003	0.3617	0.1877	0.5494	0.1030	0.1727	0.2757	0.0000	800.4256	800.4256	0.2048	0.0000	805.5453
Maximum	**0.4743**	**4.4877**	**3.3351**	**8.9000e-003**	**0.3617**	**0.1877**	**0.5494**	**0.1030**	**0.1727**	**0.2757**	**0.0000**	**800.4256**	**800.4256**	**0.2048**	**0.0000**	**805.5453**

	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**	**44.15**	**0.00**	**34.23**	**45.73**	**0.00**	**23.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-2-2019**	**4-1-2019**	1.9043	1.9043
		Highest	1.9043	1.9043

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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Trenching and Electrical	Site Preparation	1/2/2019	1/31/2019	5	22	
2	Grading	Grading	2/5/2019	3/6/2019	5	22	
3	Panel Assembly	Building Construction	3/8/2019	9/9/2019	5	132	
4	Gravel Road	Paving	9/7/2019	10/8/2019	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 344

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

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Panel Assembly	Bore/Drill Rigs	3	8.00	291	0.74
Panel Assembly	Cement and Mortar Mixers	3	8.00	300	0.20
Panel Assembly	Cranes	3	8.00	250	0.29
Grading	Excavators	3	8.00	168	0.38
Grading	Graders	3	8.00	174	0.41
Grading	Off-Highway Trucks	3	4.00	189	0.38
Grading	Rubber Tired Dozers	3	8.00	357	0.40
Grading	Scrapers	6	4.00	313	0.48
Grading	Tractors/Loaders/Backhoes	6	4.00	108	0.37
Gravel Road	Crawler Tractors	3	8.00	147	0.42
Trenching and Electrical	Crawler Tractors	3	8.00	147	0.43
Trenching and Electrical	Excavators	3	8.00	168	0.40
Trenching and Electrical	Off-Highway Trucks	3	4.00	189	0.38
Trenching and Electrical	Rough Terrain Forklifts	3	8.00	93	0.37

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
Panel Assembly	9	200.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	24	60.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Gravel Road	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching and Electrical	12	30.00	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 - 2019

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					0.0785	0.0000	0.0785	8.4700e-003	0.0000	8.4700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4120	0.3406	5.7000e-004		0.0206	0.0206		0.0190	0.0190	0.0000	51.0858	51.0858	0.0162	0.0000	51.4898
Total	**0.0391**	**0.4120**	**0.3406**	**5.7000e-004**	**0.0785**	**0.0206**	**0.0991**	**8.4700e-003**	**0.0190**	**0.0275**	**0.0000**	**51.0858**	**51.0858**	**0.0162**	**0.0000**	**51.4898**

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	1.9500e-003	1.4500e-003	0.0139	4.0000e-005	4.1300e-003	3.0000e-005	4.1600e-003	1.1000e-003	3.0000e-005	1.1200e-003	0.0000	3.8793	3.8793	1.1000e-004	0.0000	3.8820
Total	**1.9500e-003**	**1.4500e-003**	**0.0139**	**4.0000e-005**	**4.1300e-003**	**3.0000e-005**	**4.1600e-003**	**1.1000e-003**	**3.0000e-005**	**1.1200e-003**	**0.0000**	**3.8793**	**3.8793**	**1.1000e-004**	**0.0000**	**3.8820**

3.2 Trenching and Electrical - 2019

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					0.0306	0.0000	0.0306	3.3000e-003	0.0000	3.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4120	0.3406	5.7000e-004		0.0206	0.0206		0.0190	0.0190	0.0000	51.0857	51.0857	0.0162	0.0000	51.4898
Total	**0.0391**	**0.4120**	**0.3406**	**5.7000e-004**	**0.0306**	**0.0206**	**0.0512**	**3.3000e-003**	**0.0190**	**0.0223**	**0.0000**	**51.0857**	**51.0857**	**0.0162**	**0.0000**	**51.4898**

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	1.9500e-003	1.4500e-003	0.0139	4.0000e-005	4.1300e-003	3.0000e-005	4.1600e-003	1.1000e-003	3.0000e-005	1.1200e-003	0.0000	3.8793	3.8793	1.1000e-004	0.0000	3.8820
Total	**1.9500e-003**	**1.4500e-003**	**0.0139**	**4.0000e-005**	**4.1300e-003**	**3.0000e-005**	**4.1600e-003**	**1.1000e-003**	**3.0000e-005**	**1.1200e-003**	**0.0000**	**3.8793**	**3.8793**	**1.1000e-004**	**0.0000**	**3.8820**

3.3 Grading - 2019

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					0.3902	0.0000	0.3902	0.1339	0.0000	0.1339	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1269	1.3661	1.0025	1.4400e-003		0.0645	0.0645		0.0593	0.0593	0.0000	129.3140	129.3140	0.0409	0.0000	130.3368
Total	**0.1269**	**1.3661**	**1.0025**	**1.4400e-003**	**0.3902**	**0.0645**	**0.4547**	**0.1339**	**0.0593**	**0.1932**	**0.0000**	**129.3140**	**129.3140**	**0.0409**	**0.0000**	**130.3368**

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	3.9100e-003	2.9000e-003	0.0278	9.0000e-005	8.2700e-003	6.0000e-005	8.3300e-003	2.2000e-003	5.0000e-005	2.2500e-003	0.0000	7.7587	7.7587	2.1000e-004	0.0000	7.7640
Total	**3.9100e-003**	**2.9000e-003**	**0.0278**	**9.0000e-005**	**8.2700e-003**	**6.0000e-005**	**8.3300e-003**	**2.2000e-003**	**5.0000e-005**	**2.2500e-003**	**0.0000**	**7.7587**	**7.7587**	**2.1000e-004**	**0.0000**	**7.7640**

3.3 Grading - 2019

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					0.1522	0.0000	0.1522	0.0522	0.0000	0.0522	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1269	1.3661	1.0025	1.4400e-003		0.0645	0.0645		0.0593	0.0593	0.0000	129.3138	129.3138	0.0409	0.0000	130.3366
Total	**0.1269**	**1.3661**	**1.0025**	**1.4400e-003**	**0.1522**	**0.0645**	**0.2167**	**0.0522**	**0.0593**	**0.1115**	**0.0000**	**129.3138**	**129.3138**	**0.0409**	**0.0000**	**130.3366**

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	3.9100e-003	2.9000e-003	0.0278	9.0000e-005	8.2700e-003	6.0000e-005	8.3300e-003	2.2000e-003	5.0000e-005	2.2500e-003	0.0000	7.7587	7.7587	2.1000e-004	0.0000	7.7640
Total	**3.9100e-003**	**2.9000e-003**	**0.0278**	**9.0000e-005**	**8.2700e-003**	**6.0000e-005**	**8.3300e-003**	**2.2000e-003**	**5.0000e-005**	**2.2500e-003**	**0.0000**	**7.7587**	**7.7587**	**2.1000e-004**	**0.0000**	**7.7640**

3.4 Panel Assembly - 2019

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	0.2052	2.4535	1.2693	4.8600e-003		0.0906	0.0906		0.0833	0.0833	0.0000	436.4810	436.4810	0.1381	0.0000	439.9334
Total	**0.2052**	**2.4535**	**1.2693**	**4.8600e-003**		**0.0906**	**0.0906**		**0.0833**	**0.0833**	**0.0000**	**436.4810**	**436.4810**	**0.1381**	**0.0000**	**439.9334**

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	0.0781	0.0580	0.5559	1.7200e-003	0.1654	1.1500e-003	0.1665	0.0439	1.0600e-003	0.0450	0.0000	155.1730	155.1730	4.3000e-003	0.0000	155.2804
Total	**0.0781**	**0.0580**	**0.5559**	**1.7200e-003**	**0.1654**	**1.1500e-003**	**0.1665**	**0.0439**	**1.0600e-003**	**0.0450**	**0.0000**	**155.1730**	**155.1730**	**4.3000e-003**	**0.0000**	**155.2804**

3.4 Panel Assembly - 2019

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	0.2052	2.4535	1.2693	4.8600e-003		0.0906	0.0906		0.0833	0.0833	0.0000	436.4805	436.4805	0.1381	0.0000	439.9329
Total	**0.2052**	**2.4535**	**1.2693**	**4.8600e-003**		**0.0906**	**0.0906**		**0.0833**	**0.0833**	**0.0000**	**436.4805**	**436.4805**	**0.1381**	**0.0000**	**439.9329**

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	0.0781	0.0580	0.5559	1.7200e-003	0.1654	1.1500e-003	0.1665	0.0439	1.0600e-003	0.0450	0.0000	155.1730	155.1730	4.3000e-003	0.0000	155.2804
Total	**0.0781**	**0.0580**	**0.5559**	**1.7200e-003**	**0.1654**	**1.1500e-003**	**0.1665**	**0.0439**	**1.0600e-003**	**0.0450**	**0.0000**	**155.1730**	**155.1730**	**4.3000e-003**	**0.0000**	**155.2804**

3.5 Gravel Road - 2019

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	0.0186	0.1934	0.1214	1.7000e-004		0.0108	0.0108		9.9000e-003	9.9000e-003	0.0000	15.7003	15.7003	4.9700e-003	0.0000	15.8245
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0186**	**0.1934**	**0.1214**	**1.7000e-004**		**0.0108**	**0.0108**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**15.7003**	**15.7003**	**4.9700e-003**	**0.0000**	**15.8245**

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	5.2000e-004	3.9000e-004	3.7100e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0345	1.0345	3.0000e-005	0.0000	1.0352
Total	**5.2000e-004**	**3.9000e-004**	**3.7100e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0345**	**1.0345**	**3.0000e-005**	**0.0000**	**1.0352**

3.5 Gravel Road - 2019

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	0.0186	0.1934	0.1214	1.7000e-004		0.0108	0.0108		9.9000e-003	9.9000e-003	0.0000	15.7003	15.7003	4.9700e-003	0.0000	15.8244
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0186**	**0.1934**	**0.1214**	**1.7000e-004**		**0.0108**	**0.0108**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**15.7003**	**15.7003**	**4.9700e-003**	**0.0000**	**15.8244**

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	5.2000e-004	3.9000e-004	3.7100e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0345	1.0345	3.0000e-005	0.0000	1.0352
Total	**5.2000e-004**	**3.9000e-004**	**3.7100e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0345**	**1.0345**	**3.0000e-005**	**0.0000**	**1.0352**

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	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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**

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**

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**

6.2 Area by SubCategory

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**

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**

8.2 Waste by Land Use

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

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 Appollo Solar Project Construction Equipment[2]			60 MW			
Equipment	Number	Year	HP	Hours Used	Hours/Piece of Equipment	hours/day/ piece of equipment
Grading (1 month)						
Excavator	3	1997	168	528	176	8
Grader	3	1997	174	528	176	8
Rubber Tired Dozer	3	1996	357	528	176	8
Scraper	6	1996	313	528	88	4
Tractor/Loader/ Backhoe	6	1997	108	528	88	4
Water Truck	3	1996	189	264	88	4
Gravel Roads (1 month)						
Crawler Tractor	3	1997	147	528	176	8
Trenching/Electrical (1 month)						
Excavator	3	1997	168	528	176	8
Rough Terrain Forklinft	3	1998	93	528	176	8
Crawler Tractor	3	1997	147	528	176	8
Water Truck	3	1996	189	264	88	4
Pile Driving/Panel Assembly (6 months)						
Drill Rig	3	1996	291	3168	1056	8
Cement Mixer	3	1996	300	3168	1056	8
Crane	3	1996	250	3168	1056	8

[2] Assumed 22 working days/month

2016 Project Solar Panel Delivery T7 Single Exhaust Emissions - EMFAC2014

Based on:

One-way Trips/year:	2770	(540 panels per truck delivery)
One -way Miles/Trip:	120.1	(Distance from Port of Long Beach to the Town of Mojave)
Total miles traveled/year:	332,721	

	ROG	NOx	CO	SOX	PM10[1]	PM2.5[1]	CO2	CH4[2]	N2O[2]	CO2e
Em. Factor (grams/mile)	0.14	5.45	0.55	0.02	0.14	0.08	1649.81	5.10E-03	4.80E-03	
Lbs/Mile	3.12E-04	1.20E-02	1.22E-03	3.47E-05	3.14E-04	1.73E-04	3.64E+00	1.12E-05	1.06E-05	
Lbs/Year	103.95	3995.72	406.55	11.55	104.52	57.42	1210176.31	3.74	3.52	
Tons/year	**5.20E-02**	**1.998**	**0.20**	**5.77E-03**	**5.23E-02**	**2.87E-02**	**605.09**	**1.87E-03**	**1.76E-03**	**605.67**

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

[2]California Climate Action Registry General Reporting Protocol Version 3.1 April 2009. Table C4 Diesel Heavy -Duty Vehicles, All Model Years

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:	2770
Miles/one-way trip:	0.57
Total miles traveled/year:	1579

*Miles based on a vehicle entering the widest part of the project.

	PM10	PM2.5
Em. Factor (lbs/VMT)[1]	2.20E+00	2.20E-01
Lbs/Year (2019)*	7.59E+02	7.59E+01
Tons/year (2019)	**0.38**	**3.79E-02**

*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	**4.74E-01**	**4.49E+00**	**3.34E+00**	**8.90E-03**	**5.49E-01**	**2.76E-01**	**8.00E+02**	**2.05E-01**	**0.00E+00**	**8.06E+02**

1) Applied SJVAPCD construction equipment list, for all 60 MW of project constructed at once with a 9 month project construction schedule in 2019.

2) CalEEMod defaults for employee number and trip lengths were applied except 200 employees was used for panel assembly per Project Description.

Total Project Construction Emissions

	ROG	NOx	CO	SOX	PM10	PM2.5	CO2	CH4	N2O	CO2e
Panel Delivery from POLB	0.052	1.998	0.203	0.006	0.052	0.029	6.1E+02	1.9E-03	1.8E-03	6.06E+02
Panel Delivery - on-site dust					0.379	0.038				
Construction Equipment & Worker Travel	0.474	4.488	3.335	0.009	0.549	0.276	8.00E+02	2.05E-01	0.00E+00	8.06E+02
Tons/year	0.526	6.486	3.538	0.015	0.981	0.342	**1.41E+03**	**2.07E-01**	**1.76E-03**	**1.41E+03**

2019 Project Operational Water Trucks T6 Utility Exhaust Emissions - EMFAC2014

Quarterly panel cleaning - water truck travel to and from site

Based on:

One-way Trips/year:	400	(5 trucks x 10 days per cleaning cycle x 2 for one way trips x 4 cleaning cycles per year)
One-way Miles/Trip:	12	(average distance from near-by towns)
Total miles traveled/year:	4,800	

	ROG	NOx	CO	SOX	PM10[1]	PM2.5[1]	CO2	CH4[2]	N2O[2]	CO2e
Em. Factor (grams/mile)	0.03	0.82	0.17	1.17E-02	0.14	0.06	1230.70	5.10E-03	4.80E-03	
Lbs/Mile	7.14E-05	1.80E-03	3.76E-04	2.59E-05	3.18E-04	1.34E-04	2.71E+00	1.12E-05	1.06E-05	
Lbs/Year	0.3429	8.6563	1.8048	0.1242	1.5277	0.6434	13023.4509	0.0540	0.0508	
lbs/day	0.0857	2.1641	0.4512	0.0311	0.3819	0.1609	3255.8627	0.0135	0.0127	3260.0826
Tons/year	**1.71E-04**	**4.33E-03**	**9.02E-04**	**6.21E-05**	**7.64E-04**	**3.22E-04**	**6.51E+00**	**2.70E-05**	**2.54E-05**	**6.52E+00**

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

[2]California Climate Action Registry General Reporting Protocol Version 3.1 April 2009. Table C4 Diesel Heavy -Duty Vehicles, All Model Years

2019 Project Operational Water Trucks T6 Utility On-Site Exhaust Emissions - EMFAC2014

Quarterly panel cleaning - water truck travel on-site

Based on:

On-site miles/cleaning	84.3	(See Note 1)
Number of days of panel washing:	40	(4 panel cleanings per year*10 days per cleaning cycle)
Total miles traveled/year:	3,374	

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[1]	N2O[1]	CO2e
Em. Factor (grams/mile)	0.10	2.78	0.54	0.00E+00	3.02E-03	2.89E-03	1679.87	5.10E-03	4.80E-03	
Lbs/Mile	2.28E-04	6.13E-03	1.20E-03	0.00E+00	6.66E-06	6.37E-06	3.70E+00	1.12E-05	1.06E-05	
Lbs/Year	0.7695	20.6746	4.0505	0.0000	0.0225	0.0215	12494.4918	0.0379	0.0357	
lbs/day	0.0192	0.5169	0.1013	0.0000	0.0006	0.0005	312.3623	0.0009	0.0009	312.6589
Tons/year	**3.85E-04**	**1.03E-02**	**2.03E-03**	**0.00E+00**	**1.12E-05**	**1.07E-05**	**6.25E+00**	**1.90E-05**	**1.79E-05**	**0.00E+00**

[1]California Climate Action Registry General Reporting Protocol Version 3.1 April 2009. Table C4 Diesel Heavy -Duty Vehicles, All Model Years

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:

2019		
On-site miles/cleaning	84.3	(See Note 1)
cleaning per year	4	(Client provided)
Total miles traveled/year:	337	

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)*	151.21	15.12
Tons/year (2019)	**0.0756**	**0.00756**

*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]:	48
One-way Miles/Trip[2]:	9.3
Total miles travelled/year:	446

[1] Based on factors used for another solar project in the area - up to 6 round trips per quarter (12 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[2]	N2O[2]	CO2e
Em. Factor (grams/mile)**	0.0418	0.1885	1.7513	0.0036	0.0477	0.0205	362.03	0.08	0.10	
Lbs/Mile	0.0001	0.0004	0.0039	0.0000	0.0001	0.0000	7.98E-01	1.79E-04	2.28E-04	
Lbs/Year	0.0411	0.1856	1.7235	0.0036	0.0470	0.0202	3.56E+02	8.00E-02	1.02E-01	
lbs/day	0.0103	0.0464	0.4309	0.0009	0.0117	0.0050	8.91E+01	2.00E-02	2.55E-02	97.39
Tons/year	**0.0000**	**0.0001**	**0.0009**	**0.0000**	**0.0000**	**0.0000**	**1.78E-01**	**4.00E-05**	**5.09E-05**	**1.95E-01**

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

[2]California Climate Action Registry General Reporting Protocol Version 3.1 April 2009. Table C4 Gasoline Light Trucks, Model Years 1987-1993 (used to be most conservative)

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:

2019	
One-way Trips/year:	48
Miles/one-way trip*:	0.57
Total miles travelled/year:	27.4

*Miles based on entering the widest part of the project.

	PM10	PM2.5
Em. Factor (lbs/VMT)	1.10E+00	1.10E-01
Lbs/Year (2019)*	6.57	0.66
Tons/year (2019)	**0.0033**	**0.0003**

*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]:	80
One-way Miles/Trip[2]:	9.3
Total miles traveled/year:	744

[1]Based on another solar project, conservative estimate of 10 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[2]	N2O[2]	CO2e
Em. Factor (grams/mile)**	0.03	0.13	1.20	3.35E-03	4.71E-02	2.00E-02	333.99	0.08	0.08	
Lbs/Mile	6.13E-05	2.78E-04	2.64E-03	7.39E-06	1.04E-04	4.40E-05	7.36E-01	1.67E-04	1.85E-04	
Lbs/Year	0.05	0.21	1.97	0.01	0.08	0.03	547.82	0.12	0.14	
Tons/year	**2.28E-05**	**1.03E-04**	**9.83E-04**	**2.75E-06**	**3.87E-05**	**1.64E-05**	**2.74E-01**	**6.22E-05**	**6.90E-05**	**2.97E-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.

[2]California Climate Action Registry General Reporting Protocol Version 3.1 April 2009. Table C4 Gasoline Passenger Cars and Gasoline Light Trucks, Model Years 1987-1993 (used to be most conservative)

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:

2019	
One-way Trips/year:	80
Miles/one-way trip*:	0.57
Total miles travelled/year:	46

*Miles based on a vehicle entering Phase 1 from Hwy 395 and traveling west on the southern border of Phase 1 - the widest part of the project.

	PM10	PM2.5
Em. Factor (lbs/VMT)	1.01E+00	1.01E-01
Lbs/Year (2017)*	10.09	1.01
Tons/year (2017)	**0.0050**	**0.0005**

*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	0.0002	0.0043	0.0009	0.0001	0.0008	0.0003	6.51E+00	2.70E-05	2.54E-05	6.52E+00
Water Truck - on-site emissions	0.0004	0.0103	0.0020	0.0000	0.0000	0.0000	6.25E+00	1.90E-05	1.79E-05	0.00E+00
Water truck - fugitive dust emissions					0.0756	0.0076				
Maintenance Trips - LDA & LDT1 off-site emissions	0.0000	0.0001	0.0009	0.0000	0.0000	0.0000	1.78E-01	4.00E-05	5.09E-05	1.95E-01
Maintenance Trips - LDA & LDT1 on-site dust					0.0033	0.0003				
Employee Trips - off-site travel	0.0000	0.0001	0.0010	0.0000	0.0000	0.0000	0.2739	0.0001	0.0001	0.2966
Employee Trips - on-site fugitive dust emissions					0.0050	0.0005				
Operational total emissions (tons/year)	**0.0006**	**0.0149**	**0.0048**	**0.0001**	**0.0848**	**0.0088**	**1.32E+01**	**1.48E-04**	**1.63E-04**	**7.01E+00**

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	120000	2204.62	47844.980	1	47,845.0
Electricty CH4 Emissions	0.0067	120000	2204.62	0.365	21	7.66
Electricty N2O Emissions	0.0037	120000	2204.62	0.201	310	62.4
					Total CO2e =	47,915

[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	1405.514	0.207	0.002	1411.218
Annualized Construction Emissioı	46.850	0.007	0.000	47.041
Operations GHG Emissions	13.211	0.000	0.000	7.012
Project emissions	60.061	0.007	0.000	54.052
GHG Savings from Solar	47844.980	0.365	0.201	47,915
Net Project Savings	47784.919	0.358	0.201	47861.019

Attachment F

California Air Resources Board 2012 Estimated Annual Average Emissions

2016 SIP Emission Projection Data
2012 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	6.1	1.2	9.0	23.6	1.4	11.0	5.1	2.6	0.2
WASTE DISPOSAL	33.2	0.4	0.1	0.1	0.0	75.0	21.8	2.2	1.7
CLEANING AND SURFACE COATINGS	9.6	6.7	0.0	0.0	-	0.5	0.5	0.5	-
PETROLEUM PRODUCTION AND MARKETING	18.7	6.2	0.0	0.0	-	-	-	-	-
INDUSTRIAL PROCESSES	1.8	1.6	14.4	36.7	8.6	60.3	30.8	11.8	0.1
*** TOTAL STATIONARY SOURCES**	**69.4**	**16.1**	**23.5**	**60.3**	**10.1**	**146.7**	**58.2**	**17.1**	**2.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	10.9	9.4	-	-	-	-	-	-	2.6
MISCELLANEOUS PROCESSES	38.4	5.6	24.5	2.1	0.1	121.4	65.7	12.9	13.2
*** TOTAL AREAWIDE SOURCES**	**49.2**	**15.0**	**24.5**	**2.1**	**0.1**	**121.4**	**65.7**	**12.9**	**15.8**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	22.2	20.0	162.7	70.3	0.2	4.2	4.1	2.7	1.7
OTHER MOBILE SOURCES	17.1	15.5	67.6	43.3	0.5	4.8	4.6	4.4	0.0
*** TOTAL MOBILE SOURCES**	**39.3**	**35.5**	**230.3**	**113.6**	**0.8**	**9.0**	**8.8**	**7.1**	**1.7**
GRAND TOTAL FOR MOJAVE DESERT AIR BASIN	**158.0**	**66.6**	**278.4**	**176.1**	**10.9**	**277.1**	**132.7**	**37.1**	**19.6**

Start a new query.

2016 SIP Emission Projection Data
2012 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	0.7	2.3	0.2	0.4	0.4	0.3	0.0
WASTE DISPOSAL	7.3	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
CLEANING AND SURFACE COATINGS	0.8	0.8	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.2	0.2	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	8.6	15.4	6.8	3.1	2.5	1.5	0.0
*** TOTAL STATIONARY SOURCES**	**8.9**	**1.2**	**9.3**	**17.8**	**7.0**	**3.5**	**2.8**	**1.8**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.5	1.3	-	-	-	-	-	-	1.4
MISCELLANEOUS PROCESSES	3.4	1.2	10.9	0.5	0.0	18.3	9.5	2.6	0.7
*** TOTAL AREAWIDE SOURCES**	**4.9**	**2.5**	**10.9**	**0.5**	**0.0**	**18.3**	**9.5**	**2.6**	**2.1**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	2.9	2.6	18.9	9.9	0.0	0.5	0.5	0.3	0.2
OTHER MOBILE SOURCES	5.4	5.2	23.7	6.8	0.3	3.1	3.0	2.9	0.0
*** TOTAL MOBILE SOURCES**	**8.3**	**7.8**	**42.7**	**16.7**	**0.3**	**3.6**	**3.5**	**3.3**	**0.2**
TOTAL KERN COUNTY IN MOJAVE DESERT	**22.1**	**11.5**	**62.9**	**35.0**	**7.4**	**25.4**	**15.8**	**7.6**	**2.4**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	13.5	2.0	11.0	9.9	1.2	3.0	2.9	2.9	1.6
WASTE DISPOSAL	199.3	10.9	0.1	0.0	0.0	0.1	0.0	0.0	4.7
CLEANING AND SURFACE COATINGS	2.5	2.2	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	48.6	13.8	1.1	0.4	0.5	0.2	0.1	0.1	0.1
INDUSTRIAL PROCESSES	2.1	2.0	0.1	0.1	0.0	3.1	1.3	0.5	0.1
*** TOTAL STATIONARY SOURCES**	**266.0**	**30.9**	**12.3**	**10.3**	**1.7**	**6.4**	**4.4**	**3.5**	**6.5**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	9.9	9.0	-	-	-	-	-	-	28.8
MISCELLANEOUS PROCESSES	63.7	10.0	5.8	1.2	0.0	61.6	30.7	5.6	16.9
*** TOTAL AREAWIDE SOURCES**	**73.7**	**19.0**	**5.8**	**1.2**	**0.0**	**61.6**	**30.7**	**5.6**	**45.8**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	11.9	10.7	74.4	48.8	0.1	2.7	2.6	1.8	1.0
OTHER MOBILE SOURCES	5.5	4.8	28.4	15.7	0.0	0.9	0.8	0.8	0.0
*** TOTAL MOBILE SOURCES**	**17.5**	**15.5**	**102.8**	**64.5**	**0.2**	**3.5**	**3.5**	**2.5**	**1.0**
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	**357.1**	**65.4**	**120.8**	**76.1**	**1.9**	**71.5**	**38.6**	**11.7**	**53.3**
GRAND TOTAL FOR KERN COUNTY	**379.1**	**76.9**	**183.7**	**111.1**	**9.3**	**96.9**	**54.5**	**19.3**	**55.6**

Start a new query.

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Attachment G

Califormia Air Resources Board 2020 Forecasted Annual Average Emissions / Estimated Annual Average Emissions

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
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.

the umbrella of the California Environmental Protection Agency.
Cal/EPA | ARB | CalRecycle | DPR | DTSC | OEHHA | SWRCB

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Attachment H

Cumulative Projects – CalEEMod v2016.3.1 Output

Renhong Dog Kennel 4.7 acres

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	4.70	Acre	4.70	204,732.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2019
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

Project Characteristics -

Land Use - Using City park land use type to simulate a dog park.

Construction Phase - defaults

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2019

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					
2017	0.2055	1.8631	1.1945	2.2600e-003	0.1070	0.1035	0.2105	0.0480	0.0968	0.1447	0.0000	205.7213	205.7213	0.0418	0.0000	206.7665
2018	0.2739	2.3868	1.8230	3.7200e-003	0.0749	0.1302	0.2051	0.0203	0.1224	0.1427	0.0000	334.7786	334.7786	0.0590	0.0000	336.2531
Maximum	**0.2739**	**2.3868**	**1.8230**	**3.7200e-003**	**0.1070**	**0.1302**	**0.2105**	**0.0480**	**0.1224**	**0.1447**	**0.0000**	**334.7786**	**334.7786**	**0.0590**	**0.0000**	**336.2531**

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					
2017	0.2055	1.8631	1.1945	2.2600e-003	0.1070	0.1035	0.2105	0.0480	0.0968	0.1447	0.0000	205.7211	205.7211	0.0418	0.0000	206.7663
2018	0.2739	2.3868	1.8230	3.7200e-003	0.0749	0.1302	0.2051	0.0203	0.1224	0.1427	0.0000	334.7784	334.7784	0.0590	0.0000	336.2529
Maximum	**0.2739**	**2.3868**	**1.8230**	**3.7200e-003**	**0.1070**	**0.1302**	**0.2105**	**0.0480**	**0.1224**	**0.1447**	**0.0000**	**334.7784**	**334.7784**	**0.0590**	**0.0000**	**336.2529**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-4-2017**	**11-3-2017**	1.3483	1.3483
2	**11-4-2017**	**2-3-2018**	1.1288	1.1288
3	**2-4-2018**	**5-3-2018**	1.0099	1.0099
4	**5-4-2018**	**8-3-2018**	1.0422	1.0422
5	**8-4-2018**	**9-30-2018**	0.2062	0.2062
		Highest	1.3483	1.3483

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	1.9300e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
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	0.0134	0.1668	0.1183	5.7000e-004	0.0271	7.0000e-004	0.0278	7.3000e-003	6.6000e-004	7.9600e-003	0.0000	52.7284	52.7284	4.7500e-003	0.0000	52.8472
Waste						0.0000	0.0000		0.0000	0.0000	0.0812	0.0000	0.0812	4.8000e-003	0.0000	0.2012
Water						0.0000	0.0000		0.0000	0.0000	0.0000	19.8232	19.8232	8.2000e-004	1.7000e-004	19.8941
Total	**0.0153**	**0.1668**	**0.1183**	**5.7000e-004**	**0.0271**	**7.0000e-004**	**0.0278**	**7.3000e-003**	**6.6000e-004**	**7.9600e-003**	**0.0812**	**72.5517**	**72.6329**	**0.0104**	**1.7000e-004**	**72.9426**

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	1.9300e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
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	0.0134	0.1668	0.1183	5.7000e-004	0.0271	7.0000e-004	0.0278	7.3000e-003	6.6000e-004	7.9600e-003	0.0000	52.7284	52.7284	4.7500e-003	0.0000	52.8472
Waste						0.0000	0.0000		0.0000	0.0000	0.0812	0.0000	0.0812	4.8000e-003	0.0000	0.2012
Water						0.0000	0.0000		0.0000	0.0000	0.0000	19.8232	19.8232	8.2000e-004	1.7000e-004	19.8941
Total	**0.0153**	**0.1668**	**0.1183**	**5.7000e-004**	**0.0271**	**7.0000e-004**	**0.0278**	**7.3000e-003**	**6.6000e-004**	**7.9600e-003**	**0.0812**	**72.5517**	**72.6329**	**0.0104**	**1.7000e-004**	**72.9426**

	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/4/2017	8/31/2017	5	20	
2	Site Preparation	Site Preparation	9/1/2017	9/7/2017	5	5	
3	Grading	Grading	9/8/2017	9/19/2017	5	8	
4	Building Construction	Building Construction	9/20/2017	8/7/2018	5	230	
5	Paving	Paving	8/8/2018	8/31/2018	5	18	
6	Architectural Coating	Architectural Coating	9/1/2018	9/26/2018	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

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

Renhong Dog Kennel 4.7 acres - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	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
Architectural Coating	1	17.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	86.00	34.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

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	0.0410	0.4275	0.2301	3.9000e-004		0.0219	0.0219		0.0204	0.0204	0.0000	35.6005	35.6005	9.7300e-003	0.0000	35.8438
Total	**0.0410**	**0.4275**	**0.2301**	**3.9000e-004**		**0.0219**	**0.0219**		**0.0204**	**0.0204**	**0.0000**	**35.6005**	**35.6005**	**9.7300e-003**	**0.0000**	**35.8438**

3.2 Demolition - 2017

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	8.1000e-004	6.0000e-004	5.8400e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.2195	1.2195	4.0000e-005	0.0000	1.2206
Total	**8.1000e-004**	**6.0000e-004**	**5.8400e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.2195**	**1.2195**	**4.0000e-005**	**0.0000**	**1.2206**

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	0.0410	0.4275	0.2301	3.9000e-004		0.0219	0.0219		0.0204	0.0204	0.0000	35.6005	35.6005	9.7300e-003	0.0000	35.8438
Total	**0.0410**	**0.4275**	**0.2301**	**3.9000e-004**		**0.0219**	**0.0219**		**0.0204**	**0.0204**	**0.0000**	**35.6005**	**35.6005**	**9.7300e-003**	**0.0000**	**35.8438**

3.2 Demolition - 2017

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	8.1000e-004	6.0000e-004	5.8400e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.2195	1.2195	4.0000e-005	0.0000	1.2206
Total	**8.1000e-004**	**6.0000e-004**	**5.8400e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.2195**	**1.2195**	**4.0000e-005**	**0.0000**	**1.2206**

3.3 Site Preparation - 2017

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1307	0.0586	1.0000e-004		7.2000e-003	7.2000e-003		6.6200e-003	6.6200e-003	0.0000	8.8336	8.8336	2.7100e-003	0.0000	8.9013
Total	**0.0124**	**0.1307**	**0.0586**	**1.0000e-004**	**0.0452**	**7.2000e-003**	**0.0524**	**0.0248**	**6.6200e-003**	**0.0315**	**0.0000**	**8.8336**	**8.8336**	**2.7100e-003**	**0.0000**	**8.9013**

3.3 Site Preparation - 2017

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	2.4000e-004	1.8000e-004	1.7500e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3659	0.3659	1.0000e-005	0.0000	0.3662
Total	**2.4000e-004**	**1.8000e-004**	**1.7500e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3659**	**0.3659**	**1.0000e-005**	**0.0000**	**0.3662**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1307	0.0586	1.0000e-004		7.2000e-003	7.2000e-003		6.6200e-003	6.6200e-003	0.0000	8.8336	8.8336	2.7100e-003	0.0000	8.9013
Total	**0.0124**	**0.1307**	**0.0586**	**1.0000e-004**	**0.0452**	**7.2000e-003**	**0.0524**	**0.0248**	**6.6200e-003**	**0.0315**	**0.0000**	**8.8336**	**8.8336**	**2.7100e-003**	**0.0000**	**8.9013**

3.3 Site Preparation - 2017

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	2.4000e-004	1.8000e-004	1.7500e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3659	0.3659	1.0000e-005	0.0000	0.3662
Total	**2.4000e-004**	**1.8000e-004**	**1.7500e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3659**	**0.3659**	**1.0000e-005**	**0.0000**	**0.3662**

3.4 Grading - 2017

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.1356	0.0684	1.2000e-004		7.1100e-003	7.1100e-003		6.5400e-003	6.5400e-003	0.0000	11.0238	11.0238	3.3800e-003	0.0000	11.1082
Total	**0.0123**	**0.1356**	**0.0684**	**1.2000e-004**	**0.0262**	**7.1100e-003**	**0.0333**	**0.0135**	**6.5400e-003**	**0.0200**	**0.0000**	**11.0238**	**11.0238**	**3.3800e-003**	**0.0000**	**11.1082**

3.4 Grading - 2017

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	3.3000e-004	2.4000e-004	2.3400e-003	1.0000e-005	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4878	0.4878	2.0000e-005	0.0000	0.4882
Total	**3.3000e-004**	**2.4000e-004**	**2.3400e-003**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**4.9000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4878**	**0.4878**	**2.0000e-005**	**0.0000**	**0.4882**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.1356	0.0684	1.2000e-004		7.1100e-003	7.1100e-003		6.5400e-003	6.5400e-003	0.0000	11.0238	11.0238	3.3800e-003	0.0000	11.1082
Total	**0.0123**	**0.1356**	**0.0684**	**1.2000e-004**	**0.0262**	**7.1100e-003**	**0.0333**	**0.0135**	**6.5400e-003**	**0.0200**	**0.0000**	**11.0238**	**11.0238**	**3.3800e-003**	**0.0000**	**11.1082**

3.4 Grading - 2017

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	3.3000e-004	2.4000e-004	2.3400e-003	1.0000e-005	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4878	0.4878	2.0000e-005	0.0000	0.4882
Total	**3.3000e-004**	**2.4000e-004**	**2.3400e-003**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**4.9000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4878**	**0.4878**	**2.0000e-005**	**0.0000**	**0.4882**

3.5 Building Construction - 2017

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	0.1137	0.9692	0.6637	9.8000e-004		0.0653	0.0653		0.0613	0.0613	0.0000	87.7799	87.7799	0.0216	0.0000	88.3205
Total	**0.1137**	**0.9692**	**0.6637**	**9.8000e-004**		**0.0653**	**0.0653**		**0.0613**	**0.0613**	**0.0000**	**87.7799**	**87.7799**	**0.0216**	**0.0000**	**88.3205**

3.5 Building Construction - 2017

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	7.6400e-003	0.1866	0.0415	3.7000e-004	8.2800e-003	1.7700e-003	0.0101	2.3900e-003	1.6900e-003	4.0800e-003	0.0000	34.8903	34.8903	3.3700e-003	0.0000	34.9746
Worker	0.0171	0.0125	0.1222	2.8000e-004	0.0253	2.0000e-004	0.0255	6.7200e-003	1.8000e-004	6.9000e-003	0.0000	25.5200	25.5200	9.2000e-004	0.0000	25.5430
Total	**0.0247**	**0.1992**	**0.1638**	**6.5000e-004**	**0.0336**	**1.9700e-003**	**0.0355**	**9.1100e-003**	**1.8700e-003**	**0.0110**	**0.0000**	**60.4104**	**60.4104**	**4.2900e-003**	**0.0000**	**60.5176**

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	0.1137	0.9692	0.6637	9.8000e-004		0.0653	0.0653		0.0613	0.0613	0.0000	87.7798	87.7798	0.0216	0.0000	88.3204
Total	**0.1137**	**0.9692**	**0.6637**	**9.8000e-004**		**0.0653**	**0.0653**		**0.0613**	**0.0613**	**0.0000**	**87.7798**	**87.7798**	**0.0216**	**0.0000**	**88.3204**

3.5 Building Construction - 2017

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	7.6400e-003	0.1866	0.0415	3.7000e-004	8.2800e-003	1.7700e-003	0.0101	2.3900e-003	1.6900e-003	4.0800e-003	0.0000	34.8903	34.8903	3.3700e-003	0.0000	34.9746
Worker	0.0171	0.0125	0.1222	2.8000e-004	0.0253	2.0000e-004	0.0255	6.7200e-003	1.8000e-004	6.9000e-003	0.0000	25.5200	25.5200	9.2000e-004	0.0000	25.5430
Total	**0.0247**	**0.1992**	**0.1638**	**6.5000e-004**	**0.0336**	**1.9700e-003**	**0.0355**	**9.1100e-003**	**1.8700e-003**	**0.0110**	**0.0000**	**60.4104**	**60.4104**	**4.2900e-003**	**0.0000**	**60.5176**

3.5 Building Construction - 2018

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	0.2103	1.8361	1.3801	2.1100e-003		0.1177	0.1177		0.1107	0.1107	0.0000	186.6473	186.6473	0.0457	0.0000	187.7905
Total	**0.2103**	**1.8361**	**1.3801**	**2.1100e-003**		**0.1177**	**0.1177**		**0.1107**	**0.1107**	**0.0000**	**186.6473**	**186.6473**	**0.0457**	**0.0000**	**187.7905**

3.5 Building Construction - 2018

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	0.0145	0.3778	0.0796	7.9000e-004	0.0178	3.1100e-003	0.0209	5.1400e-003	2.9800e-003	8.1200e-003	0.0000	74.7510	74.7510	6.6300e-003	0.0000	74.9167
Worker	0.0320	0.0230	0.2237	5.9000e-004	0.0544	4.0000e-004	0.0548	0.0145	3.7000e-004	0.0148	0.0000	53.1709	53.1709	1.6900e-003	0.0000	53.2132
Total	**0.0464**	**0.4008**	**0.3033**	**1.3800e-003**	**0.0722**	**3.5100e-003**	**0.0757**	**0.0196**	**3.3500e-003**	**0.0229**	**0.0000**	**127.9219**	**127.9219**	**8.3200e-003**	**0.0000**	**128.1299**

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	0.2103	1.8361	1.3801	2.1100e-003		0.1177	0.1177		0.1107	0.1107	0.0000	186.6471	186.6471	0.0457	0.0000	187.7903
Total	**0.2103**	**1.8361**	**1.3801**	**2.1100e-003**		**0.1177**	**0.1177**		**0.1107**	**0.1107**	**0.0000**	**186.6471**	**186.6471**	**0.0457**	**0.0000**	**187.7903**

3.5 Building Construction - 2018

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	0.0145	0.3778	0.0796	7.9000e-004	0.0178	3.1100e-003	0.0209	5.1400e-003	2.9800e-003	8.1200e-003	0.0000	74.7510	74.7510	6.6300e-003	0.0000	74.9167
Worker	0.0320	0.0230	0.2237	5.9000e-004	0.0544	4.0000e-004	0.0548	0.0145	3.7000e-004	0.0148	0.0000	53.1709	53.1709	1.6900e-003	0.0000	53.2132
Total	**0.0464**	**0.4008**	**0.3033**	**1.3800e-003**	**0.0722**	**3.5100e-003**	**0.0757**	**0.0196**	**3.3500e-003**	**0.0229**	**0.0000**	**127.9219**	**127.9219**	**8.3200e-003**	**0.0000**	**128.1299**

3.6 Paving - 2018

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	0.0128	0.1307	0.1119	1.7000e-004		7.5300e-003	7.5300e-003		6.9500e-003	6.9500e-003	0.0000	15.2887	15.2887	4.6300e-003	0.0000	15.4045
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0128**	**0.1307**	**0.1119**	**1.7000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9500e-003**	**6.9500e-003**	**0.0000**	**15.2887**	**15.2887**	**4.6300e-003**	**0.0000**	**15.4045**

3.6 Paving - 2018

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	8.5000e-004	6.1000e-004	5.9600e-003	2.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.4177	1.4177	5.0000e-005	0.0000	1.4188
Total	**8.5000e-004**	**6.1000e-004**	**5.9600e-003**	**2.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.4177**	**1.4177**	**5.0000e-005**	**0.0000**	**1.4188**

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	0.0128	0.1307	0.1119	1.7000e-004		7.5300e-003	7.5300e-003		6.9500e-003	6.9500e-003	0.0000	15.2887	15.2887	4.6300e-003	0.0000	15.4045
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0128**	**0.1307**	**0.1119**	**1.7000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9500e-003**	**6.9500e-003**	**0.0000**	**15.2887**	**15.2887**	**4.6300e-003**	**0.0000**	**15.4045**

3.6 Paving - 2018

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	8.5000e-004	6.1000e-004	5.9600e-003	2.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.4177	1.4177	5.0000e-005	0.0000	1.4188
Total	**8.5000e-004**	**6.1000e-004**	**5.9600e-003**	**2.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.4177**	**1.4177**	**5.0000e-005**	**0.0000**	**1.4188**

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6900e-003	0.0181	0.0167	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.2979	2.2979	2.2000e-004	0.0000	2.3034
Total	**2.6900e-003**	**0.0181**	**0.0167**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.2979**	**2.2979**	**2.2000e-004**	**0.0000**	**2.3034**

3.7 Architectural Coating - 2018

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	7.2000e-004	5.2000e-004	5.0700e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.2050	1.2050	4.0000e-005	0.0000	1.2060
Total	**7.2000e-004**	**5.2000e-004**	**5.0700e-003**	**1.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.2050**	**1.2050**	**4.0000e-005**	**0.0000**	**1.2060**

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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6900e-003	0.0181	0.0167	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.2979	2.2979	2.2000e-004	0.0000	2.3034
Total	**2.6900e-003**	**0.0181**	**0.0167**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.2979**	**2.2979**	**2.2000e-004**	**0.0000**	**2.3034**

3.7 Architectural Coating - 2018

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	7.2000e-004	5.2000e-004	5.0700e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.2050	1.2050	4.0000e-005	0.0000	1.2060
Total	**7.2000e-004**	**5.2000e-004**	**5.0700e-003**	**1.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.2050**	**1.2050**	**4.0000e-005**	**0.0000**	**1.2060**

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	0.0134	0.1668	0.1183	5.7000e-004	0.0271	7.0000e-004	0.0278	7.3000e-003	6.6000e-004	7.9600e-003	0.0000	52.7284	52.7284	4.7500e-003	0.0000	52.8472
Unmitigated	0.0134	0.1668	0.1183	5.7000e-004	0.0271	7.0000e-004	0.0278	7.3000e-003	6.6000e-004	7.9600e-003	0.0000	52.7284	52.7284	4.7500e-003	0.0000	52.8472

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	8.88	106.93	78.68	70,151	70,151
Total	8.88	106.93	78.68	70,151	70,151

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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					
City Park	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					
City Park	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			
City Park	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			
City Park	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	1.9300e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Unmitigated	1.9300e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005

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
Consumer Products	1.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Total	**1.9200e-003**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

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
Consumer Products	1.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Total	**1.9200e-003**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.8232	8.2000e-004	1.7000e-004	19.8941
Unmitigated	19.8232	8.2000e-004	1.7000e-004	19.8941

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.59996	19.8232	8.2000e-004	1.7000e-004	19.8941
Total		**19.8232**	**8.2000e-004**	**1.7000e-004**	**19.8941**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.59996	19.8232	8.2000e-004	1.7000e-004	19.8941
Total		**19.8232**	**8.2000e-004**	**1.7000e-004**	**19.8941**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0812	4.8000e-003	0.0000	0.2012
Unmitigated	0.0812	4.8000e-003	0.0000	0.2012

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.4	0.0812	4.8000e-003	0.0000	0.2012
Total		**0.0812**	**4.8000e-003**	**0.0000**	**0.2012**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.4	0.0812	4.8000e-003	0.0000	0.2012
Total		**0.0812**	**4.8000e-003**	**0.0000**	**0.2012**

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

Garcia one mobile home

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Mobile Home Park	1.00	Dwelling Unit	0.13	1,200.00	3

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2019
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

Project Characteristics -

Land Use - project description

Construction Phase - defaults

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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					
2017	0.0681	0.6622	0.4311	6.2000e-004	2.3800e-003	0.0446	0.0470	8.1000e-004	0.0412	0.0420	0.0000	57.4205	57.4205	0.0165	0.0000	57.8334
2018	0.0259	0.0657	0.0522	8.0000e-005	6.1000e-004	4.1400e-003	4.7500e-003	1.6000e-004	3.8500e-003	4.0100e-003	0.0000	7.2941	7.2941	1.9000e-003	0.0000	7.3415
Maximum	**0.0681**	**0.6622**	**0.4311**	**6.2000e-004**	**2.3800e-003**	**0.0446**	**0.0470**	**8.1000e-004**	**0.0412**	**0.0420**	**0.0000**	**57.4205**	**57.4205**	**0.0165**	**0.0000**	**57.8334**

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					
2017	0.0681	0.6622	0.4311	6.2000e-004	2.3800e-003	0.0446	0.0470	8.1000e-004	0.0412	0.0420	0.0000	57.4204	57.4204	0.0165	0.0000	57.8334
2018	0.0259	0.0657	0.0522	8.0000e-005	6.1000e-004	4.1400e-003	4.7500e-003	1.6000e-004	3.8500e-003	4.0100e-003	0.0000	7.2941	7.2941	1.9000e-003	0.0000	7.3415
Maximum	**0.0681**	**0.6622**	**0.4311**	**6.2000e-004**	**2.3800e-003**	**0.0446**	**0.0470**	**8.1000e-004**	**0.0412**	**0.0420**	**0.0000**	**57.4204**	**57.4204**	**0.0165**	**0.0000**	**57.8334**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-4-2017**	**11-3-2017**	0.4467	0.4467
2	**11-4-2017**	**2-3-2018**	0.3794	0.3794
		Highest	0.4467	0.4467

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	0.0695	1.3100e-003	0.0849	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4453	1.4783	9.7000e-004	8.0000e-005	1.5266
Energy	1.3000e-004	1.1200e-003	4.8000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.2130	3.2130	1.0000e-004	4.0000e-005	3.2276
Mobile	2.5800e-003	0.0328	0.0273	1.4000e-004	7.2900e-003	1.8000e-004	7.4600e-003	1.9600e-003	1.7000e-004	2.1300e-003	0.0000	12.6997	12.6997	8.3000e-004	0.0000	12.7206
Waste						0.0000	0.0000		0.0000	0.0000	0.0934	0.0000	0.0934	5.5200e-003	0.0000	0.2313
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.4157	0.4364	2.1400e-003	5.0000e-005	0.5059
Total	**0.0723**	**0.0352**	**0.1127**	**2.9000e-004**	**7.2900e-003**	**0.0112**	**0.0185**	**1.9600e-003**	**0.0112**	**0.0131**	**1.1470**	**16.7738**	**17.9208**	**9.5600e-003**	**1.7000e-004**	**18.2120**

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	0.0695	1.3100e-003	0.0849	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4453	1.4783	9.7000e-004	8.0000e-005	1.5266
Energy	1.3000e-004	1.1200e-003	4.8000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.2130	3.2130	1.0000e-004	4.0000e-005	3.2276
Mobile	2.5800e-003	0.0328	0.0273	1.4000e-004	7.2900e-003	1.8000e-004	7.4600e-003	1.9600e-003	1.7000e-004	2.1300e-003	0.0000	12.6997	12.6997	8.3000e-004	0.0000	12.7206
Waste						0.0000	0.0000		0.0000	0.0000	0.0934	0.0000	0.0934	5.5200e-003	0.0000	0.2313
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.4157	0.4364	2.1400e-003	5.0000e-005	0.5059
Total	**0.0723**	**0.0352**	**0.1127**	**2.9000e-004**	**7.2900e-003**	**0.0112**	**0.0185**	**1.9600e-003**	**0.0112**	**0.0131**	**1.1470**	**16.7738**	**17.9208**	**9.5600e-003**	**1.7000e-004**	**18.2120**

	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/4/2017	8/17/2017	5	10	
2	Site Preparation	Site Preparation	8/18/2017	8/18/2017	5	1	
3	Grading	Grading	8/19/2017	8/22/2017	5	2	
4	Building Construction	Building Construction	8/23/2017	1/9/2018	5	100	
5	Paving	Paving	1/10/2018	1/16/2018	5	5	
6	Architectural Coating	Architectural Coating	1/17/2018	1/23/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 2,430; Residential Outdoor: 810; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Garcia one mobile home - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

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	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3493	5.3493	1.0500e-003	0.0000	5.3755
Total	**6.0500e-003**	**0.0525**	**0.0396**	**6.0000e-005**		**3.6600e-003**	**3.6600e-003**		**3.4900e-003**	**3.4900e-003**	**0.0000**	**5.3493**	**5.3493**	**1.0500e-003**	**0.0000**	**5.3755**

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	3.8000e-004	3.0000e-004	2.8300e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.6261	0.6261	2.0000e-005	0.0000	0.6266
Total	**3.8000e-004**	**3.0000e-004**	**2.8300e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.6261**	**0.6261**	**2.0000e-005**	**0.0000**	**0.6266**

3.2 Demolition - 2017

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	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3492	5.3492	1.0500e-003	0.0000	5.3755
Total	**6.0500e-003**	**0.0525**	**0.0396**	**6.0000e-005**		**3.6600e-003**	**3.6600e-003**		**3.4900e-003**	**3.4900e-003**	**0.0000**	**5.3492**	**5.3492**	**1.0500e-003**	**0.0000**	**5.3755**

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	3.8000e-004	3.0000e-004	2.8300e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.6261	0.6261	2.0000e-005	0.0000	0.6266
Total	**3.8000e-004**	**3.0000e-004**	**2.8300e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.6261**	**0.6261**	**2.0000e-005**	**0.0000**	**0.6266**

3.3 Site Preparation - 2017

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0313	0.0313	0.0000	0.0000	0.0313
Total	**2.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0313**	**0.0313**	**0.0000**	**0.0000**	**0.0313**

3.3 Site Preparation - 2017

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0313	0.0313	0.0000	0.0000	0.0313
Total	**2.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0313**	**0.0313**	**0.0000**	**0.0000**	**0.0313**

3.4 Grading - 2017

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	**1.2100e-003**	**0.0105**	**7.9200e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**7.0000e-004**	**1.1100e-003**	**0.0000**	**1.0699**	**1.0699**	**2.1000e-004**	**0.0000**	**1.0751**

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	8.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1252	0.1252	0.0000	0.0000	0.1253
Total	**8.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1252**	**0.1252**	**0.0000**	**0.0000**	**0.1253**

3.4 Grading - 2017

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	**1.2100e-003**	**0.0105**	**7.9200e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**7.0000e-004**	**1.1100e-003**	**0.0000**	**1.0699**	**1.0699**	**2.1000e-004**	**0.0000**	**1.0751**

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	8.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1252	0.1252	0.0000	0.0000	0.1253
Total	**8.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1252**	**0.1252**	**0.0000**	**0.0000**	**0.1253**

3.5 Building Construction - 2017

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	0.0596	0.5933	0.3753	5.3000e-004		0.0400	0.0400		0.0368	0.0368	0.0000	49.1831	49.1831	0.0151	0.0000	49.5599
Total	**0.0596**	**0.5933**	**0.3753**	**5.3000e-004**		**0.0400**	**0.0400**		**0.0368**	**0.0368**	**0.0000**	**49.1831**	**49.1831**	**0.0151**	**0.0000**	**49.5599**

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	3.5000e-004	2.8000e-004	2.6300e-003	1.0000e-005	5.8000e-004	0.0000	5.9000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5823	0.5823	2.0000e-005	0.0000	0.5828
Total	**3.5000e-004**	**2.8000e-004**	**2.6300e-003**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**5.9000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5823**	**0.5823**	**2.0000e-005**	**0.0000**	**0.5828**

3.5 Building Construction - 2017

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	0.0596	0.5933	0.3753	5.3000e-004		0.0400	0.0400		0.0368	0.0368	0.0000	49.1831	49.1831	0.0151	0.0000	49.5598
Total	**0.0596**	**0.5933**	**0.3753**	**5.3000e-004**		**0.0400**	**0.0400**		**0.0368**	**0.0368**	**0.0000**	**49.1831**	**49.1831**	**0.0151**	**0.0000**	**49.5598**

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	3.5000e-004	2.8000e-004	2.6300e-003	1.0000e-005	5.8000e-004	0.0000	5.9000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5823	0.5823	2.0000e-005	0.0000	0.5828
Total	**3.5000e-004**	**2.8000e-004**	**2.6300e-003**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**5.9000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5823**	**0.5823**	**2.0000e-005**	**0.0000**	**0.5828**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8000e-003	0.0386	0.0271	4.0000e-005		2.4800e-003	2.4800e-003		2.2800e-003	2.2800e-003	0.0000	3.6404	3.6404	1.1300e-003	0.0000	3.6687
Total	**3.8000e-003**	**0.0386**	**0.0271**	**4.0000e-005**		**2.4800e-003**	**2.4800e-003**		**2.2800e-003**	**2.2800e-003**	**0.0000**	**3.6404**	**3.6404**	**1.1300e-003**	**0.0000**	**3.6687**

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	2.0000e-005	2.0000e-005	1.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0425	0.0425	0.0000	0.0000	0.0425
Total	**2.0000e-005**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0425**	**0.0425**	**0.0000**	**0.0000**	**0.0425**

3.5 Building Construction - 2018

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	3.8000e-003	0.0386	0.0271	4.0000e-005		2.4800e-003	2.4800e-003		2.2800e-003	2.2800e-003	0.0000	3.6404	3.6404	1.1300e-003	0.0000	3.6687
Total	**3.8000e-003**	**0.0386**	**0.0271**	**4.0000e-005**		**2.4800e-003**	**2.4800e-003**		**2.2800e-003**	**2.2800e-003**	**0.0000**	**3.6404**	**3.6404**	**1.1300e-003**	**0.0000**	**3.6687**

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	2.0000e-005	2.0000e-005	1.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0425	0.0425	0.0000	0.0000	0.0425
Total	**2.0000e-005**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0425**	**0.0425**	**0.0000**	**0.0000**	**0.0425**

3.6 Paving - 2018

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	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

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	3.0000e-004	2.3000e-004	2.1600e-003	1.0000e-005	5.6000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5459	0.5459	2.0000e-005	0.0000	0.5463
Total	**3.0000e-004**	**2.3000e-004**	**2.1600e-003**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5459**	**0.5459**	**2.0000e-005**	**0.0000**	**0.5463**

3.6 Paving - 2018

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	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

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	3.0000e-004	2.3000e-004	2.1600e-003	1.0000e-005	5.6000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5459	0.5459	2.0000e-005	0.0000	0.5463
Total	**3.0000e-004**	**2.3000e-004**	**2.1600e-003**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5459**	**0.5459**	**2.0000e-005**	**0.0000**	**0.5463**

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.0188					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.0195**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Unmitigated Construction Off-Site

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

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.0188					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.0195**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	2.5800e-003	0.0328	0.0273	1.4000e-004	7.2900e-003	1.8000e-004	7.4600e-003	1.9600e-003	1.7000e-004	2.1300e-003	0.0000	12.6997	12.6997	8.3000e-004	0.0000	12.7206
Unmitigated	2.5800e-003	0.0328	0.0273	1.4000e-004	7.2900e-003	1.8000e-004	7.4600e-003	1.9600e-003	1.7000e-004	2.1300e-003	0.0000	12.6997	12.6997	8.3000e-004	0.0000	12.7206

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Mobile Home Park	4.99	5.00	4.36	18,845	18,845
Total	4.99	5.00	4.36	18,845	18,845

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
Mobile Home Park	16.80	7.10	7.90	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Mobile Home Park	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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	1.9148	1.9148	8.0000e-005	2.0000e-005	1.9216
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.9148	1.9148	8.0000e-005	2.0000e-005	1.9216
NaturalGas Mitigated	1.3000e-004	1.1200e-003	4.8000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2983	1.2983	2.0000e-005	2.0000e-005	1.3060
NaturalGas Unmitigated	1.3000e-004	1.1200e-003	4.8000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2983	1.2983	2.0000e-005	2.0000e-005	1.3060

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					
Mobile Home Park	24328.5	1.3000e-004	1.1200e-003	4.8000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2983	1.2983	2.0000e-005	2.0000e-005	1.3060
Total		**1.3000e-004**	**1.1200e-003**	**4.8000e-004**	**1.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**1.2983**	**1.2983**	**2.0000e-005**	**2.0000e-005**	**1.3060**

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					
Mobile Home Park	24328.5	1.3000e-004	1.1200e-003	4.8000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2983	1.2983	2.0000e-005	2.0000e-005	1.3060
Total		**1.3000e-004**	**1.1200e-003**	**4.8000e-004**	**1.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**1.2983**	**1.2983**	**2.0000e-005**	**2.0000e-005**	**1.3060**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Mobile Home Park	6009.51	1.9148	8.0000e-005	2.0000e-005	1.9216
Total		**1.9148**	**8.0000e-005**	**2.0000e-005**	**1.9216**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Mobile Home Park	6009.51	1.9148	8.0000e-005	2.0000e-005	1.9216
Total		**1.9148**	**8.0000e-005**	**2.0000e-005**	**1.9216**

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	0.0695	1.3100e-003	0.0849	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4453	1.4783	9.7000e-004	8.0000e-005	1.5266
Unmitigated	0.0695	1.3100e-003	0.0849	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4453	1.4783	9.7000e-004	8.0000e-005	1.5266

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	1.8800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0628	1.2300e-003	0.0775	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4332	1.4662	9.5000e-004	8.0000e-005	1.5142
Landscaping	2.3000e-004	9.0000e-005	7.4600e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Total	**0.0696**	**1.3200e-003**	**0.0849**	**1.4000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**1.0330**	**0.4453**	**1.4783**	**9.6000e-004**	**8.0000e-005**	**1.5266**

6.2 Area by SubCategory

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	1.8800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0628	1.2300e-003	0.0775	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4332	1.4662	9.5000e-004	8.0000e-005	1.5142
Landscaping	2.3000e-004	9.0000e-005	7.4600e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Total	**0.0696**	**1.3200e-003**	**0.0849**	**1.4000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**1.0330**	**0.4453**	**1.4783**	**9.6000e-004**	**8.0000e-005**	**1.5266**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4364	2.1400e-003	5.0000e-005	0.5059
Unmitigated	0.4364	2.1400e-003	5.0000e-005	0.5059

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Mobile Home Park	0.065154 / 0.0410754	0.4364	2.1400e-003	5.0000e-005	0.5059
Total		**0.4364**	**2.1400e-003**	**5.0000e-005**	**0.5059**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Mobile Home Park	0.065154 / 0.0410754	0.4364	2.1400e-003	5.0000e-005	0.5059
Total		**0.4364**	**2.1400e-003**	**5.0000e-005**	**0.5059**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0934	5.5200e-003	0.0000	0.2313
Unmitigated	0.0934	5.5200e-003	0.0000	0.2313

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Mobile Home Park	0.46	0.0934	5.5200e-003	0.0000	0.2313
Total		**0.0934**	**5.5200e-003**	**0.0000**	**0.2313**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Mobile Home Park	0.46	0.0934	5.5200e-003	0.0000	0.2313
Total		**0.0934**	**5.5200e-003**	**0.0000**	**0.2313**

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

Frieling Animal Keeping

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	40.00	Acre	40.00	1,742,400.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2019
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

Project Characteristics -

Land Use - Using City Park land use type to simulate animal keeping facility.

Construction Phase - defaults

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	0.00	1,742,400.00
tblLandUse	GreenSpaceSquareFeet	1,742,400.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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					
2017	0.2586	2.7414	1.4825	2.4700e-003	0.6076	0.1380	0.7456	0.2868	0.1276	0.4145	0.0000	228.1630	228.1630	0.0639	0.0000	229.7603
2018	1.0793	8.4271	7.3372	0.0232	1.4866	0.2627	1.7493	0.4475	0.2460	0.6935	0.0000	2,126.8604	2,126.8604	0.2087	0.0000	2,132.0777
2019	1.0456	7.9507	7.2245	0.0261	1.4222	0.2109	1.6331	0.3829	0.1986	0.5816	0.0000	2,392.7139	2,392.7139	0.1935	0.0000	2,397.5503
2020	0.9374	7.2825	6.6552	0.0257	1.4277	0.1779	1.6056	0.3844	0.1675	0.5519	0.0000	2,352.7589	2,352.7589	0.1830	0.0000	2,357.3346
2021	20.2687	0.5382	0.7226	1.7300e-003	0.0827	0.0243	0.1071	0.0221	0.0227	0.0447	0.0000	154.7176	154.7176	0.0228	0.0000	155.2864
Maximum	**20.2687**	**8.4271**	**7.3372**	**0.0261**	**1.4866**	**0.2627**	**1.7493**	**0.4475**	**0.2460**	**0.6935**	**0.0000**	**2,392.7139**	**2,392.7139**	**0.2087**	**0.0000**	**2,397.5503**

2.1 Overall Construction

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					
2017	0.2586	2.7414	1.4825	2.4700e-003	0.6076	0.1380	0.7456	0.2868	0.1276	0.4145	0.0000	228.1627	228.1627	0.0639	0.0000	229.7600
2018	1.0793	8.4271	7.3372	0.0232	1.4866	0.2627	1.7493	0.4475	0.2460	0.6935	0.0000	2,126.8599	2,126.8599	0.2087	0.0000	2,132.0773
2019	1.0456	7.9507	7.2245	0.0261	1.4222	0.2109	1.6331	0.3829	0.1986	0.5816	0.0000	2,392.7135	2,392.7135	0.1935	0.0000	2,397.5500
2020	0.9374	7.2825	6.6552	0.0257	1.4277	0.1779	1.6056	0.3844	0.1675	0.5519	0.0000	2,352.7585	2,352.7585	0.1830	0.0000	2,357.3342
2021	20.2687	0.5382	0.7226	1.7300e-003	0.0827	0.0243	0.1071	0.0221	0.0227	0.0447	0.0000	154.7175	154.7175	0.0228	0.0000	155.2863
Maximum	**20.2687**	**8.4271**	**7.3372**	**0.0261**	**1.4866**	**0.2627**	**1.7493**	**0.4475**	**0.2460**	**0.6935**	**0.0000**	**2,392.7135**	**2,392.7135**	**0.2087**	**0.0000**	**2,397.5500**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-4-2017**	**11-3-2017**	1.6283	1.6283
2	**11-4-2017**	**2-3-2018**	2.2023	2.2023
3	**2-4-2018**	**5-3-2018**	2.2587	2.2587
4	**5-4-2018**	**8-3-2018**	2.4425	2.4425
5	**8-4-2018**	**11-3-2018**	2.4536	2.4536
6	**11-4-2018**	**2-3-2019**	2.4016	2.4016

7	**2-4-2019**	**5-3-2019**	2.1970	2.1970
8	**5-4-2019**	**8-3-2019**	2.2548	2.2548
9	**8-4-2019**	**11-3-2019**	2.2644	2.2644
10	**11-4-2019**	**2-3-2020**	2.2046	2.2046
11	**2-4-2020**	**5-3-2020**	2.0224	2.0224
12	**5-4-2020**	**8-3-2020**	2.0543	2.0543
13	**8-4-2020**	**11-3-2020**	2.0619	2.0619
14	**11-4-2020**	**2-3-2021**	1.5887	1.5887
15	**2-4-2021**	**5-3-2021**	10.5238	10.5238
16	**5-4-2021**	**8-3-2021**	10.0049	10.0049
		Highest	10.5238	10.5238

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	8.8240	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
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	0.1203	1.5063	1.1136	5.3900e-003	0.2666	6.7100e-003	0.2734	0.0718	6.3700e-003	0.0782	0.0000	502.2037	502.2037	0.0418	0.0000	503.2488
Waste						0.0000	0.0000		0.0000	0.0000	0.6983	0.0000	0.6983	0.0413	0.0000	1.7300
Water						0.0000	0.0000		0.0000	0.0000	0.0000	168.7082	168.7082	6.9700e-003	1.4400e-003	169.3118
Total	**8.9443**	**1.5063**	**1.1140**	**5.3900e-003**	**0.2666**	**6.7100e-003**	**0.2734**	**0.0718**	**6.3700e-003**	**0.0782**	**0.6983**	**670.9126**	**671.6109**	**0.0900**	**1.4400e-003**	**674.2913**

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	8.8240	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
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	0.1203	1.5063	1.1136	5.3900e-003	0.2666	6.7100e-003	0.2734	0.0718	6.3700e-003	0.0782	0.0000	502.2037	502.2037	0.0418	0.0000	503.2488
Waste						0.0000	0.0000		0.0000	0.0000	0.6983	0.0000	0.6983	0.0413	0.0000	1.7300
Water						0.0000	0.0000		0.0000	0.0000	0.0000	168.7082	168.7082	6.9700e-003	1.4400e-003	169.3118
Total	**8.9443**	**1.5063**	**1.1140**	**5.3900e-003**	**0.2666**	**6.7100e-003**	**0.2734**	**0.0718**	**6.3700e-003**	**0.0782**	**0.6983**	**670.9126**	**671.6109**	**0.0900**	**1.4400e-003**	**674.2913**

	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/4/2017	10/12/2017	5	50	
2	Site Preparation	Site Preparation	10/13/2017	11/23/2017	5	30	
3	Grading	Grading	11/24/2017	3/8/2018	5	75	
4	Building Construction	Building Construction	3/9/2018	1/7/2021	5	740	
5	Paving	Paving	1/8/2021	3/25/2021	5	55	
6	Architectural Coating	Architectural Coating	3/26/2021	6/10/2021	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,613,600; Non-Residential Outdoor: 871,200; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Frieling Animal Keeping - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	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
Architectural Coating	1	146.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	732.00	286.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

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	0.1026	1.0687	0.5753	9.7000e-004		0.0548	0.0548		0.0511	0.0511	0.0000	89.0013	89.0013	0.0243	0.0000	89.6096
Total	**0.1026**	**1.0687**	**0.5753**	**9.7000e-004**		**0.0548**	**0.0548**		**0.0511**	**0.0511**	**0.0000**	**89.0013**	**89.0013**	**0.0243**	**0.0000**	**89.6096**

3.2 Demolition - 2017

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	2.8500e-003	2.2200e-003	0.0212	5.0000e-005	4.7000e-003	3.0000e-005	4.7300e-003	1.2500e-003	3.0000e-005	1.2800e-003	0.0000	4.6957	4.6957	1.6000e-004	0.0000	4.6998
Total	**2.8500e-003**	**2.2200e-003**	**0.0212**	**5.0000e-005**	**4.7000e-003**	**3.0000e-005**	**4.7300e-003**	**1.2500e-003**	**3.0000e-005**	**1.2800e-003**	**0.0000**	**4.6957**	**4.6957**	**1.6000e-004**	**0.0000**	**4.6998**

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	0.1026	1.0687	0.5753	9.7000e-004		0.0548	0.0548		0.0511	0.0511	0.0000	89.0011	89.0011	0.0243	0.0000	89.6095
Total	**0.1026**	**1.0687**	**0.5753**	**9.7000e-004**		**0.0548**	**0.0548**		**0.0511**	**0.0511**	**0.0000**	**89.0011**	**89.0011**	**0.0243**	**0.0000**	**89.6095**

3.2 Demolition - 2017

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	2.8500e-003	2.2200e-003	0.0212	5.0000e-005	4.7000e-003	3.0000e-005	4.7300e-003	1.2500e-003	3.0000e-005	1.2800e-003	0.0000	4.6957	4.6957	1.6000e-004	0.0000	4.6998
Total	**2.8500e-003**	**2.2200e-003**	**0.0212**	**5.0000e-005**	**4.7000e-003**	**3.0000e-005**	**4.7300e-003**	**1.2500e-003**	**3.0000e-005**	**1.2800e-003**	**0.0000**	**4.6957**	**4.6957**	**1.6000e-004**	**0.0000**	**4.6998**

3.3 Site Preparation - 2017

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					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0744	0.7841	0.3518	5.7000e-004		0.0432	0.0432		0.0397	0.0397	0.0000	53.0016	53.0016	0.0162	0.0000	53.4076
Total	**0.0744**	**0.7841**	**0.3518**	**5.7000e-004**	**0.2710**	**0.0432**	**0.3142**	**0.1490**	**0.0397**	**0.1887**	**0.0000**	**53.0016**	**53.0016**	**0.0162**	**0.0000**	**53.4076**

3.3 Site Preparation - 2017

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	2.0500e-003	1.6000e-003	0.0153	4.0000e-005	3.3800e-003	3.0000e-005	3.4100e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	3.3809	3.3809	1.2000e-004	0.0000	3.3838
Total	**2.0500e-003**	**1.6000e-003**	**0.0153**	**4.0000e-005**	**3.3800e-003**	**3.0000e-005**	**3.4100e-003**	**9.0000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**3.3809**	**3.3809**	**1.2000e-004**	**0.0000**	**3.3838**

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					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0744	0.7841	0.3518	5.7000e-004		0.0432	0.0432		0.0397	0.0397	0.0000	53.0015	53.0015	0.0162	0.0000	53.4075
Total	**0.0744**	**0.7841**	**0.3518**	**5.7000e-004**	**0.2710**	**0.0432**	**0.3142**	**0.1490**	**0.0397**	**0.1887**	**0.0000**	**53.0015**	**53.0015**	**0.0162**	**0.0000**	**53.4075**

3.3 Site Preparation - 2017

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	2.0500e-003	1.6000e-003	0.0153	4.0000e-005	3.3800e-003	3.0000e-005	3.4100e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	3.3809	3.3809	1.2000e-004	0.0000	3.3838
Total	**2.0500e-003**	**1.6000e-003**	**0.0153**	**4.0000e-005**	**3.3800e-003**	**3.0000e-005**	**3.4100e-003**	**9.0000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**3.3809**	**3.3809**	**1.2000e-004**	**0.0000**	**3.3838**

3.4 Grading - 2017

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					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0747	0.8832	0.5042	8.1000e-004		0.0400	0.0400		0.0368	0.0368	0.0000	74.8278	74.8278	0.0229	0.0000	75.4010
Total	**0.0747**	**0.8832**	**0.5042**	**8.1000e-004**	**0.3253**	**0.0400**	**0.3652**	**0.1349**	**0.0368**	**0.1716**	**0.0000**	**74.8278**	**74.8278**	**0.0229**	**0.0000**	**75.4010**

3.4 Grading - 2017

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	1.9700e-003	1.5400e-003	0.0147	4.0000e-005	3.2600e-003	2.0000e-005	3.2800e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	3.2557	3.2557	1.1000e-004	0.0000	3.2585
Total	**1.9700e-003**	**1.5400e-003**	**0.0147**	**4.0000e-005**	**3.2600e-003**	**2.0000e-005**	**3.2800e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**3.2557**	**3.2557**	**1.1000e-004**	**0.0000**	**3.2585**

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					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0747	0.8832	0.5042	8.1000e-004		0.0400	0.0400		0.0368	0.0368	0.0000	74.8277	74.8277	0.0229	0.0000	75.4009
Total	**0.0747**	**0.8832**	**0.5042**	**8.1000e-004**	**0.3253**	**0.0400**	**0.3652**	**0.1349**	**0.0368**	**0.1716**	**0.0000**	**74.8277**	**74.8277**	**0.0229**	**0.0000**	**75.4009**

3.4 Grading - 2017

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	1.9700e-003	1.5400e-003	0.0147	4.0000e-005	3.2600e-003	2.0000e-005	3.2800e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	3.2557	3.2557	1.1000e-004	0.0000	3.2585
Total	**1.9700e-003**	**1.5400e-003**	**0.0147**	**4.0000e-005**	**3.2600e-003**	**2.0000e-005**	**3.2800e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**3.2557**	**3.2557**	**1.1000e-004**	**0.0000**	**3.2585**

3.4 Grading - 2018

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					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1247	1.4583	0.8597	1.5200e-003		0.0645	0.0645		0.0594	0.0594	0.0000	138.7888	138.7888	0.0432	0.0000	139.8690
Total	**0.1247**	**1.4583**	**0.8597**	**1.5200e-003**	**0.3253**	**0.0645**	**0.3898**	**0.1349**	**0.0594**	**0.1942**	**0.0000**	**138.7888**	**138.7888**	**0.0432**	**0.0000**	**139.8690**

3.4 Grading - 2018

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	3.2400e-003	2.4800e-003	0.0235	7.0000e-005	6.1400e-003	4.0000e-005	6.1800e-003	1.6300e-003	4.0000e-005	1.6700e-003	0.0000	5.9438	5.9438	1.8000e-004	0.0000	5.9484
Total	**3.2400e-003**	**2.4800e-003**	**0.0235**	**7.0000e-005**	**6.1400e-003**	**4.0000e-005**	**6.1800e-003**	**1.6300e-003**	**4.0000e-005**	**1.6700e-003**	**0.0000**	**5.9438**	**5.9438**	**1.8000e-004**	**0.0000**	**5.9484**

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					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1247	1.4583	0.8597	1.5200e-003		0.0645	0.0645		0.0594	0.0594	0.0000	138.7887	138.7887	0.0432	0.0000	139.8688
Total	**0.1247**	**1.4583**	**0.8597**	**1.5200e-003**	**0.3253**	**0.0645**	**0.3898**	**0.1349**	**0.0594**	**0.1942**	**0.0000**	**138.7887**	**138.7887**	**0.0432**	**0.0000**	**139.8688**

3.4 Grading - 2018

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	3.2400e-003	2.4800e-003	0.0235	7.0000e-005	6.1400e-003	4.0000e-005	6.1800e-003	1.6300e-003	4.0000e-005	1.6700e-003	0.0000	5.9438	5.9438	1.8000e-004	0.0000	5.9484
Total	**3.2400e-003**	**2.4800e-003**	**0.0235**	**7.0000e-005**	**6.1400e-003**	**4.0000e-005**	**6.1800e-003**	**1.6300e-003**	**4.0000e-005**	**1.6700e-003**	**0.0000**	**5.9438**	**5.9438**	**1.8000e-004**	**0.0000**	**5.9484**

3.5 Building Construction - 2018

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	0.2840	2.4793	1.8635	2.8500e-003		0.1590	0.1590		0.1495	0.1495	0.0000	252.0333	252.0333	0.0618	0.0000	253.5770
Total	**0.2840**	**2.4793**	**1.8635**	**2.8500e-003**		**0.1590**	**0.1590**		**0.1495**	**0.1495**	**0.0000**	**252.0333**	**252.0333**	**0.0618**	**0.0000**	**253.5770**

3.5 Building Construction - 2018

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	0.1544	4.0947	0.8623	8.3100e-003	0.1830	0.0322	0.2152	0.0528	0.0308	0.0836	0.0000	788.8842	788.8842	0.0747	0.0000	790.7509
Worker	0.5130	0.3924	3.7281	0.0104	0.9722	6.9300e-003	0.9791	0.2582	6.3900e-003	0.2646	0.0000	941.2103	941.2103	0.0289	0.0000	941.9325
Total	**0.6674**	**4.4870**	**4.5904**	**0.0187**	**1.1552**	**0.0391**	**1.1943**	**0.3110**	**0.0372**	**0.3482**	**0.0000**	**1,730.0945**	**1,730.0945**	**0.1036**	**0.0000**	**1,732.6834**

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	0.2840	2.4793	1.8635	2.8500e-003		0.1590	0.1590		0.1495	0.1495	0.0000	252.0330	252.0330	0.0618	0.0000	253.5767
Total	**0.2840**	**2.4793**	**1.8635**	**2.8500e-003**		**0.1590**	**0.1590**		**0.1495**	**0.1495**	**0.0000**	**252.0330**	**252.0330**	**0.0618**	**0.0000**	**253.5767**

3.5 Building Construction - 2018

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	0.1544	4.0947	0.8623	8.3100e-003	0.1830	0.0322	0.2152	0.0528	0.0308	0.0836	0.0000	788.8842	788.8842	0.0747	0.0000	790.7509
Worker	0.5130	0.3924	3.7281	0.0104	0.9722	6.9300e-003	0.9791	0.2582	6.3900e-003	0.2646	0.0000	941.2103	941.2103	0.0289	0.0000	941.9325
Total	**0.6674**	**4.4870**	**4.5904**	**0.0187**	**1.1552**	**0.0391**	**1.1943**	**0.3110**	**0.0372**	**0.3482**	**0.0000**	**1,730.0945**	**1,730.0945**	**0.1036**	**0.0000**	**1,732.6834**

3.5 Building Construction - 2019

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	0.3081	2.7508	2.2399	3.5100e-003		0.1683	0.1683		0.1583	0.1583	0.0000	306.8110	306.8110	0.0747	0.0000	308.6795
Total	**0.3081**	**2.7508**	**2.2399**	**3.5100e-003**		**0.1683**	**0.1683**		**0.1583**	**0.1583**	**0.0000**	**306.8110**	**306.8110**	**0.0747**	**0.0000**	**308.6795**

3.5 Building Construction - 2019

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	0.1720	4.7802	0.9619	0.0101	0.2253	0.0342	0.2595	0.0650	0.0327	0.0977	0.0000	962.9442	962.9442	0.0876	0.0000	965.1350
Worker	0.5655	0.4198	4.0227	0.0124	1.1969	8.3400e-003	1.2053	0.3179	7.6800e-003	0.3256	0.0000	1,122.9586	1,122.9586	0.0311	0.0000	1,123.7358
Total	**0.7375**	**5.1999**	**4.9846**	**0.0226**	**1.4222**	**0.0425**	**1.4647**	**0.3829**	**0.0404**	**0.4233**	**0.0000**	**2,085.9029**	**2,085.9029**	**0.1187**	**0.0000**	**2,088.8708**

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	0.3081	2.7508	2.2399	3.5100e-003		0.1683	0.1683		0.1583	0.1583	0.0000	306.8106	306.8106	0.0747	0.0000	308.6792
Total	**0.3081**	**2.7508**	**2.2399**	**3.5100e-003**		**0.1683**	**0.1683**		**0.1583**	**0.1583**	**0.0000**	**306.8106**	**306.8106**	**0.0747**	**0.0000**	**308.6792**

3.5 Building Construction - 2019

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	0.1720	4.7802	0.9619	0.0101	0.2253	0.0342	0.2595	0.0650	0.0327	0.0977	0.0000	962.9442	962.9442	0.0876	0.0000	965.1350
Worker	0.5655	0.4198	4.0227	0.0124	1.1969	8.3400e-003	1.2053	0.3179	7.6800e-003	0.3256	0.0000	1,122.9586	1,122.9586	0.0311	0.0000	1,123.7358
Total	**0.7375**	**5.1999**	**4.9846**	**0.0226**	**1.4222**	**0.0425**	**1.4647**	**0.3829**	**0.0404**	**0.4233**	**0.0000**	**2,085.9029**	**2,085.9029**	**0.1187**	**0.0000**	**2,088.8708**

3.5 Building Construction - 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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.5 Building Construction - 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	0.1432	4.3987	0.8481	0.0101	0.2262	0.0234	0.2496	0.0653	0.0224	0.0877	0.0000	958.0763	958.0763	0.0818	0.0000	960.1217
Worker	0.5165	0.3704	3.5999	0.0121	1.2015	8.1700e-003	1.2097	0.3191	7.5200e-003	0.3266	0.0000	1,091.2735	1,091.2735	0.0272	0.0000	1,091.9533
Total	**0.6597**	**4.7691**	**4.4481**	**0.0222**	**1.4277**	**0.0316**	**1.4592**	**0.3844**	**0.0299**	**0.4143**	**0.0000**	**2,049.3498**	**2,049.3498**	**0.1090**	**0.0000**	**2,052.0750**

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.5 Building Construction - 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	0.1432	4.3987	0.8481	0.0101	0.2262	0.0234	0.2496	0.0653	0.0224	0.0877	0.0000	958.0763	958.0763	0.0818	0.0000	960.1217
Worker	0.5165	0.3704	3.5999	0.0121	1.2015	8.1700e-003	1.2097	0.3191	7.5200e-003	0.3266	0.0000	1,091.2735	1,091.2735	0.0272	0.0000	1,091.9533
Total	**0.6597**	**4.7691**	**4.4481**	**0.0222**	**1.4277**	**0.0316**	**1.4592**	**0.3844**	**0.0299**	**0.4143**	**0.0000**	**2,049.3498**	**2,049.3498**	**0.1090**	**0.0000**	**2,052.0750**

3.5 Building Construction - 2021

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	4.7500e-003	0.0436	0.0414	7.0000e-005		2.4000e-003	2.4000e-003		2.2500e-003	2.2500e-003	0.0000	5.7909	5.7909	1.4000e-003	0.0000	5.8259
Total	**4.7500e-003**	**0.0436**	**0.0414**	**7.0000e-005**		**2.4000e-003**	**2.4000e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**5.7909**	**5.7909**	**1.4000e-003**	**0.0000**	**5.8259**

3.5 Building Construction - 2021

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	2.2300e-003	0.0759	0.0142	1.9000e-004	4.3200e-003	1.9000e-004	4.5100e-003	1.2500e-003	1.8000e-004	1.4300e-003	0.0000	18.1128	18.1128	1.4800e-003	0.0000	18.1499
Worker	9.0900e-003	6.2800e-003	0.0626	2.2000e-004	0.0229	1.5000e-004	0.0231	6.0900e-003	1.4000e-004	6.2300e-003	0.0000	20.0994	20.0994	4.6000e-004	0.0000	20.1109
Total	**0.0113**	**0.0822**	**0.0768**	**4.1000e-004**	**0.0273**	**3.4000e-004**	**0.0276**	**7.3400e-003**	**3.2000e-004**	**7.6600e-003**	**0.0000**	**38.2122**	**38.2122**	**1.9400e-003**	**0.0000**	**38.2609**

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	4.7500e-003	0.0436	0.0414	7.0000e-005		2.4000e-003	2.4000e-003		2.2500e-003	2.2500e-003	0.0000	5.7909	5.7909	1.4000e-003	0.0000	5.8259
Total	**4.7500e-003**	**0.0436**	**0.0414**	**7.0000e-005**		**2.4000e-003**	**2.4000e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**5.7909**	**5.7909**	**1.4000e-003**	**0.0000**	**5.8259**

3.5 Building Construction - 2021

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	2.2300e-003	0.0759	0.0142	1.9000e-004	4.3200e-003	1.9000e-004	4.5100e-003	1.2500e-003	1.8000e-004	1.4300e-003	0.0000	18.1128	18.1128	1.4800e-003	0.0000	18.1499
Worker	9.0900e-003	6.2800e-003	0.0626	2.2000e-004	0.0229	1.5000e-004	0.0231	6.0900e-003	1.4000e-004	6.2300e-003	0.0000	20.0994	20.0994	4.6000e-004	0.0000	20.1109
Total	**0.0113**	**0.0822**	**0.0768**	**4.1000e-004**	**0.0273**	**3.4000e-004**	**0.0276**	**7.3400e-003**	**3.2000e-004**	**7.6600e-003**	**0.0000**	**38.2122**	**38.2122**	**1.9400e-003**	**0.0000**	**38.2609**

3.6 Paving - 2021

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	0.0345	0.3553	0.4030	6.3000e-004		0.0186	0.0186		0.0172	0.0172	0.0000	55.0646	55.0646	0.0178	0.0000	55.5098
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0345**	**0.3553**	**0.4030**	**6.3000e-004**		**0.0186**	**0.0186**		**0.0172**	**0.0172**	**0.0000**	**55.0646**	**55.0646**	**0.0178**	**0.0000**	**55.5098**

3.6 Paving - 2021

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	2.0500e-003	1.4200e-003	0.0141	5.0000e-005	5.1700e-003	3.0000e-005	5.2000e-003	1.3700e-003	3.0000e-005	1.4000e-003	0.0000	4.5306	4.5306	1.0000e-004	0.0000	4.5332
Total	**2.0500e-003**	**1.4200e-003**	**0.0141**	**5.0000e-005**	**5.1700e-003**	**3.0000e-005**	**5.2000e-003**	**1.3700e-003**	**3.0000e-005**	**1.4000e-003**	**0.0000**	**4.5306**	**4.5306**	**1.0000e-004**	**0.0000**	**4.5332**

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	0.0345	0.3553	0.4030	6.3000e-004		0.0186	0.0186		0.0172	0.0172	0.0000	55.0645	55.0645	0.0178	0.0000	55.5097
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0345**	**0.3553**	**0.4030**	**6.3000e-004**		**0.0186**	**0.0186**		**0.0172**	**0.0172**	**0.0000**	**55.0645**	**55.0645**	**0.0178**	**0.0000**	**55.5097**

3.6 Paving - 2021

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	2.0500e-003	1.4200e-003	0.0141	5.0000e-005	5.1700e-003	3.0000e-005	5.2000e-003	1.3700e-003	3.0000e-005	1.4000e-003	0.0000	4.5306	4.5306	1.0000e-004	0.0000	4.5332
Total	**2.0500e-003**	**1.4200e-003**	**0.0141**	**5.0000e-005**	**5.1700e-003**	**3.0000e-005**	**5.2000e-003**	**1.3700e-003**	**3.0000e-005**	**1.4000e-003**	**0.0000**	**4.5306**	**4.5306**	**1.0000e-004**	**0.0000**	**4.5332**

3.7 Architectural Coating - 2021

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					
Archit. Coating	20.1901					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0200e-003	0.0420	0.0500	8.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	7.0215	7.0215	4.8000e-004	0.0000	7.0335
Total	**20.1961**	**0.0420**	**0.0500**	**8.0000e-005**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**	**0.0000**	**7.0215**	**7.0215**	**4.8000e-004**	**0.0000**	**7.0335**

3.7 Architectural Coating - 2021

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	0.0199	0.0138	0.1373	4.9000e-004	0.0503	3.3000e-004	0.0506	0.0134	3.0000e-004	0.0137	0.0000	44.0978	44.0978	1.0100e-003	0.0000	44.1232
Total	**0.0199**	**0.0138**	**0.1373**	**4.9000e-004**	**0.0503**	**3.3000e-004**	**0.0506**	**0.0134**	**3.0000e-004**	**0.0137**	**0.0000**	**44.0978**	**44.0978**	**1.0100e-003**	**0.0000**	**44.1232**

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					
Archit. Coating	20.1901					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0200e-003	0.0420	0.0500	8.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	7.0214	7.0214	4.8000e-004	0.0000	7.0335
Total	**20.1961**	**0.0420**	**0.0500**	**8.0000e-005**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**	**0.0000**	**7.0214**	**7.0214**	**4.8000e-004**	**0.0000**	**7.0335**

3.7 Architectural Coating - 2021

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	0.0199	0.0138	0.1373	4.9000e-004	0.0503	3.3000e-004	0.0506	0.0134	3.0000e-004	0.0137	0.0000	44.0978	44.0978	1.0100e-003	0.0000	44.1232
Total	**0.0199**	**0.0138**	**0.1373**	**4.9000e-004**	**0.0503**	**3.3000e-004**	**0.0506**	**0.0134**	**3.0000e-004**	**0.0137**	**0.0000**	**44.0978**	**44.0978**	**1.0100e-003**	**0.0000**	**44.1232**

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	0.1203	1.5063	1.1136	5.3900e-003	0.2666	6.7100e-003	0.2734	0.0718	6.3700e-003	0.0782	0.0000	502.2037	502.2037	0.0418	0.0000	503.2488
Unmitigated	0.1203	1.5063	1.1136	5.3900e-003	0.2666	6.7100e-003	0.2734	0.0718	6.3700e-003	0.0782	0.0000	502.2037	502.2037	0.0418	0.0000	503.2488

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	75.60	910.00	669.60	689,692	689,692
Total	75.60	910.00	669.60	689,692	689,692

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
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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					
City Park	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					
City Park	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			
City Park	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			
City Park	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	8.8240	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
Unmitigated	8.8240	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004

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	2.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.8049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
Total	**8.8240**	**0.0000**	**3.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**0.0000**	**7.6000e-004**

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	2.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.8049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
Total	**8.8240**	**0.0000**	**3.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**0.0000**	**7.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	168.7082	6.9700e-003	1.4400e-003	169.3118
Unmitigated	168.7082	6.9700e-003	1.4400e-003	169.3118

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 47.6593	168.7082	6.9700e-003	1.4400e-003	169.3118
Total		**168.7082**	**6.9700e-003**	**1.4400e-003**	**169.3118**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 47.6593	168.7082	6.9700e-003	1.4400e-003	169.3118
Total		**168.7082**	**6.9700e-003**	**1.4400e-003**	**169.3118**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.6983	0.0413	0.0000	1.7300
Unmitigated	0.6983	0.0413	0.0000	1.7300

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.44	0.6983	0.0413	0.0000	1.7300
Total		**0.6983**	**0.0413**	**0.0000**	**1.7300**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.44	0.6983	0.0413	0.0000	1.7300
Total		**0.6983**	**0.0413**	**0.0000**	**1.7300**

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

Dmohowski Animal Sheltar

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	30.00	1000sqft	0.69	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2019
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

Project Characteristics -

Land Use - Using Industrial Park land use type to simulate animal sheltar; 30K sf ~ space for 50 additional dog kennels and support facilities.

Construction Phase - defaults

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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					
2017	0.0737	0.6988	0.4701	7.6000e-004	0.0108	0.0449	0.0557	3.0700e-003	0.0415	0.0446	0.0000	70.4794	70.4794	0.0174	0.0000	70.9140
2018	0.3552	0.0684	0.0550	9.0000e-005	1.3300e-003	4.1600e-003	5.4900e-003	3.6000e-004	3.8700e-003	4.2200e-003	0.0000	8.3499	8.3499	1.9600e-003	0.0000	8.3989
Maximum	**0.3552**	**0.6988**	**0.4701**	**7.6000e-004**	**0.0108**	**0.0449**	**0.0557**	**3.0700e-003**	**0.0415**	**0.0446**	**0.0000**	**70.4794**	**70.4794**	**0.0174**	**0.0000**	**70.9140**

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					
2017	0.0737	0.6988	0.4701	7.6000e-004	0.0108	0.0449	0.0557	3.0700e-003	0.0415	0.0446	0.0000	70.4793	70.4793	0.0174	0.0000	70.9140
2018	0.3552	0.0684	0.0550	9.0000e-005	1.3300e-003	4.1600e-003	5.4900e-003	3.6000e-004	3.8700e-003	4.2200e-003	0.0000	8.3499	8.3499	1.9600e-003	0.0000	8.3988
Maximum	**0.3552**	**0.6988**	**0.4701**	**7.6000e-004**	**0.0108**	**0.0449**	**0.0557**	**3.0700e-003**	**0.0415**	**0.0446**	**0.0000**	**70.4793**	**70.4793**	**0.0174**	**0.0000**	**70.9140**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-4-2017**	**11-3-2017**	0.4703	0.4703
2	**11-4-2017**	**2-3-2018**	0.7301	0.7301
		Highest	0.7301	0.7301

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	0.1520	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.4000e-004	5.4000e-004	0.0000	0.0000	5.7000e-004
Energy	2.7900e-003	0.0254	0.0213	1.5000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	125.1459	125.1459	4.5600e-003	1.3400e-003	125.6590
Mobile	0.0802	1.0136	0.8236	4.0900e-003	0.2148	5.2200e-003	0.2201	0.0579	4.9600e-003	0.0628	0.0000	380.3046	380.3046	0.0263	0.0000	380.9629
Waste						0.0000	0.0000		0.0000	0.0000	7.5513	0.0000	7.5513	0.4463	0.0000	18.7079
Water						0.0000	0.0000		0.0000	0.0000	2.2010	28.7821	30.9830	0.2273	5.5800e-003	38.3281
Total	**0.2349**	**1.0390**	**0.8453**	**4.2400e-003**	**0.2148**	**7.1500e-003**	**0.2220**	**0.0579**	**6.8900e-003**	**0.0647**	**9.7522**	**534.2332**	**543.9854**	**0.7044**	**6.9200e-003**	**563.6586**

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	0.1520	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.4000e-004	5.4000e-004	0.0000	0.0000	5.7000e-004
Energy	2.7900e-003	0.0254	0.0213	1.5000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	125.1459	125.1459	4.5600e-003	1.3400e-003	125.6590
Mobile	0.0802	1.0136	0.8236	4.0900e-003	0.2148	5.2200e-003	0.2201	0.0579	4.9600e-003	0.0628	0.0000	380.3046	380.3046	0.0263	0.0000	380.9629
Waste						0.0000	0.0000		0.0000	0.0000	7.5513	0.0000	7.5513	0.4463	0.0000	18.7079
Water						0.0000	0.0000		0.0000	0.0000	2.2010	28.7821	30.9830	0.2273	5.5800e-003	38.3281
Total	**0.2349**	**1.0390**	**0.8453**	**4.2400e-003**	**0.2148**	**7.1500e-003**	**0.2220**	**0.0579**	**6.8900e-003**	**0.0647**	**9.7522**	**534.2332**	**543.9854**	**0.7044**	**6.9200e-003**	**563.6586**

	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

Dmohowski Animal Sheltar - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/4/2017	8/17/2017	5	10	
2	Site Preparation	Site Preparation	8/18/2017	8/18/2017	5	1	
3	Grading	Grading	8/19/2017	8/22/2017	5	2	
4	Building Construction	Building Construction	8/23/2017	1/9/2018	5	100	
5	Paving	Paving	1/10/2018	1/16/2018	5	5	
6	Architectural Coating	Architectural Coating	1/17/2018	1/23/2018	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 45,000; Non-Residential Outdoor: 15,000; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Dmohowski Animal Sheltar - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Architectural Coating	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	13.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

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	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3493	5.3493	1.0500e-003	0.0000	5.3755
Total	**6.0500e-003**	**0.0525**	**0.0396**	**6.0000e-005**		**3.6600e-003**	**3.6600e-003**		**3.4900e-003**	**3.4900e-003**	**0.0000**	**5.3493**	**5.3493**	**1.0500e-003**	**0.0000**	**5.3755**

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	3.8000e-004	3.0000e-004	2.8300e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.6261	0.6261	2.0000e-005	0.0000	0.6266
Total	**3.8000e-004**	**3.0000e-004**	**2.8300e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.6261**	**0.6261**	**2.0000e-005**	**0.0000**	**0.6266**

3.2 Demolition - 2017

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	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3492	5.3492	1.0500e-003	0.0000	5.3755
Total	**6.0500e-003**	**0.0525**	**0.0396**	**6.0000e-005**		**3.6600e-003**	**3.6600e-003**		**3.4900e-003**	**3.4900e-003**	**0.0000**	**5.3492**	**5.3492**	**1.0500e-003**	**0.0000**	**5.3755**

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	3.8000e-004	3.0000e-004	2.8300e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.6261	0.6261	2.0000e-005	0.0000	0.6266
Total	**3.8000e-004**	**3.0000e-004**	**2.8300e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.6261**	**0.6261**	**2.0000e-005**	**0.0000**	**0.6266**

3.3 Site Preparation - 2017

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0313	0.0313	0.0000	0.0000	0.0313
Total	**2.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0313**	**0.0313**	**0.0000**	**0.0000**	**0.0313**

3.3 Site Preparation - 2017

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0313	0.0313	0.0000	0.0000	0.0313
Total	**2.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0313**	**0.0313**	**0.0000**	**0.0000**	**0.0313**

3.4 Grading - 2017

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	**1.2100e-003**	**0.0105**	**7.9200e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**7.0000e-004**	**1.1100e-003**	**0.0000**	**1.0699**	**1.0699**	**2.1000e-004**	**0.0000**	**1.0751**

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	8.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1252	0.1252	0.0000	0.0000	0.1253
Total	**8.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1252**	**0.1252**	**0.0000**	**0.0000**	**0.1253**

3.4 Grading - 2017

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	**1.2100e-003**	**0.0105**	**7.9200e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**7.0000e-004**	**1.1100e-003**	**0.0000**	**1.0699**	**1.0699**	**2.1000e-004**	**0.0000**	**1.0751**

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	8.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1252	0.1252	0.0000	0.0000	0.1253
Total	**8.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1252**	**0.1252**	**0.0000**	**0.0000**	**0.1253**

3.5 Building Construction - 2017

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	0.0596	0.5933	0.3753	5.3000e-004		0.0400	0.0400		0.0368	0.0368	0.0000	49.1831	49.1831	0.0151	0.0000	49.5599
Total	**0.0596**	**0.5933**	**0.3753**	**5.3000e-004**		**0.0400**	**0.0400**		**0.0368**	**0.0368**	**0.0000**	**49.1831**	**49.1831**	**0.0151**	**0.0000**	**49.5599**

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	1.3400e-003	0.0333	7.4200e-003	6.0000e-005	1.4000e-003	3.0000e-004	1.7100e-003	4.1000e-004	2.9000e-004	6.9000e-004	0.0000	6.0716	6.0716	6.3000e-004	0.0000	6.0873
Worker	4.5900e-003	3.5800e-003	0.0342	8.0000e-005	7.5700e-003	6.0000e-005	7.6300e-003	2.0100e-003	5.0000e-005	2.0600e-003	0.0000	7.5695	7.5695	2.6000e-004	0.0000	7.5761
Total	**5.9300e-003**	**0.0369**	**0.0416**	**1.4000e-004**	**8.9700e-003**	**3.6000e-004**	**9.3400e-003**	**2.4200e-003**	**3.4000e-004**	**2.7500e-003**	**0.0000**	**13.6411**	**13.6411**	**8.9000e-004**	**0.0000**	**13.6634**

3.5 Building Construction - 2017

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	0.0596	0.5933	0.3753	5.3000e-004		0.0400	0.0400		0.0368	0.0368	0.0000	49.1831	49.1831	0.0151	0.0000	49.5598
Total	**0.0596**	**0.5933**	**0.3753**	**5.3000e-004**		**0.0400**	**0.0400**		**0.0368**	**0.0368**	**0.0000**	**49.1831**	**49.1831**	**0.0151**	**0.0000**	**49.5598**

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	1.3400e-003	0.0333	7.4200e-003	6.0000e-005	1.4000e-003	3.0000e-004	1.7100e-003	4.1000e-004	2.9000e-004	6.9000e-004	0.0000	6.0716	6.0716	6.3000e-004	0.0000	6.0873
Worker	4.5900e-003	3.5800e-003	0.0342	8.0000e-005	7.5700e-003	6.0000e-005	7.6300e-003	2.0100e-003	5.0000e-005	2.0600e-003	0.0000	7.5695	7.5695	2.6000e-004	0.0000	7.5761
Total	**5.9300e-003**	**0.0369**	**0.0416**	**1.4000e-004**	**8.9700e-003**	**3.6000e-004**	**9.3400e-003**	**2.4200e-003**	**3.4000e-004**	**2.7500e-003**	**0.0000**	**13.6411**	**13.6411**	**8.9000e-004**	**0.0000**	**13.6634**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8000e-003	0.0386	0.0271	4.0000e-005		2.4800e-003	2.4800e-003		2.2800e-003	2.2800e-003	0.0000	3.6404	3.6404	1.1300e-003	0.0000	3.6687
Total	**3.8000e-003**	**0.0386**	**0.0271**	**4.0000e-005**		**2.4800e-003**	**2.4800e-003**		**2.2800e-003**	**2.2800e-003**	**0.0000**	**3.6404**	**3.6404**	**1.1300e-003**	**0.0000**	**3.6687**

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	9.0000e-005	2.3600e-003	5.0000e-004	0.0000	1.1000e-004	2.0000e-005	1.2000e-004	3.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.4554	0.4554	4.0000e-005	0.0000	0.4565
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5519	0.5519	2.0000e-005	0.0000	0.5524
Total	**3.9000e-004**	**2.5900e-003**	**2.6900e-003**	**1.0000e-005**	**6.8000e-004**	**2.0000e-005**	**6.9000e-004**	**1.8000e-004**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**1.0073**	**1.0073**	**6.0000e-005**	**0.0000**	**1.0088**

3.5 Building Construction - 2018

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	3.8000e-003	0.0386	0.0271	4.0000e-005		2.4800e-003	2.4800e-003		2.2800e-003	2.2800e-003	0.0000	3.6404	3.6404	1.1300e-003	0.0000	3.6687
Total	**3.8000e-003**	**0.0386**	**0.0271**	**4.0000e-005**		**2.4800e-003**	**2.4800e-003**		**2.2800e-003**	**2.2800e-003**	**0.0000**	**3.6404**	**3.6404**	**1.1300e-003**	**0.0000**	**3.6687**

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	9.0000e-005	2.3600e-003	5.0000e-004	0.0000	1.1000e-004	2.0000e-005	1.2000e-004	3.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.4554	0.4554	4.0000e-005	0.0000	0.4565
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5519	0.5519	2.0000e-005	0.0000	0.5524
Total	**3.9000e-004**	**2.5900e-003**	**2.6900e-003**	**1.0000e-005**	**6.8000e-004**	**2.0000e-005**	**6.9000e-004**	**1.8000e-004**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**1.0073**	**1.0073**	**6.0000e-005**	**0.0000**	**1.0088**

3.6 Paving - 2018

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	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

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	3.0000e-004	2.3000e-004	2.1600e-003	1.0000e-005	5.6000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5459	0.5459	2.0000e-005	0.0000	0.5463
Total	**3.0000e-004**	**2.3000e-004**	**2.1600e-003**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5459**	**0.5459**	**2.0000e-005**	**0.0000**	**0.5463**

3.6 Paving - 2018

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	2.3000e-003	0.0219	0.0181	3.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	2.4270	2.4270	6.8000e-004	0.0000	2.4441
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3000e-003**	**0.0219**	**0.0181**	**3.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**2.4270**	**2.4270**	**6.8000e-004**	**0.0000**	**2.4441**

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	3.0000e-004	2.3000e-004	2.1600e-003	1.0000e-005	5.6000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5459	0.5459	2.0000e-005	0.0000	0.5463
Total	**3.0000e-004**	**2.3000e-004**	**2.1600e-003**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5459**	**0.5459**	**2.0000e-005**	**0.0000**	**0.5463**

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.3476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.3484**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

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	5.0000e-005	4.0000e-005	3.6000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.0910	0.0910	0.0000	0.0000	0.0911
Total	**5.0000e-005**	**4.0000e-005**	**3.6000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0910**	**0.0910**	**0.0000**	**0.0000**	**0.0911**

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.3476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**0.3484**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

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	5.0000e-005	4.0000e-005	3.6000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.0910	0.0910	0.0000	0.0000	0.0911
Total	**5.0000e-005**	**4.0000e-005**	**3.6000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0910**	**0.0910**	**0.0000**	**0.0000**	**0.0911**

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	0.0802	1.0136	0.8236	4.0900e-003	0.2148	5.2200e-003	0.2201	0.0579	4.9600e-003	0.0628	0.0000	380.3046	380.3046	0.0263	0.0000	380.9629
Unmitigated	0.0802	1.0136	0.8236	4.0900e-003	0.2148	5.2200e-003	0.2201	0.0579	4.9600e-003	0.0628	0.0000	380.3046	380.3046	0.0263	0.0000	380.9629

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	204.90	74.70	21.90	555,684	555,684
Total	204.90	74.70	21.90	555,684	555,684

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
Industrial Park	14.70	6.60	6.60	59.00	28.00	13.00	79	19	2

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial Park	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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	97.4982	97.4982	4.0300e-003	8.3000e-004	97.8470
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	97.4982	97.4982	4.0300e-003	8.3000e-004	97.8470
NaturalGas Mitigated	2.7900e-003	0.0254	0.0213	1.5000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	27.6478	27.6478	5.3000e-004	5.1000e-004	27.8121
NaturalGas Unmitigated	2.7900e-003	0.0254	0.0213	1.5000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	27.6478	27.6478	5.3000e-004	5.1000e-004	27.8121

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					
Industrial Park	518100	2.7900e-003	0.0254	0.0213	1.5000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	27.6478	27.6478	5.3000e-004	5.1000e-004	27.8121
Total		**2.7900e-003**	**0.0254**	**0.0213**	**1.5000e-004**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**27.6478**	**27.6478**	**5.3000e-004**	**5.1000e-004**	**27.8121**

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					
Industrial Park	518100	2.7900e-003	0.0254	0.0213	1.5000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	27.6478	27.6478	5.3000e-004	5.1000e-004	27.8121
Total		**2.7900e-003**	**0.0254**	**0.0213**	**1.5000e-004**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**27.6478**	**27.6478**	**5.3000e-004**	**5.1000e-004**	**27.8121**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	306000	97.4982	4.0300e-003	8.3000e-004	97.8470
Total		**97.4982**	**4.0300e-003**	**8.3000e-004**	**97.8470**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	306000	97.4982	4.0300e-003	8.3000e-004	97.8470
Total		**97.4982**	**4.0300e-003**	**8.3000e-004**	**97.8470**

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	0.1520	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.4000e-004	5.4000e-004	0.0000	0.0000	5.7000e-004
Unmitigated	0.1520	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.4000e-004	5.4000e-004	0.0000	0.0000	5.7000e-004

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	0.0348					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.4000e-004	5.4000e-004	0.0000	0.0000	5.7000e-004
Total	**0.1520**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.4000e-004**	**5.4000e-004**	**0.0000**	**0.0000**	**5.7000e-004**

6.2 Area by SubCategory

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	0.0348					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.4000e-004	5.4000e-004	0.0000	0.0000	5.7000e-004
Total	**0.1520**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.4000e-004**	**5.4000e-004**	**0.0000**	**0.0000**	**5.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	30.9830	0.2273	5.5800e-003	38.3281
Unmitigated	30.9830	0.2273	5.5800e-003	38.3281

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	6.9375 / 0	30.9830	0.2273	5.5800e-003	38.3281
Total		**30.9830**	**0.2273**	**5.5800e-003**	**38.3281**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	6.9375 / 0	30.9830	0.2273	5.5800e-003	38.3281
Total		**30.9830**	**0.2273**	**5.5800e-003**	**38.3281**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.5513	0.4463	0.0000	18.7079
Unmitigated	7.5513	0.4463	0.0000	18.7079

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	37.2	7.5513	0.4463	0.0000	18.7079
Total		**7.5513**	**0.4463**	**0.0000**	**18.7079**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	37.2	7.5513	0.4463	0.0000	18.7079
Total		**7.5513**	**0.4463**	**0.0000**	**18.7079**

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

Blue Eagle Lode mining 1.75 acres

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	76.00	1000sqft	1.74	76,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2019
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

Project Characteristics -

Land Use - 76,000 sf simulates 1.75 acres

Construction Phase - defaults

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2019

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					
2017	0.1621	1.1738	0.8242	1.4400e-003	0.0304	0.0693	0.0997	0.0120	0.0662	0.0782	0.0000	125.5088	125.5088	0.0242	0.0000	126.1130
2018	1.0562	1.2168	0.9751	1.7900e-003	0.0210	0.0682	0.0893	5.7000e-003	0.0658	0.0715	0.0000	153.9600	153.9600	0.0265	0.0000	154.6233
Maximum	**1.0562**	**1.2168**	**0.9751**	**1.7900e-003**	**0.0304**	**0.0693**	**0.0997**	**0.0120**	**0.0662**	**0.0782**	**0.0000**	**153.9600**	**153.9600**	**0.0265**	**0.0000**	**154.6233**

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					
2017	0.1621	1.1738	0.8242	1.4400e-003	0.0304	0.0693	0.0997	0.0120	0.0662	0.0782	0.0000	125.5087	125.5087	0.0242	0.0000	126.1129
2018	1.0562	1.2168	0.9751	1.7900e-003	0.0210	0.0682	0.0893	5.7000e-003	0.0658	0.0715	0.0000	153.9599	153.9599	0.0265	0.0000	154.6232
Maximum	**1.0562**	**1.2168**	**0.9751**	**1.7900e-003**	**0.0304**	**0.0693**	**0.0997**	**0.0120**	**0.0662**	**0.0782**	**0.0000**	**153.9599**	**153.9599**	**0.0265**	**0.0000**	**154.6232**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-4-2017**	**11-3-2017**	0.8473	0.8473
2	**11-4-2017**	**2-3-2018**	0.7733	0.7733
3	**2-4-2018**	**5-3-2018**	0.7008	0.7008
4	**5-4-2018**	**8-3-2018**	1.2886	1.2886
		Highest	1.2886	1.2886

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	0.3850	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3600e-003	1.3600e-003	0.0000	0.0000	1.4500e-003
Energy	7.0800e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	317.0364	317.0364	0.0115	3.3900e-003	318.3363
Mobile	0.1790	2.2447	1.6887	8.2200e-003	0.4113	0.0103	0.4215	0.1107	9.7600e-003	0.1205	0.0000	765.0269	765.0269	0.0616	0.0000	766.5666
Waste						0.0000	0.0000		0.0000	0.0000	19.1299	0.0000	19.1299	1.1305	0.0000	47.3934
Water						0.0000	0.0000		0.0000	0.0000	5.5757	72.9146	78.4904	0.5757	0.0142	97.0979
Total	**0.5710**	**2.3090**	**1.7435**	**8.6100e-003**	**0.4113**	**0.0152**	**0.4264**	**0.1107**	**0.0147**	**0.1254**	**24.7056**	**1,154.9792**	**1,179.6848**	**1.7794**	**0.0175**	**1,229.3956**

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	0.3850	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3600e-003	1.3600e-003	0.0000	0.0000	1.4500e-003
Energy	7.0800e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	317.0364	317.0364	0.0115	3.3900e-003	318.3363
Mobile	0.1790	2.2447	1.6887	8.2200e-003	0.4113	0.0103	0.4215	0.1107	9.7600e-003	0.1205	0.0000	765.0269	765.0269	0.0616	0.0000	766.5666
Waste						0.0000	0.0000		0.0000	0.0000	19.1299	0.0000	19.1299	1.1305	0.0000	47.3934
Water						0.0000	0.0000		0.0000	0.0000	5.5757	72.9146	78.4904	0.5757	0.0142	97.0979
Total	**0.5710**	**2.3090**	**1.7435**	**8.6100e-003**	**0.4113**	**0.0152**	**0.4264**	**0.1107**	**0.0147**	**0.1254**	**24.7056**	**1,154.9792**	**1,179.6848**	**1.7794**	**0.0175**	**1,229.3956**

	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

Blue Eagle Lode mining 1.75 acres - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/4/2017	8/31/2017	5	20	
2	Site Preparation	Site Preparation	9/1/2017	9/4/2017	5	2	
3	Grading	Grading	9/5/2017	9/8/2017	5	4	
4	Building Construction	Building Construction	9/9/2017	6/15/2018	5	200	
5	Paving	Paving	6/16/2018	6/29/2018	5	10	
6	Architectural Coating	Architectural Coating	6/30/2018	7/13/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 114,000; Non-Residential Outdoor: 38,000; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Blue Eagle Lode mining 1.75 acres - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	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
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	32.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

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	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	**0.0276**	**0.2676**	**0.1556**	**2.4000e-004**		**0.0165**	**0.0165**		**0.0154**	**0.0154**	**0.0000**	**21.9668**	**21.9668**	**5.5600e-003**	**0.0000**	**22.1057**

3.2 Demolition - 2017

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	7.1000e-004	5.2000e-004	5.0600e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	1.0569	1.0569	4.0000e-005	0.0000	1.0579
Total	**7.1000e-004**	**5.2000e-004**	**5.0600e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.0569**	**1.0569**	**4.0000e-005**	**0.0000**	**1.0579**

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	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	**0.0276**	**0.2676**	**0.1556**	**2.4000e-004**		**0.0165**	**0.0165**		**0.0154**	**0.0154**	**0.0000**	**21.9668**	**21.9668**	**5.5600e-003**	**0.0000**	**22.1057**

3.2 Demolition - 2017

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	7.1000e-004	5.2000e-004	5.0600e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	1.0569	1.0569	4.0000e-005	0.0000	1.0579
Total	**7.1000e-004**	**5.2000e-004**	**5.0600e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.0569**	**1.0569**	**4.0000e-005**	**0.0000**	**1.0579**

3.3 Site Preparation - 2017

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0222	8.4000e-003	2.0000e-005		1.0500e-003	1.0500e-003		9.6000e-004	9.6000e-004	0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128
Total	**1.9300e-003**	**0.0222**	**8.4000e-003**	**2.0000e-005**	**5.8000e-003**	**1.0500e-003**	**6.8500e-003**	**2.9500e-003**	**9.6000e-004**	**3.9100e-003**	**0.0000**	**1.6005**	**1.6005**	**4.9000e-004**	**0.0000**	**1.6128**

3.3 Site Preparation - 2017

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	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0650	0.0650	0.0000	0.0000	0.0651
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0650**	**0.0650**	**0.0000**	**0.0000**	**0.0651**

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0222	8.4000e-003	2.0000e-005		1.0500e-003	1.0500e-003		9.6000e-004	9.6000e-004	0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128
Total	**1.9300e-003**	**0.0222**	**8.4000e-003**	**2.0000e-005**	**5.8000e-003**	**1.0500e-003**	**6.8500e-003**	**2.9500e-003**	**9.6000e-004**	**3.9100e-003**	**0.0000**	**1.6005**	**1.6005**	**4.9000e-004**	**0.0000**	**1.6128**

3.3 Site Preparation - 2017

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	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0650	0.0650	0.0000	0.0000	0.0651
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0650**	**0.0650**	**0.0000**	**0.0000**	**0.0651**

3.4 Grading - 2017

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					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0366	0.0141	3.0000e-005		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417
Total	**3.2000e-003**	**0.0366**	**0.0141**	**3.0000e-005**	**9.8300e-003**	**1.7500e-003**	**0.0116**	**5.0500e-003**	**1.6100e-003**	**6.6600e-003**	**0.0000**	**2.6216**	**2.6216**	**8.0000e-004**	**0.0000**	**2.6417**

3.4 Grading - 2017

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	9.0000e-005	6.0000e-005	6.2000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1301	0.1301	0.0000	0.0000	0.1302
Total	**9.0000e-005**	**6.0000e-005**	**6.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1301**	**0.1301**	**0.0000**	**0.0000**	**0.1302**

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					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0366	0.0141	3.0000e-005		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417
Total	**3.2000e-003**	**0.0366**	**0.0141**	**3.0000e-005**	**9.8300e-003**	**1.7500e-003**	**0.0116**	**5.0500e-003**	**1.6100e-003**	**6.6600e-003**	**0.0000**	**2.6216**	**2.6216**	**8.0000e-004**	**0.0000**	**2.6417**

3.4 Grading - 2017

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	9.0000e-005	6.0000e-005	6.2000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1301	0.1301	0.0000	0.0000	0.1302
Total	**9.0000e-005**	**6.0000e-005**	**6.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1301**	**0.1301**	**0.0000**	**0.0000**	**0.1302**

3.5 Building Construction - 2017

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	0.1186	0.7695	0.5743	8.8000e-004		0.0493	0.0493		0.0475	0.0475	0.0000	74.1665	74.1665	0.0156	0.0000	74.5564
Total	**0.1186**	**0.7695**	**0.5743**	**8.8000e-004**		**0.0493**	**0.0493**		**0.0475**	**0.0475**	**0.0000**	**74.1665**	**74.1665**	**0.0156**	**0.0000**	**74.5564**

3.5 Building Construction - 2017

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	2.9500e-003	0.0722	0.0161	1.4000e-004	3.2000e-003	6.8000e-004	3.8900e-003	9.2000e-004	6.5000e-004	1.5800e-003	0.0000	13.4951	13.4951	1.3000e-003	0.0000	13.5277
Worker	6.9500e-003	5.1100e-003	0.0498	1.2000e-004	0.0103	8.0000e-005	0.0104	2.7400e-003	7.0000e-005	2.8100e-003	0.0000	10.4064	10.4064	3.7000e-004	0.0000	10.4157
Total	**9.9000e-003**	**0.0773**	**0.0659**	**2.6000e-004**	**0.0135**	**7.6000e-004**	**0.0143**	**3.6600e-003**	**7.2000e-004**	**4.3900e-003**	**0.0000**	**23.9014**	**23.9014**	**1.6700e-003**	**0.0000**	**23.9434**

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	0.1186	0.7695	0.5743	8.8000e-004		0.0493	0.0493		0.0475	0.0475	0.0000	74.1664	74.1664	0.0156	0.0000	74.5563
Total	**0.1186**	**0.7695**	**0.5743**	**8.8000e-004**		**0.0493**	**0.0493**		**0.0475**	**0.0475**	**0.0000**	**74.1664**	**74.1664**	**0.0156**	**0.0000**	**74.5563**

3.5 Building Construction - 2017

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	2.9500e-003	0.0722	0.0161	1.4000e-004	3.2000e-003	6.8000e-004	3.8900e-003	9.2000e-004	6.5000e-004	1.5800e-003	0.0000	13.4951	13.4951	1.3000e-003	0.0000	13.5277
Worker	6.9500e-003	5.1100e-003	0.0498	1.2000e-004	0.0103	8.0000e-005	0.0104	2.7400e-003	7.0000e-005	2.8100e-003	0.0000	10.4064	10.4064	3.7000e-004	0.0000	10.4157
Total	**9.9000e-003**	**0.0773**	**0.0659**	**2.6000e-004**	**0.0135**	**7.6000e-004**	**0.0143**	**3.6600e-003**	**7.2000e-004**	**4.3900e-003**	**0.0000**	**23.9014**	**23.9014**	**1.6700e-003**	**0.0000**	**23.9434**

3.5 Building Construction - 2018

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	0.1555	1.0457	0.8326	1.3200e-003		0.0635	0.0635		0.0613	0.0613	0.0000	110.5408	110.5408	0.0223	0.0000	111.0971
Total	**0.1555**	**1.0457**	**0.8326**	**1.3200e-003**		**0.0635**	**0.0635**		**0.0613**	**0.0613**	**0.0000**	**110.5408**	**110.5408**	**0.0223**	**0.0000**	**111.0971**

3.5 Building Construction - 2018

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	3.9000e-003	0.1019	0.0215	2.1000e-004	4.8100e-003	8.4000e-004	5.6400e-003	1.3900e-003	8.0000e-004	2.1900e-003	0.0000	20.1651	20.1651	1.7900e-003	0.0000	20.2098
Worker	9.0900e-003	6.5500e-003	0.0636	1.7000e-004	0.0155	1.1000e-004	0.0156	4.1100e-003	1.1000e-004	4.2200e-003	0.0000	15.1219	15.1219	4.8000e-004	0.0000	15.1340
Total	**0.0130**	**0.1085**	**0.0851**	**3.8000e-004**	**0.0203**	**9.5000e-004**	**0.0212**	**5.5000e-003**	**9.1000e-004**	**6.4100e-003**	**0.0000**	**35.2871**	**35.2871**	**2.2700e-003**	**0.0000**	**35.3438**

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	0.1555	1.0457	0.8326	1.3200e-003		0.0635	0.0635		0.0613	0.0613	0.0000	110.5406	110.5406	0.0223	0.0000	111.0970
Total	**0.1555**	**1.0457**	**0.8326**	**1.3200e-003**		**0.0635**	**0.0635**		**0.0613**	**0.0613**	**0.0000**	**110.5406**	**110.5406**	**0.0223**	**0.0000**	**111.0970**

3.5 Building Construction - 2018

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	3.9000e-003	0.1019	0.0215	2.1000e-004	4.8100e-003	8.4000e-004	5.6400e-003	1.3900e-003	8.0000e-004	2.1900e-003	0.0000	20.1651	20.1651	1.7900e-003	0.0000	20.2098
Worker	9.0900e-003	6.5500e-003	0.0636	1.7000e-004	0.0155	1.1000e-004	0.0156	4.1100e-003	1.1000e-004	4.2200e-003	0.0000	15.1219	15.1219	4.8000e-004	0.0000	15.1340
Total	**0.0130**	**0.1085**	**0.0851**	**3.8000e-004**	**0.0203**	**9.5000e-004**	**0.0212**	**5.5000e-003**	**9.1000e-004**	**6.4100e-003**	**0.0000**	**35.2871**	**35.2871**	**2.2700e-003**	**0.0000**	**35.3438**

3.6 Paving - 2018

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	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0900e-003**	**0.0523**	**0.0450**	**7.0000e-005**		**3.0500e-003**	**3.0500e-003**		**2.8100e-003**	**2.8100e-003**	**0.0000**	**6.1073**	**6.1073**	**1.8700e-003**	**0.0000**	**6.1540**

3.6 Paving - 2018

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	3.1000e-004	2.2000e-004	2.1500e-003	1.0000e-005	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.5119	0.5119	2.0000e-005	0.0000	0.5124
Total	**3.1000e-004**	**2.2000e-004**	**2.1500e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.5119**	**0.5119**	**2.0000e-005**	**0.0000**	**0.5124**

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	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0900e-003**	**0.0523**	**0.0450**	**7.0000e-005**		**3.0500e-003**	**3.0500e-003**		**2.8100e-003**	**2.8100e-003**	**0.0000**	**6.1073**	**6.1073**	**1.8700e-003**	**0.0000**	**6.1540**

3.6 Paving - 2018

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	3.1000e-004	2.2000e-004	2.1500e-003	1.0000e-005	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.5119	0.5119	2.0000e-005	0.0000	0.5124
Total	**3.1000e-004**	**2.2000e-004**	**2.1500e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.5119**	**0.5119**	**2.0000e-005**	**0.0000**	**0.5124**

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.8807					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total	**0.8821**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2797**

3.7 Architectural Coating - 2018

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	1.4000e-004	1.0000e-004	9.9000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2363	0.2363	1.0000e-005	0.0000	0.2365
Total	**1.4000e-004**	**1.0000e-004**	**9.9000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2363**	**0.2363**	**1.0000e-005**	**0.0000**	**0.2365**

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					
Archit. Coating	0.8807					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total	**0.8821**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2797**

3.7 Architectural Coating - 2018

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	1.4000e-004	1.0000e-004	9.9000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2363	0.2363	1.0000e-005	0.0000	0.2365
Total	**1.4000e-004**	**1.0000e-004**	**9.9000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2363**	**0.2363**	**1.0000e-005**	**0.0000**	**0.2365**

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	0.1790	2.2447	1.6887	8.2200e-003	0.4113	0.0103	0.4215	0.1107	9.7600e-003	0.1205	0.0000	765.0269	765.0269	0.0616	0.0000	766.5666
Unmitigated	0.1790	2.2447	1.6887	8.2200e-003	0.4113	0.0103	0.4215	0.1107	9.7600e-003	0.1205	0.0000	765.0269	765.0269	0.0616	0.0000	766.5666

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	519.08	189.24	55.48	1,063,758	1,063,758
Total	519.08	189.24	55.48	1,063,758	1,063,758

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
Industrial Park	9.50	7.30	7.30	59.00	28.00	13.00	79	19	2

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial Park	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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	246.9953	246.9953	0.0102	2.1100e-003	247.8790
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	246.9953	246.9953	0.0102	2.1100e-003	247.8790
NaturalGas Mitigated	7.0800e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	70.0411	70.0411	1.3400e-003	1.2800e-003	70.4573
NaturalGas Unmitigated	7.0800e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	70.0411	70.0411	1.3400e-003	1.2800e-003	70.4573

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					
Industrial Park	1.31252e+006	7.0800e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	70.0411	70.0411	1.3400e-003	1.2800e-003	70.4573
Total		**7.0800e-003**	**0.0643**	**0.0540**	**3.9000e-004**		**4.8900e-003**	**4.8900e-003**		**4.8900e-003**	**4.8900e-003**	**0.0000**	**70.0411**	**70.0411**	**1.3400e-003**	**1.2800e-003**	**70.4573**

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					
Industrial Park	1.31252e+006	7.0800e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	70.0411	70.0411	1.3400e-003	1.2800e-003	70.4573
Total		**7.0800e-003**	**0.0643**	**0.0540**	**3.9000e-004**		**4.8900e-003**	**4.8900e-003**		**4.8900e-003**	**4.8900e-003**	**0.0000**	**70.0411**	**70.0411**	**1.3400e-003**	**1.2800e-003**	**70.4573**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	775200	246.9953	0.0102	2.1100e-003	247.8790
Total		**246.9953**	**0.0102**	**2.1100e-003**	**247.8790**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	775200	246.9953	0.0102	2.1100e-003	247.8790
Total		**246.9953**	**0.0102**	**2.1100e-003**	**247.8790**

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	0.3850	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3600e-003	1.3600e-003	0.0000	0.0000	1.4500e-003
Unmitigated	0.3850	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3600e-003	1.3600e-003	0.0000	0.0000	1.4500e-003

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	0.0881					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2968					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3600e-003	1.3600e-003	0.0000	0.0000	1.4500e-003
Total	**0.3850**	**1.0000e-005**	**7.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.3600e-003**	**1.3600e-003**	**0.0000**	**0.0000**	**1.4500e-003**

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	0.0881					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2968					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3600e-003	1.3600e-003	0.0000	0.0000	1.4500e-003
Total	**0.3850**	**1.0000e-005**	**7.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.3600e-003**	**1.3600e-003**	**0.0000**	**0.0000**	**1.4500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	78.4904	0.5757	0.0142	97.0979
Unmitigated	78.4904	0.5757	0.0142	97.0979

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	17.575 / 0	78.4904	0.5757	0.0142	97.0979
Total		**78.4904**	**0.5757**	**0.0142**	**97.0979**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	17.575 / 0	78.4904	0.5757	0.0142	97.0979
Total		**78.4904**	**0.5757**	**0.0142**	**97.0979**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.1299	1.1305	0.0000	47.3934
Unmitigated	19.1299	1.1305	0.0000	47.3934

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	94.24	19.1299	1.1305	0.0000	47.3934
Total		**19.1299**	**1.1305**	**0.0000**	**47.3934**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	94.24	19.1299	1.1305	0.0000	47.3934
Total		**19.1299**	**1.1305**	**0.0000**	**47.3934**

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

AT&T Tower 1.25 acres

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	55.00	1000sqft	1.26	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2019
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

Project Characteristics -

Land Use - Using Industrial Park land use type to simulate a cell tower; 55K sf ~ 1.25 acres.

Construction Phase - defaults

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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					
2017	0.1616	1.1538	0.8245	1.4200e-003	0.0313	0.0691	0.1004	0.0122	0.0660	0.0782	0.0000	123.2051	123.2051	0.0239	0.0000	123.8022
2018	0.8119	1.1883	0.9728	1.7500e-003	0.0217	0.0680	0.0897	5.8300e-003	0.0655	0.0714	0.0000	149.8081	149.8081	0.0261	0.0000	150.4610
Maximum	**0.8119**	**1.1883**	**0.9728**	**1.7500e-003**	**0.0313**	**0.0691**	**0.1004**	**0.0122**	**0.0660**	**0.0782**	**0.0000**	**149.8081**	**149.8081**	**0.0261**	**0.0000**	**150.4610**

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					
2017	0.1616	1.1538	0.8245	1.4200e-003	0.0313	0.0691	0.1004	0.0122	0.0660	0.0782	0.0000	123.2050	123.2050	0.0239	0.0000	123.8020
2018	0.8119	1.1883	0.9728	1.7500e-003	0.0217	0.0680	0.0897	5.8300e-003	0.0655	0.0714	0.0000	149.8080	149.8080	0.0261	0.0000	150.4609
Maximum	**0.8119**	**1.1883**	**0.9728**	**1.7500e-003**	**0.0313**	**0.0691**	**0.1004**	**0.0122**	**0.0660**	**0.0782**	**0.0000**	**149.8080**	**149.8080**	**0.0261**	**0.0000**	**150.4609**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-4-2017	11-3-2017	0.8375	0.8375
2	11-4-2017	2-3-2018	0.7564	0.7564
3	2-4-2018	5-3-2018	0.6852	0.6852
4	5-4-2018	8-3-2018	1.0380	1.0380
		Highest	1.0380	1.0380

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	0.2786	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.8000e-004	9.8000e-004	0.0000	0.0000	1.0500e-003
Energy	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	229.4342	229.4342	8.3500e-003	2.4600e-003	230.3749
Mobile	0.1470	1.8582	1.5100	7.5000e-003	0.3939	9.5700e-003	0.4034	0.1061	9.0800e-003	0.1151	0.0000	697.2251	697.2251	0.0483	0.0000	698.4320
Waste						0.0000	0.0000		0.0000	0.0000	13.8440	0.0000	13.8440	0.8182	0.0000	34.2979
Water						0.0000	0.0000		0.0000	0.0000	4.0351	52.7672	56.8022	0.4166	0.0102	70.2682
Total	**0.4307**	**1.9048**	**1.5496**	**7.7800e-003**	**0.3939**	**0.0131**	**0.4070**	**0.1061**	**0.0126**	**0.1187**	**17.8791**	**979.4274**	**997.3065**	**1.2914**	**0.0127**	**1,033.3740**

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	0.2786	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.8000e-004	9.8000e-004	0.0000	0.0000	1.0500e-003
Energy	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	229.4342	229.4342	8.3500e-003	2.4600e-003	230.3749
Mobile	0.1470	1.8582	1.5100	7.5000e-003	0.3939	9.5700e-003	0.4034	0.1061	9.0800e-003	0.1151	0.0000	697.2251	697.2251	0.0483	0.0000	698.4320
Waste						0.0000	0.0000		0.0000	0.0000	13.8440	0.0000	13.8440	0.8182	0.0000	34.2979
Water						0.0000	0.0000		0.0000	0.0000	4.0351	52.7672	56.8022	0.4166	0.0102	70.2682
Total	**0.4307**	**1.9048**	**1.5496**	**7.7800e-003**	**0.3939**	**0.0131**	**0.4070**	**0.1061**	**0.0126**	**0.1187**	**17.8791**	**979.4274**	**997.3065**	**1.2914**	**0.0127**	**1,033.3740**

	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/4/2017	8/31/2017	5	20	
2	Site Preparation	Site Preparation	9/1/2017	9/4/2017	5	2	
3	Grading	Grading	9/5/2017	9/8/2017	5	4	
4	Building Construction	Building Construction	9/9/2017	6/15/2018	5	200	
5	Paving	Paving	6/16/2018	6/29/2018	5	10	
6	Architectural Coating	Architectural Coating	6/30/2018	7/13/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 82,500; Non-Residential Outdoor: 27,500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

AT&T Tower 1.25 acres - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	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
Architectural Coating	1	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	23.00	9.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

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	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	**0.0276**	**0.2676**	**0.1556**	**2.4000e-004**		**0.0165**	**0.0165**		**0.0154**	**0.0154**	**0.0000**	**21.9668**	**21.9668**	**5.5600e-003**	**0.0000**	**22.1057**

3.2 Demolition - 2017

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	9.9000e-004	7.7000e-004	7.3500e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6400e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.6279	1.6279	6.0000e-005	0.0000	1.6293
Total	**9.9000e-004**	**7.7000e-004**	**7.3500e-003**	**2.0000e-005**	**1.6300e-003**	**1.0000e-005**	**1.6400e-003**	**4.3000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.6279**	**1.6279**	**6.0000e-005**	**0.0000**	**1.6293**

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	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	**0.0276**	**0.2676**	**0.1556**	**2.4000e-004**		**0.0165**	**0.0165**		**0.0154**	**0.0154**	**0.0000**	**21.9668**	**21.9668**	**5.5600e-003**	**0.0000**	**22.1057**

3.2 Demolition - 2017

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	9.9000e-004	7.7000e-004	7.3500e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6400e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.6279	1.6279	6.0000e-005	0.0000	1.6293
Total	**9.9000e-004**	**7.7000e-004**	**7.3500e-003**	**2.0000e-005**	**1.6300e-003**	**1.0000e-005**	**1.6400e-003**	**4.3000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.6279**	**1.6279**	**6.0000e-005**	**0.0000**	**1.6293**

3.3 Site Preparation - 2017

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0222	8.4000e-003	2.0000e-005		1.0500e-003	1.0500e-003		9.6000e-004	9.6000e-004	0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128
Total	**1.9300e-003**	**0.0222**	**8.4000e-003**	**2.0000e-005**	**5.8000e-003**	**1.0500e-003**	**6.8500e-003**	**2.9500e-003**	**9.6000e-004**	**3.9100e-003**	**0.0000**	**1.6005**	**1.6005**	**4.9000e-004**	**0.0000**	**1.6128**

3.3 Site Preparation - 2017

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	6.0000e-005	5.0000e-005	4.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1002	0.1002	0.0000	0.0000	0.1003
Total	**6.0000e-005**	**5.0000e-005**	**4.5000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1002**	**0.1002**	**0.0000**	**0.0000**	**0.1003**

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0222	8.4000e-003	2.0000e-005		1.0500e-003	1.0500e-003		9.6000e-004	9.6000e-004	0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128
Total	**1.9300e-003**	**0.0222**	**8.4000e-003**	**2.0000e-005**	**5.8000e-003**	**1.0500e-003**	**6.8500e-003**	**2.9500e-003**	**9.6000e-004**	**3.9100e-003**	**0.0000**	**1.6005**	**1.6005**	**4.9000e-004**	**0.0000**	**1.6128**

3.3 Site Preparation - 2017

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	6.0000e-005	5.0000e-005	4.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1002	0.1002	0.0000	0.0000	0.1003
Total	**6.0000e-005**	**5.0000e-005**	**4.5000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1002**	**0.1002**	**0.0000**	**0.0000**	**0.1003**

3.4 Grading - 2017

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					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0366	0.0141	3.0000e-005		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417
Total	**3.2000e-003**	**0.0366**	**0.0141**	**3.0000e-005**	**9.8300e-003**	**1.7500e-003**	**0.0116**	**5.0500e-003**	**1.6100e-003**	**6.6600e-003**	**0.0000**	**2.6216**	**2.6216**	**8.0000e-004**	**0.0000**	**2.6417**

3.4 Grading - 2017

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	1.2000e-004	9.0000e-005	9.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2004	0.2004	1.0000e-005	0.0000	0.2005
Total	**1.2000e-004**	**9.0000e-005**	**9.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.2004**	**0.2004**	**1.0000e-005**	**0.0000**	**0.2005**

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					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0366	0.0141	3.0000e-005		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417
Total	**3.2000e-003**	**0.0366**	**0.0141**	**3.0000e-005**	**9.8300e-003**	**1.7500e-003**	**0.0116**	**5.0500e-003**	**1.6100e-003**	**6.6600e-003**	**0.0000**	**2.6216**	**2.6216**	**8.0000e-004**	**0.0000**	**2.6417**

3.4 Grading - 2017

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	1.2000e-004	9.0000e-005	9.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2004	0.2004	1.0000e-005	0.0000	0.2005
Total	**1.2000e-004**	**9.0000e-005**	**9.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.2004**	**0.2004**	**1.0000e-005**	**0.0000**	**0.2005**

3.5 Building Construction - 2017

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	0.1186	0.7695	0.5743	8.8000e-004		0.0493	0.0493		0.0475	0.0475	0.0000	74.1665	74.1665	0.0156	0.0000	74.5564
Total	**0.1186**	**0.7695**	**0.5743**	**8.8000e-004**		**0.0493**	**0.0493**		**0.0475**	**0.0475**	**0.0000**	**74.1665**	**74.1665**	**0.0156**	**0.0000**	**74.5564**

3.5 Building Construction - 2017

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	2.0800e-003	0.0516	0.0115	1.0000e-004	2.1700e-003	4.7000e-004	2.6400e-003	6.3000e-004	4.5000e-004	1.0700e-003	0.0000	9.4013	9.4013	9.7000e-004	0.0000	9.4255
Worker	6.9800e-003	5.4500e-003	0.0520	1.3000e-004	0.0115	9.0000e-005	0.0116	3.0600e-003	8.0000e-005	3.1400e-003	0.0000	11.5202	11.5202	4.0000e-004	0.0000	11.5301
Total	**9.0600e-003**	**0.0570**	**0.0635**	**2.3000e-004**	**0.0137**	**5.6000e-004**	**0.0143**	**3.6900e-003**	**5.3000e-004**	**4.2100e-003**	**0.0000**	**20.9214**	**20.9214**	**1.3700e-003**	**0.0000**	**20.9556**

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	0.1186	0.7695	0.5743	8.8000e-004		0.0493	0.0493		0.0475	0.0475	0.0000	74.1664	74.1664	0.0156	0.0000	74.5563
Total	**0.1186**	**0.7695**	**0.5743**	**8.8000e-004**		**0.0493**	**0.0493**		**0.0475**	**0.0475**	**0.0000**	**74.1664**	**74.1664**	**0.0156**	**0.0000**	**74.5563**

3.5 Building Construction - 2017

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	2.0800e-003	0.0516	0.0115	1.0000e-004	2.1700e-003	4.7000e-004	2.6400e-003	6.3000e-004	4.5000e-004	1.0700e-003	0.0000	9.4013	9.4013	9.7000e-004	0.0000	9.4255
Worker	6.9800e-003	5.4500e-003	0.0520	1.3000e-004	0.0115	9.0000e-005	0.0116	3.0600e-003	8.0000e-005	3.1400e-003	0.0000	11.5202	11.5202	4.0000e-004	0.0000	11.5301
Total	**9.0600e-003**	**0.0570**	**0.0635**	**2.3000e-004**	**0.0137**	**5.6000e-004**	**0.0143**	**3.6900e-003**	**5.3000e-004**	**4.2100e-003**	**0.0000**	**20.9214**	**20.9214**	**1.3700e-003**	**0.0000**	**20.9556**

3.5 Building Construction - 2018

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	0.1555	1.0457	0.8326	1.3200e-003		0.0635	0.0635		0.0613	0.0613	0.0000	110.5408	110.5408	0.0223	0.0000	111.0971
Total	**0.1555**	**1.0457**	**0.8326**	**1.3200e-003**		**0.0635**	**0.0635**		**0.0613**	**0.0613**	**0.0000**	**110.5408**	**110.5408**	**0.0223**	**0.0000**	**111.0971**

3.5 Building Construction - 2018

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	2.7500e-003	0.0729	0.0154	1.5000e-004	3.2600e-003	5.7000e-004	3.8300e-003	9.4000e-004	5.5000e-004	1.4900e-003	0.0000	14.0519	14.0519	1.3300e-003	0.0000	14.0852
Worker	9.1200e-003	6.9800e-003	0.0663	1.9000e-004	0.0173	1.2000e-004	0.0174	4.5900e-003	1.1000e-004	4.7100e-003	0.0000	16.7397	16.7397	5.1000e-004	0.0000	16.7526
Total	**0.0119**	**0.0799**	**0.0817**	**3.4000e-004**	**0.0206**	**6.9000e-004**	**0.0212**	**5.5300e-003**	**6.6000e-004**	**6.2000e-003**	**0.0000**	**30.7916**	**30.7916**	**1.8400e-003**	**0.0000**	**30.8377**

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	0.1555	1.0457	0.8326	1.3200e-003		0.0635	0.0635		0.0613	0.0613	0.0000	110.5406	110.5406	0.0223	0.0000	111.0970
Total	**0.1555**	**1.0457**	**0.8326**	**1.3200e-003**		**0.0635**	**0.0635**		**0.0613**	**0.0613**	**0.0000**	**110.5406**	**110.5406**	**0.0223**	**0.0000**	**111.0970**

3.5 Building Construction - 2018

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	2.7500e-003	0.0729	0.0154	1.5000e-004	3.2600e-003	5.7000e-004	3.8300e-003	9.4000e-004	5.5000e-004	1.4900e-003	0.0000	14.0519	14.0519	1.3300e-003	0.0000	14.0852
Worker	9.1200e-003	6.9800e-003	0.0663	1.9000e-004	0.0173	1.2000e-004	0.0174	4.5900e-003	1.1000e-004	4.7100e-003	0.0000	16.7397	16.7397	5.1000e-004	0.0000	16.7526
Total	**0.0119**	**0.0799**	**0.0817**	**3.4000e-004**	**0.0206**	**6.9000e-004**	**0.0212**	**5.5300e-003**	**6.6000e-004**	**6.2000e-003**	**0.0000**	**30.7916**	**30.7916**	**1.8400e-003**	**0.0000**	**30.8377**

3.6 Paving - 2018

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	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0900e-003**	**0.0523**	**0.0450**	**7.0000e-005**		**3.0500e-003**	**3.0500e-003**		**2.8100e-003**	**2.8100e-003**	**0.0000**	**6.1073**	**6.1073**	**1.8700e-003**	**0.0000**	**6.1540**

3.6 Paving - 2018

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	4.3000e-004	3.3000e-004	3.1200e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7885	0.7885	2.0000e-005	0.0000	0.7891
Total	**4.3000e-004**	**3.3000e-004**	**3.1200e-003**	**1.0000e-005**	**8.1000e-004**	**1.0000e-005**	**8.2000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7885**	**0.7885**	**2.0000e-005**	**0.0000**	**0.7891**

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	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0900e-003**	**0.0523**	**0.0450**	**7.0000e-005**		**3.0500e-003**	**3.0500e-003**		**2.8100e-003**	**2.8100e-003**	**0.0000**	**6.1073**	**6.1073**	**1.8700e-003**	**0.0000**	**6.1540**

3.6 Paving - 2018

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	4.3000e-004	3.3000e-004	3.1200e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7885	0.7885	2.0000e-005	0.0000	0.7891
Total	**4.3000e-004**	**3.3000e-004**	**3.1200e-003**	**1.0000e-005**	**8.1000e-004**	**1.0000e-005**	**8.2000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7885**	**0.7885**	**2.0000e-005**	**0.0000**	**0.7891**

3.7 Architectural Coating - 2018

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					
Archit. Coating	0.6373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total	**0.6388**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2797**

3.7 Architectural Coating - 2018

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	1.7000e-004	1.3000e-004	1.2000e-003	0.0000	3.1000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3033	0.3033	1.0000e-005	0.0000	0.3035
Total	**1.7000e-004**	**1.3000e-004**	**1.2000e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3033**	**0.3033**	**1.0000e-005**	**0.0000**	**0.3035**

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					
Archit. Coating	0.6373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total	**0.6388**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2797**

3.7 Architectural Coating - 2018

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	1.7000e-004	1.3000e-004	1.2000e-003	0.0000	3.1000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3033	0.3033	1.0000e-005	0.0000	0.3035
Total	**1.7000e-004**	**1.3000e-004**	**1.2000e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3033**	**0.3033**	**1.0000e-005**	**0.0000**	**0.3035**

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	0.1470	1.8582	1.5100	7.5000e-003	0.3939	9.5700e-003	0.4034	0.1061	9.0800e-003	0.1151	0.0000	697.2251	697.2251	0.0483	0.0000	698.4320
Unmitigated	0.1470	1.8582	1.5100	7.5000e-003	0.3939	9.5700e-003	0.4034	0.1061	9.0800e-003	0.1151	0.0000	697.2251	697.2251	0.0483	0.0000	698.4320

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	375.65	136.95	40.15	1,018,754	1,018,754
Total	375.65	136.95	40.15	1,018,754	1,018,754

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
Industrial Park	14.70	6.60	6.60	59.00	28.00	13.00	79	19	2

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial Park	0.466291	0.031960	0.164877	0.131500	0.023119	0.007290	0.020969	0.142348	0.001645	0.001858	0.006120	0.000997	0.001026

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	178.7466	178.7466	7.3800e-003	1.5300e-003	179.3861
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	178.7466	178.7466	7.3800e-003	1.5300e-003	179.3861
NaturalGas Mitigated	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	50.6876	50.6876	9.7000e-004	9.3000e-004	50.9888
NaturalGas Unmitigated	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	50.6876	50.6876	9.7000e-004	9.3000e-004	50.9888

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					
Industrial Park	949850	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	50.6876	50.6876	9.7000e-004	9.3000e-004	50.9888
Total		**5.1200e-003**	**0.0466**	**0.0391**	**2.8000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**50.6876**	**50.6876**	**9.7000e-004**	**9.3000e-004**	**50.9888**

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					
Industrial Park	949850	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	50.6876	50.6876	9.7000e-004	9.3000e-004	50.9888
Total		**5.1200e-003**	**0.0466**	**0.0391**	**2.8000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**50.6876**	**50.6876**	**9.7000e-004**	**9.3000e-004**	**50.9888**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	561000	178.7466	7.3800e-003	1.5300e-003	179.3861
Total		**178.7466**	**7.3800e-003**	**1.5300e-003**	**179.3861**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	561000	178.7466	7.3800e-003	1.5300e-003	179.3861
Total		**178.7466**	**7.3800e-003**	**1.5300e-003**	**179.3861**

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	0.2786	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.8000e-004	9.8000e-004	0.0000	0.0000	1.0500e-003
Unmitigated	0.2786	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.8000e-004	9.8000e-004	0.0000	0.0000	1.0500e-003

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	0.0637					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.8000e-004	9.8000e-004	0.0000	0.0000	1.0500e-003
Total	**0.2786**	**0.0000**	**5.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.8000e-004**	**9.8000e-004**	**0.0000**	**0.0000**	**1.0500e-003**

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	0.0637					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.8000e-004	9.8000e-004	0.0000	0.0000	1.0500e-003
Total	**0.2786**	**0.0000**	**5.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.8000e-004**	**9.8000e-004**	**0.0000**	**0.0000**	**1.0500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	56.8022	0.4166	0.0102	70.2682
Unmitigated	56.8022	0.4166	0.0102	70.2682

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	12.7188 / 0	56.8022	0.4166	0.0102	70.2682
Total		**56.8022**	**0.4166**	**0.0102**	**70.2682**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	12.7188 / 0	56.8022	0.4166	0.0102	70.2682
Total		**56.8022**	**0.4166**	**0.0102**	**70.2682**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.8440	0.8182	0.0000	34.2979
Unmitigated	13.8440	0.8182	0.0000	34.2979

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	68.2	13.8440	0.8182	0.0000	34.2979
Total		**13.8440**	**0.8182**	**0.0000**	**34.2979**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	68.2	13.8440	0.8182	0.0000	34.2979
Total		**13.8440**	**0.8182**	**0.0000**	**34.2979**

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 E
Biological Analysis Report

ESA

BIOLOGICAL ANALYSIS REPORT

LENDLEASE ENERGY DEVELOPMENT LLC

AV APOLLO SOLAR PROJECT, KERN COUNTY, CALIFORNIA

JULY 2017

BIOLOGICAL ANALYSIS REPORT

AV APOLLO SOLAR PROJECT, KERN COUNTY, CALIFORNIA

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Table of Contents

Executive Summary *1*

SECTION 1 - Introduction *3*

1.1 - Project Description 3
1.2 - Project Location 3
1.3 - Purpose, Goals, and Objectives 3

SECTION 2 - Environmental Setting *7*

2.1 - Topography 7
2.2 - Climate 9
2.3 - Land Use 9
2.4 - Soils 11
2.5 - Hydrology 11
2.6 - General Biological Conditions 15

SECTION 3 - Regulatory Setting *18*

3.1 - Applicable Federal Regulations 18
3.1.1 - Federal Endangered Species Act of 1973 (USC, Title 16, Sections 1531 -1543) 18
3.1.2 - Migratory Bird Treaty Act (USC, Title 16, Sections 703 - 711) 19
3.1.3 - Bald and Golden Eagle Protection Act of 1940 (USC, Title 16, Section 668) 19
3.1.4 - Federal Clean Water Act (USC, Title 33, Sections 1521 - 1376) 19
3.1.5 - Draft West Mojave Habitat Conservation Plan 20
3.1.6 - Desert Renewable Energy Conservation Plan 20
3.2 - Applicable State Regulations 20
3.2.1 - California Environmental Quality Act (California Public Resources Code, Sections 21000 - 21178, and Title 14 CCR, Section 753, and Chapter 3, Sections 15000 - 15387) 20
3.2.2 - California Endangered Species Act (California Fish and Game Code Section 2050 et seq.) 21
3.2.3 - Porter-Cologne Water Quality Control Act 21
3.2.4 - Various Sections of the California State and Fish and Game Code 21
3.2.5 - California Food and Agricultural Code Sections 800071 Through 80075 - California Desert Native Plant Protection Act 22
3.3 - Applicable Regional and Local Regulations 23
3.3.1 - Kern County General Plan 23

SECTION 4 - Methods *25*

4.1 - Literature Review and Database Analysis 25
4.2 - Reconnaissance-Level Surveys 26
4.3 - Focused Surveys 26

4.3.1 - Floristics Surveys 26
4.3.2 - Desert Tortoise Surveys 27
4.3.3 - Swainson's Hawk Surveys 27
4.3.4 - Waters Delineations 28

SECTION 5 - Results and Discussion 31

5.1 - Sensitive Natural Communities 31
5.1.1 - Results of Literature Review and Database Searches 31
5.1.2 - Presence of Sensitive Natural Communities 31
5.2 - Special-Status Plants 32
5.2.1 - Results of Literature Review and Database Searches 32
5.2.2 - Presence of Special-Status Plants 32
5.3 - Special-Status Wildlife 35
5.3.1 - Results of Literature Review and Database Searches 36
5.3.2 - Presence of Special-Status Wildlife 41
5.4 - Critical Habitat, Movement Corridors, and Linkages 45
5.4.1 - Results of Literature Review and Database Searches 45
5.5 - Waters and Wetlands 47
5.5.1 - Results of Literature Review and Database Searches 47
5.5.2 - Presence of Waters and Wetlands 48

SECTION 6 - Evaluation of Impacts and Recommended Avoidance and Minimization Measures 50

6.1 - Project Impacts to Special-Status Species (CEQA Evaluation Factor A): 51
6.1.1 - Project Impacts to Special-Status Plant Species 51
6.1.2 - Project Impacts to Special-Status Wildlife Species 52
6.2 - Project Impacts to Sensitive Vegetation Communities (CEQA Evaluation Factor B) 59
6.3 - Project Impacts to Wetlands and Waters (CEQA Evaluation Factor C) 59
6.4 - Project Impacts to Movement Corridors and Linkages (CEQA Evaluation Factor D) 60

SECTION 7 - Conclusions 62

SECTION 8 - References 63

List of Figures

Figure 1 Regional Map AV Apollo Solar Project, Kern County, California 5
Figure 2 Site Map AV Apollo Solar Project, Kern County, California 6
Figure 3 Topographic Map AV Apollo Solar Project, Kern County, California 8
Figure 4 Adjacent Solar Sites, AV Apollo Solar Project, Kern County, California 10
Figure 5 Soils Map AV Apollo Solar Project, Kern County, California 12
Figure 6 FEMA Floodplain Map AV Apollo Solar Project, Kern County, California 13

Figure 7 National Wetlands Inventory Map AV Apollo Solar Project, Kern County, California 14
Figure 8 Historical Occurrences of Sensitive Natural Communities and Special-Status Plant Species within 10 Miles of the AV Apollo Solar Project, Kern County, California 33
Figure 9 Location of Sensitive Plant Species 34
Figure 10 Historical Occurrences of Special-Status Invertebrates, Amphibians, and Reptiles within 10 Miles of the AV Apollo Solar Project, Kern County, California 38
Figure 11 Historical Occurrences of Special-Status Birds within 10 Miles of the AV Apollo Solar Project, Kern County, California 39
Figure 12 Historical Occurrences of Special-Status Mammals within 10 Miles of the AV Apollo Solar Project, Kern County, California 40
Figure 13 Special-Status Species Observed, AV Apollo Solar Project, Kern County, California 43
Figure 14 Mohave Ground Squirrel Range Boundary AV Apollo Solar Project, Kern County, California 44
Figure 15 Critical Habitat and Movement Corridors and Linkages, AV Apollo Solar Project, Kern County, California 46
Figure 16 Waters Delineation Conducted on the AV Apollo Solar Site, Kern County, California 49

List of Tables

Table 1 Plants and Wildlife Species Observed within the AV Apollo Solar Project Site, Kern County, California 15
Table 2 Chapter 1 – Land Use, Open Space, and Conservation Element 23
Table 3 AV Apollo Biological Resources Survey Types, Survey Dates, Participating Staff, and Survey Location (by Site Number) 29
Table 4 Special-Status Plant Species Occurring in the Region of the AV Apollo Solar Project, Kern County, California 35
Table 5 Special-Status Wildlife Species Occurring in the Region of the AV Apollo Solar Project, Kern County, California 36
Table 6 Water Feature Data, AV Apollo Solar Project, Kern County, California 48

List of Appendices

Appendix A Special-Status Species Database Search Results
Appendix B Photoplates

EXECUTIVE SUMMARY

QK was retained by Lendlease Energy Development LLC (Project proponent) to provide biological resource services in support of the AV Apollo Solar Project (Project). The Project proponent proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities encompassing approximately 493 acres of mostly undisturbed land. The three facilities are named Syracuse Solar (Site 1), Tours Solar (Site 2), and Sunbow Solar (Site 3). Collectively, these three facilities are referred to as the Project or by site.

This report provides information including the condition and sensitivity of natural resources currently existing on and adjacent to the Project. Information on the occurrence of sensitive natural communities and special-status species that are known to occur on and adjacent to the Project sites are provided, based upon available historic records and data collected during on-site field surveys. This report may also be used to support the environmental documentation and evaluation of the Project pursuant to the California Environmental Quality Act (CEQA).

The Project is located in the southeast corner of Kern County, California in the Mojave Desert, about 9 miles northwest of Rosamond and 9 miles southwest of Mojave. Regularly dispersed native shrubs occur throughout the Project site, mostly consisting of creosote bush (*Larrea tridentata*), burrobush (*Ambrosia salsola*), and white bursage (*Ambrosia dumosa*). There are widely dispersed Joshua trees (*Yucca brevifolia*) on the Project site. The Project site supports a wide variety of reptile, bird, and mammal species.

Reviews of agency-maintained databases were conducted on the Project to determine the potential presence of sensitive biological resources and special-status species. The databases indicated that two sensitive natural communities, twenty special-status plants, and twenty-nine special-status wildlife species occur within the vicinity of the Project. On-site field surveys were conducted to identify sensitive biological resources. No sensitive natural communities occur on the Project site. Two special-status plants, Lemmon's jewelflower (*Caulanthus lemmonii*) and Clokeys cryptantha (*Cryptantha clokeyi*) were found on Site 3 and diagnostic sign were observed of two special-status wildlife species, the, American badger (*Taxidea taxus*) on Sites 1 and 2, and desert kit fox (*Vulpes macrotis arsipus*) on Site 2 and 3. No desert tortoise (*Gopherus agassizii*) or definitive desert tortoise sign was found on the Project, but a possible desert tortoise burrow (Class 4 burrow) was found on Site 1. No Swainson's hawk (*Buteo Swainsoni*) or active Swainson's hawk nests were found within 5 miles of the Project site.

Site 1 includes three unnamed blue-line drainages and one ditch. Four water features were identified on Site 2, including Oak Creek and three unnamed drainages and two unnamed drainages were delineated on Site 3. There are no designated migratory corridors or linkages, significant nursery sites, or designated Critical Habitat that occur on the Project site.

The Project has the potential to significantly impact two special-status plant species, the desert kit fox, American badger, western burrowing owl, nesting migratory birds, and

Waters of the State. There is no evidence that shows that the site is occupied by the desert tortoise, Mohave ground squirrel, or Swainson's hawks, and impacts to those species are not anticipated to occur. Avoidance and minimization measures could be implemented that would result in the Project having ***less than significant*** impacts to biological resources.

The AV Apollo Project would contribute to cumulative impacts to biological resources. Although the avoidance and minimization measures provided in this document would reduce the effects of the Project to less than significant levels, the cumulative impacts of the Project would be considered ***significant and unavoidable***.

SECTION 1 - INTRODUCTION

QK was retained by Lendlease Energy Development LLC (Project proponent) to provide biological resource services in support of the AV Apollo Solar Project (Project). QK reviewed relevant technical documents and agency-maintained databases on biological resources and assessed biological conditions throughout the Project area during on-site biological surveys. The results of the desktop research and field surveys are summarized in this biological analysis report (BAR), which provides the technical basis for the analysis of potential impacts to biological resources that may result from the construction, operation, and maintenance of the Project.

1.1 - Project Description

The Project proponent proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities. The three facilities are named Syracuse Solar (Site 1), Tours Solar (Site 2), and Sunbow Solar (Site 3). Collectively, these three facilities are referred to as the AV Apollo Solar Project. Sites 1and 2 are each approximately 160 acres, and Site 3 is approximately 173 acres, resulting in a total Project size of 60 MW on approximately 493 acres. A portion of Site 2 includes a permanent no development area of approximately 35 acres. This no development area is included within the Project boundary, but is not part of the proposed development footprint (Figure 2).

1.2 - Project Location

The Project is in the southeast corner of Kern County, California in the Mojave Desert, about 9 miles northwest of Rosamond and 9 miles southwest of Mojave (Figure 1). The Project is located 11 miles south of State Route 58 and 8 miles east of State Route14, west of the Backus Road and Tehachapi Willow Springs Road intersection (Figure 2). The Tehachapi Range occurs to the north and west of the Project, and the Central Transverse Range is 20 miles south of the site. Edwards Air Force Base is 24 miles east of the Project.

The Project is located within the Willow Springs United States Geological Survey (USGS) 7.5-minute topographical quadrangle. Sites 1 and 2 are in the northern ½ of Section 19, Township 10 North, Range 13 West, San Bernardino Base and Meridian (SBB&M) and Site 3 is located in the western ½ of Section 18, Township 10 North, Range 13 West, SBB&M. Backus Road and Tehachapi Willow Springs Road provide access to all three locations of the Project site.

1.3 - Purpose, Goals, and Objectives

This BAR provides information about the condition and sensitivity of natural resources currently existing on and adjacent to the Project site. The occurrence of sensitive natural communities and special-status species that are known to occur on and adjacent to the Project site are provided, based upon available historic records and data collected during on-site field surveys. The purpose of this BAR is to provide site-specific information and an evaluation of Project impacts that would be used for the preparation of Project

environmental documentation and evaluation pursuant to the California Environmental Quality Act (CEQA). The Project is subject to discretionary approvals by the Kern County Board of Supervisors. Acting in its capacity as a lead agency under CEQA, the Kern County Planning and Natural Resources Department would need to determine the potential for the Project to result in significant impacts, consider mitigation measures and alternatives to avoid significant impacts, and consider the environmental effects of the Project in its decision-making process. This BAR provides the substantial evidence upon which the required evaluation of feasibility, environmental analysis, and findings of fact in relation to biological resources can be made.

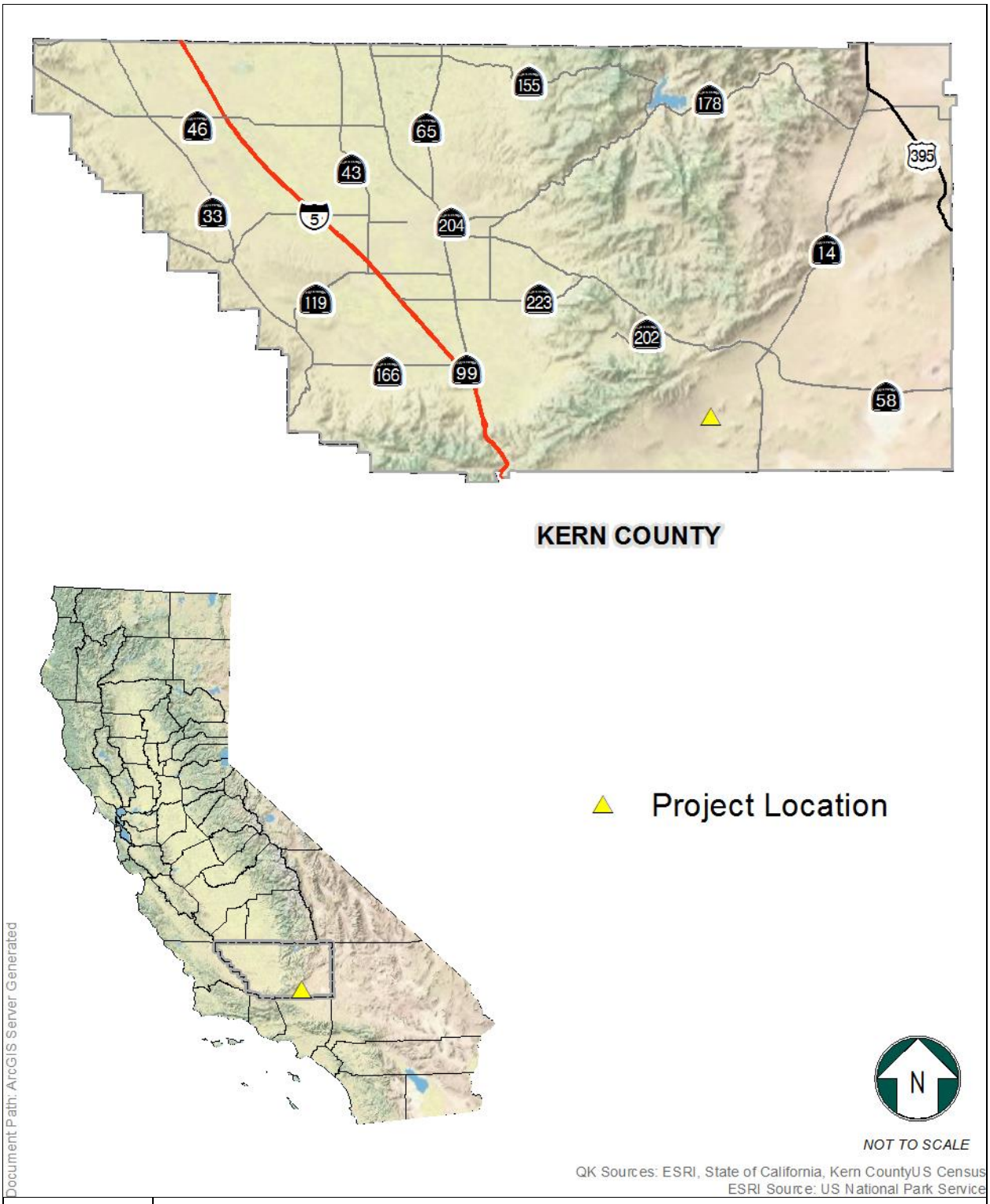

Figure 1
Regional Map
AV Apollo Solar Project, Kern County, California

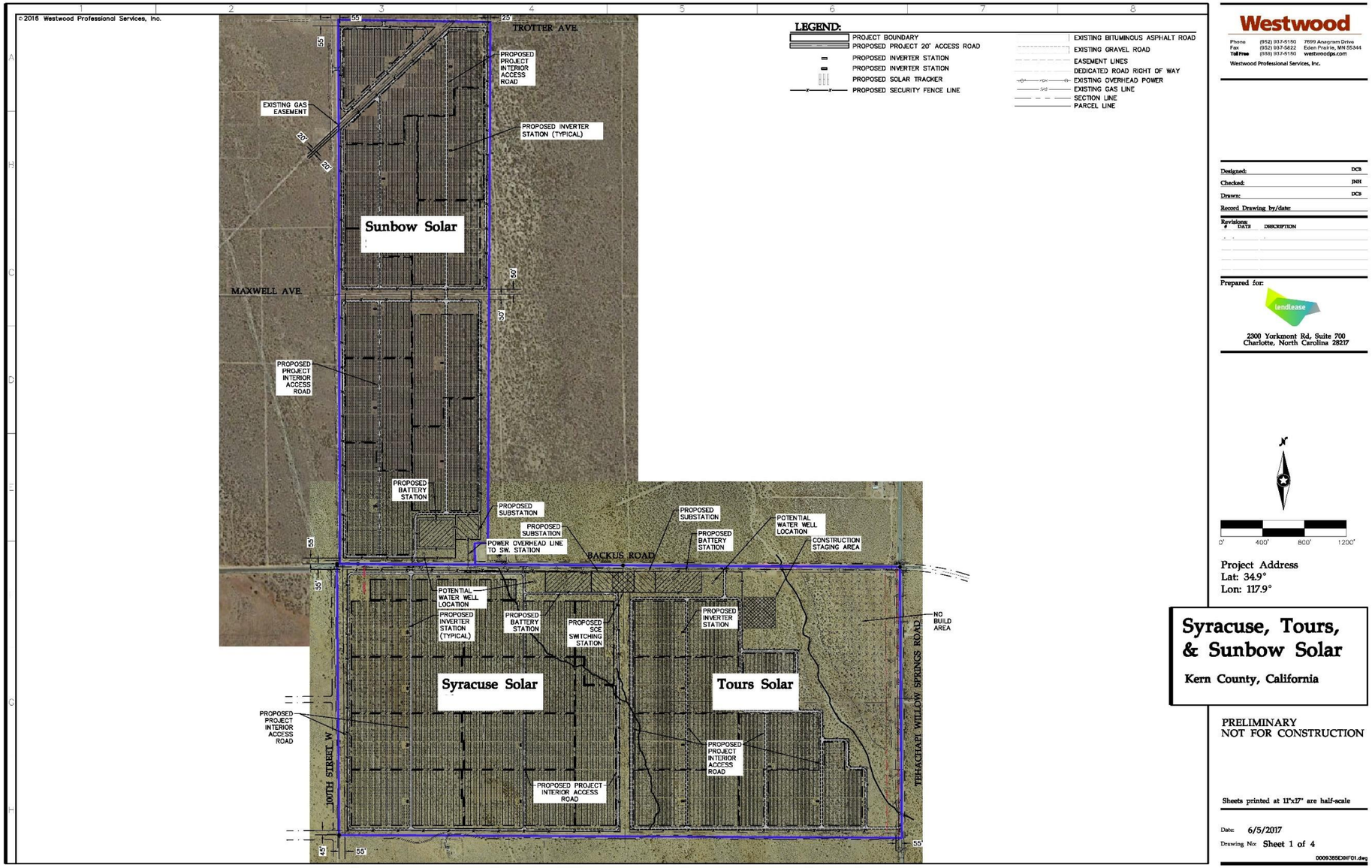

Figure 2
Site Map
AV Apollo Solar Project, Kern County, California

SECTION 2 - 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:

- Topography
- Climate
- Land Use
- Soils
- Hydrology, and
- General Biological Conditions

2.1 - Topography

The Project and surrounding land are relatively flat and exhibit little topographic variation except for three intermittent drainage features traversing in a north/south orientation for the length of the Project (Figure 3). The Project site gently slopes from the northwest to the southeast with an elevation of 3,072 feet above mean sea level (AMSL) in the northwest corner of Site 3 to 2,867 feet in the southeast corner of Site 1. Four miles to the north and west lie the foothills of the Tehachapi Mountains. An alluvial fan from those mountains extends to the east, but does not reach the Project site. The alluvial fan exhibits a gradual decrease in elevation (less than one percent slope). This locality is geographically defined by the intersection of the Garlock and San Andreas Faults and where the Tehachapi Mountains meet the Transverse Range.

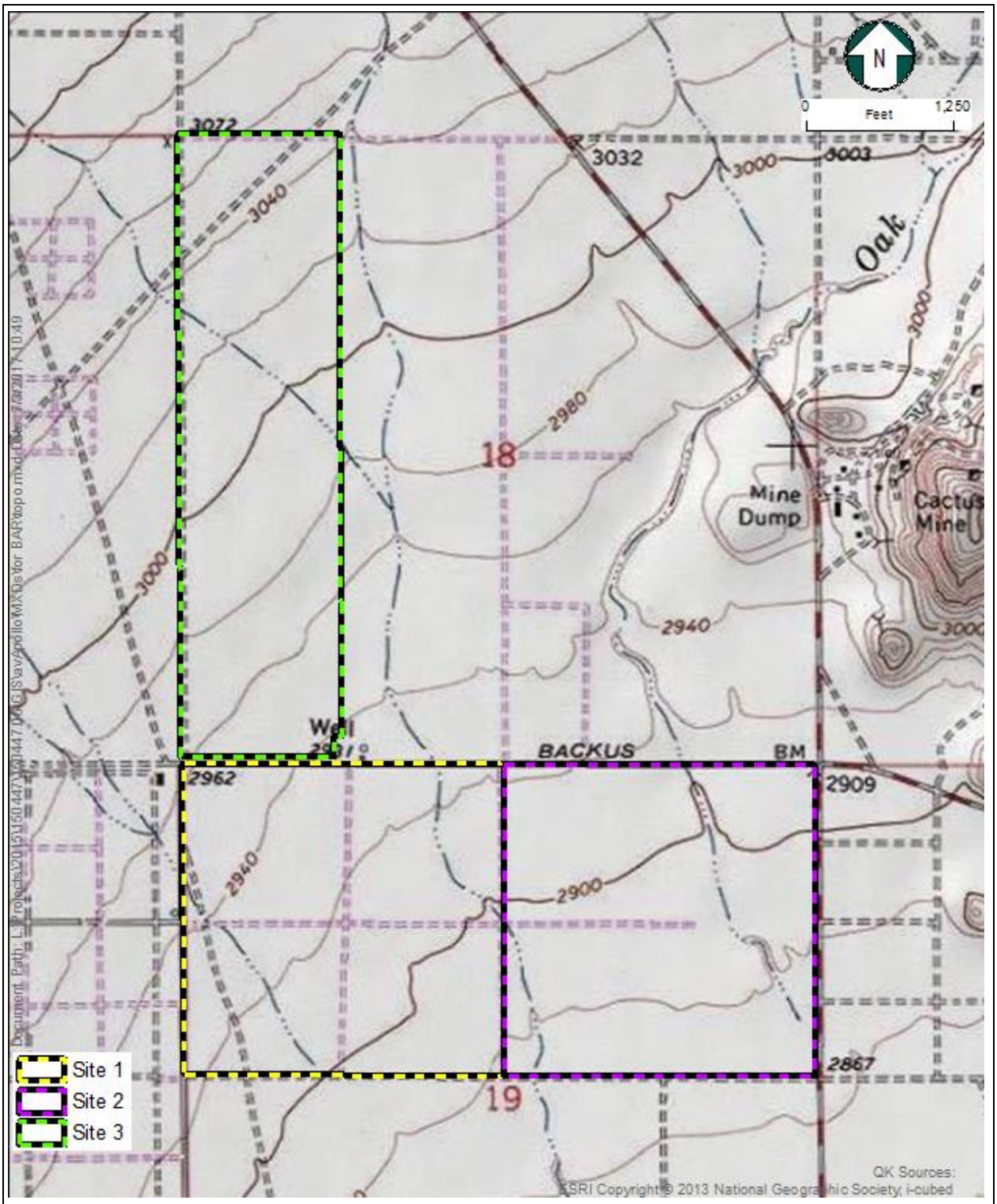

Figure 3
Topographic Map
AV Apollo Solar Project, Kern County, California

2.2 - Climate

The climate of the region is hot and dry, and exhibits the usual characteristics of the California Desert. The climate in Antelope Valley is of a Mediterranean-type, with hot, dry, windy summers and cool, moist winters, with highly variable precipitation events from year to year. Summer temperatures are hot both day and night, with maximum temperatures reaching up to 115 degrees Fahrenheit (F). The largest metropolitan area in the vicinity is Mojave, located approximately 9 miles to the northeast. The Mojave Desert is not influenced by the Pacific Ocean because it is in a broad rain shadow created by the presence of the Coast Range, Transverse Range, and Sierra Nevada Range to the west. These conditions create year-round arid conditions. Normally, approximately 90 percent of the precipitation in the Mojave Desert occurs between November and April, but there can be rare, intense summer thunderstorms. The average annual precipitation in Mojave is approximately 6.34 inches and there are, on average, only 16 days each year of frost (Cooperative Observer Program ID: 045756) (WRCC 2017). High winds often occur, with peak wind velocities often above 50 miles per hour, and winds exceeding100 miles per hour can occur. The arid conditions and variable precipitation from year to year, coupled with extremes in temperatures, creates a harsh and unpredictable environment for plants and wildlife. Consequently, the availability of water or soil moisture is a critical factor that determines the broad distribution of vegetation types and associated wildlife species in the region.

2.3 - Land Use

The Project site consists mostly of native, undisturbed habitat, situated among a matrix of maintained and abandoned dirt roads. Surrounding lands also consist mostly of native habitat. Existing developments in the vicinity include renewable energy facilities and supporting infrastructures, rural access roads, scattered rural residences, and producing and non-producing water wells, cattle ranching facilities, and mining operations. Southern California Edison's Tehachapi Renewable Transmission Project (TRTP) transmission line is near the Project. This transmission line connects SCE's Vincent Substation with SCE's Windhub Substation, which is located north of the Project site.

Nine operating solar facilities exist within a 10-mile radius of the Project (Figure 4). The nearest solar sites are Catalina Renewable Energy Project, which is located two miles to the southwest, and SEPV Solar, which is located approximately three miles north of the Project. A number of mining operations are located nearby, the nearest of which is Cactus Gold Mine, approximately 2,860-feet to the northeast of the Project. Several small, isolated residences are near the Project site, which are located on Backus Road and Tehachapi Willow Springs Road, and 100th Street West and Trotter Ave. Off-highway vehicle use is a common recreational activity in the region.

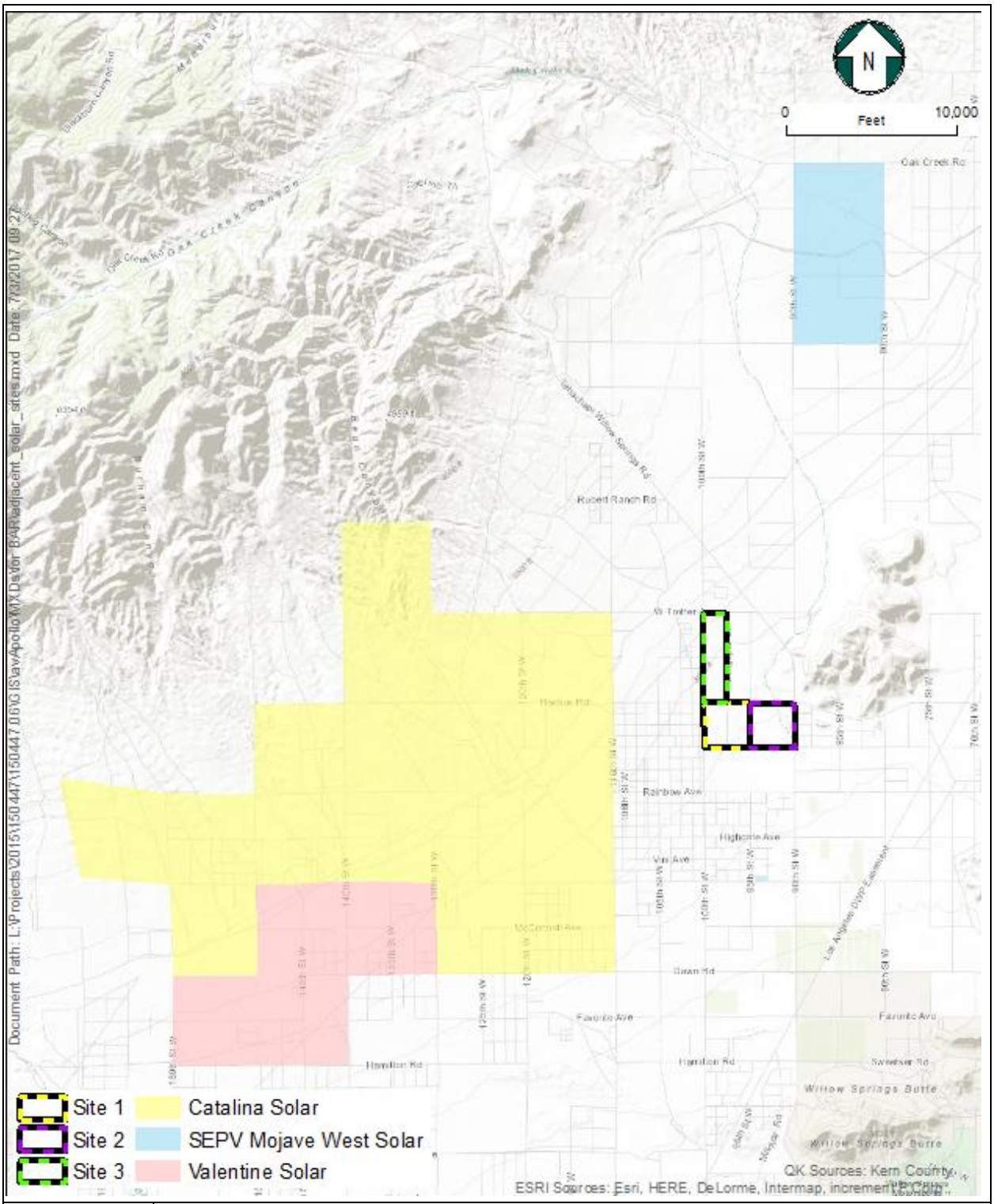

Figure 4
Adjacent Solar Sites,
AV Apollo Solar Project, Kern County, California

2.4 - Soils

Soils occurring on the Project sites are limited to Cajon Gravelly Loamy Sand, Cajon Loamy Sand, and Garlock Loamy Sand (Figure 5). Site 1 consists mostly of Cajon Loamy Sand, but there is also some Garlock Loamy Sand occurring in the northeast corner of the site. There are three soil types occurring on Site 2. The most common is Cajon Gravelly Loamy Sand, followed by Cajon Loamy Sand, and finally there is some Garlock Loamy Sand in the southwest corner of the site. Site three consists entirely of Cajon Gravelly Loamy Sand. The Cajon series of soil is classified as having a low potential for expansion.

2.5 - Hydrology

The Project is situated entirely within a Federal Emergency Management Agency (FEMA) designated Zone "A" floodplain, which is a 100-year floodplain (Figure 6). Several unnamed ephemeral streams run through the Project (Figure 7). An unnamed ephemeral stream runs through the northeast corner of Site 1, and another unnamed ephemeral stream runs through the southwest corner of the site, terminating before it reached the southern border. The unnamed ephemeral drainage in the northwest corner of Site 1 continues into Site 2, and is situated in the southwest corner of Site 2. Oak Creek, also an ephemeral drainage, is situated in the eastern half of Site 2. There is one unnamed ephemeral drainage situated in the northern half of Site 3.

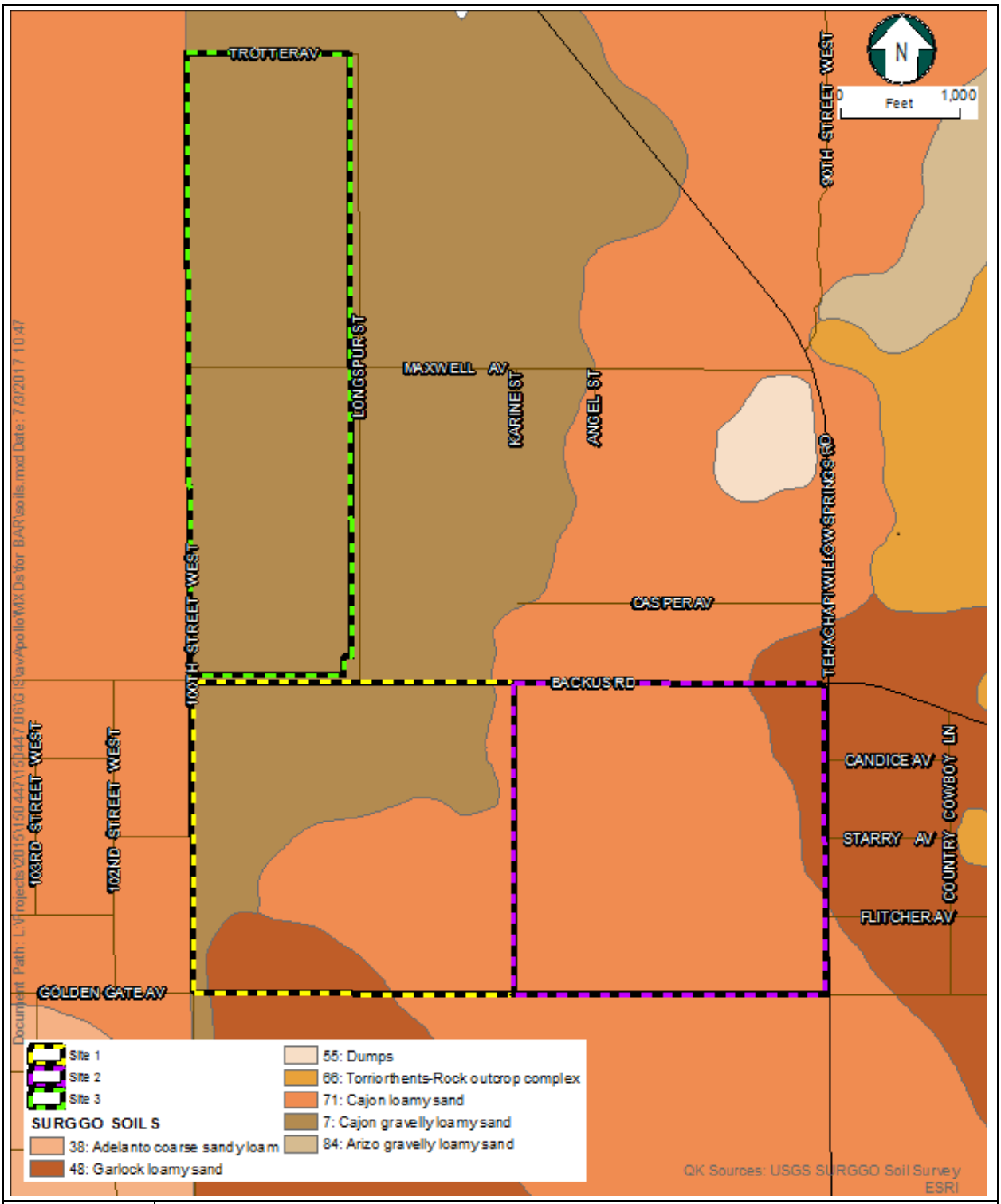

Figure 5
Soils Map
AV Apollo Solar Project, Kern County, California

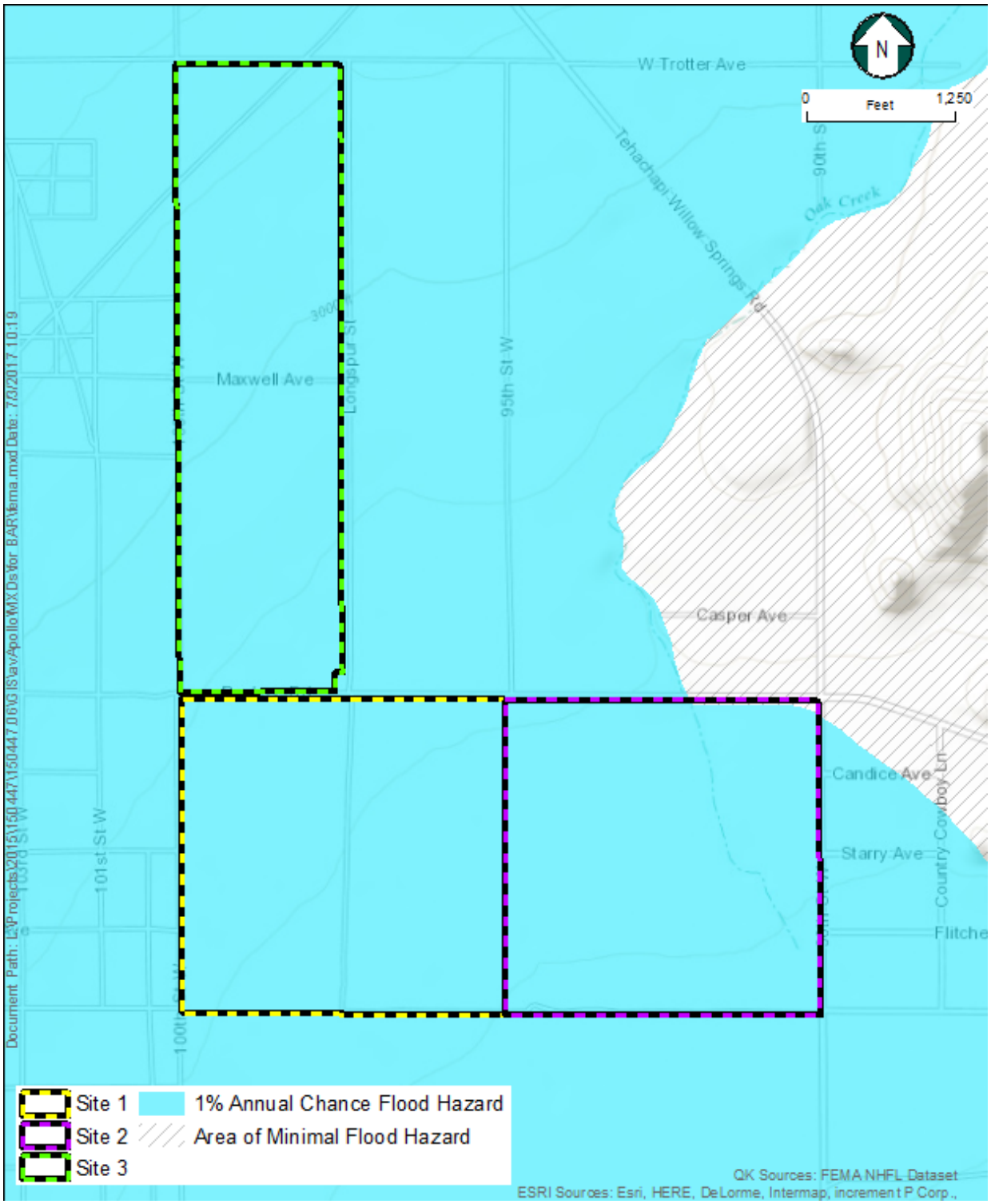

Figure 6
FEMA Floodplain Map
AV Apollo Solar Project, Kern County, California

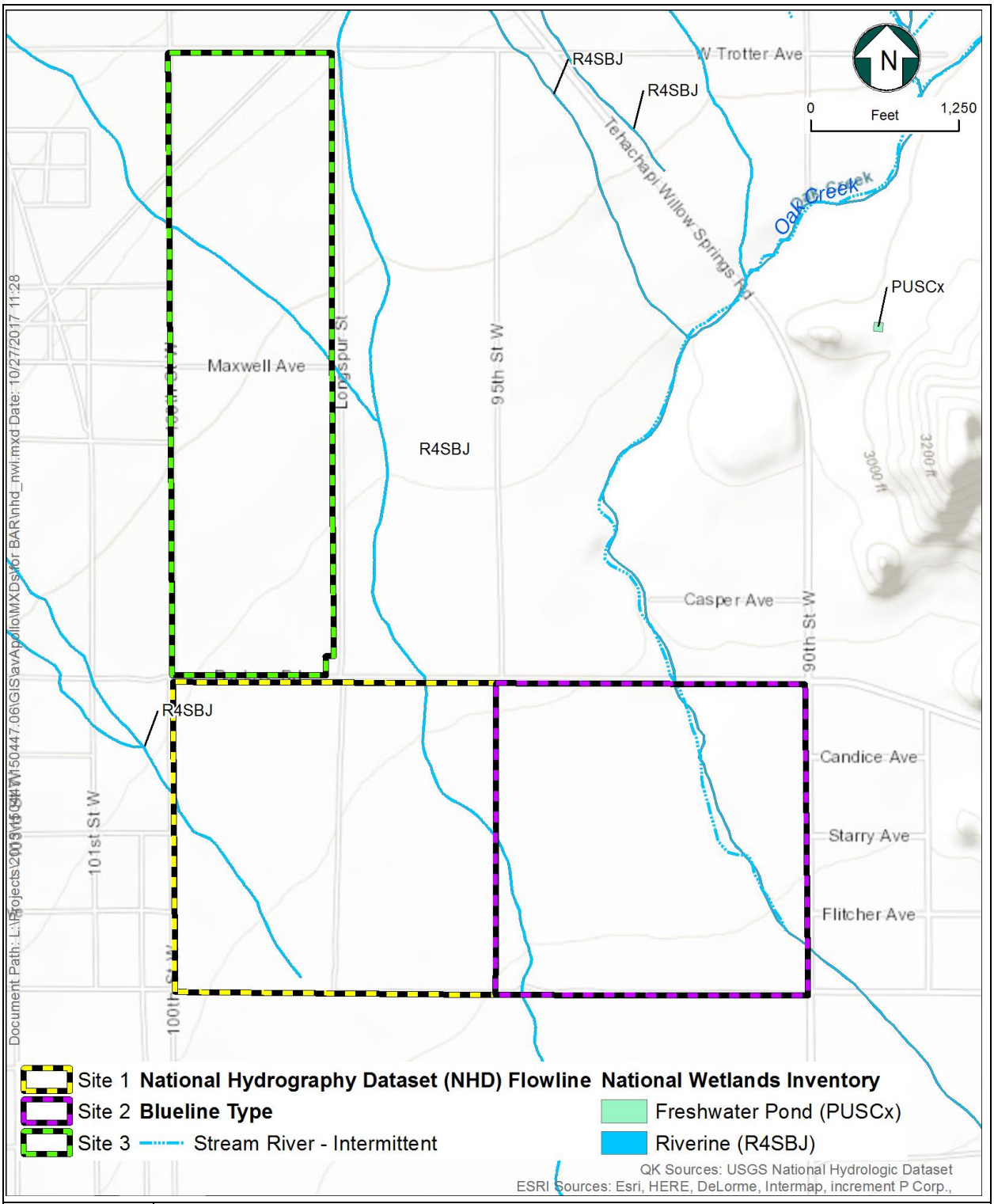

Figure 7
National Wetlands Inventory Map
AV Apollo Solar Project, Kern County, California

2.6 - General Biological Conditions

The Project is within a mostly undisturbed area, predominantly covered by native vegetation. There were 57 species of plants identified on the Project site (Table 1). Regularly dispersed native shrubs occur throughout the Project site, mostly consisting of creosote bush (*Larrea tridentata*), burrobush (*Ambrosia salsola*), and white bursage (*Ambrosia dumosa*), although a variety of other shrub species were common to rare on the site. There are scattered Joshua trees (*Yucca brevifolia*) on the Project site. Interspersed between the perennial species are many native annuals such as fiddleneck (*Amsinckia intermedia*), goldfields (*Lasthenia californica*), heliotrope phacelia (*Phacelia crenulata*), rusty popcorn flower (*Plagiobothrys nothofulvus*), and other species. Invasive annual grasses and forbs are common throughout the Project, and include such species as Brome grass (*Bromus* spp.), common oat (*Avena sativa*), Arabian schismus (*Schismus arabicus*), and filaree (*Erodium cicutarium*). These invasive species contribute to habitat for wildlife and other plants native to the Project. Two special-status plants, Lemmon's jewelflower (*Caulanthus lemmonii*) and Clokey's cryptantha (*Cryptantha clokeyi*) were found on Site 3.

The Project supports a variety of reptile, bird, and mammal species (Table 1). Common reptiles in the region that were observed on the Project site included the tiger whiptail lizard (*Aspidoscelis tigris*), zebra-tailed lizard (*Callisaurus draconoides*), Mojave rattlesnake (*Crotalus scutulatus*), long-nosed leopard lizard (*Gambelia wislizenii*), and side blotched lizard (*Uta stansburiana*). Bird species that were observed included the red-tailed hawk (*Buteo jamaicensis*), common raven (*Corus corax*), and mourning dove (*Zenaida macroura*). Mammal species that were identified on the site included the coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), and California ground squirrel (*Otospermophilus beechyi*).

Table 1
Plants and Wildlife Species Observed within the
AV Apollo Solar Project Site, Kern County, California

Scientific Name	Common Name
Plants	
Acamptopappus schockleyi	Schockley's Goldenhead
Ambrosia dumosa	white bursage
Ambrosia salsola	burrobush
Amsinkia intermedia	common fiddleneck
Anisocoma acaulis	scale bud
Astragalus lentiginosus var. *fremontii*	freckled milk vetch
Atriplex canescens	Four-wing saltbush
Atriplex polycarpa	valley saltbush
Avena sativa	common oat
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Bromus madritensis ssp. *rubens*	red brome
Camissonia campestris	Mojave sun cup
Camissoniopsis pallida	pale yellow sun cup

Scientific Name	Common Name
Caulanthus lemmonii	Lemmon's Jewelflower
Chaenactis fremontii	Fremont pincushion
Chylismia caliviformis	clavate fruited primrose
Croton setiger	turkey mullein
Cryptantha clokeyi	Clokey's cryptantha
Cylindropopuntia echinocarpa	Wiggin's cholla
Datura wrightii	jimson weed
Descurainia pinnata	western tansy mustard
Dichelostema capitatum	blue dicks
Ephedra viridis	Mormon tea
Eriastrum eremicum	desert woolystar
Ericameria cooperi var. cooperi	Cooper's goldenbush
Ericameria nauseosa	rubber rabbitbush
Eriogonum fasciculatum	California buckwheat
Erodium cicutarium	red-stemmed filaree
Eschscholzia minutiflora	pygmy poppy
Euphorbia albomarginata	rattlesnake sandmat
Festuca microstachys	small fescue
Gilia brecciarum	small gilia
Krascheninnikovia lanata	winterfat
Larrea tridentata	creosote bush
Lasthenia californica	goldfields
Lepidium nitidum	peppergrass
Linanthus parryae	sand blossom
Loeseliastrum matthewsii	desert calico
Lupinus sparsiflorus	Mojave lupine
Lycium andersonii	Anderson's desert thorn
Lycium cooperi	boxthorn
Malacaothrix glabrata	desert dandelion
Mentzelia congesta	blazing star
Mentzelia veatchiana	Veatch's blazing star
Mirabilis multiflora	desert four o'clock
Nemophila menziesii	baby blue eyes
Phacelia crenulata	heliotrope phacelia
Plagiobothrys nothofulvus	rusty popcorn flower
Platystemon californianus	cream cups
Saliva columbariae	chia sage
Salvia carduaceae	thistle sage
Schismus arabicus	Arabian schismus
Sisymbrium irio	London rocket
Stipa hymenoides	Indian rice grass
Uropappus lindleyi	silver puffs
Yucca brevifolia	Joshua tree
Reptiles	
Aspidoscelis spp.	western whiptail
Callisaurus draconoides	zebra-tailed lizard
Crotalus scutulatus	Mojave rattlesnake
Gambelia wislizenii	long nosed leopard lizard

Scientific Name	Common Name
Uta stansburiana	western side-blotched lizard
Xantusia vigilis	desert night lizard
Birds	
Accipiter cooperii	Cooper's hawk
Artemisiospiza nevadensis	sagebush sparrow
Artemisiospizabelli	Bell's sparrow
Asio sp.	long or short eared owl
Athene cunicularia	Western burrowing owl*
Buteo jamaicensis	red-tailed hawk
Campylorhynchus brunneicapillus	cactus wren
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Eremophila aipestris	horned lark
Lanius ludovicianus	loggerhead shrike
Mimus polyglottos	northern mockingbird
Sturnella neglecta	western meadowlark
Mammals	
Ammospermophilus leucurus	white-tailed antelope squirrel
Canis latrans	coyote
Canis lupus familiaris	domestic dog
Lepus californicus	black tailed jackrabbit
Neotoma lepida	woodrat
Vulpes macrotis arsipus	desert kit fox*

*indicates sign (i.e. scat, tracks, prey remains, dens, etc.) was observed.

SECTION 3 - REGULATORY SETTING

3.1 - Applicable Federal Regulations

3.1.1 - 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. 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. The AV Apollo Solar Project lacks federal funding or any other nexus to federal jurisdiction, and Section 7 does not apply.

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.

3.1.2 - 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.

3.1.3 - 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).

3.1.4 - 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.

3.1.5 - Draft West Mojave Habitat Conservation Plan

The AV Apollo 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 AV Apollo is located on private land and is not subject to the jurisdiction of the BLM or the West Mojave Plan.

3.1.6 - 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.

3.2 - Applicable State Regulations

3.2.1 - 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.

3.2.2 - 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.

3.2.3 - 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.

3.2.4 - 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

Protection of fully protected species is 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.

3.2.5 - California Food and Agricultural Code Sections 800071 Through 80075 - California Desert Native Plant Protection Act

The California Desert Native Plant Protection Act affords protection to certain native desert plant species, including all species of the agave family (Agavacae), all species of the genus Prosopis, all species of the genus Cercidium, and makes the harvest, transport, sale, or possession of these species unlawful unless a permit it first obtained.

3.3 - Applicable Regional and Local Regulations

3.3.1 - KERN COUNTY GENERAL PLAN

The Kern County 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 2
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)

SECTION 4 - METHODS

This section discusses the methods used to obtain relevant data on the occurrence, or potential occurrence, of natural resources on the Project. This included an agency-maintained database search, literature review, and on-site surveys. The timing of these efforts corresponded with the phase-based inclusions of the three sites into the Project. As a result, the timings of the efforts vary by site. There were some differences in the focus and intensity of the on-site surveys, being influenced by the findings of the database searches and findings from initial reconnaissance-level surveys conducted on the sites.

4.1 - Literature Review and Database Analysis

A review of agency databases was conducted in May 2017 to obtain information on the occurrences of natural communities and special-status species documented within the nine USGS 7.5-minute quadrangles that encompass the Project. The California Natural Diversity Database (CNDDB 2017), California Native Plant Society Database (CNPS 2017), and U.S. Fish and Wildlife Service (USFWS) Threatened and Endangered Species List (USFWS 2017a) were reviewed to obtain occurrences of sensitive natural communities, federally-listed species, State-listed species, other species of special concern, or USFWS Critical Habitat Units that have been known to occur within the nine quads surrounding the Project site. To satisfy other standard search criteria, CNDDB records within a 10-mile radius of the Project site were queried separately from the broader database search.

The CNDDB provides element-specific spatial information on individual documented occurrences of special-status species and sensitive natural vegetation communities. The CNPS database provides similar information as the CNDDB, but at a much lower spatial resolution. The USFWS query generates a list of federally protected species known to potentially occur within individual USGS quadrangles. Wildlife species designated as "Fully Protected" by California Fish and Game Code Sections 5050 (Fully Protected reptiles and amphibians), 3511 (Fully Protected birds), and 4700 (Fully Protected mammals) were included on the final list.

Reviews of the National Wetlands Inventory (NWI, USFWS 2017b) and National Hydrology Dataset (NHD 2017) were completed to identify whether wetlands had previously been documented on or adjacent to the Project site. The NWI, which is operated by the USFWS, is a collection of wetland and riparian maps that depicts graphic representations of the type, size, and location of wetland, deep water, and riparian habitats in the United States. In addition to the NWI, regional hydrologic information was obtained from the USGS to evaluate the potential occurrence of blueline streams within the Project Site.

Soils data were obtained from the Natural Resource Conservation District, United States Department of Agriculture (USDA 2017), weather and precipitation data were obtained from the Western Regional Climate Center (WRCC 2017), and land use information was obtained from available aerial imagery. Information about flood-prone areas were obtained from the Federal Emergency Management Agency, Department of Homeland Security (FEMA 2017)

and information on protected lands were obtained from Greeninfo Network (Greeninfo Network 2017).

The results of the database inquiries were subsequently reviewed to extract pertinent information on site conditions and evaluate the potential for sensitive biological resources to occur within or near the Project site. Only those resources with the potential to be present and affected by the Project were included and considered in this document. The potential presence of natural communities and special-status species was based on distributional ranges overlapping the Project site and the presence of habitat and/or primary constituent habitat elements that would support the various species.

4.2 - Reconnaissance-Level Surveys

Reconnaissance-level biological surveys were conducted in January 2016 (Sites 1 and 2), June 2016 (Sites 1 and 2), and in September 2016 (Site 3). Those surveys focused on determining the locations and extent of vegetation communities and the potential for occurrences of sensitive plant and wildlife species within the Project (Table 2). Surveys consisted of walking meandering pedestrian transects throughout the Project site. Current land uses within the Project were documented along with the presence of all plants, wildlife, and wildlife sign (scat, burrows, feather, tracks, etc.). All suitable habitats that could potentially support wildlife within the Project were documented and photographs were taken. Results from the reconnaissance-level surveys were used to determine the need and design of additional, more focused Project site surveys.

4.3 - Focused Surveys

Focused surveys were conducted specifically for rare plants, desert tortoise (*Gopherus agassizii*), Swainson's Hawk (*Buteo swainsoni*), and wetlands and waters. These surveys provided adequate information for the evaluation of other species such as the desert kit fox (*Vulpes macrotis arsipus*) and western burrowing owl (*Athene cunicularia*), so specific focused surveys for all potentially occurring species were not warranted. This section discusses the methodology used while conducting focused surveys.

4.3.1 - Floristics Surveys

The Project is within the known distributional range of several special-status plants and provides habitat that could support the occurrence of those species. Floristic surveys were conducted on the Project sites to determine the presence or absence of special-status plant species and, if present, to document the extent of occurrences so that the impacts of the Project on the species could be adequately analyzed. The Project was evaluated for the presence of special-status plant species using standard methods described in the *CNPS Botanical Survey Guidelines* (CNPS 2001).

Floristic surveys were conducted between June 2016 and June 2017 (Table 2). The surveys consisted of walking North-South pedestrian transects spaced at 100-foot intervals to provide for 100 percent coverage of the Project sites. The intent of the surveys was to

identify and record all plant communities and plant species including subspecies and varieties. Samples of species which could not be identified in the field were placed in plastic bags and later identified using a dichotomous key (*Sensu* Hickman 2016). The surveys were conducted at appropriate seasonal times when the potentially-occurring special-status plant species were in bloom, evident, and identifiable. Detailed data were collected for any observed special-status species, including total number of individuals observed, specific locations of occurrence within the Project site, and condition of plants.

4.3.2 - DESERT TORTOISE SURVEYS

A protocol-level survey of the Project was conducted between October 5 and October 14, 2016 (Table 2, Appendix A). The survey was conducted using United States Fish and Wildlife Service protocols (USFWS 2010). The survey covered the entire Project site (493 acres), but the survey did not include buffer areas surrounding the Project site because those were within private property where access was not granted. Parallel 30-foot-wide transects were walked over the entire Project site to assure 100% visual coverage. A Global Positioning System (GPS) unit was used for navigation, to record transect locations, and to record the locations of biological resources located on the site.

Along each transect, biologists searched for live tortoises and diagnostic sign (e.g., burrows, pallets, carcasses, scats, tracks, eggshell fragments, courtship rings, drinking sites) that would indicate the presence of tortoises. All desert wood rat (*Neotoma lepida*) nests were examined for presence of tortoise scutes and bones. All large mammal burrows were examined for the presence of tortoises. The ground beneath common raven (*Corvus corax*) nests were examined for diagnostic signs of tortoises because remains of tortoises can often be found on the ground below nests. All tortoises and tortoise sign, geomorphology, soil type, and plant species composition were recorded. Incidental observations of other wildlife species and rare plants and air temperature (recorded at 5cm above the soil surface in an area full of sunlight, but in the shade of the observer) were recorded for each transect.

4.3.3 - SWAINSON'S HAWK SURVEYS

The Swainson's hawk is listed as a California threatened species, but it is not listed as a federally threatened or endangered species. To comply with State wildlife protection requirements and receive Project approvals, renewable energy Project developers are generally required to conduct surveys for the Swainson's hawk in areas where they may be present, and avoid or minimize impacts to Swainson's hawks and related nesting and foraging habitat.

Swainson's hawks are known to have historically nested in Joshua tree woodlands and foraged in grasslands and native desert scrub communities. Currently, they nest in Joshua tree woodlands, ornamental roadside trees, and windrow or perimeter trees in active and historical agricultural areas. Foraging habitat includes dry land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, new orchards, and cereal grain crops. Swainson's hawks may also forage in grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base. In the Antelope Valley where the Project is

situated, Swainson's hawks are rare, with an estimated 10 breeding pairs being present (CEC and CDFW 2010).

Swainson's hawk windshield surveys were conducted in April, May, June, and July of 2017 (Table 2). The Project and surrounding habitat was evaluated for the presence of Swainson's Hawk using standard methods described in the *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* (CEC and CDFW 2010). All potential nesting locations within a five-mile radius of the Project site were surveyed for the presence of nests. The Project and surrounding lands provide some areas of suitable nesting habitat for Swainson's hawk, including Joshua tree woodlands, desert scrub communities, power lines, and large residential trees. Potential nesting locations were thoroughly surveyed for visual and audible cues using a combination of binoculars and spotting scopes. All observed nests that could potentially be used by Swainson's hawks were documented and evaluated based on the following factors: nest composition, presence of diagnostic signs of raptor presence (e.g., prey remains, feathers, scat), species known to be occupying the nest, number of individuals per nest, age of occupants (e.g. adults, fledglings, chicks), type of nest habitat (i.e. power line, Joshua tree), and nest location (GPS coordinates, height above ground, location in structure).

Swainson's hawk Surveys were conducted during survey periods II (April 1-April 30: arrival, nest building), III (May 1-May30: egg laying, incubation), and IV (June 1 to July 15: fledging).

4.3.4 - Waters Delineations

Prior to conducting field investigations, a review of the National Wetlands Inventory (USFWS 2015), was completed to determine the historic occurrence of known wetlands on the Project. The NWI is a collection of wetland and riparian maps that depict graphic representations of the type, size, and location of wetland, deepwater, and riparian habitats in the United States. The NWI maps were prepared through the analysis of high altitude imagery, collateral data sources, and field work. Given that only one percent, on average, of the NWI is updated each year, its interpretation was accompanied by site-specific surveys. The National Hydrology Dataset (NHD) was referenced to evaluate the historical occurrence of blueline drainages within the Project.

The Project was examined using meandering pedestrian transects at intervals allowing for a 100 percent visual coverage. All potential water features were identified and delineated using standard techniques. Delineations of Sites 1 and 2 were conducted in June and July of 2016 and delineation of Site 3 was conducted in April 2017 (Table 2).

Due to the problematic nature of mapping wetlands and waters in arid environments, a combination of methodologies was used to conduct the delineation. The Project was first evaluated for the presence of wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the most recent version of the *Arid West Supplement* (Version 2.0 2008a). The Project was examined for wetland indicators including hydric soils, hydrophytic vegetation, and

hydrology. If wetland conditions were met, paired sample points were located on either side of each feature boundary to obtain information describing both wetland and upland conditions. The locations of sample points were mapped using a Trimble GeoXH Global Positioning System (GPS) unit. At each sample point, the presence or absence of hydrologic indicators was noted, soils were characterized, and present vegetation was analyzed following standard procedures.

Linear drainages and other similar waters were delineated using methodologies and diagnostic characteristics presented in the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* (Brady 2013), with references to the *Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). The *Review of Stream Processes and Forms in Dryland Watersheds*, which shares many similarities with the MESA guide, was also referenced (CDFW 2010). Both the MESA guide and the USACE Field Guide datasheets require entries for standard evaluative characteristics including fluvial and terrestrial indicators, vegetation cover, transportation, deposition, flow indicators, and sediment texture.

Table 3
AV Apollo Biological Resources Survey Types, Survey Dates, Participating Staff, and Survey Location (by Site Number)

Survey Type	Dates of Survey	Survey Staff*	Survey Location (Site)
Reconnaissance Survey	01-06-2016	BP, ES, EM	Site 1
	06-01-2016	BP, ES, EM	Site 2
Reconnaissance Survey	09-13-2016	BP, KD	Site 3
Floristic Surveys	06-03-2016	MC, BP	Sites 1 & 2
	08-08-2016	MC, BP	Site 1
	04-07-2017	BP, MC, KD	Site 3
	05-05-2017	BP, MC, EM, KD	Site 2
	05-12-2017	MC, EM, KD	Site 1
	06-08-2017	MC, KD	Site 3
	06-13-2017	MC, KD, BP	Site 2 & 3
	06-19-2017	MC, BP, EM	Site 1
Swainson's Hawk Surveys	04-25-2017	MC, LS	5-mile radius north and west of Project site
	05-12-2017	MC, KD, EM	5- mile radius south and east of Project site
	06-02-2017	BP, KD	5- mile radius around Project site
	06-16-2017	KD, MC	5- mile radius around Project site
	07-06-2017	BP, KD	5- mile radius around Project site
Water Delineations	06-02-2016	TS	Site 1
	07-18-2016	TS	Site 2
	07-19-2016	TS	Site 2

Survey Type	Dates of Survey	Survey Staff*	Survey Location (Site)
	04-11-2017	TS	Site 3

*Denise LaBerteaux and Bruce Garlinger, ES = Eric Schaad, BP = Belen Perez, TS = Tyler Schade, MC = Mitchell Coleman, KD = Karissa Denney, EM = Eric Madueno, LS = Lisa Sandoval

SECTION 5 - RESULTS AND DISCUSSION

The results of the database searches and evaluation of special-status species occurrence within the Project, as well as specific information gathered during the various field surveys, are presented in this section. These findings are used to support the evaluations of the condition and sensitivity of the natural resources currently existing on and adjacent to the Project site. The evaluation of the potential impacts of the Project to sensitive natural resources are provided in Section 6.

5.1 - Sensitive Natural Communities

Sensitive natural communities are designated by various resource agencies including the CDFW, USFWS, BLM, Forest Service, or are designated by local agencies through policies, ordinances, and regulations. Sensitive natural communities, generally have important functions or values for plants and wildlife or are recognized as declining in extent or distribution, and warrant some level of protection. There are eight sensitive natural communities occurring within the Mojave Desert region. of Kern County where the Project is situated. These include alkali seep, stabilized interior dunes, valley needlegrass grassland, valley sacaton grassland, valley saltbush scrub, valley sink scrub, valley oak woodland, and wildflower fields. A habitat of local concern is Joshua tree woodland, which CDFW considers globally 'uncommon, but not rare' and a 'high priority for inventory' (CDFG, 2003). Joshua trees is also specifically designated in many local plans, ordinances, and policies as a biological resource of concern.

5.1.1 - RESULTS OF LITERATURE REVIEW AND DATABASE SEARCHES

The database listed the occurrence of two sensitive natural communities occurring in the region of the Project; Valley needlegrass grassland and Wildflower fields. Valley needlegrass grassland is a mid-height grassland dominated by purple needlegrass (*Stipa pulchra*), a perennial, tussock-forming grass. Native and introduced annuals often occur between the bunchgrasses, and this community is usually found on fine-textured soils, moist or even waterlogged in winter, but very dry in the summer. Wildflower fields are composed mostly of low-growing annual species which bloom in the springtime months each year. For the remainder of the year, the community consists of mostly senesced vegetation. Neither of these natural communities occur within 10 miles of the Project (Figure 8).

5.1.2 - PRESENCE OF SENSITIVE NATURAL COMMUNITIES

Neither valley needle grassland nor wildflower field sensitive community types are present on the Project site or in adjacent areas. The Project is dominated by Mojavean Creosote Scrub vegetation interspersed with Joshua trees. In some areas, the Project has open grassy areas, but these mostly consist of invasive annual grasses of the genera *Bromus, Schismus*, and *Avena*. The high density of Creosote and other shrubs on the Project site prevents the formation of a grassland or wildflower field. The density of Joshua trees on the Project site is relatively moderate (several hundred are present over an area of 493 acres), but Joshua trees are not present at a density that would justify a designation of a Joshua tree woodland.

5.2 - Special-Status Plants

Special status plants are not limited to those that have been listed by State or federal agencies but include any plants that, based on all available data, are shown to be rare, threatened, or endangered in California. A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

5.2.1 - Results of Literature Review and Database Searches

Twenty special-status plant species were identified in the CNDDB, CNPS, and USFWS databases as occurring in the Project Region (Table 3). Six special-status plant species are known to occur within 10-miles of the Project (Figure 8). Nine special-status plant species were determined to have the potential to occur on the Project (Appendix B) because the Project falls within the geographic and elevational range of these species and provides suitable habitat elements.

5.2.2 - Presence of Special-Status Plants

Two special-status plant species, Lemmon's Jewelflower and Clokey's cryptantha, were observed on Site 3 during the floristic surveys. Lemmon's Jewelflower is a member of the mustard family which primarily occurs in the Coastal Range, but is uncommon in the San Joaquin Valley and northwestern Mojave Desert (see Appendix A). The species is listed as 1B.2 by the CNPS, which is a designation for rare, threatened, or endangered in California and elsewhere. Forty-seven individuals of Lemmon's Jewelflower were observed during the floristic survey of Site 3 conducted on April 8, 2017. All individuals were observed within the boundary and associated floodplain of a blue line stream (designated as Drainage 2) on Site 3 (Figure 9). No individuals were observed in the upland areas of Site 3, and no individuals were observed on Sites 1 and 2. Clokey's cryptantha is a member of the forget-me-not family that occurs in Mojavean Creosote Scrub in the northwestern Mojave Desert. The species is also listed as a 1B.2 species by the CNPS. Two individuals were observed, one on Site 1 during the floristic survey conducted on May 12, 2017, just south of Backus Road, and another on Site 3 during the floristic survey conducted on June 8, 2017, on the west side of Maxwell road (see Figure 9). Based upon the results of the field surveys, no other special-status plant species are anticipated to be present on the Project site.

The Joshua tree is a species that is protected by the California Desert Native Plant Protection Act. It was observed on all three sites (Figure 9). Joshua Tree Woodland (*Yucca brevifolia* Woodland Alliance) is defined as areas where Joshua trees are evenly distributed at ≥ 1% cover, and *Juniperus* and/or *Pinus* spp. are less than 1% absolute cover in the tree canopy (Thomas et al. 2004). To estimate cover of Joshua trees on the Project site, each mapped

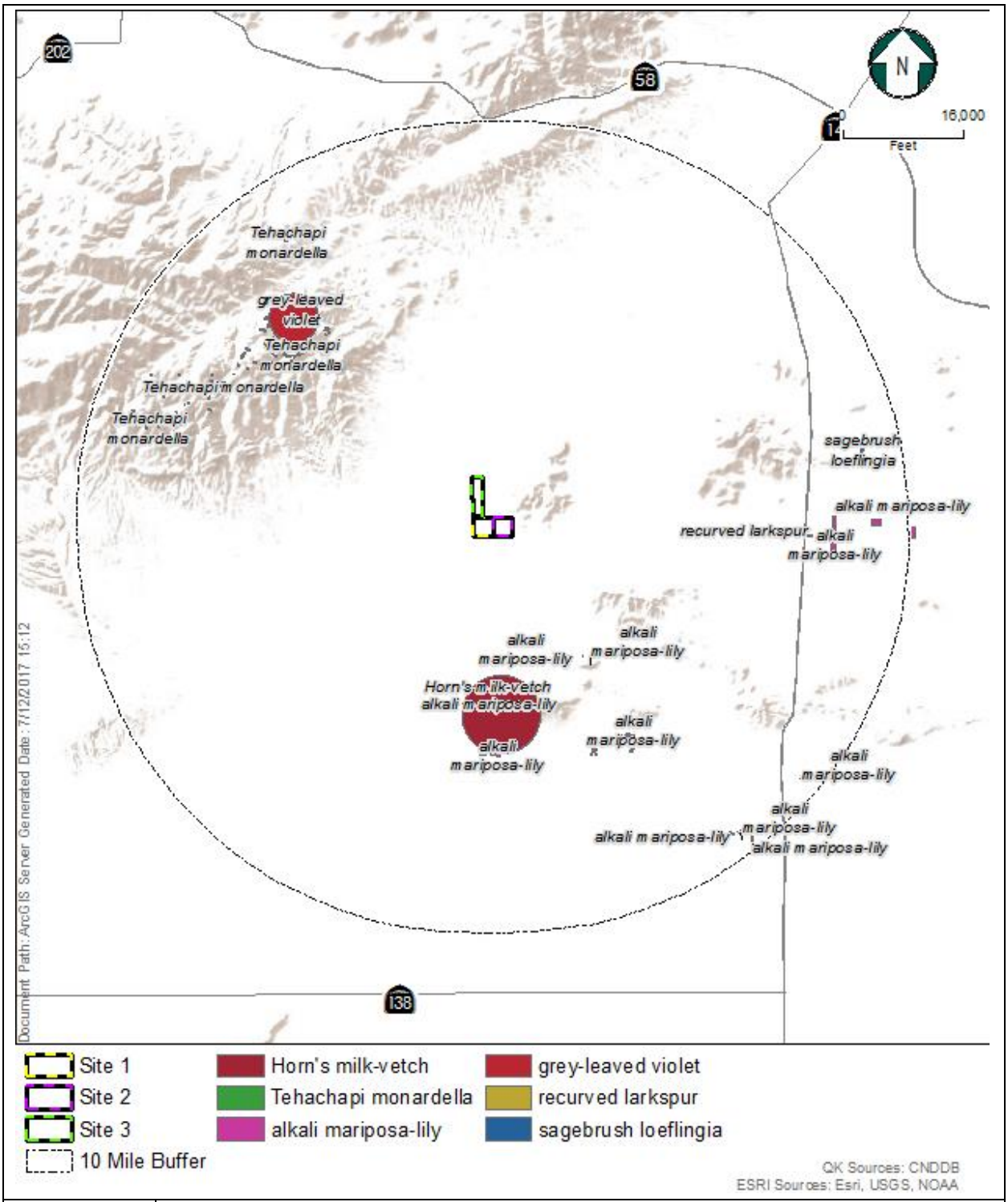

Figure 8
Historical Occurrences of Sensitive Natural Communities and Special-Status Plant Species within 10 Miles of the AV Apollo Solar Project, Kern County, California

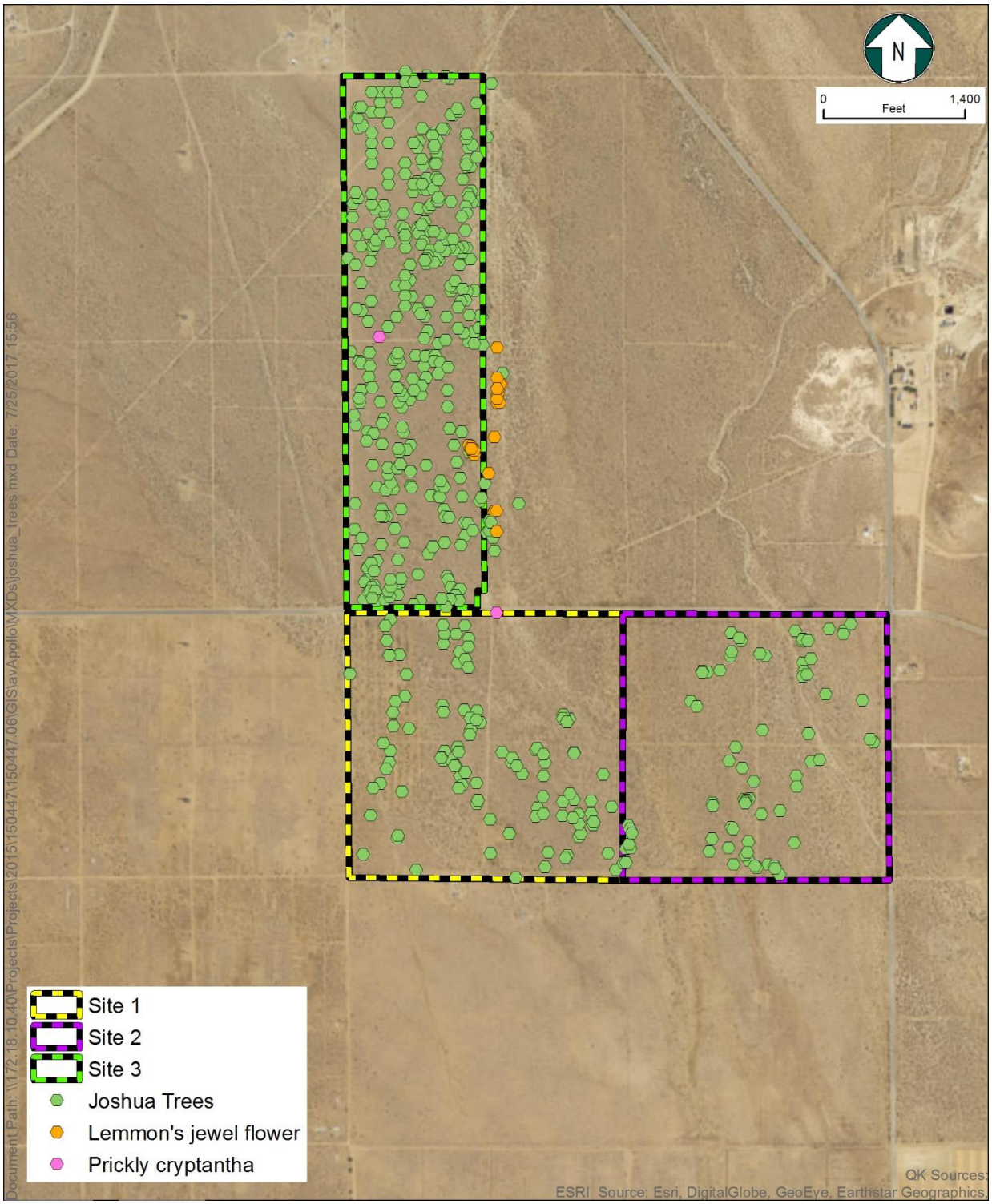

Figure 9
Location of Sensitive Plant Species

Table 4
Special-Status Plant Species Occurring in the Region of the AV Apollo Solar Project, Kern County, California

Scientific Name	Common Name	Status
Allium howellii var. *clokeyi*	Mt. Pinos onion	1B.3
Astragalus hornii var. *hornii*	Horn's milk-vetch	1B.1
California macrophylla	round-leaved filaree	1B.2
Calochortus palmeri var. *palmeri*	Palmer's mariposa lily	1B.2
Calochortus striatus	alkali mariposa-lily	1B.2
Caulanthus lemmonii	Lemmon's jewelflower	1B.2
Cryptantha clokeyi	Clokey's cryptantha	1B.2
Delphinium recurvatum	recurved larkspur	1B.2
Eriastrum rosamondense	Rosamond eriastrum	1B.1
Fritillaria brandegeei	Greenhorn fritillary	1B.3
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	1B.1
Layia heterotricha	pale-yellow layia	1B.1
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	2B.2
Mimulus pictus	calico monkeyflower	1B.2
Monardella linoides ssp. *oblonga*	Tehachapi monardella	1B.3
Navarrentia peninsularis	Baja navarretia	1B.2
Navarrentia setiloba	Piute Mountains navarrentia	1B.2
Saltugilia latimeri	Latimer's woodland gilia	1B.2
Viola pinetorum var. *grisea*	grey-leaved violet	1B.3
Viola purpurea ssp. *aurea*	golden violet	2B.2

Abbreviations:

1B.1 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Seriously Endangered in California

1B.2 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Fairly Endangered in California.

1B.3 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Not Very Endangered in California

2B.1 California Native Plant Society List 2B Species-Plants Categorized as Endangered in California; Seriously Endangered

2B.2 Native Plant Society List 2B Species-Plants Categorized as Endangered in California; Fairly Endangered in California

2B.3 Native Plant Society List 2B Species-Plants Categorized as Endangered in California; Not Very Endangered in California and immediacy of threat).

Source: (CNDDB 2017, CNPS 2017, and USFWS 2017)

Joshua tree point was assigned an estimated canopy size of 2 meters in diameter. The resulting canopy cover estimate was therefore approximately 3.14 square meters. This estimate is considered a maximum average size because most of Joshua trees existing on the site were less than six feet in height with a canopy much smaller than 3 square meters. Estimates of cover were then generated by multiplying the sum of the tree points within a sample area by the estimated canopy size, dividing that total by the size of the sample area, and then multiplying by 100 to obtain a percentage of aerial cover. Cover estimates were generated for five separate sample areas: cover was estimated within a 0.25-acre area representing the most dense area of trees, cover was estimated for the overall project area, and cover was estimated for each of the three independent Project sites. Within the overall

Project site, the estimated cover of Joshua trees was 0.05 percent. Within Site 1, Site 2, and Site 3, the cover of Joshua trees was 0.037 percent, 0.013 percent, and 0.08 percent, respectively. As viewed at these scales, the cover of Joshua trees on the overall project area and within each of the three project sites does not meet the ≥ 1% cover criteria necessary to consider a designation as a Joshua Tree Woodland. There are however, several scattered, small, 0.25-acre areas within the Project sites that may contain up to 4 percent cover of Joshua trees, and as such, some of these areas may meet the criteria of Joshua Tree Woodland. These scattered small areas are not extensive, and the canopy cover size that was used to estimate cover was very liberal. These small areas do contribute to the overall cover and density of Joshua trees on the sites, but their presence does not warrant a determination of the presence of a Joshua Tree Woodland.

5.3 - Special-Status Wildlife

This section provides the results of wildlife species listed as occurring within the Project region from database queries in addition to species or sign observed during on-site surveys, and include species listed as threatened or endangered by the CDFW and/or USFWS, species designated as Species of Special Concern, and Fully Protected species.

5.3.1 - Results of Literature Review and Database Searches

Twenty-nine special-status wildlife species were identified in the CNDDB and USFWS database queries within the USGS 7.5-minute quadrangles that encompass the Project (Table 4). These included four invertebrates, one amphibian three reptiles, fourteen birds, and seven mammals. Twenty-one special-status wildlife species have the potential to occur on the Project site because the site falls within the geographic and elevational range of these species and provides suitable habitat (see Appendix B). These include one invertebrate, two reptiles, eleven birds, and seven mammals (see Appendix B). Twelve special-status wildlife species were documented as occurring within the 10-mile radius of the Project site (Figures 10, 11, and 12).

Table 5
Special-Status Wildlife Species Occurring in the Region of the AV Apollo Solar Project, Kern County, California

Scientific Name	Common Name	Status
Invertebrates		
Bombus crotchii	crotch bumble bee	G3G4, S1S2
Euphilotes battoides comstocki	Comstock's blue butterfly	G5T2, S2
Helminthoglypta concolor	whitefir shoulder band	G1G2, S1S2
Speyeria egleis tehachapina	Tehachapi Mountain silverspot butterfly	G5T2, S2, USFWS-S
Amphibians		
Ensatina eschscholtzii croceator	yellow-blotched salamander	BLM-S, CDFW-WL, USFW-S
Reptiles		
Anniella pulchra pulchra	silvery legless lizard	SSC

Scientific Name	Common Name	Status
Gopherus agassizii	desert tortoise	FT, ST
Phrynosoma blainvillii	coast horned lizard	BLM-S, SSC
Birds		
Agelaius tricolor	tricolored blackbird	S– Candidate, MBTA, SSC
Aquila chrysaetos	golden eagle	BLM-S, CDFW-S, CDFW- FP, MBTA
Athene cunucularia	western burrowing owl	SSC, MBTA
Buteo swainsoni	Swainson's hawk	CT, MBTA
Charadrius montanus	mountain plover	FT, BLM-S, SSC, MBTA
Eremophila alpestris actia	California horned lark	MBTA, CDFW- WL
Falco columbarius	merlin	CDFW-WL, MBTA
Falco mexicanus	prairie falcon	CDFW-WL, MBTA
Falco peregrinus	peregrine falcon	USFWS- Delisted, MBTA
Gymnogyps californianus	California condor	FE, FP, CE, MBTA
Lanius ludovicianus	loggerhead shrike	SSC, MBTA
Plegadis chihi	white-faced ibis	CDFW-WL, MBTA
Toxostoma lecontei	Le Conte's thrasher	SSC, MBTA
Mammals		
Taxidea taxus	American badger	G5, S3, SSC
Xerospermophilus mohavensis	Mohave ground squirrel	ST, BLM-S, SSC, G2G3, S2S3
Perognathus inornatus	San Joaquin pocket mouse	G2G3, S2S3, BLM-S
Perognathus alticolus inexpectatus	Tehachapi pocket mouse	SSC, G1G2T1T2, S1S2
Vulpes macrotis arsipus	desert kit fox	Treated as CDFW - FP
Corynorhinus townsendii	Townsend's big-eared bat	S-Candidate, G3G4, S2, BLM-S, SSC
Onychomys torridus tularensis	Tulare grasshopper mouse	BLM-S, G5T1T2, S1S2, SSC

Abbreviations:

BLM-S	Bureau of Land Management Sensitive Species
FE	Federal Endangered Species
FT	Federal Threatened Species
MBTA	Species Protected Under the Auspices of the Migratory Bird Treaty Act
CE	California Endangered Species
CT	California Threatened Species
SSC	California Department of Fish and Game Species of Special Concern
CDFW-WL	CDFW Watch List Species
ST	State Threatened
FP	California Fully Protected
USFWS	U.S. Fish and Wildlife Service
USFWS-S	USFWS Sensitive
S-Candidate	State Candidate
CDFW-S	CDFW Sensitive

Source: (CNDDB 2017, CNPS 2017, USFWS 2017)

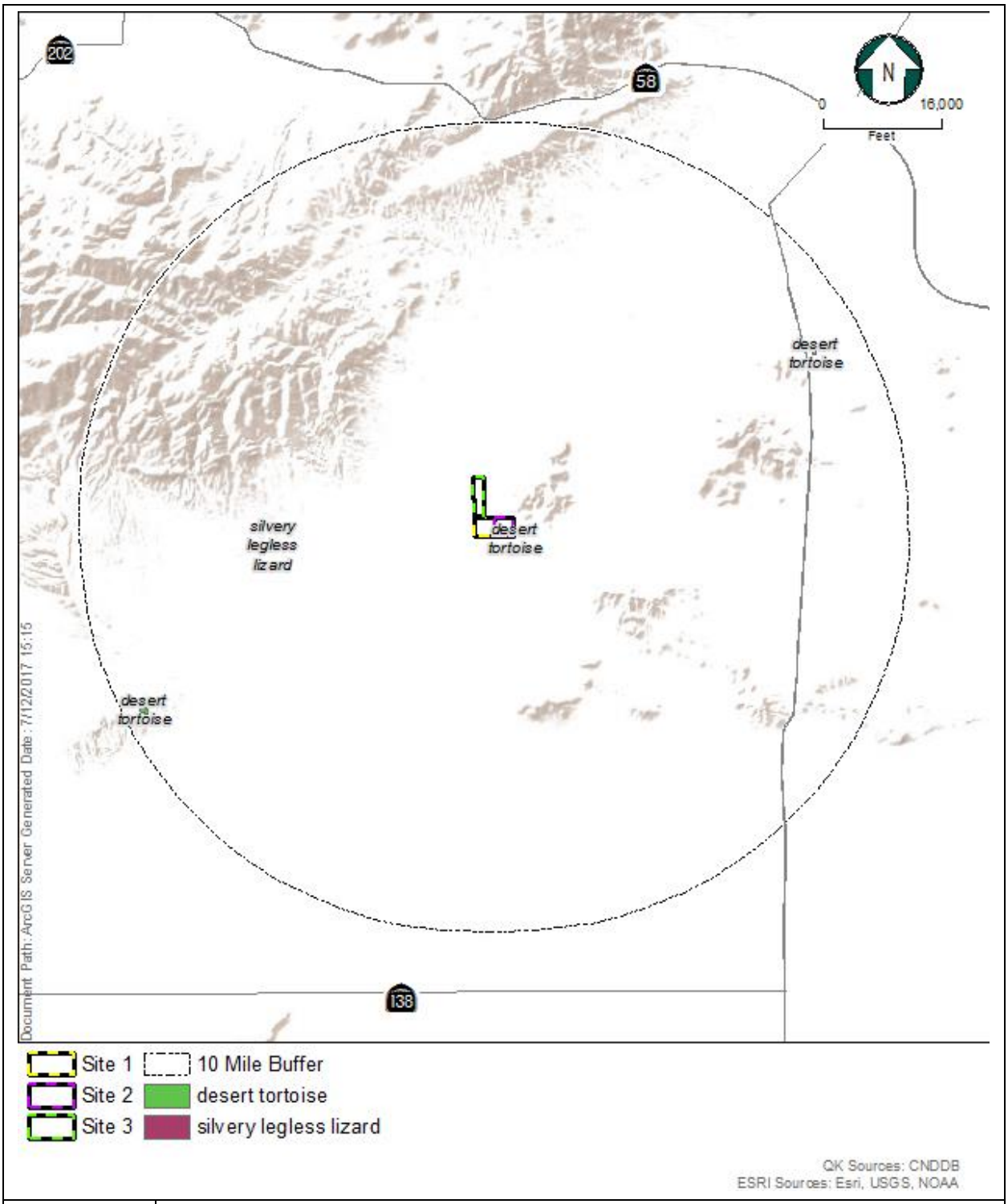

Figure 10
Historical Occurrences of Special-Status Invertebrates, Amphibians, and Reptiles within 10 Miles of the AV Apollo Solar Project, Kern County, California

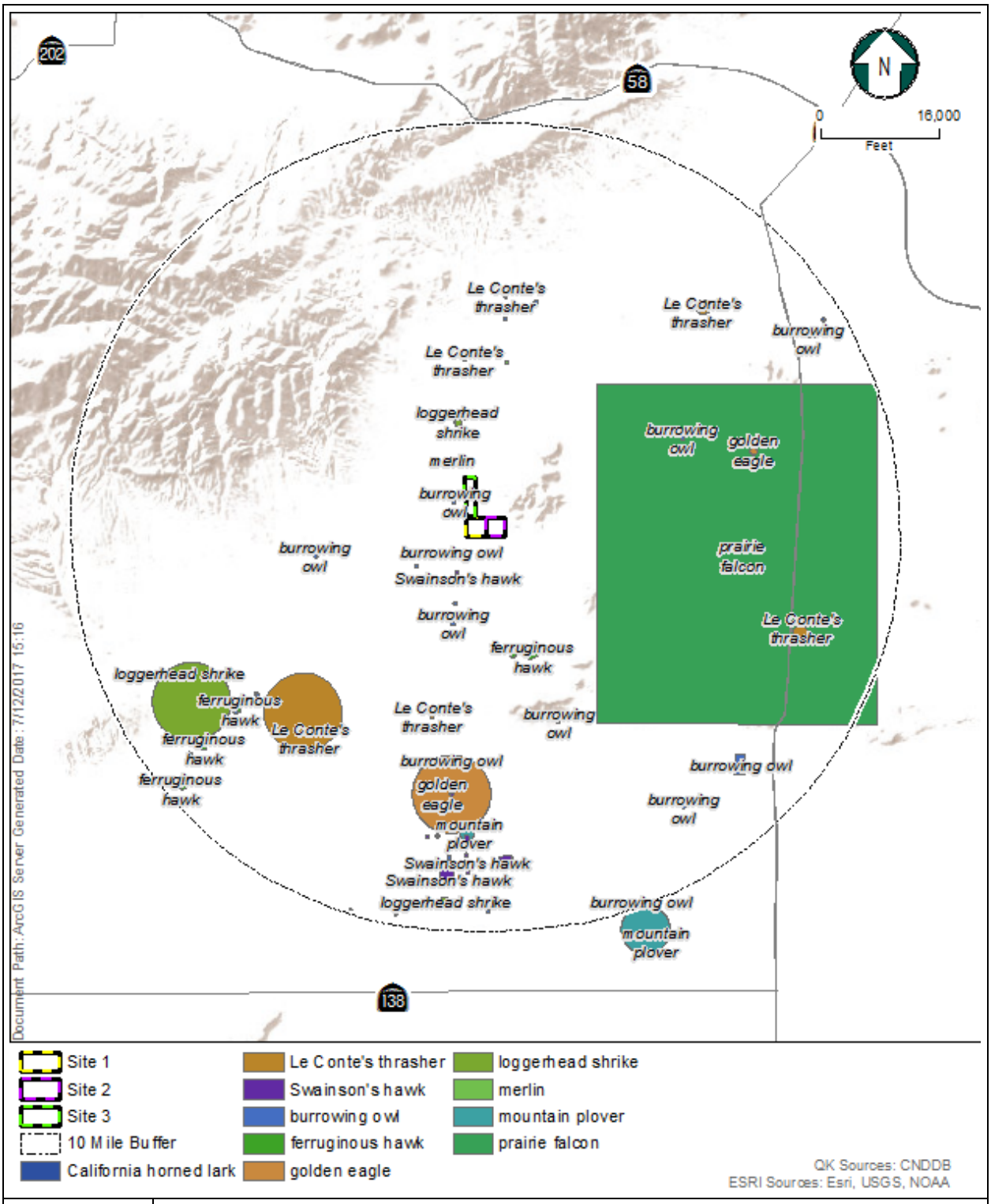

Figure 11
Historical Occurrences of Special-Status Birds within 10 Miles of the AV Apollo Solar Project, Kern County, California

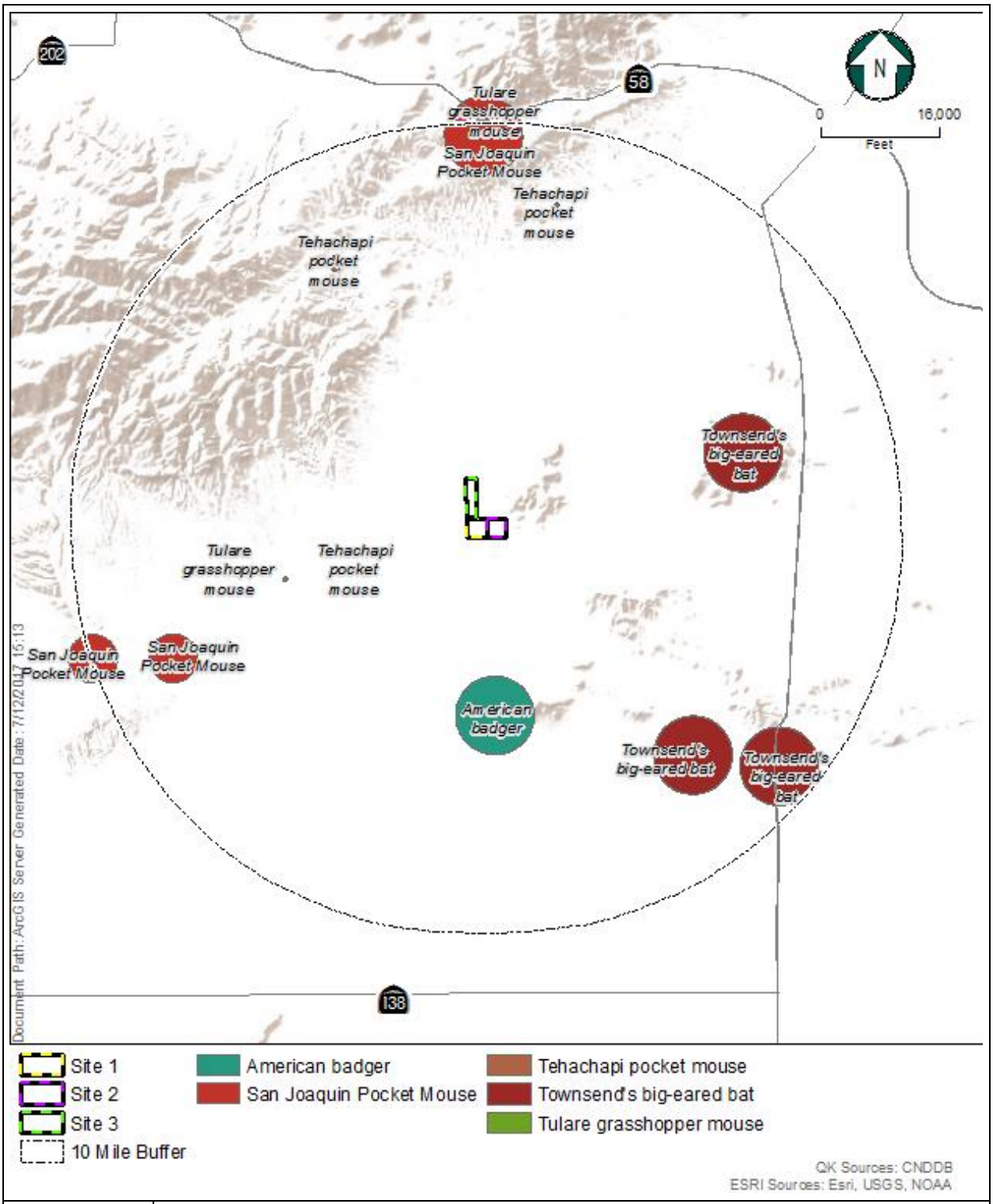

Figure 12
Historical Occurrences of Special-Status Mammals within 10 Miles of the AV Apollo Solar Project, Kern County, California

5.3.2 - PRESENCE OF SPECIAL-STATUS WILDLIFE

Of the 21 species that could potentially occur on the Project, six are worthy of special consideration and discussion because they have a potential to be significant issues for the Project. These species include the Desert tortoise, Western burrowing owl, Swainson's hawk, Mohave ground squirrel, Desert kit fox, and American badger. The evaluation of the potential for occurrence of these and other wildlife species is presented in Appendix B.

Desert Tortoise

One Class 4 tortoise burrow (characterized as a possible tortoise burrow) was found on Site 1 during the protocol-level survey effort conducted in October 2016 (Figure 13, see Appendix A). No other possible tortoise burrows, tortoises, or definitive signs of tortoise were found. Habitat for the desert tortoise exists in the vicinity of the Project, but based on extensive surveys conducted for nearby solar facilities, it is apparent that very few desert tortoises inhabit the areas (County of Kern 2014a, b and 2016). Although there is a historic record of a desert tortoise occurring near the Project site, based on the lack of observations in the area, there is no current evidence that the Project is occupied by desert tortoises.

Western Burrowing Owl

One western burrowing owl was observed on Site 1 (see Figure 13). There were also three western burrowing owl burrows and associated evidence of the presence of burrowing owls (pellets, scat, whitewash) located on Site 1. A single burrowing owl pellet was found on Site 2, but no other evidence of the presence of burrowing owls were observed on Site 2 or on Site 3. The western burrowing owl is known to occur on the Project site and likely uses the entire site as foraging habitat. It could become established as a resident breeding bird within any of the three sites.

Swainson's Hawk

There were no Swainson's hawks observed on or within five miles of the Project. There was a stick nests found on Site 3, but that nest was used by a common raven. There were numerous stick nests within five miles of the Project site (see Figure 13 for those closest to the Project site). Most of these nests were in the tops of transmission line towers and were used by common ravens. No nests within 5 miles of the Project were being used by Swainson's hawk. There is no evidence that Swainson's hawks are present within five miles of the Project or use the Project as nesting or foraging habitat.

Mohave Ground Squirrel

The Project site is outside the CNDDB 10 miles buffer (Figure 12) and outside of the known range of MGS and the five-mile survey buffer that has been established for the species (Figure 14). The species is considered extirpated west of SR 14 and south of SR 58 (County of Kern, 2016) Protocol surveys for the Mohave ground squirrel were conducted for the Catalina Renewable Energy (County of Kern, 2014a), the SEPV Mojave West Solar (County of Kern,

2014b) and Valentine Solar (County of Kern, 2016) projects. The surveys of these nearby solar projects resulted in no observations of Mohave ground squirrel, and no Mohave ground squirrels were trapped on those sites. Based on the results of previous surveys conducted in the area and the location of the AV Apollo Project site relative to the accepted range of the Mohave ground squirrel, Mojave ground squirrels are likely absent from Project.

Desert Kit Fox

Five desert kit fox dens and associated evidence of the presence of the desert kit fox (scat and tracks) were observed on the Project (see Figure 13). Two of the dens occurred on Site 1 and three of the dens were found on Site 3. This species is relatively wide-ranging, is known to occur on two of the sites, and is presumed to be present on the entire Project, at least as a transient forager and likely as a temporary or permanent resident.

American Badger

Two American badger burrows were observed, one on Site 1 and one on Site 2 (see Figure 13). This species is relatively wide-ranging, is known to occur on two of the sites, and is presumed to be present on the entire Project, at least as a transient forager.

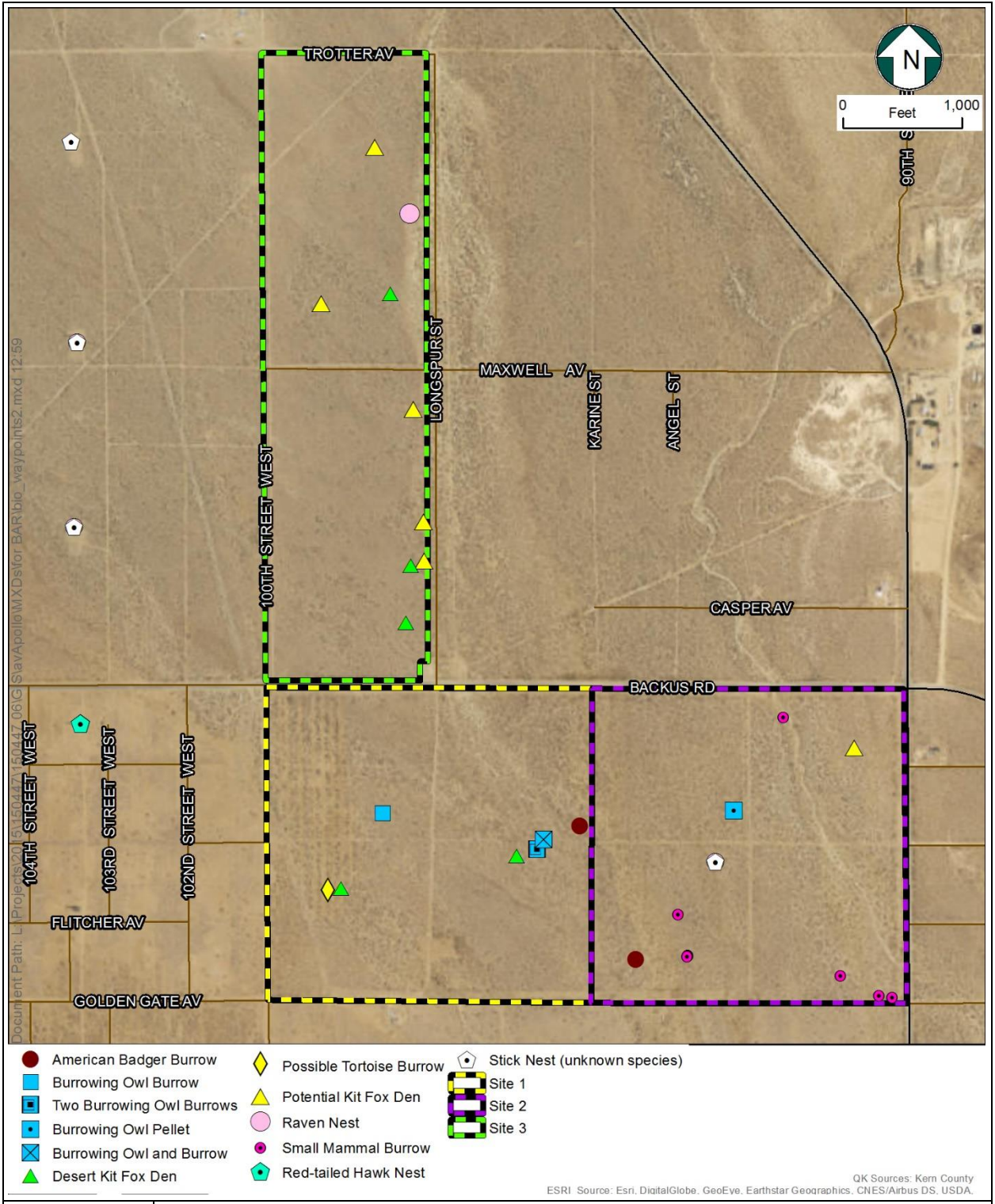

Figure 13
Special-Status Species Observed,
AV Apollo Solar Project, Kern County, California

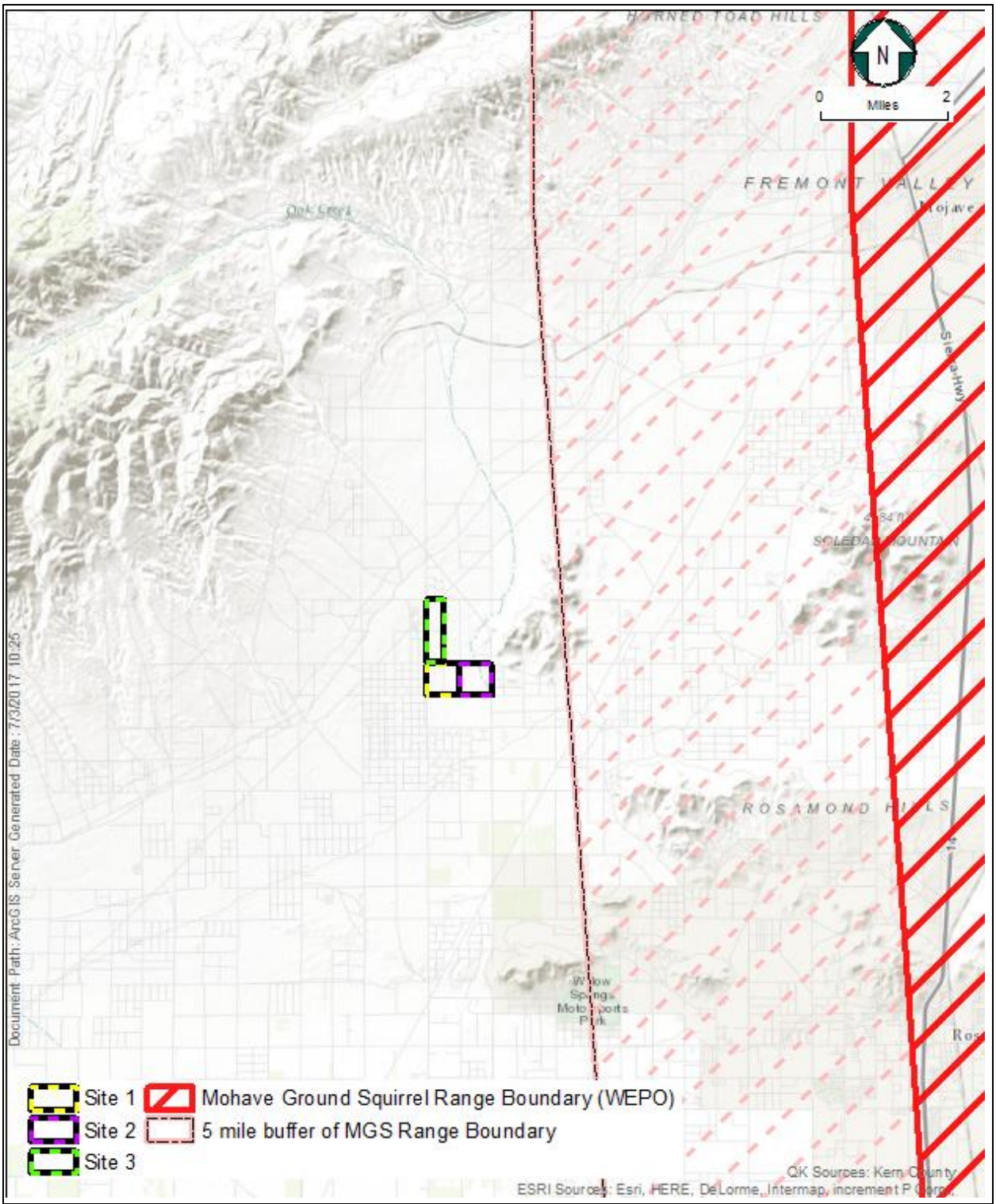

Figure 14
Mohave Ground Squirrel Range Boundary
AV Apollo Solar Project, Kern County, California

5.4 - Critical Habitat, Movement Corridors, and Linkages

This section describes the occurrence of Critical Habitat, movement corridors, and linkages known to occur within the vicinity of the Project site. Habitat may be designated as Critical Habitat by the USFWS, which are blocks of habitat that may or may not be currently occupied by species, but which are of the highest priority for the survival, conservation, and recovery of threatened or endangered species. 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.

5.4.1 - Results of Literature Review and Database Searches

The USFWS does not identify any Critical Habitats on or near the Project. The nearest Critical Habitat to the Project site is California condor Critical Habitat located approximately eleven miles west of the Project in the Tehachapi Mountains near Tejon Ranch (Figure 15). The Tehachapi Mountains are suitable foraging habitat for California condors, and condors routinely visit the area as evidenced by regular visual observations and verification of visitations by GPS tracking devices attached to condors. Nesting activities have not been recently documented in the Tehachapi Mountains. Desert Tortoise Critical Habitat is located approximately 30 miles to the east-southeast of the Project site.

The Project site does not lie within a recognized wildlife connectivity area as mapped by the California Essential Habitat Connectivity Project (Spencer et al., 2010; County of Kern 2016)). The Project site and surrounding area contain expanses of open habitat with little development and the site lacks any significant barriers to local wildlife movement. Wildlife would be expected to traverse the Project site unimpeded during foraging and dispersal activities. Various species may travel between and among surrounding areas of low disturbance (predominantly present immediately to the northeast of the Project), or between irrigated agricultural fields south and west of the Project. The most likely areas for wildlife movement in this portion of the Mojave Desert would be within larger drainages, uninterrupted spans of native vegetation (creosote scrub, Joshua tree woodland, etc.), or along the foothills of the Tehachapi Mountains to the north, or San Gabriel Mountains to the south. Scattered washes traverse the Project site, generally trending northwest to southeast, toward Rosamond Dry Lake. These washes are landscape features that are the most likely areas representing wildlife movement areas on the site, but there is no evidence that they provide avenues for concentrations of wildlife or contribute in a significant way to wildlife movements or dispersal.

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 partially related to the proximity to the Pacific Flyway.

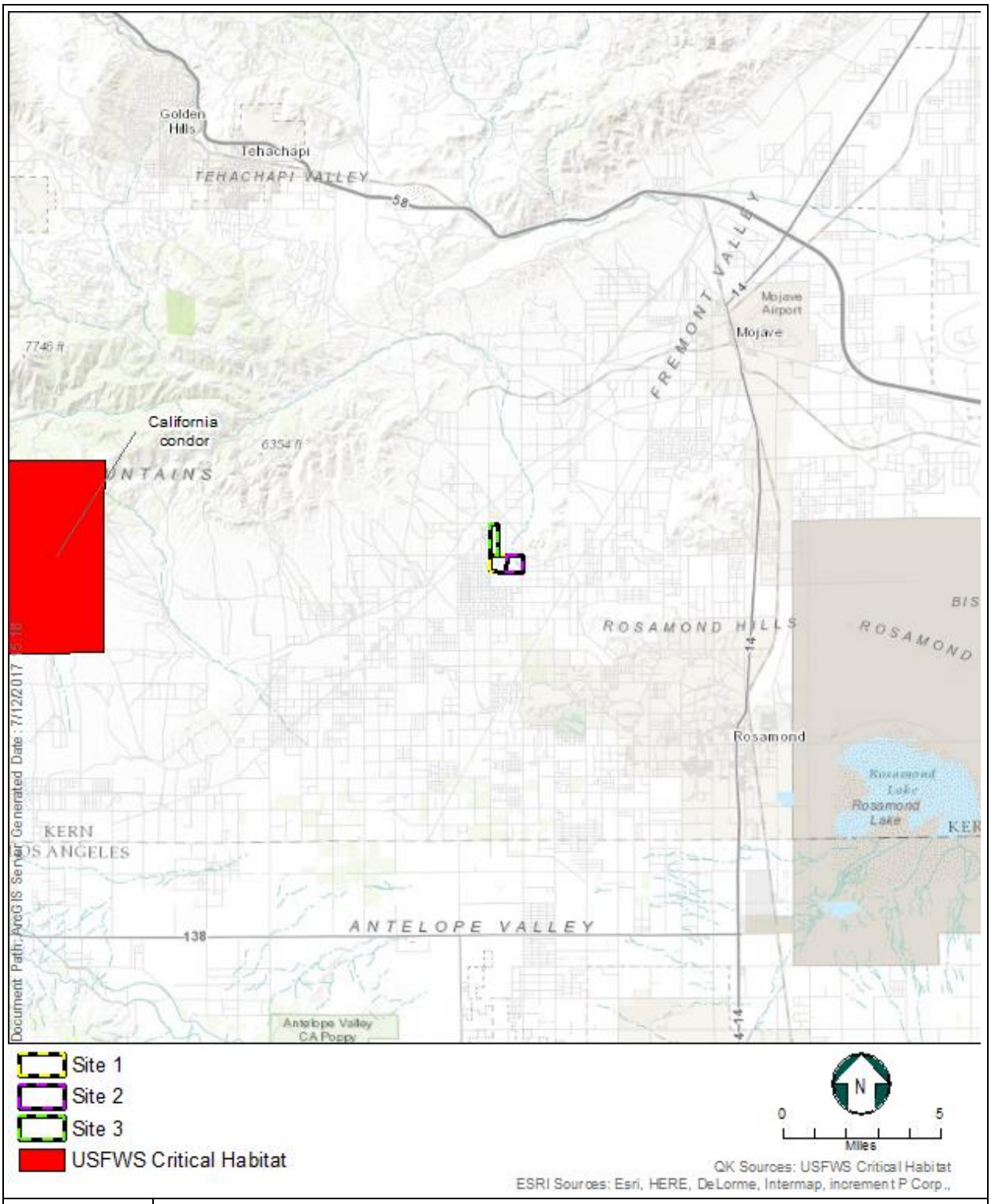

Figure 15
Critical Habitat and Movement Corridors and Linkages, AV Apollo Solar Project, Kern County, California

5.5 - Waters and Wetlands

This section describes the results of the database queries and focused delineations of waters and wetlands on the AV Apollo Solar Project site.

5.5.1 - Results of Literature Review and Database Searches

There are three riverine features that cross the AV Apollo Project, which generally trend from the northwest to the southeast (see Figure 7). Two of these features occur on Site 1, two are present on Site 2, and one is present on Site 3. The features on each site are described in detail below:

Site 1

The NHD depicts two unnamed blue-line drainages occurring on Site 1(see Figure 7). One drainage flows through the northeast corner of the site along a north-northwest to south-southeast axis. This drainage originates approximately 7.5 miles northwest of the site in the foothills of the Tehachapi Mountains. Another blue-line drainage flows through the southwest portion of the site, along a north-northwest to south-southeast axis. This drainage originates approximately 4.5 miles northwest of the Project site in the foothills of the Tehachapi Mountains. No wetlands were shown to occur on or near the site. The NWI shows an excavated lacustrine feature (designated as L2USJX) located approximately 1.80 miles northeast of the site, adjacent to Cactus Gold Mine.

Site 2

The NHD depicts two blue-line drainages occurring on Site 2 (see Figure 7). Oak Creek flows through the northeast corner of the site trending along a north-northwest to south-southeast axis. Oak Creek extends approximately 10 miles north of the site to its headwaters in the foothills of the Tehachapi Mountains. Oak Creek terminates 0.65 miles southeast of the site at Montiverde Road. The unnamed drainage flows southeast across the southwestern corner of the site. The drainage begins approximately 6 miles to the north of the site in the foothill of the Tehachapi Mountains, and terminates 0.5 miles south of the site at Montiverde Road. No wetlands were shown to occur on or near the Project site.

Site 3

The NHD depicts one un-named blue-line drainages occurring on Site 3 (see Figure 7). This drainage originates 3.75 miles northwest of the site in the foothills of the Tehachapi Mountains. The blue-line drainage crosses the center of the site along a north-northwest to south-southeast axis. It joins with another blue-line drainage that occurs just east of the site. No wetlands were shown to occur on or near the site.

5.5.2 - Presence of Waters and Wetlands

Approximately 28 acres of water features were identified within the AV Apollo Project (Table 5, Figure 16, Appendix C). All of these water features are isolated episodic waters, which typically only flow for brief periods in response to rainfall. Three drainages and one ditch were delineated on Site 1. The boundaries of these water features encompassed a total of 6.914 acres. Three drainages and one creek (Oak Creek) were delineated on Site 2, encompassing a total area of 6.62 acres. Two drainages were delineated on Site 3, encompassing a total area of 14.49 acres. These features roughly correspond to the information available from the NWI (see Figure 7). The drainages across all three sites were single braided channels and included fluvial indicators such as sandy bar forms, drainage swales, flow lineations, organic drift, out-of-channel flow (lateral floodplain), secondary channels, and headcut, overturned rocks, and mud cracks. The water features also included erosion indicators such as cut banks, exposed roots, rills, scour on the channel bottom, secondary channels, and water-cut benches. The ditch on Site 1 exhibited typical slope, bed, and bank characteristics. No riparian vegetation occurred in association with these water features.

Table 6
Water Feature Data, AV Apollo Solar Project, Kern County, California

	Low-flow Channel Acreage	High-flow Channel Acreage	Active Floodplain Acreage	Bank Acreage	Total Watercourse Acreage
Water Features Site 1					
Drainage 1	0.235	0.582	5.864	0	6.681
Drainage 2	0.046	0.062	0	0	0.108
Drainage 3	0.070	0	0	0	0.070
Ditch 1	0.009	0	0	0.046	0.056
Total	**0.360**	**0.644**	**5.864**	**0.046**	**6.914**
Water Features Site 2					
Oak Creek	0.763	2.251	2.844	0	5.857
Drainage 1	0.101	0	0	0.016	0.117
Drainage 2	0.128	0.190	0.012	0	0.330
Drainage 3	0.099	0	0.182	0.038	0.318
Total	**1.090**	**2.441**	**3.037**	**0.054**	**6.622**
Water Features Site 3					
Drainage 1	1,820	0.48	6.68	7.16	
Drainage 2	1,965	0.88	6.45	7.33	
Total	**3,785**	**1.36**	**13.13**	**14.49**	

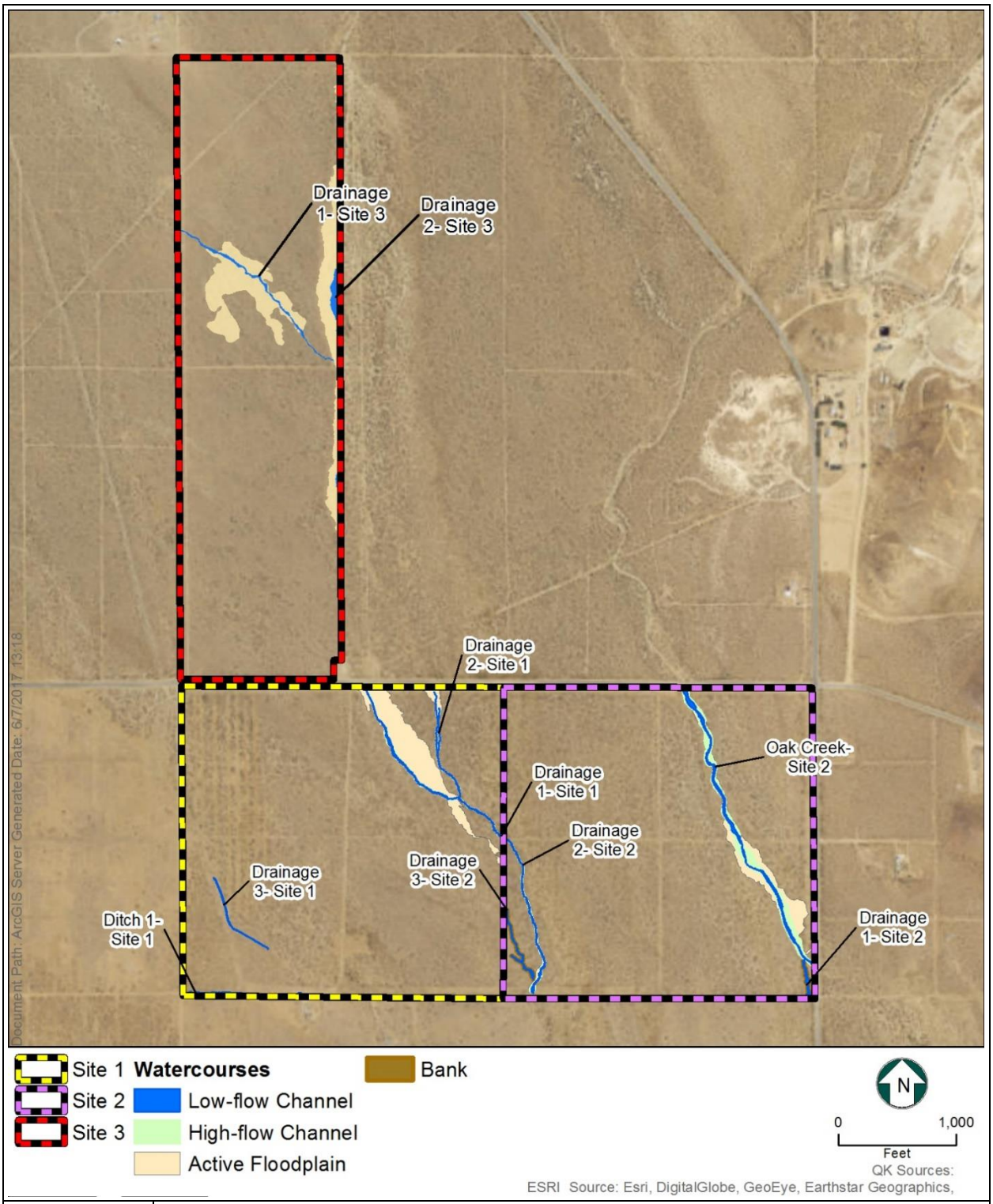

Figure 16
Waters Delineation Conducted on the AV Apollo Solar Site, Kern County, California

SECTION 6 - EVALUATION OF IMPACTS AND RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

This section evaluates Project-related impacts to sensitive biological resources. Direct and indirect impacts are identified. Temporary impacts are defined as impacts with a maximum duration of one calendar year. The CDFW defines that one-year term to include the duration of the impact plus the length of time required to fully restore the impacted area to pre-project conditions. Because restoration efforts in desert environments usually take multiple years to implement, there are no temporary impacts included in this evaluation. When significant impacts are identified or when they would be anticipated to occur, recommended measures to avoid or reduce those impacts to less than significant levels are provided.

The analysis of impacts that is provided is based upon the requirements of CEQA, and the associated thresholds of significance. The fundamental definition of significant effect under CEQA is "a substantial adverse change in physical conditions." This criterion underlies the evaluation of environmental impacts for most of the impact issues identified in the CEQA Environmental Checklist Form (Guidelines Appendix G). The significance threshold for evaluation of impacts under CEQA will not necessarily equate to a regulatory limit or standard. Instead, under CEQA, most thresholds are set at meaningful levels, independent of regulatory thresholds. Some thresholds are driven by regulatory standards (HCP compliance, Air Quality plan compliance, etc).

For each of the existing biological conditions described in this report, potential impacts are addressed in accordance with the biological issues listed in Appendix G of the CEQA Guidelines, which are:

(A) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

(B) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, any regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

(C) Would the project have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

(D) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

(E) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

(F) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan or Recovery Plan?

Each issue is assessed according to thresholds of significance established under CEQA Guidelines §15065(a), as modified. These are:

- Would the project result in substantial degradation of the environment?
- Would the project result in substantial habitat reduction for a fish or wildlife species?
- Would the project result in reduction of a fish or wildlife population below self-sustaining levels?
- Would the project result in elimination of a plant or animal community?
- Would the project result in substantial reduction of the number of, or restriction of the range of, a rare or threatened species, or result in direct or indirect "take" of an endangered species as defined in State or federal Endangered Species Acts?

6.1 - Project Impacts to Special-Status Species (CEQA Evaluation Factor A):

6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

Two special-status plant species were identified at the proposed Project Site 3: Clokey's Cryptantha and Lemmon's Jewelflower. Clokey's cryptantha was only observed on the Site 3, and which consisted of only two plants, both occurring as isolated plants along disturbed roadsides. These two areas were outside of the development area and Project-related activities would not impact these plants. The Lemmon's jewelflower was more common, but was also only located outside of the Project development areas. The Joshua tree is a species that is protected by the California Desert Native Plant Protection Act, and although Joshua trees are not at densities high enough to be considered a Joshua tree Woodland, the individual plants are a protected resource.

Project construction, operation, and decommissioning activities have the potential to impact members of these species. Permanent impacts to these species would result from clearing and grading areas containing these species. Although these species are not listed as threatened or endangered, and are instead classified as CNPS 1B.2 species or are otherwise protected, they are considered here as special-status species. The elimination of these species from the Project site would be a ***significant impact***. To reduce impacts to members these species to a ***less than significant level***, we recommend the implementation of the following measures:

BIO-1 (Site 3 only): Ecological Sensitive Area (ESA) fencing should be established at a 50-foot radius around Lemmon's jewelflower and Clokey's cryptantha plants to ensure that they are not destroyed during Project activities. If Project activities cannot avoid those

areas, then CDFW will be notified and provided the opportunity to salvage any Lemmon's jewelflower or Clokey's crptantha plants that would be destroyed.

BIO-2: To comply with the California Desert Plant Protection Act, the Project proponent should prepare a Joshua Tree Preservation Plan prior to construction to protect on-site Joshua trees. Although it would not be possible to protect those trees occurring within the development footprint, there is an opportunity to protect trees occurring on-site that are outside of the Project footprint. All trees in non-development areas should be individually identified, evaluated, and included in the preservation plan.

BIO-3: The introduction of exotic plant species shall be avoided and controlled wherever possible, and may be achieved through physical or chemical removal and prevention. Preventing exotic plants from entering the site via vehicular sources shall include measures such as implementing Trackclean or other method of vehicle cleaning for vehicles coming and going from the site. Earth-moving equipment shall be cleaned prior to transport to the project area. Weed-free rice straw or other certified weed-free straw shall be used for erosion control.

6.1.2 - Project Impacts to Special-Status Wildlife Species

Based upon current and available information, the Project would have ***no impacts*** to the Mohave ground squirrel or Swainson's hawk. Measures for the protection of those species are not warranted. Similarly, it is anticipated that the Project would result in ***no impacts*** to the desert tortoise, however, there is a slight chance that the desert tortoise could be encountered on the Project during construction. To ensure protection of the desert tortoise, avoidance measures are recommended. The Project has the potential to ***significantly impact*** the western burrowing owl, desert kit fox, and American badger. Measures are recommended to reduce impacts to these species to ***less than significant*** levels.

Potential Impacts to Desert Tortoise

No desert tortoise or positive evidence of the presence of the desert tortoise were observed at the Project site. A single, class IV burrow was noted on Site 1, but due to the lack of any other sign of desert tortoise, the burrow could be used by other species of wildlife. The negative results of the surveys conducted for this Project, the scarcity of observations resulting from surveys conducted, and the lack of observations during construction of nearby solar Projects including Catalina Renewable Energy, SEPV Mojave West and Valentine Solar (County of Kern 2014a, 2014b and 20116, respectively), strongly suggest that desert tortoises are absent, or at best occur in extremely low densities in the Project vicinity.

Although there is a very low risk that a desert tortoise would be present on the Project site and be subject to direct and indirect impacts, we recommend that the following avoidance measures be implemented to ensure that Project activities would avoid significant impacts to desert tortoise and not result in take of an individual tortoise.

BIO-4: A qualified biologist should be on-site to survey for tortoises prior to all vegetation removal, grubbing, and fence installation activities. Limited vegetation clearing activities, such as removal of individual Joshua trees for translocation, should be permitted prior to the installation of the fencing, and provided that a qualified biologist conducts a survey for tortoises and their burrows immediately in front of each motor vehicle and site(s) where vegetation would be removed. In the event that tortoises or active burrows are discovered, all work will be immediately halted within a 500-foot radius of the tortoise or burrow. Construction activities may not resume within 500 feet of a tortoise or actively used burrow without USFWS and CDFW concurrence which may include development of a desert tortoise mitigation and monitoring plan.

BIO-5: A qualified biologist should remain on-site until all vegetation is cleared and, at a minimum, conduct monthly site and fence inspections during Project construction activities. A biologist should remain on-call throughout the construction phase in the event a tortoise occurs on the site during construction.

If a desert tortoise is found on the site during project construction or operations, active construction or operations should cease in the vicinity of the animal and the desert tortoise should be passively restricted to the area encompassing its observed position on the construction site and its point of entry shall be determined if possible. A qualified biologist will install a temporary tortoise-proof fence around this area. Concurrent with this effort, United States Fish and Wildlife Service and California Department of Fish and Game will be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the desert tortoise is observed leaving the site, work in the area can resume. A report will be prepared by a qualified biologist to document the activities of the desert tortoise within the site; all fence construction, modification, and repair efforts; and movements of the desert tortoise once again outside the permanent tortoise-proof fence. This report will be submitted to wildlife and resource agency representatives and the Kern County Planning and Natural Resources Department.

BIO-6: Prior to the initiation of construction and for the duration of Project construction and maintenance activities that could affect natural habitat, all new personnel should attend a Construction Personnel Environmental Awareness Training and Education Program. The program should be developed by a qualified biologist. Any employee responsible for the operation and maintenance (O&M) of the completed facilities should also attend the Construction Personnel Environmental Awareness Training and Education Program.

a) The program should include information on the life history of the burrowing owl, Swainson's hawk and other raptors, desert tortoise, American badger, desert kit fox, migratory birds, and special-status plant species that may be encountered during construction and operations and maintenance activities.

b) The program should discuss each species' legal protection status, the definition of "take" under the Endangered Species Act, measures the Project operator must implement to protect the species, reporting requirements, specific measures that

each worker should employ to avoid take of wildlife species, and penalties for violation of the federal ESA.

c) The program should provide information on how and where to bring injured animals for treatment in the case any animals are injured on the Project site, and how to document animal mortalities and injuries.

d) An acknowledgement form signed by each worker indicating that environmental training has been completed will be kept on record.

e) A sticker should be placed on worker hard hats upon the worker's successful environmental training completion. Construction workers should not be permitted to operate vehicles or equipment within the construction areas unless they have attended the training and are wearing hard hats with the required sticker.

BIO-7: Vehicle speed limits should not exceed 15 miles per hour (mph) during construction and operation of the Project. A speed limit sign should be posted at all Project site entry locations.

BIO-8: The project operator shall develop a site-specific Common Raven Management Plan in accordance with United States Fish and Wildlife Service guidelines and shall implement management measures for ravens in the project area. These measures may include but is not limited to designing structures to eliminate perches, waste management, roadkill management, management of ponded water during construction and operations, and nest removal on structures within the photovoltaic facility site and along the transmission line

BIO-9: No Listed or Special-status wildlife species will be handled or forcibly removed from the Project sites. If an injured or dead tortoise is encountered during construction, or if any desert tortoise is injured or killed, all construction activities within 500 feet of the vicinity should be halted and an authorized biologist immediately contacted. The biologist should have the responsibility for contacting the USFWS and the CDFW. If an injured animal recovers, the USFWS will determine the final disposition of the animal, as few injured desert tortoises are returned to the wild.

Potential Impacts to Burrowing Owl

Burrowing owls and burrows with signs of burrowing owls were recorded in the Project site. Direct impacts to burrowing owls could result from construction activities. Direct impacts could include death or injury to individuals, displacement of birds and loss of territory, disruption of breeding activities, crushing of burrows and viable eggs, and other impacts. Indirect impacts could include reducing foraging opportunities, increasing incidences of agitation, and other impacts. To ensure that impacts of the Project to western burrowing owls are less than significant, the following measures are recommended.

BIO-10: Within 14 days prior to vegetation removal or fence installation activities, a preconstruction clearance survey of the disturbance area should be conducted by a

qualified biologist (i.e., a wildlife biologist with previous burrowing owl survey experience). The survey methodology should be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and should consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls (these surveys may be combined with desert tortoise pre-construction surveys, kit fox surveys, and American badger surveys). Copies of the survey results should be submitted to the Kern County Planning and Natural Resources Department and CDFW.

If burrowing owls are detected on-site, no ground-disturbing activities, such as vegetation clearance or grading, should be permitted within a buffer of no fewer than 100 meters (330 feet) from an occupied burrow during the breeding season (February 1 to August 31), unless otherwise authorized by CDFW. During the non- breeding season (September 1 to January 31), ground-disturbing work may proceed near active burrows as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.

If it is not feasible to avoid occupied burrowing owl burrows during the non-breeding season or during the breeding season (February 1 through August 31) after a qualified biologist has confirmed that the resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist will implement a passive relocation program in accordance with Appendix E1 of the CDFW Staff Report on Burrow Owl Mitigation (2012).

At a minimum, the plan should address the following methodologies: site surveillance, exclusionary devices, installation, and monitoring, burrow excavation, removal of other potential owl burrow surrogates or refugia on site, artificial burrow locations, construction and installation (if applicable), artificial burrow monitoring and maintenance, documentation of success or failure at the artificial burrow sites, and measures that would be implemented to ensure that burrowing owl and/or fossorial mammals do not return to the site until construction activities have been completed.

Project Impacts to Desert Kit Fox and American Badger

Positive sign of desert kit fox and American badger were present on the Project, indicating that these species are present. Direct impacts to individuals could result from adults or young being crushed in dens, or from collisions with vehicles. The Project would result in significant impacts to these species. The implementation of the following measures would reduce Project impacts to less than significant levels.

BIO-11: Preconstruction surveys should be conducted by a qualified biologist for the presence of desert kit fox or American badger dens within 14 days prior to commencement of vegetation clearing, grubbing, and fence installation activities. If more than 30 days elapse between the survey and the activity, another survey should be performed. Should potential burrows of desert kit fox or American badger be identified during the surveys,

the qualified biologist should follow standard monitoring procedures using tracking medium and/or remote cameras to determine the occupancy status, species inhabiting the burrow, and type of burrow (e.g., potential, active, natal). Surveys need not be conducted for all areas of suitable habitat at one time; but instead may be phased so that surveys occur within 30 days prior to that portion of the site disturbed. If no potential desert kit fox or American badger dens are present, no further mitigation would be required. If potential dens are observed and avoidance is feasible, the following buffer distances should be established prior to construction activities:

i. Desert kit fox or American badger potential den: 30 feet.

ii. Desert kit fox active den: 100 feet.

iii. Desert kit fox natal den: 500 feet.

The removal of an inactive or potential den may be allowed. The potential or inactive den should be excavated by hand using a shovel to prevent re-occupation during the period of construction activities. If an active den cannot be avoided, then the occupying animal should be removed using passive relocation consisting of installing one-way doors at the den entrance. Once an active den has been vacated, it should The measures below shall be implemented throughout construction and operation of the AV Apollo Solar Project.

BIO-12: The measures listed below should be implemented during construction:

1. Project-related vehicles will observe a 15 mile-per-hour speed limit in all project areas, except on county roads and State and federal highways. Construction after sundown shall be prohibited. Off-road traffic outside of designated project areas shall be prohibited.

2. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a week from construction or project site.

3. No pets will be allowed in project areas.

4. The use of herbicides for vegetation control in project areas should be restricted. No rodenticides should be used on the property. All uses of such herbicidal compounds shall observe label and other restrictions mandated by the United States Environmental Protection Agency, California Department of Food and Agriculture, and federal and State legislation as well as additional project-related restrictions deemed necessary by the California Department of Fish and Wildlife and/or the United States Fish and Wildlife Service.

5. All pipes, culverts, or similar structures with a diameter of four inches or more that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped,

or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until a qualified biologist is consulted. If necessary, under the direct supervision of the biologist, the pipe may be moved to remove it from the path of construction activity until the fox has escaped.

6. To prevent inadvertent entrapment desert kit foxes, badgers, or other animals during construction, all excavated, steep-walled holes or trenches more than two feet deep should be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If trapped animals are observed, escape ramps or structures will be installed immediately to allow escape. If listed species are trapped, the United States Fish and Wildlife Service and California Department of Fish and Wildlife shall be contacted.

7. All vertical tubes used in project construction, such as chain link fencing poles should be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of special-status birds

Project Impacts to Migratory Birds and Raptors

Construction, operation, and maintenance of the Project has the potential to adversely impact migratory birds and raptors that occupy the Project site. The entire Project site provides habitat for raptors and nesting birds, and one stick nest being used by a common raven was identified within the Project. The Project has the potential to directly destroy active nests, cause abandonment of active nests, and cause nest failure. Nest failure, nest abandonment, and the removal of active nests would be a ***significant impact*** of the Project.

The Project could also result in avian mortality and injury due to collisions between flying birds and Project facilities and equipment. There has been some preliminary evidence that suggests that bird collisions with solar PV panels might be a bird mortality issue, but additional information is needed to determine whether the incidence of bird mortalities are significant. Data collection efforts and avian risk studies are currently ongoing at photovoltaic solar facilities in desert regions, such as the Desert Sunlight Solar Project in Riverside County.

The numbers or species of birds that may be affected from collisions with solar panels or other infrastructure cannot be known with certainty, though ongoing monitoring data from solar projects within California suggest that a variety of birds may be susceptible to collisions with panels (County of Kern 2016). Solar panels have elements thought to mimic water or suitable related habitat. As a result, some have theorized that solar panels can attract species that mistake the panels for bodies of water, potentially leading to increased collision-related and other risks commonly referred to as the "fake lake effect." It is thought the phenomenon could attract birds to solar project sites thereby exposing the birds to greater risk of impacts such as potential collision with project infrastructure, the possibility of being stranded

within site fencing once they land, or other forms of distress. However, this speculation is not supported by empirical research.

A recent report commissioned by the U.S. Department of Energy analyzed available avian mortality data from utility-scale solar energy facilities and concluded that, though it is apparent that solar energy facilities present a risk of fatality for birds, additional standardized and systematic fatality data would be needed to better understand and quantify the risks (County of Kern 2016). It did, however, note that, based on available data, there was no consistent pattern to support or refute the hypothesis that water-dependent species were more susceptible to mortality at solar facilities. The causes of avian injuries and fatalities at commercial-scale solar projects continue to be evaluated by the USFWS, CDFW, and others. Even with monitoring data from other PV projects in California, there remains a great deal of uncertainty regarding the extent to which birds might be impacted by the project because: 1) the mortality data from the other projects has been collected over a relatively short period of time and still is being evaluated; 2) in most cases, the cause of death is not clear; and 3) mortality information from one project location is not necessarily indicative of the mortality that might be found at another project location (County of Kern 2014b)

The Project site is located in an area of relatively low use by avian species, is not within known migratory routes, and does not experience certain inclement weather patterns that, when combined with certain types of lighting regimes, have been theorized to confuse or disorient avian species. Mortalities of bird's due to collisions with solar panels at the proposed Project is expected to be ***less than significant***.

To protect nesting migratory birds and raptors, and ensure that Project impacts to nesting birds and raptors are ***less than significant***, the following measures should be implemented.

BIO-13: If construction is scheduled to commence during the non-nesting season (September 1 to January 31), no preconstruction surveys or measures to protect nesting birds would be warranted. To avoid impacts to nesting birds in the Project area, a qualified wildlife biologist should conduct preconstruction surveys of all potential nesting habitat within the Project site for Project activities that are initiated during the breeding season (February 1 to August 31). The survey for special status raptors should focus on potential nest sites (e.g. Joshua trees and shrubs) on-site and within a 500-foot buffer around the site. Surveys should be conducted no more than 14 days prior to construction activities. Surveys need not be conducted for the entire Project site at one time; they may be phased so that surveys occur shortly before a portion of the site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. Active nests will be avoided and monitored, and the qualified biologists will have authority to stop-work should it be determined that a nest is being impacted by Project activity.

If active nests of other birds or common raptors are found, a no-work buffer shall be established around active nests. The no-work buffer should be a 250-foot radius around active passerine nests and a 500-foot radius around active raptor nests. The size of buffers

may be reduced by a qualified biologist, but only when it is determined through on-site monitoring that encroachment into the buffer does not increase the risk of nest failure. The buffer should remain in effect until the nest is deemed to be inactive (e.g. the nestlings have fledged and are no longer reliant on the nest) by a qualified biologist.

BIO-14: The Project operator should construct all power transmission lines to the 2006 Avian Power Line Interaction Committee (APLIC) Guidelines and recommendations. Prior to issuance of a grading or building permit, appropriate notes regarding these specifications should be included on any grading permit, building permit or final map. The Project operator should submit written documentation to the Kern County Planning and Community Development Department showing that all power lines are constructed to APLIC Guidelines. The Project operator should conform to the latest practices (as outlined in the 2012 APLIC Guidelines document) to protect birds from electrocution and collision. Implementation of these guidelines should be verified by the lead agency.

6.2 - Project Impacts to Sensitive Vegetation Communities (CEQA Evaluation Factor B)

There are no sensitive plant communities present on the Project and there would be ***no impacts*** to sensitive natural vegetation communities. No mitigation measures are warranted.

6.3 - Project Impacts to Wetlands and Waters (CEQA Evaluation Factor C)

No wetlands occur on the Project. There is a total of approximately 28 acres of State Waters occurring on the Project. Of this, 5.86 acres would be avoided by a proposed 35 acre no-development zone that has been incorporated as a design feature into the Project. This no-development zone is located along Oak Creek. The remaining features would be eliminated by the Project. The elimination of these water features would be a ***significant impact***.

To minimize impact to waters of the State and fulfill the regulatory requirements associated with discharges to waters of the State, the following mitigation measures should be implemented. These measures address impacts resulting from construction of proposed roads and compensation for the loss of wetland and water resources.

BIO-15: The Project should be designed to avoid direct impacts to the jurisdictional waters within the Project site to the extent feasible by implementing the following:

a) Any material/spoils from Project activities should be located away from jurisdictional areas. Jurisdictional areas should be protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and/or straw bale barriers, as appropriate. Protection measures should follow Project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan (SWPPP).

b) Prior to the start of construction activities, the Project proponent should provide evidence that all fueling, hazardous materials storage areas, and operations and

maintenance activities will be sited at least 100 feet away from on-site drainages and other water features, as identified in the Project-specific delineation of wetlands and waters.

c) The Project proponent should prepare a Hazardous Materials Business Plan in accordance with the California Health and Safety Code and Kern County regulations. This Plan should provide for hazardous material and hazardous waste storage areas; describe proper handling, storage, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies.

d) Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. The Project foreman or designated environmental representative will be notified of all spills.

BIO-16: The Project proponent should obtain a Lake and Streambed Alteration Agreement from the CDFW and a Waters Quality Certification pursuant to Section 401 of the CWA from the RWQCB, if required prior to impacting any State waters. A formal concurrence with the findings of the delineation of wetlands and waters investigation should be obtained from the USACE.

BIO-17: A Habitat Mitigation and Monitoring Plan should be prepared prior to construction that outlines the compensatory mitigation in coordination with the lead agency, RWQCB and CDFW. If on-site mitigation is proposed, the Habitat Mitigation and Monitoring Plan should identify those portions of the site, such as relocated drainage routes that contain suitable characteristics (e.g., hydrology) for restoration of alluvial desert scrub. Determination of mitigation adequacy should be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as up or downstream of the site). The Plan should include remedial measures in the event that performance criteria are not met. Off-site mitigation lands should be comprised of similar or higher quality alluvial desert scrub. Off-site land should be preserved through a deed restriction or conservation easement and the Plan should identify an approach for funding assurance for the long-term management of the conserved land.

6.4 - Project Impacts to Movement Corridors and Linkages (CEQA Evaluation Factor D)

There are no established or recognized fisheries or wildlife movement corridors, linkages, or nursery sites that overlap the Project site. The project site is located within the boundaries of the DRECP, a joint collaboration between the California Energy Commission, the Bureau of Land Management, the USFWS, and the CDFW. The Project is also within the boundaries of the West Mojave Plan, but is located on private land and therefore is not within the jurisdiction of the BLM. The Implementation Measures outlined for the Conservation

Element of the Mojave Specific Plan have been satisfied through the completion of general biological surveys and focused protocol surveys and evaluations for rare, threatened, or endangered species and other sensitive biological resources by qualified biologists. Determination of significant impacts from the biologists and recommendations for mitigation measures to preserve or protect habitat and to otherwise ensure protection of identified species have been included in this report.

The Project will result in ***no impacts*** to movement corridors, linkages, or nursey sites.

SECTION 7 - CONCLUSIONS

In accordance with the State's adopted Renewables Portfolio Standard, California has established an ambitious plan to increase the State's percentage of electricity generated by renewable energy to 50 percent and reduce greenhouse gas emissions by 40 percent by the year 2030. In order to meet this goal, Kern County has approved the installation of solar facilities in the western Mojave Desert. The California Public Utilities Commission (CPUC) has similar plans that include construction of transmission lines and supporting facilities in that region. Recently constructed and planned energy projects in the western Mojave Desert will substantially contribute to the State's goal of attaining high energy production through renewable resource technology.

The Project is situated in an area that provides for access to an existing energy distribution grid at a relatively low environmental cost. Biological resources that are present on the sites and that could potentially be impacted by the Project include the desert kit fox, American badger, western burrowing owl, nesting migratory birds, and Waters of the State. There is no evidence that shows that the site is occupied by the desert tortoise, Mohave ground squirrel, or Swainson's hawks, and impacts to those species are not anticipated to occur. Avoidance and minimization measures could be implemented that would result in the Project having ***less than significant*** impacts to biological resources.

The AV Apollo Project would contribute to cumulative impacts to biological resources. Within an area of approximately six miles of the Project site there are multiple solar and wind energy project in operation, proposed, or under construction. There are additional projects within a slightly broader region. Within the six-mile area, there would be an anticipated loss of up to 3,840 acres of desert scrub habitat that supports or potentially supports sensitive biological resources. Although the avoidance and minimization measures provided in this document would reduce the effects of the Project to less than significant levels, the cumulative impacts of the Project would be considered significant and unavoidable.

SECTION 8 - REFERENCES

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APPENDIX A
SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS FOR THE AV APOLLO SOLAR PROJECT

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Sensitive Natural Communities				
Valley Needlegrass Grassland	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.	**Absent.** (Sites 1, 2, and 3). This natural community does not occur in the Project site.
Wildflower Field	Wildflower field	S3	Wildflower field.	**Absent.** (Sites 1, 2, and 3). This natural community does not occur in the Project site.
Sensitive Plants				
Allium howellii var. clokeyi	Mt. Pinos onion	1B.3	Restricted to a narrow range of coastal sage scrub habitat in the Transverse Range, in the foothills around Mount Pinos, which is west of the Project site.	**Absent.** (Sites 1, 2, and 3). The known range of this species is West of Project and thus does not occur on site. Additionally, the Project site does not provide suitable coastal sage scrub habitat. This species was not observed during floristic surveys.
Astragalus hornii var. hornii	Horn's milk-vetch-	1B.1	Found in meadows and seeps, playas, or lake margins. Prefers alkaline soils. Occurs between 196 and 2,788 feet. Blooms from May to October.	**Absent.** (Sites 1, 2, and 3). The Project site does not provide alkali or riparian habitat and is outside the range of the species. This species was not observed during floristic surveys; however, records of occurrence exist within approximately five miles to the South of the Project site.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
California macrophylla	Round-leaved filaree	1B.2	Occurs in valley grassland or oak woodland habitat, mostly in the foothills of the Central Valley of California.	**Absent.** (Sites 1, 2, and 3). Habitat suitable to support this species is absent from the Project site and its vicinity, and is outside the known range. This species was not observed during floristic surveys.
Calochortus palmeri var. palmeri	Palmer's mariposa lily	1B.2	Mostly occurs in wetland habitat, though also occurs in yellow pine forest or chaparral at low-elevations in the foothills of the Sierra Nevada and Transverse Ranges.	**Absent.** (Sites 1, 2, and 3). Ephemeral wetland habitat suitable to support this species is present the Project site in Oak Creek, but it is outside the known range. This species was not observed during floristic surveys.
Calochortus striatus	Alkali mariposa-lily	1B.2	Inhabits alkaline meadows and ephemeral washes within chaparral, chenopod scrub, and Mojavean desert scrub. Occurs between 229 and 5,232 feet. Blooms from April to June.	**Low.** (Sites 1, 2, and 3). Habitat suitable to support this species is present on the Project site. This species was not observed during floristic surveys. Records of occurrence exist within approximately five miles to the South of the Project; thus, the species has the potential to occur on-site.
Caulanthus lemmonii	Lemmon's jewelflower	1B.2	Found in the foothills of the Coast range in pinyon and juniper woodland habitat, though it uncommonly occurs in grasslands of the San Joaquin Valley and Creosote scrublands in the Mojave Desert. Occurs between 262 and 5183. Blooms from February to May.	**Present.** (Sites 1, 2, and 3). Habitat suitable to support this species is present on the Project site, and a total of 47 individuals were observed during the April 2017 floristic survey, specifically in Oak Creek.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Cryptantha clokeyi	Clokey's cryptantha	1B.2	Occurs in rocky, sandy, or gravelly soils in Mojavean desert scrub in the northwestern Mojave Desert. Occurs between 1,968 to 4,265 feet. Blooms in April.	**Present.** (Sites 1, 2, and 3). Habitat suitable to support this species is present on the Project site, and a single individual was observed during the May 2017 floristic survey, at the Syracuse Solar site just south of Backus road.
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 March to May, and it ranges in elevation from 10 to 2,592 feet.	**Low.** (Sites 1, 2, and 3). This species was not observed during floristic surveys, and is unlikely to occur on site as the Project does not provide suitable alkaline grassland habitat.
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.	**Low.** (Sites 1, 2, and 3). There are historical records of this species approximately 10 miles to the South of the Project, though the site is outside of the described range and is not likely to occur on site. This species was not observed during floristic surveys.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Fritillaria brandegeei	Greenhorn fritillary	1B.3	This species occurs in lower montane coniferous forest, on granitic substrates. It flowers between April and June, and it ranges in elevation from 4,642 to 6,890 feet.	**Absent.** (Sites 1, 2, and 3). The Project is outside of the known range and does not provide suitable habitat for this species. This species was not observed during floristic surveys.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	1B.1	This species is found in coastal marshes and swamps, and playas and vernal pools in the interior of California. It flowers between February and June, and it ranges in elevation from 0 to 4,002 feet.	**Absent**. (Sites 1, 2, and 3). Historical records of this species exist approximately 10 miles to the North of the Project site in the Tehachapi Range, though the Project does not provide suitable habitat. This species is unlikely to occur on the Project site. This species was not observed during floristic surveys.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Layia heterotricha	Pale-yellow layia	1B.1	Pale-yellow layia occurs in open clay soils, grassland and foothill woodland habitat. It flowers between March and June, and it ranges in elevation from 984 to 5,594 feet.	**Low**. (Sites 1, 2, and 3). Historical records of this species exist approximately 10 miles North of the Project site in the Tehachapi Range. These records represent extant or extirpated populations. The Project site provides suitable habitat for this species to occur, but it is unlikely to occur on-site. This species was not observed during floristic surveys.
Loeflingia squarrosa var. artemisiarum	Sagebrush loeflingia	2B.2	Found in desert dunes, Great Basin scrub, and sandy Sonoran Desert scrub. Occurs between 2,296 and 5,298 feet. Blooms from April to May.	**Low**. (Sites 1, 2, and 3). Historical records of extant populations exist approximately five miles to the West and South of the Project, though the species distribution is still poorly understood and sightings are rare in California. This species was not observed during floristic surveys and is unlikely to occur on the Project site.
Mimulus pictus	Calico monkeyflower	1B.2	Found in a narrow range of the San Joaquin Valley in upland forest and cismontane woodlands. Occurs between 328 and 4,691 feet. Blooms from March to May.	**Absent**. (Sites 1, 2, and 3). This species was not observed during floristic surveys and the range is to the West of the Project, thus does not occur on-site.
Monardella linoides ssp. oblonga	Tehachapi monardella	1B.3	Found in upper and lower montane coniferous forest, pinyon and juniper woodland. Occurs between 2,952 and 8,103 feet. Blooms from June to August.	**Low**. (Sites 1, 2, and 3). Historical records of extant populations exist approximately 5 miles to the West and North of the Project, but the site does not contain habitat suitable for this species to occur. This species was not observed during floristic surveys.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Navarrentia peninsularis	Baja navarretia	1B.2	Found in lower montane coniferous forest and chaparral. Occurs between 4,921 and 7,545 feet. Blooms from May to August.	**Absent.** (Sites 1, 2, and 3). The Project is outside of the species elevation range.
Navarrentia setiloba	Piute Mountains navarrentia	1B.2	This annual herb occurs in mesic stands of chaparral, lower montane coniferous forest, meadows and seeps, and pinyon-juniper woodlands from 4921 to 7545 feet in elevation. The blooming period is between May and August.	**Absent.** (Sites 1, 2, and 3). The Project is below the elevation range of this species and there is no habitat present within the Project site that would support this species.
Saltugilia latimeri	Latimer's woodland gilia	1B.2	This annual herb occurs in rocky or sandy, often granitic, areas and sometimes in washes in chaparral, Mojavean desert scrub or Pinyon and juniper woodland. It flowers between March and June, and it ranges in elevation from 1,312 to 6,233 feet.	**Low.** (Sites 1, 2, and 3). The Project is at the lower elevational range of this species. Most occurrences are in southern California but there is one known occurrence to the northwest of the Project site, and one north of Lancaster (both on the east slope of the Sierras).
Viola pinetorum var. grisea	Grey-leaved violet	1B.3	This perennial herb occurs in meadows and seeps of subalpine coniferous forests, and upper montane coniferous forests at elevation from 4,900 to 11,150 feet. It blooms from April to July.	**Absent.** (Sites 1, 2, and 3). The Project is outside of the species elevation range.
Viola purpurea ssp. aurea	Golden violet	2B.2	This perennial herb occurs in Great Basin scrubs and Pinyon and juniper woodland. It flowers between April and June and it ranges in elevation from 3,280 and 8,202 feet.	**Absent.** (Sites 1, 2, and 3). The Project is outside of the species elevation range.
Invertebrates				

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Bombus crotchii	Crotch bumble bee	G3G4, S1S2	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.	**Low.** (Sites 1, 2, and 3). Habitat that could support this species is present on the Project site.
Euphilotes battoides comstocki	Comstock's blue butterfly	G5T2, S2	Valley and foothill grassland.	**Absent.** (Sites 1, 2, and 3). Habitat that could support this species is absent from the Project.
Helminthoglypta concolor	Whitefir shoulderband	G1G2, S1S2	Inhabits forests and woodlands.	**Absent.** (Sites 1, 2, and 3). Habitat that could support this species is absent from the Project.
Speyeria egleis tehachapina	Tehachapi Mountain silverspot butterfly	G5T2, S2, USFWS-S	Inhabits montane meadows and other forest openings.	**Absent.** (Sites 1, 2, and 3). Habitat that could support this species is absent from the Project.
Amphibians				
Ensatina eschscholtzii croceator	Yellow-blotched salamander	BLM-S, CDFW-WL, USFW-S	Inhabits primarily riparian areas in evergreen and deciduous forests. Found under rocks, logs, and other surface debris.	**Absent.** (Sites 1, 2, and 3). Habitat that could support this species is absent from the Project.
Reptiles				
Anniella pulchra pulchra	Silvery legless lizard	SSC	Inhabits coastal dunes, woodlands in valley-foothill areas, chaparral, and coastal scrub. Requires friable soils with higher moisture content.	**Absent.** (Sites 1, 2, and 3). Habitat that could support this species is absent from the Project.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
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.	**Low.** (Sites 1, 2, and 3). The Project is located on suitable habitat for the species. The Project site is within range of the species. No species were observed during the Project surveys.
Phrynosoma blainvillii	Coast horned lizard	BLM-S, SSC	Inhabits valley-foothill hardwood, conifer, and riparian habitats; pine-cypress; juniper; and annual grasslands.	**Absent.** (Sites 1, 2, and 3). The Project site is outside of the range of this species. The southern desert horned lizard, Phrynosoma platyrhinos calidiarum, a species that has no special status, would potentially be present.
Birds				
Agelaius tricolor	Tricolored blackbird	State – Candidate, MBTA, SSC	Requires open water, protected nesting substrate and foraging area with insect prey within a few kilometers of the colony.	**Absent.** (Sites 1, 2, and 3). Habitat to support this species is absent from the Project site. This species was not observed during the Project surveys.
Aquila chrysaetos	Golden eagle	BLM-S, CDFW-S, CDFW- FP, MBTA	Species typically nests in canyons on cliffs and large trees in open habitats. Forages for mammalian prey in grasslands and over open areas.	**Low.** The Tehachapi Mountains to the North and East, of the Project site, could support this species, but no nesting habitat for this species is present on the Project site. Foraging grassland habitat is present within the Project and its vicinity. This species was not observed during surveys but could occur as a transient and/or forager. This species was not observed during the Project surveys.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Athene cunucularia	Burrowing owl	CSC, MBTA	This species occurs in open annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	**Present.** (Sites 1, 2, and 3)**.** Habitat that could support this species is present on the Project. Foraging low-growing vegetation is present on the Project site. The species could be a potential forager on the Project site. Sign for this species was observed during the Project surveys.
Buteo regalis	Ferruginous hawk	MBTA, G4 S3S4, CDFW-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.	**Low.** (Sites 1, 2, and 3). Typically occurs as a migrant in this area. Suitable foraging habitat is present on the Project site. This species was not observed during the Project surveys.
Buteo swainsoni	Swainson's hawk	CT, MBTA	This species occurs in riparian forests and other forested areas. It roosts in a variety of trees and forage widely over forests, grasslands, and shrublands. It is easily disturbed by human activities.	**Absent.** (Sites 1, 2, and 3). Breeding habitat that could support this species is present near the Project, and/or the species could be a potential forager on the Project site. This species was not observed during the Project surveys.
Charadrius montanus	Mountain plover	FT, BLM-S, SSC, MBTA	Species occurs in short grasslands, freshly-plowed fields, newly sprouting grain fields and sod farms. Prefers short vegetation, bare ground, flat topography, grazed areas, and areas with burrowing rodents.	**Absent.** (Sites 1, 2 and 3). Habitat that could support this species is absent from the Project.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Eremophila alpestris actia	California horned lark	MBTA, CDFW-WL	This species occurs in desert, foothills and dry grasslands near sea level. It is usually found where trees and shrubs are absent.	**Low.** (Sites 1, 2, and 3). Habitat that could support this species is present on the Project, but the site is above sea level, outside the known range of the species.
Falco columbarius	Merlin	CDFW-WL, MBTA	Species typically nests in forests adjacent to open habitats. Occurs within California primarily as a migrant. Typically forages in open forests and grasslands.	**Low.** (Sites 1, 2, and 3). Habitat for this species occurs near the Project site, but no habitat is present on the Project site. Grassland habitat is present within the Project and its vicinity and this species could occur as a transient and/or forager. This species is typically a migrant forager in this area.
Falco mexicanus	Prairie falcon	CDFW-WL, MBTA	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, through trees, or transmission line support structures may be used.	**Moderate.** (Sites 1, 2, and 3). Suitable habitat for foraging is present on the Project site, but no suitable nesting habitat is present. Species was not observed during the Project surveys.
Falco peregrinus	Peregrine falcon	USFWS-Delisted, MBTA	This species occurs in open country, cliffs (mountains to coasts), sometimes cities. Often found around water.	**Low.** (Sites 1, 2, and 3). Suitable habitat for foraging is present on the Project site, but no suitable nesting habitat is present. Species was not observed during the Project surveys.
Gymnogyps californianus	California condor	FE, FP, CE, MBTA	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.	**Absent.** (Sites 1, 2, and 3). Suitable habitat for foraging is present on the Project site, but no suitable nesting habitat is present. This species could potentially forage on the site. This species was not observed during the Project surveys.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Lanius ludovicianus	Loggerhead shrike	CSC, MBTA	This species occurs in open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. It typically nests in large shrubs.	**High.** (Sites 1, 2, and 3). Suitable habitat, both foraging and nesting, occurs on the Project site. This species was not observed during the Project surveys.
Plegadis chihi	White-faced ibis	CDFW-WL, MBTA	This species occurs in dense tule thickets for nesting interspersed with areas of shallow water for foraging.	Absent. (Sites 1, 2, and 3). Habitat that could support this species is absent from the Project.
Toxostoma lecontei	Le Conte's thrasher	SSC, MBTA	This species occurs in desert flats with sparse vegetation and sandy soils. It nests in tall, robust saltbushes that can support a nest approximately 26-38 inches above the ground.	Moderate. (Sites 1, 2, and 3). Suitable habitat for nesting and foraging is present on the Project site. This species was not observed during the Project surveys.
Mammals				
Taxidea taxus	American badger	G5, S3, SSC	Typically, most abundant in drier open stages of shrub, forest, and herbaceous habitats with friable soils. Species requires open, uncultivated ground; preys on burrowing rodents.	High. (Sites 1, 2, and 3). Suitable habitat for the species is present on the Project site. This species nor it's sign was observed during the Project surveys.
Xerospermophilus mohavensis	Mohave ground squirrel	ST, BLM-S, SSC, G2G3, S2S3	Inhabits open desert scrub, alkali scrub, and Joshua tree woodland; feeds in annual grassland; restricted to Mojave Desert. Prefers sandy to gravelly soils. Species nests in burrows.	Absent. (Sites 1, 2, and 3). Suitable habitat for the species is present on the Project site. Potential Mohave ground squirrel burrows were observed on the Project site, during all Project surveys. This species was not directly observed during the Project surveys.
Perognathus inornatus	San Joaquin pocket mouse	G2G3, S2S3, BLM-S	This species occurs in arid annual grasslands, oak savannah and saltbush scrub in friable soils. It is endemic to the San Joaquin Valley region.	Absent. (Sites 1, 2, and 3). Suitable habitat for this species is present on the Project site. This species was not observed during the Project surveys.

Scientific Name	Common Name	Status	General Habitat Requirements	Potential for Occurrence on the Project Site
Perognathus alticolus inexpectatus	Tehachapi pocket mouse	SSC, G1G2T1T2, S1S2	Habitat is not well defined. Species generally found in grasslands, desert scrubland pine woodlands, and fallow fields.	Low. (Sites 1, 2, and 3). Suitable habitat for this species is present on the Project site. This species was not observed during the Project surveys.
Vulpes macrotis arsipus	Desert kit fox	Treated as CDFW - FP	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.	Present. (Sites 1, 2, and 3). Suitable habitat for this species is present on the Project site. Potential desert kit fox burrows were observed on all three Project sites. This species was not directly observed during the time of the Project surveys.
Corynorhinus townsendii	Townsend's big-eared bat	S-Candidate, G3G4, S2, BLM-S, SSC	Species inhabits 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.	Low. (Sites 1, 2, and 3). Suitable roosting habitat that could support this species is absent from the Project. There is a potential for this species to be a forager on the Project site. This species was not observed during the time of the Project surveys.
Onychomys torridus tularensis	Tulare grasshopper mouse	BLM-S, G5T1T2, S1S2, SSC	This species occurs in shrubland communities in hot, arid grassland and shrubland associations. These include blue oak woodlands, upper sonoran subshrub scrub, alkali sink and mesquite associations on the Valley Floor, and grasslands associations on the sloping margins of the San Joaquin Valley and Carrizo Plain region.	Absent. (Sites 1, 2, and 3). Suitable habitat for this species is present on the Project site. This species was not observed during the time of the Project surveys.

APPENDIX B
REPRESENTATIVE PHOTOGRAPHS OF AV APOLLO SOLAR PROJECT

PHOTO 1: Site 2 (Tours) during the reconnaissance survey.
Photograph facing southeast, taken by Belen Perez on June 1, 2016.

PHOTO 2: Site 2 (Tours) during the reconnaissance survey.
Photograph facing southwest, taken by Eric Schaad on June 1, 2016.

Photo Plate 1

PHOTO 3: Site 1 (Syracuse) during the reconnaissance survey.
Photograph facing north, taken by Eric Schaad on June 1, 2016.

PHOTO 4: Site 1 (Syracuse) during the reconnaissance survey.
Photograph facing southeast, taken by Eric Schaad on June 2, 2016.

Photo Plate 2

PHOTO 5: Sites 1 and 2 (Syracuse and Tours) Spring 2016 Floristic Survey
Photograph facing southwest, taken by Belen Perez on June 3, 2016.

PHOTO 6: Sites 1 and 2 (Syracuse and Tours) Spring 2016 Floristic Survey
Photograph facing north, taken by Mitchell Coleman on June 3, 2016.

Photo Plate 3

PHOTO 7: Site 2 (Tours - Water Delineation) Oak Creek observed during Spring 2016. Photograph facing northeast, taken by Tyler Schade on June 2, 2016.

PHOTO 8: Site 2 (Tours - Water Delineation) active floodplain area observed during Spring 2016. Photograph facing northeast, taken by Tyler Schade on June 2, 2016.

Photo Plate 4

PHOTO 9: Sites 1 and 2 (Syracuse and Tours) Summer 2016 Floristic Survey Photograph facing northeast, taken by Mitchell Coleman on August 8, 2016.

PHOTO 10: Sites 1 and 2 (Syracuse and Tours) Summer 2016 Floristic Survey Photograph facing west, taken by Mitchell Coleman on August 8, 2016.

PHOTO 11: Site 3 (Sunbow) during the reconnaissance survey
Photograph facing southeast, taken by Belen Perez on September 13, 2016.

PHOTO 12: Site 3 (Sunbow) during the reconnaissance survey.
Photograph facing north, taken by Belen Perez on September 13, 2016.

Photo Plate 6

PHOTO 13: Site 3 (Sunbow) during the Spring 2017 Floristic Survey
GPS coordinates: 34°57'29.52" N, 118°18'32.78" W.
Photograph facing southwest, taken by Belen Perez on April 7, 2017.

PHOTO 14: Site 3 (Sunbow) during the Spring 2017 Floristic Survey.
GPS coordinates: 34°57'28.89" N, 118°18'28.63" W.
Photograph facing southeast, taken by Belen Perez on April 7, 2017.

Photo Plate 7

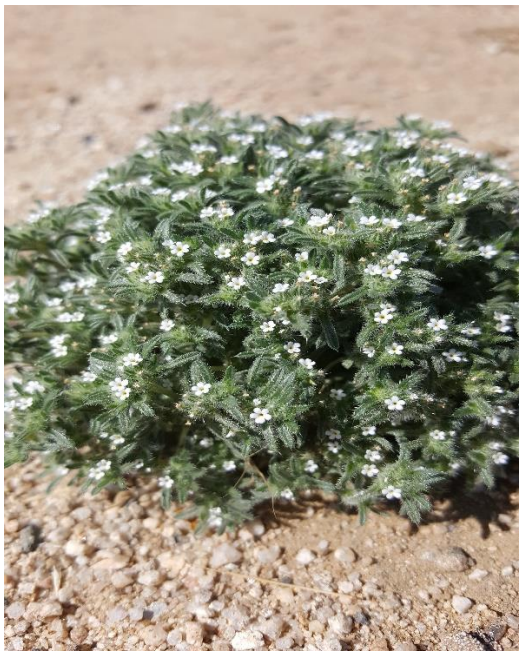

PHOTO 15: Clokey's Cryptantha located on Site 1 (Syracuse) during the Spring 2017 Floristic Survey. GPS coordinates: 34°57'30" N, 118°18'17" W. Photograph facing top to bottom, taken by Mitchell Coleman on May 12, 2017.

PHOTO 16: Lemmon's jewelflower located on Site 3 (Sunbow) during the Spring 2017 Floristic Survey. GPS coordinates: 34°57'19" N, 118°18'20" W. Photograph facing top to bottom, taken by Mitchell Coleman on April 7, 2017.

PHOTO 17: Site 2 (Tours) during the Spring 2017 Floristic Survey.
GPS coordinates: 34°57'2.64" N, 118°17'48.09" W.
Photograph facing southwest, taken by Belen Perez on May 5, 2017.

PHOTO 18: Site 2 (Tours) during the Spring 2017 Floristic Survey.
GPS coordinates: 34°56'45.91" N, 118°17'46.88" W.
Photograph facing northwest, taken by Belen Perez on May 5, 2017.

Photo Plate 9

PHOTO 19: Site 1 (Syracuse) during the Spring 2017 Floristic Survey.
Photograph facing south, taken by Karissa Denney on May 12, 2017.

PHOTO 20: Site 1 (Syracuse) during the Spring 2017 Floristic Survey.
Photograph facing west, taken by Karissa Denney on May 12, 2017.

PHOTO 21: Active red-tailed hawk nest located in transmission tower west of Site 1 (Syracuse). GPS coordinates: 34° 94'32" N, 118°31'58" W. Photograph facing south, taken by Lisa Sandoval on April 25, 2017.

PHOTO 22: Active raven nest located in the transmission tower east of the Project area, located along the Los Angeles DWP Easement. GPS coordinates: 34°94'32" N, 34°95'01" W. Photograph facing north, taken by Belen Perez on June 2, 2017.

Photo Plate 11

DELINEATION OF WATERS

SUNBOW SOLAR PROJECT SITE

KERN COUNTY, CALIFORNIA

MAY 2017

DELINEATION OF WATERS

SUNBOW SOLAR PROJECT SITE
KERN COUNTY, CALIFORNIA

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Table of Contents

EXECUTIVE SUMMARY *1*

1.0 Introduction *1*

2.0 METHODS *3*

3.0 RESULTS *10*

3.1 Land Use and Topographic Relief 10
3.2 Watersheds and Regional Hydrology 10
3.3 Plant Communities 12
3.4 Soils 12
3.5 Precipitation 16
3.6 USGS Topographic Drainages and National Wetlands Inventory 16
3.7 Delineated Wetlands and Waters 18
3.7.1 DRAINAGES 18

4.0 CONCLUSIONS *20*

5.0 REFERENCES *21*

APPENDICES

Appendix A Photoplates

List of Figures

Figure 1 Regional Map of the Sunbow Solar Site, ... 3
Figure 2 Vicinity Map of the Sunbow Solar Project Site, ... 4
Figure 3 Project Site, Sunbow Solar Project, Kern County, California 11
Figure 4 FEMA Designated 100-Year Flood Zone Boundary Encompassing the Sunbow Project Site, Kern County, California 13
Figure 5 Soils on the Sunbow Solar Project Site, Kern County, California 15
Figure 6 USGS Blue-Lines on the Sunbow Solar Site, Kern County, California 17
Figure 7 Delineated Waters Map on the Sunbow Project Site, Kern County, California 20

List of Tables

Table 1 Indicators of Stream Activity (Brady 2013) 7
Table 2 Plants Observed on the Sunbow Solar Project Site, Kern County, California 14
Table 3 Water Features on the Sunbow Project Site, Kern County, California 19

EXECUTIVE SUMMARY

Lend Lease (US) Energy Development, LLC (Lend Lease) proposes to construct and operate a 20 megawatt (MW) photovoltaic solar facility. The Project would be constructed on the Sunbow Solar site (Project), which encompasses approximately 165 acres on the southwestern edge of Kern County, California. The Project site is situated 11 miles south of State Route 58 and eight miles east of State Route 14, west-northwest of the intersection of Backus Road and Tehachapi Willow Springs Road. The Project site occurs within zoning district A FP (Exclusive Agriculture, Floodplain Combining), but has not been cultivated. The Project site consists of desert landscape and, except for occasional signs of off-highway vehicle use, is generally in an undisturbed condition.

Quad Knopf, Inc (DBA QK) conducted a delineation of waters (including potential wetlands) on the Project site. These data will allow impacts to waters to be determined based upon final Project design, and the determination of any permitting that would need to be completed for the Project.

Prior to conducting field investigations, a review of available literature and a search of the National Wetlands Inventory (NWI), aerial imagery, and topographical maps were conducted. Field investigations were conducted on September 13, 2016 and on April 11, 2017 to identify and delineate all water features on the Project site. The Project site was evaluated for the presence of wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the most recent version of the *Arid West Supplement (Version 2.0)* (USACE 2008a). Linear drainages and other similar waters were delineated using methodologies and diagnostic characteristics presented in the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Field Guide) (USACE 2008b) and *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* and the *Appendix G: MESA Field Guide: Mapping Episodic Stream* (Brady 2013) document.

The Project site is located within the Tropico Hill-Oak Creek Watershed in the Antelope Hydrologic Unit, within the South Lahontan Hydrologic Region. The National Hydrology Dataset (NHD) depicts one un-named blue-line drainages occurring on the Project site. This drainage originates 3.75 miles northwest of the Project site in the foothills of the Tehachapi Mountains. The blue-line drainage crosses the center of the Project site along a north-northwest and south-southeast axis until it joins with another blue-line drainage that occurs just east of the Project site.

The delineated boundaries of the on-site unnamed blue-line drainage and the off-site blue-line drainage corresponded closely to the available blue-line map of these features. The on-site blue-line drainage included an active floodplain, as defined by the California Department of Fish and Wildlife. The off-site blue-line drainage included an active floodplain, which expanded on the Project site. Project water features are considered to be isolated episodic waters, which typically only flow for brief periods in response to rainfall.

Two water features were identified and delineated on the Project site, but only portions of the off-site blue-line drainage were delineated as they occurred on the site. The watercourse of the unnamed drainage (Drainage 1) encompasses 7.16 acres and extends 1,820 feet in length on the Project site. The watercourse of Drainage 2 (the off-site blue-line drainage discussed above) encompasses 7.33 acres and extends approximately 1,965 feet in length on the Project site. This feature extends outside the Project site and encompasses a much larger area than what occurs on the Project site. As isolated non-wetland drainages that do not establish connectivity with navigable waters, the water features on the Project site are not considered waters of the U.S. However, both water features occurring on the Project site are likely waters of the State and would fall under the jurisdictional authority of the Regional Water Quality Control Board (RWQCB). The RWQCB typically takes jurisdiction over the ordinary high water or low-flow channel, and bank area of water features. The California Department of Fish and Wildlife (CDFW) would also take jurisdiction over the water features, associated bank habitat, and active floodplains associated with these features.

1.0 INTRODUCTION

Lend Lease (US) Energy Development, LLC (Lend Lease) proposes to construct and operate a 20 megawatt (MW) photovoltaic solar facility. The Project would be constructed on the Sunbow Solar site (Project), which encompasses approximately 165 acres on the southwestern edge of Kern County, California. The Project site is situated 11 miles south of State Route 58 and eight miles east of State Route 14, west-northwest of the intersection of Backus Road and Tehachapi Willow Springs Road. The Project site occurs within zoning district A FP (Exclusive Agriculture, Floodplain Combining), but has not been cultivated. The Project site consists of desert landscape and, except for occasional signs of off-highway vehicle use is generally in an undisturbed condition. Several operating solar facilities exist within a 10-mile radius of the Project site. The nearest operating solar facilities include the Catalina Renewable Energy Project, located two miles to the southwest, and SEPV Solar, which is located approximately five miles north of the Project site.

This report includes the results of a delineation of wetlands and waters that Quad Knopf, Inc. (DBA QK) conducted on the Project site. Wetlands that are under federal jurisdiction are defined as:

"*Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas*" [40 CFR 230.3(t)].

Waters of the United States are defined as:

"*All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, all impoundments of waters otherwise defined as waters of the United States under this definition, tributaries of waters previously identified, the territorial sea, and wetlands adjacent to waters (other than waters that are themselves wetlands) previously identified"* [40 CFR 230.3(s)].

Waters of the State are defined in the California Water Code as:

"*Any surface water or groundwater, including saline waters, within the boundaries of the state*" [Section 13050 (e)].

This definition for waters of the State does not distinguish between wetlands and waters, but includes all surface waters, including non-jurisdictional wetlands. This is a much broader definition than that for Waters of the U.S.

In the *Appendix G: The MESA Field Guide: Mapping Episodic Stream Activity,* the California Department of Fish and Wildlife (CDFW) defines stream as:

"A body of water that flows perennially or episodically and that is defined by the area in which water currently flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators" (Brady 2013). The historic hydrological regime is defined as circa 1800 to present (CDFW 2010).

QK delineated waters of the U.S. and waters of the State that occur on the Project site to:

- Document existing site conditions;
- Determine the presence of waters that occur on the Project site using standardized diagnostic criteria; and,
- Delineate wetland boundaries, boundaries of the Ordinary High Water for those features that may be under the jurisdictional authority of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB), and boundaries of the watercourse for those features that may be under the jurisdictional authority of the CDFW.

Tasks that were completed include:

- Reviewing previous environmental reports, topographic maps and aerial photography;
- Reviewing National Wetland Inventory (NWI) data and maps, National Hydrography Dataset (NHD) and topographic maps, and published soil survey data and maps;
- Conducting a field survey of the Project site to locate all potential waters;
- Determining potential waters of the U.S. at the Ordinary High Water Mark (OHWM) using the *A Field Guide to the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b) where warranted;
- Documenting soil conditions, hydrological conditions, and plant community composition of potential wetlands following the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* where warranted (USACE 2008a);
- Documenting soil conditions, hydrological conditions, and plant community composition of potential waters following the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants* and *Appendix G: The MESA Field Guide: Mapping Episodic Stream Activity* (Brady 2013);

- Determining the presence and distribution of, and mapping the boundaries of, wetlands and other waters located on the Project site based upon standardized characteristics.

This report summarizes the distribution of water features that were found on the Project site. These data will allow impacts to the water features to be determined based upon final Project design, and to determine the necessary permitting that would be needed. This report will also provide information sufficient to allow the USACE, RWQCB and CDFW to conduct a wetland and waters verification and prepare a jurisdictional determination for the Project.

2.0 METHODS

A literature review and database search were conducted prior to performing field investigations. The NWI (USFWS 2017) was searched for known occurrences of wetlands, and United States Geological Survey (USGS) 7.5 minute topographic maps were evaluated for the presence of known natural drainage features ("blue-line") and other potential waters occurring on and near the Project site. Aerial imagery (ArcGIS Online 2017) was reviewed to identify differences in vegetative cover, slope, and general terrain that can be indicative of water presence. Information on regional hydrology, including the NHD from the United States Geological Survey (USGS), was obtained from the Geospatial Data Gateway website of the Natural Resources Conservation Service and the Lahontan Region Basin Plan (RWQCB 2015). Weather and precipitation data were obtained from the Western Regional Climate Center (WRCC 2017) and soils data were obtained from the Web Soil Survey (USDA-NRCS 2017).

QK Associate Environmental Scientist Tyler Schade conducted field investigations on September 13, 2016 and April 11, 2017 to identify and delineate wetlands and waters on the Project site. Pedestrian transects were conducted in a manner to ensure 100 percent visual coverage of the site. Due to the problematic nature of mapping wetlands and waters in arid environments, a combination of methodologies was used to conduct the delineation. The Project site was evaluated for the presence of wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the most recent version of the *Arid West Supplement (Version 2.0)* (USACE 2008a). The Project site was inspected for wetland indicators such as hydric soils, hydrophytic vegetation, and hydrology. If wetland conditions were met, paired sample points were located on either side of each feature boundary to obtain information describing both wetland and upland conditions. The locations of sample points were mapped using a Trimble GeoXH Global Positioning System (GPS) unit. At each sample point, the presence or absence of hydrologic indicators was noted, soils were characterized, and present vegetation was analyzed following standard procedures. Hydrologic indicators include the presence of absence of hydrologic indicators was noted, soils were characterized, and present vegetation was analyzed following standard procedures. Hydrologic indicators include the presence of reduced iron, water-stained leaves, drainage patterns, drift deposits, surface soil cracks, saturation visible on aerial imagery, and other diagnostic characteristics. Soil samples were

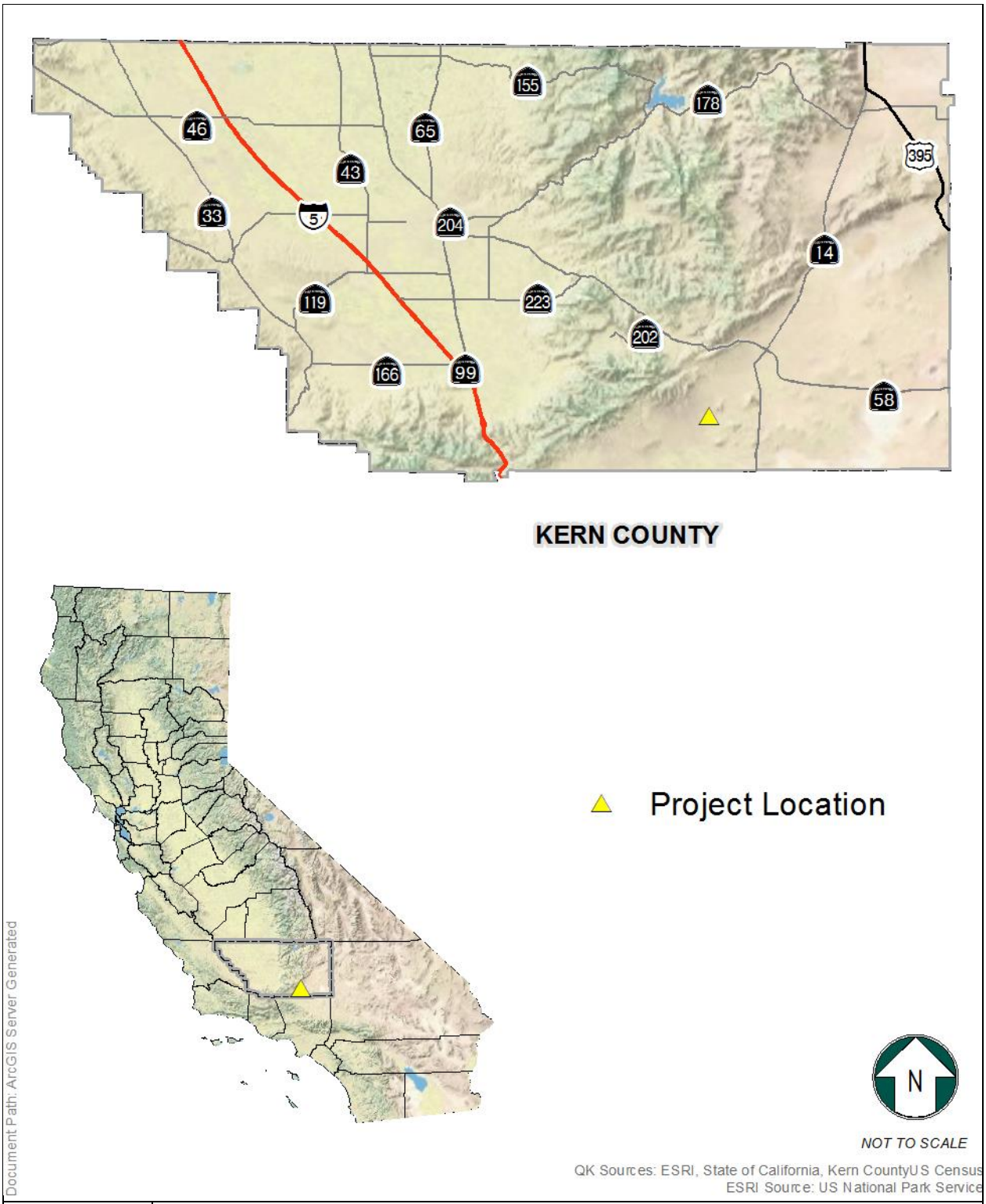


Figure 1
Regional Map of the Sunbow Solar Site,
Kern County, California

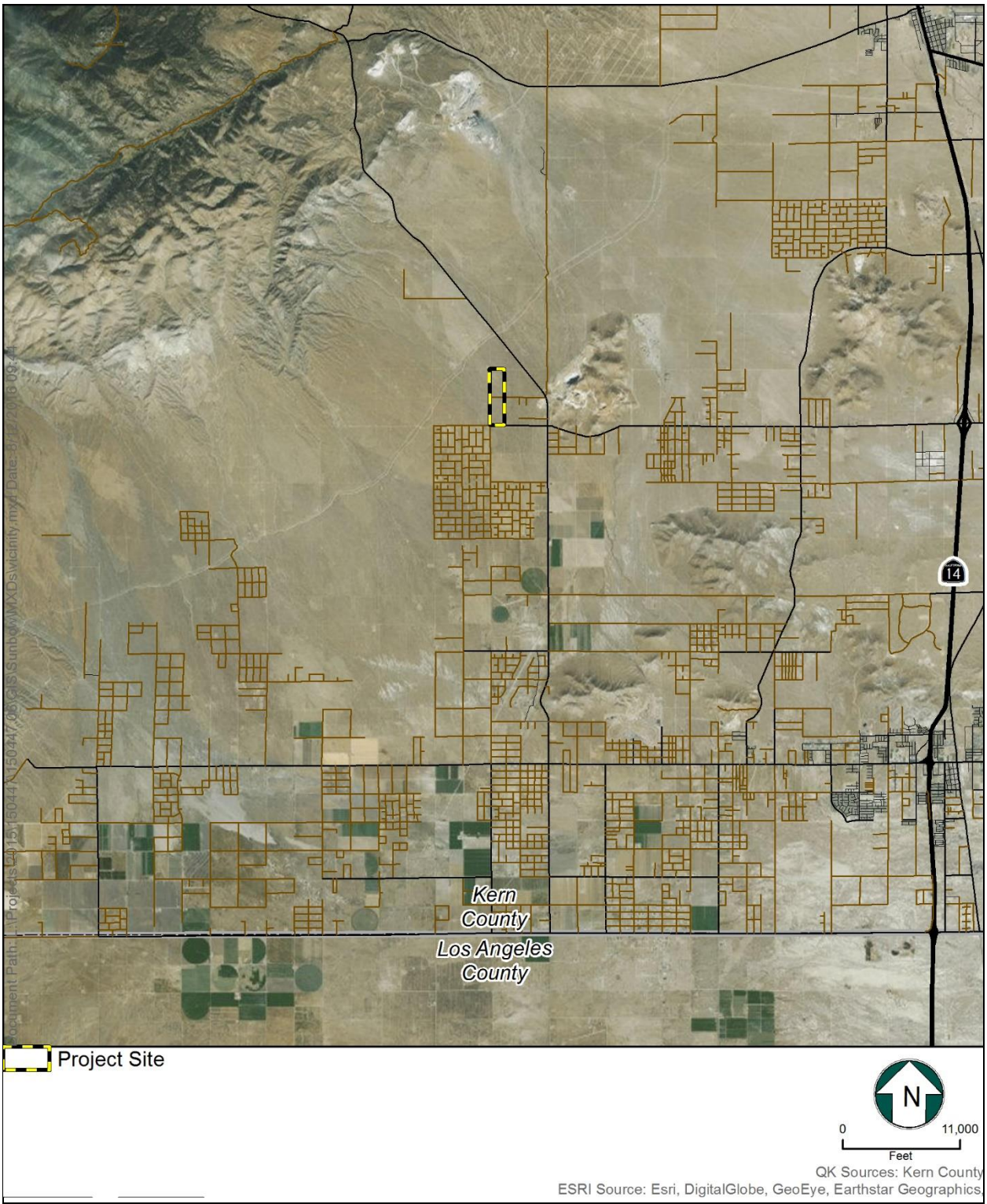


Figure 2
Vicinity Map of the Sunbow Solar Project Site, Kern County, California

excavated and soils were inspected to characterize soil profiles at each sample plot, and to compare site observations with soil conditions described in the Web Soil Survey (USDA-NRCS 2017). Soil horizonation, texture, moisture content, depth to saturation, and/or standing water was noted for each soil pit. The presence or absence of particulate organic matter, redoximorphic features, depleted matrices, gleying, and other diagnostic characteristics were noted. Soil colors were determined using Munsell soil color charts (*sensu* Munsell 2000). The cover of observed plant species was visually estimated and recorded. Dominant plant species were identified in accordance with the USACE 50/20 Rule. Plant identification was determined using the *Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). The wetland indicator status of each plant species was determined using the National Wetland Plant List: 2016 Wetland Ratings (Lichvar, R.W. 2016). The hydrologic, soil, and vegetative data recorded at the sample points were transcribed onto USACE Arid West Region Wetland Determination Data Forms.

Drainages were delineated using methodologies and diagnostic characteristics presented in the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide*, including *Appendix G: The MESA Field Guide: Mapping Episodic Stream Activity* (Brady 2013), with references to the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Field Guide) (USACE 2008b). Additionally, the *Review of Stream Processes and Forms in Dryland Watersheds*, which shares many similarities with the MESA guide, was also referenced (CDFW 2010). Both the MESA guide and the USACE Field Guide datasheets require entries for standard evaluative characteristics including fluvial and terrestrial indicators, vegetation cover, transportation, deposition, flow indicators, and sediment texture. The primary differences between datasheets in the USACE Field Guide and the MESA Guide pertain to the identification of geomorphic units and the significance of the OHWM. The MESA guide recommends consultation with a professional geologist to identify basic geological and geomorphic units. The MESA guide discourages using the traditional OHWM indicators to define the boundaries of a watercourse, and instead recommends using the local topography, elevations of land, and specific indicators of fluvial activity to identify the boundaries of a watercourse. The MESA guide is the primary guiding document with the USACE Field Guide only used when traditional OHWM, bed, and bank are observed, as appropriate.

Dryland, or episodic, stream processes are often outside the normal range of the hydrologic and morphologic characteristics of their temperate and humid region counterparts, and their hydrology, sediment transport characteristics, and resultant channel forms cannot be reliably modeled by extrapolation from temperate and humid region fluvial systems (CDFW 2010) (Brady 2013). Potential water features on the Project site were initially identified by noting changes in geomorphology, vegetative distribution, fluvial indicators, and various aspects of hydrology and sedimentation. Some of the defining geomorphic characteristics of dryland stream processes include:

- Short-lived, localized, and highly variable flow, often referred to as a flashy discharge pattern;

- Great variability in flood magnitudes (high magnitude, low-frequency), such that discharge of floods tends to be significantly greater than the mean annual flow Downstream decreases in flow volume;
- Asynchronous flow that produces abrupt morphological changes at tributary confluences;
- Abrupt and episodic deposition of sediments that creates a fabric of highly varied transient channel forms;
- A flat and plane bed topography at lower reaches;
- Low sinuosity and high width-to-depth channel ratios;
- Indefinite floodplain boundaries;
- Channel bottoms that support vegetation;
- Numerous lower stream order channels that are tributaries to main watercourses; and
- Flow path uncertainty that results in alluvial fan formation.

For water features on the Project site, the active floodplain, when present, was considered to be the lateral limit of non-wetland waters. The active floodplain is an area associated with a stream over which water and sediment from that stream overflow into when the capacity of the channel is exceeded (Brady 2013). The high-flow channel, sometimes called a "secondary channel," carries water during high flows or flood flows and may include topographically higher channels (higher than low-flow channel) or out of channel flows, including those over benches or around islands. The low-flow channel is the topographically lowest stream channel, or the dominant subchannel, within a channel watercourse (Brady 2013).

The identification of terrestrial (upland) and fluvial processes guide the mapping of the watercourse boundary (Table 1). These indicators may or may not be present in every feature, and may exhibit spatial and temporal variability in position over the length of a feature or laterally across it.

Table 1
Indicators of Stream Activity (Brady 2013)

Terrestrial Processes	Fluvial indicators	
Av horizon	Bar forms	Wrinkle marks
Biotic soil crusts	Bifurcated flow	Cut banks
Biotubation	Drainage swales	Exposed roots
Caliche	Flow lineations	Headcuts
Carbonate etching	Imbricated gravel	Rills
Coppice dunes	Levee ridged	Scour
Deflated surface	Mud (cracks, curls, drapes)	Secondary channels
Drainage swales	Organic drift	Water-cut benches
First-order streams	Out-of-channel flow	Water level marks

Over-turned rocks	Overturned rocks	Algal crusts
Pavement	Ripples	Beach ridges
Relict bar and swale	Secondary channels	Biotic soul crusts
Rock fractured in place	Sediment plastering	Sand-filled channels
Rock varnish	Sediment ramps	Springs
Rock weathering	Sediment sheets	Substrate staining
Rubified rock undersides	Sediment sorting	
Soil development	Sediment tails	
Surface rounding of landform	Vegetation-channel alignment	
Woody debris in place	Wrack	

Upland, fluvial, and watercourse indicators were recorded on the Episodic Stream Indicator Data Sheet at representative locations along the channel feature that reflected existing indicators of the channel. The MESA guide, specifically the *Review of Channel Forms and Geomorphic Units* and *Photographic Atlas* sections, was used to fill out the data forms and map the watercourse boundaries.

The stepwise delineation procedure that was used consisted of:

1. Aerial imagery was reviewed for evidence of stream activity. Previous site visits had been made to facilitate reconnaissance-level surveys, and, as such, the general locations of channels were known. The entire site was also surveyed by foot to identify potential watercourses and signs of fluvial activity.

2. An appropriate transect that encompassed a cross-section of the full potential watercourse was identified and endpoints were mapped.

3. The entire drainage was walked, including cross-sectional transect, and the physical setting, describing surficial materials and conditions, including disturbance and/or anthropogenic influences on the channel, was noted.

4. A cross-sectional sketch of the watercourse from edge to edge was drawn and labeled. Approximate width and elevation differences were noted.

5. The upland indicators (terrestrial and fluvial) were marked on the data sheet, where applicable, including substrate particle size, terrestrial indicators, fluvial indicators, total vegetation cover, dominant and co-dominate species and total cover, and representative height and width of dominant and co-dominant species. Differences in total vegetation density between upland and fluvially-active areas (including watercourse) were indicated.

6. The watercourse indicators were marked on the data sheet, where applicable, including substrate particle size, transportation, deposition, and flow transition indicators, erosion indicators, total vegetation cover, dominant and co-dominate species and total cover, and representative height and width of dominant and co-

dominant species. Differences in total vegetation density between the low-flow channel and adjacent floodplain were indicated.

7. The transition area between the low-flow channel and high-flow channel or bank, depending on water feature, was identified by observing changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The low-flow channel was then delineated.

8. The transition area between the high-flow channel or bank and active floodplain was identified by observing changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The high-flow channel or bank was then delineated.

9. The transition area between the active floodplain and upland area was identified by observing changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The active floodplain was then delineated.

10. Photographs were taken of each watercourse, data point locations, and representative fluvial activity.

The watercourse includes all functionally related swales, first-order streams, single-thread channels, compound channels, braided channels, discontinuous and distributary channel networks, secondary channels, and active floodplains (Brady 2013). For some watercourses, the out-of-channel flow occurred in both the high-flow channel and the active floodplain, separated by topographic and/or elevation changes.

Watercourse boundaries, including the low-flow channel and active floodplain, data points, and transects were mapped with a Trimble GeoXH Global Positioning System (GPS) unit. Data were post-processed with Pathfinder Office to ensure sub-meter accuracy. Watercourse delineation maps were produced by overlaying the survey GPS data with 2017 ortho-rectified one-foot pixel resolution color aerial imagery (ArcGIS Online 2017).

3.0 RESULTS

This section describes various characteristics of the Project site including historic and current land use, topographic relief, the presence and distribution of plant communities, the presence and distribution of soil types, precipitation and growing season, waters information based upon the NWI database, USGS topographic maps, and results of the waters delineation.

3.1 Land Use and Topographic Relief

The Project site is located near the southeast region of Kern County, California in the Mojave Basin and Range ecoregion (USEPA 10.2.1) and the Willow Springs United States Geological Survey (USGS) 7.5-minute topographical quadrangle. The Project site is located in the western ½ of Section 18, Township 10 North, Range 13 West, San Bernardino Base and Meridian (SBB&M). The Project site is approximately nine miles northwest of Rosamond, nine miles southwest of the City of Mojave, 11 miles south of State Route 58, and 8 miles east of State Route 14 (see Figures 1 and 2). The Project site is bounded by Backus Road to the south, W. Trotter Avenue (which exists as a functional dirt road) to the north, the Section 18 west boundary to the west, and by Longspur Street (which currently exists as a derelict dirt road) to the east. The site, in addition to the surrounding lands, is zoned for agriculture but has not been cultivated as far as surveyors could determine. The Project site consists mostly of undisturbed Creosote shrubland (Figure 3).

The foothills of the Tehachapi Range occur 5.5 miles northwest of the Project site, and the Central Transverse Range occurs 20 miles southwest of the Project site. The Project site and surrounding land are mostly flat and exhibit little topographic variation. Cactus Gold Mine, an active mine, is located approximately 2,200 feet to the northeast of the Project site. Preserve land managed by the Bureau of Land Management (BLM) is located approximately one-mile northeast of the Project site. Signs of off-highway vehicle use were observed on and near the Project site.

3.2 Watersheds and Regional Hydrology

The Project site is located within the Tropico Hill-Oak Creek Watershed in the Antelope Hydrologic Unit, within the South Lahontan Hydrologic Region. The South Lahontan Hydrologic Region represents about 17 percent of the land (26,732 square miles) area in California. The region includes Inyo County and portions of Mono, San Bernardino, Kern, and Los Angeles counties. It is bounded to the north by the drainage divide between Mono Lake and East Walker River; to the west and south by the Sierra Nevada, San Gabriel, San Bernardino, and Tehachapi mountains; and to the east by the State of Nevada. In addition to the Sierra Nevada, important mountain ranges in the region include the White Mountains, the Avawatz Mountains, and the Argus and Coso ranges. The mountains are separated by many U-shaped alluvial valleys, some of which are quite large. Drainage for most of the watershed in the region is internal. Along with the arid climate, this accounts for the presence of many dry lakebeds or playas in the region. Major lakes and reservoirs within the region include Mono Lake, June Lake, Convict Lake, Crowley Lake, and Tinemaha Reservoir

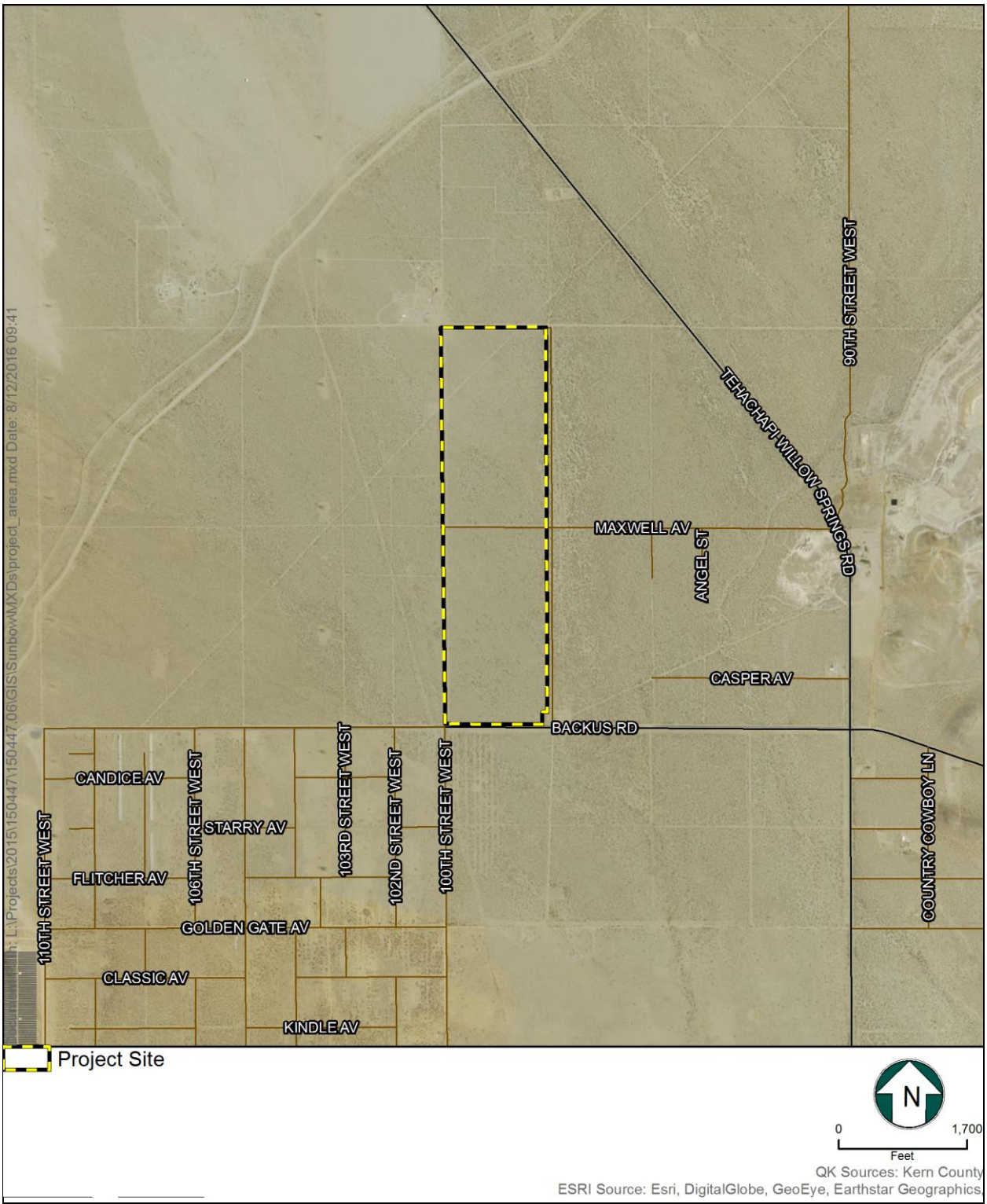


Figure 3
Project Site, Sunbow Solar Project,
Kern County, California

in the north and Lake Arrowhead, Silverwood Lake, and Lake Palmdale in the south. Most of the perennial rivers are in the northern portion of this hydrologic region. These include the Owens River and Rush Creek. In the south, the Mojave and Amargosa rivers are present, but typically dry for most of the year. Significant geographic features within the Antelope Hydrologic Unit include the Tehachapi Range and the Transverse Coastal Range. Both ranges act in concert to create a wide rain shadow, which contributes to the dry conditions of the Mojave Desert. The entire Project site occurs within a 100-year flood zone as defined by the Federal Emergency Management Agency (Figure 4).

3.3 Plant Communities

The Mojave Creosote Bush Scrub community is the only natural vegetation community on the Project site. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes (Sawyer, Keeler-Wolf 1995). Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation, and extending into northwestern Arizona and southern Utah. Some creosote bush scrub associations are considered sensitive habitats by CDFW when specific vegetation alliances or associated species are present, and it is a natural community that is tracked in the California Natural Diversity database (CNDDB).

The creosote scrub vegetation on the Project site is dominated by creosote bush (*Larrea tridentata*). Other common shrubs occurring on the Project site include burrobush (*Ambrosia dumosa*), Cooper's boxthorn (*Lycium cooperi*), Joshua tree (*Yucca brevifolia*), allscale saltbush (*Atriplex polycarpa*), and rubber rabbitbrush (*Ericameria nauseosa*). The Project site also includes an herbaceous layer consisting of a mixture of native and invasive annual grasses and forbs in the upland area (Table 2). Vegetation in the low-flow channel was dominated by red-stemmed filaree (*Erodium cicutarium*), peppergrass (*Lepidium nitidum*) and red brome (*Bromus madritensis* ssp. *rubens*.). Vegetation in the active floodplain was dominated by red brome, ripgut brome (*Bromus diandrus*), common fiddleneck (*Amsinckia intermedia*), and common oat (*Avena sativa*).

3.4 Soils

One soil type is present on the Project site: Cajon gravelly loamy sand (Figure 5).

Cajon Loamy Sand: The Cajon soil series consists of very deep, somewhat excessively well drained soils. These soils are formed in sandy alluvium from granitic rocks. Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. They have negligible to low runoff and rapid permeability; Cajon soils with sandy loam surface textures have moderate rapid to over rapid permeability.

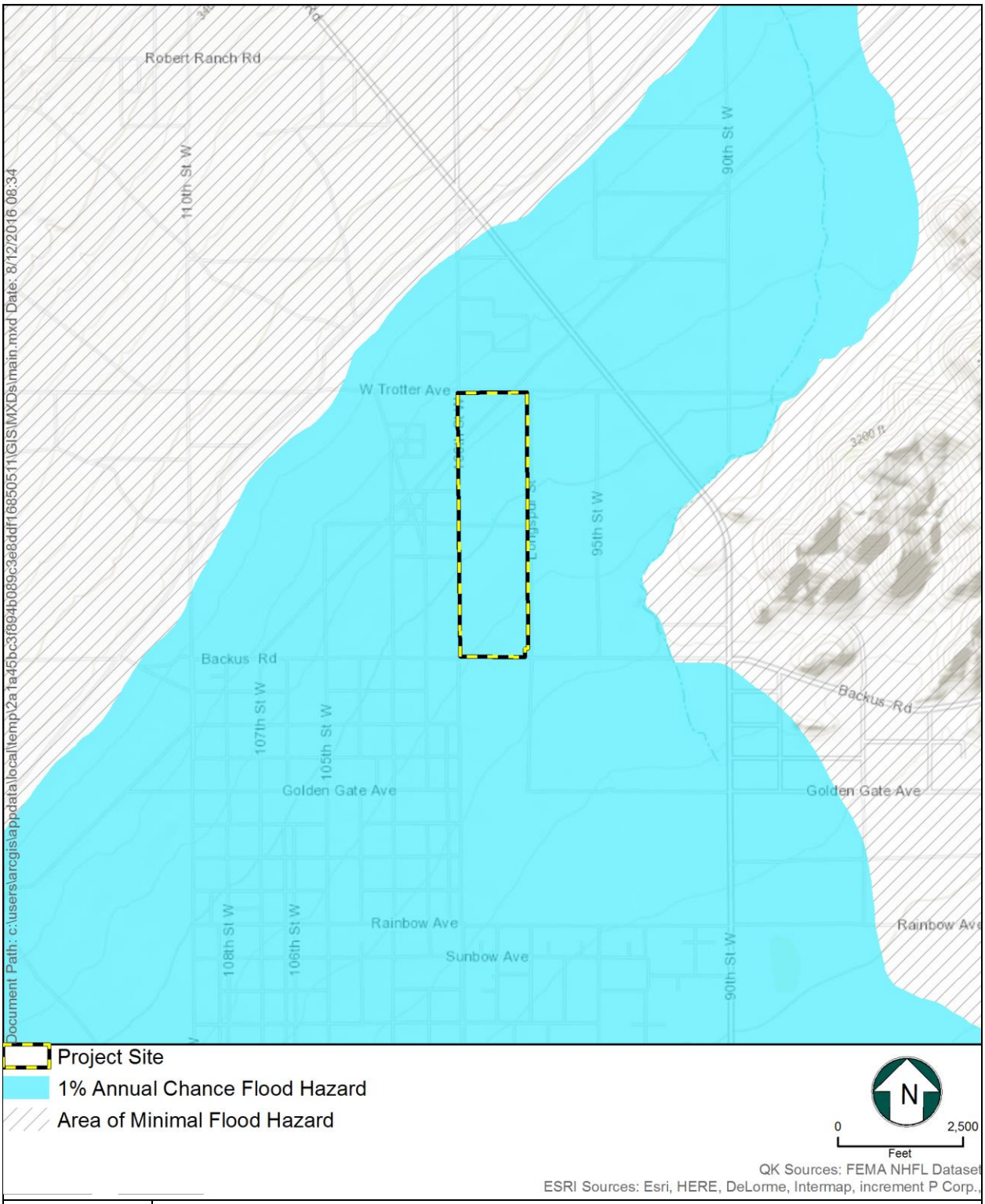


Figure 4
FEMA Designated 100-Year Flood Zone Boundary Encompassing the Sunbow Project Site, Kern County, California

Table 2
Plants Observed on the Sunbow Solar Project Site, Kern County, California

Scientific Name	Common Name
Ambrosia dumosa	white bursage
Ambrosia salsola	burrobush
Amsinkia intermedia	common fiddleneck
Anisocoma acaulis	scale bud
Astragalus lentiginosus var. fremontii	freckled milk vetch
Atriplex canescens	four wing saltbush
Avena sativa	common oat
Bromus diandrus	ripgut brome
Bromus madritensis ssp. rubens	red brome
Camissoniopsis pallida	pale yellow sun cup
Caulanthus lemmonii	Lemmon's jewelflower
Chaenactis fremontii	Fremont pincushion
Chylismia caliviformis	clavate fruited primrose
Descurainia pinnata	western tansy mustard
Dichelostema capitatum	blue dicks
Ephedra viridis	Mormon tea
Erodium cicutarium	red-stemmed filaree
Eschscholzia minutiflora	pygmy poppy
Euphorbia albomarginata	rattlesnake sandmat
Festuca microstachys	small fescue
Gilia brecciarum	small gilia
Hirschfeldia incana	wild mustard
Larrea tridentata	creosote bush
Lasthenia californica	goldfields
Lepidium nitidum	peppergrass
Linanthus parryae	sand blossom
Lupinus sparsiflorus	Mojave lupine
Lycium cooperi	Cooper’s boxthorn
Malacarthix glabrata	desert dandelion
Mentzelia congesta	blazing star
Nemophila menziesii	baby blue eyes
Phacelia crenulata	heliotrope phacelia
Plagiobothrys nothofulvus	rusty popcorn flower
Platystemon californianus	cream cups
Saliva columbariae	chia sage
Schismus arabicus	Arabian schismus
Stipa hymenoides	Indian rice grass
Uropappus lindleyi	silver puffs
Yucca brevifolia	Joshua tree

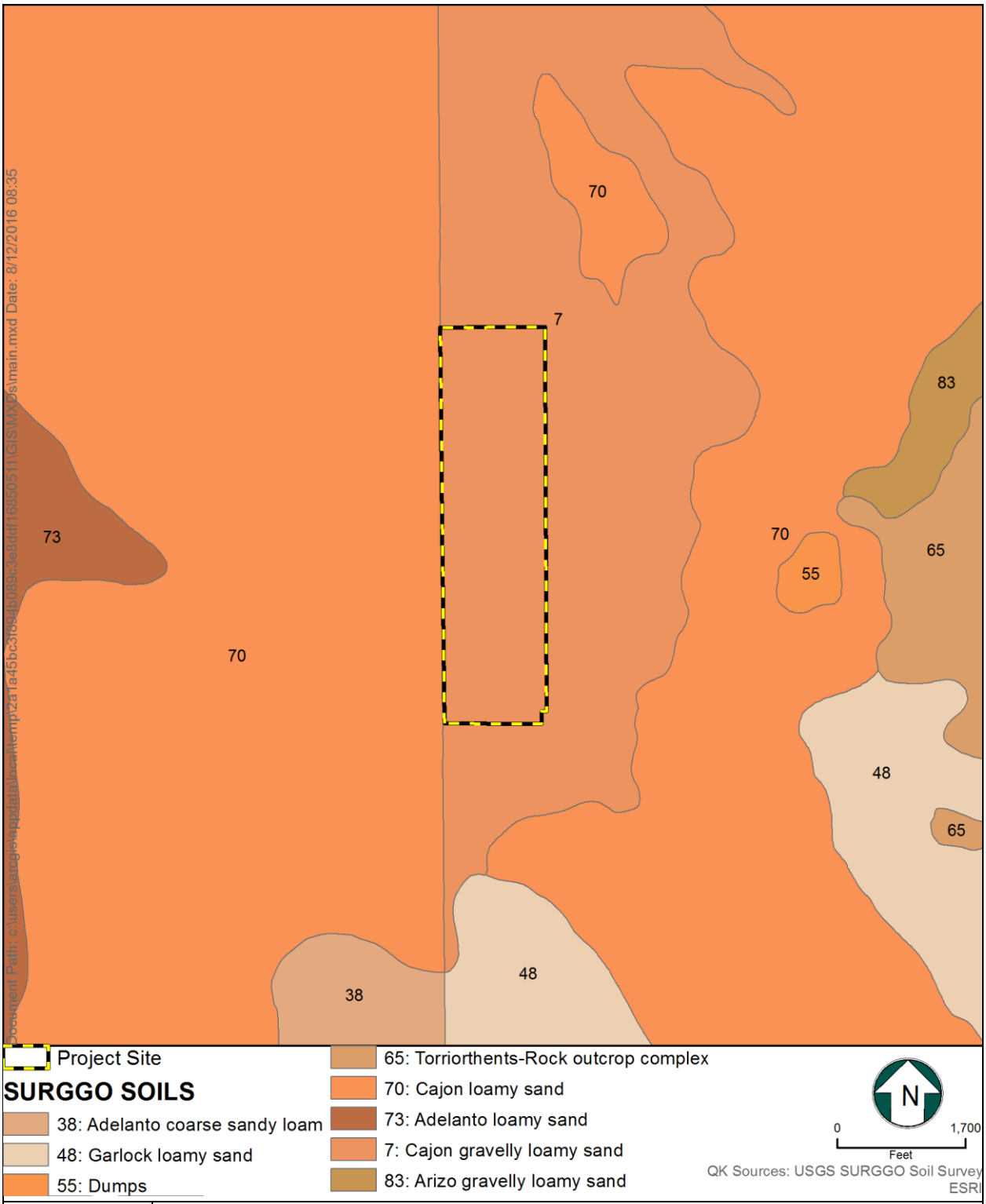


Figure 5
Soils on the Sunbow Solar Project Site, Kern County, California

3.5 Precipitation

The Project site occurs in the Mojave Desert, which is separated from the influence of the ocean by the Coast Range and is in a broad rain shadow, leading to relatively arid conditions year-round. On average, temperatures reach a maximum of 98.5 degrees Fahrenheit (F) in July and a minimum of 34.2F in January. In the City of Mojave, which houses the largest population in the vicinity, the average annual precipitation is approximately 6.34 inches and there are, on average, only 16 days each year of frost (Cooperative Observer Program ID: 045756) (WRCC 2017). Normally, approximately 90 percent of the precipitation occurs from November to April (WRCC 2017). The arid conditions and variable precipitation from year to year, coupled with extremes in temperature, create a harsh and unpredictable environment for a variety of wildlife. Consequently, the availability of water or soil moisture is a critical factor that determines the broad distribution of vegetation types and associated wildlife species in the region.

3.6 USGS Topographic Drainages and National Wetlands Inventory

The NHD depicts one un-named blue-line drainages occurring on the Project site (Figure 6). This drainage originates 3.75 miles northwest of the Project site in the foothills of the Tehachapi Mountains. The blue-line drainage crosses the center of the Project site along a north-northwest and south-southeast axis until it joins with another blue-line drainage that occurs just east of the Project site.

The delineated boundaries of the on-site unnamed blue-line drainage and the off-site blue-line drainage corresponded closely to the available blue-line map of these features. The on-site blue-line drainage included an active floodplain, as defined by CDFW. The off-site blue-line drainage included a substantial active floodplain, which primarily occurred east of the site, but did expand upon the Project site. Project water features are considered to be isolated episodic waters, which typically only flow for brief periods in response to rainfall.

No wetlands occurred on or near the Project site. The NWI shows an excavated lacustrine feature (L2USJX) located 1.92 miles east of the Project site, adjacent to Cactus Gold Mine.

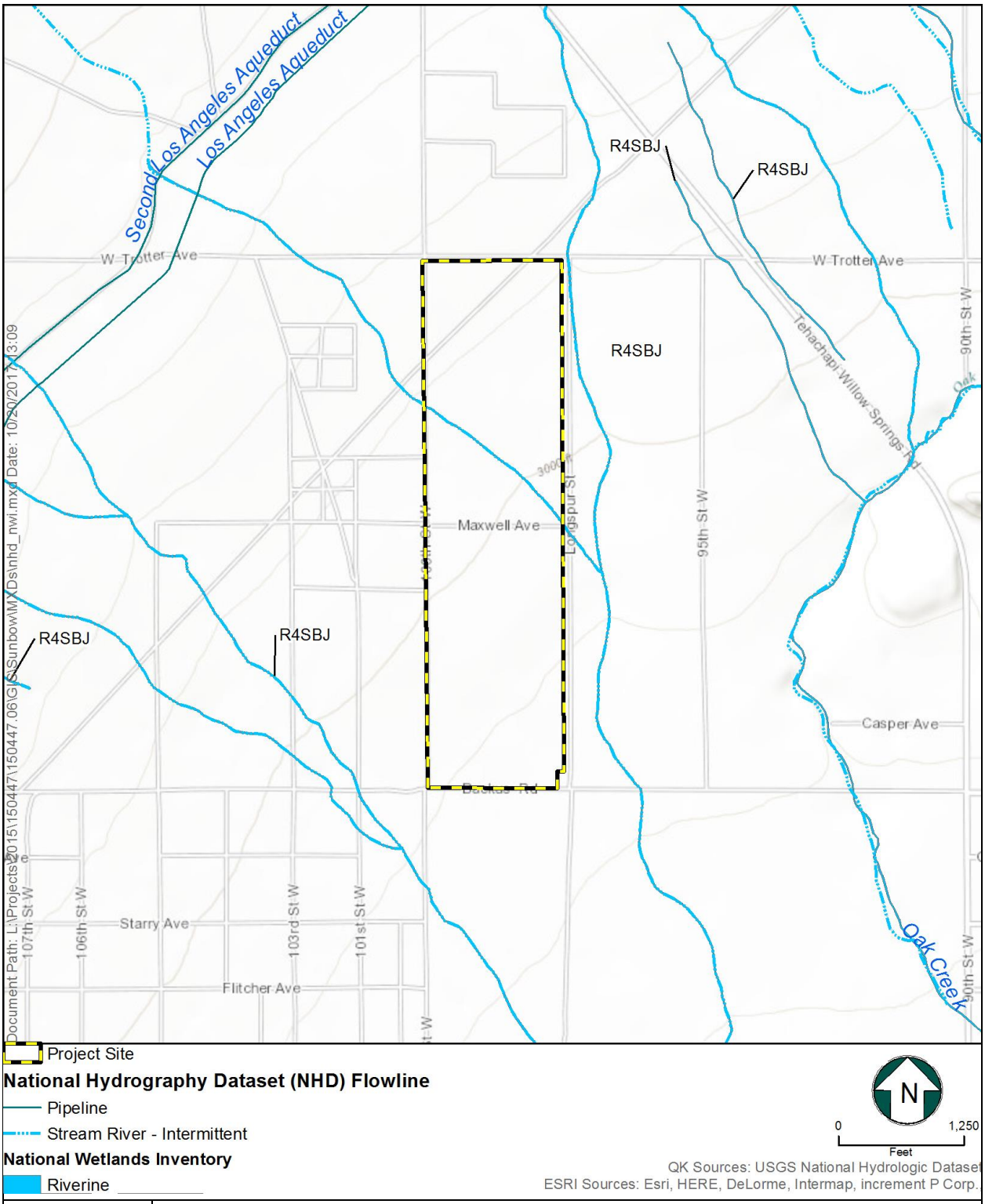


Figure 6
NHD Blue-Lines and NWI Features on and near the Sunbow Solar Site, Kern County, California

3.7 Delineated Wetlands and Waters

Two drainages were delineated on the Project site (see Figure 7). Both delineated water features are isolated episodic waters, which only flow for brief periods in response to rainfall. The water features were single braided channels and included several fluvial indicators, such as: bar mid-channel flow, bar mid-channel flow degraded, sand bars, bifurcated flow, levee ridges, sediment ramp, vegetation-channel alignment, wrack, cut bank, and headcut in the low-flow channel area; mud cracks, out of channel flow, and secondary channel in the active floodplain; and rills, scour, secondary channels, and water cut benches occurred as erosional indicators. A total of 14.49 acres of watercourse boundaries, including the low-flow channel and active floodplain were delineated on the Project site (Table 3).

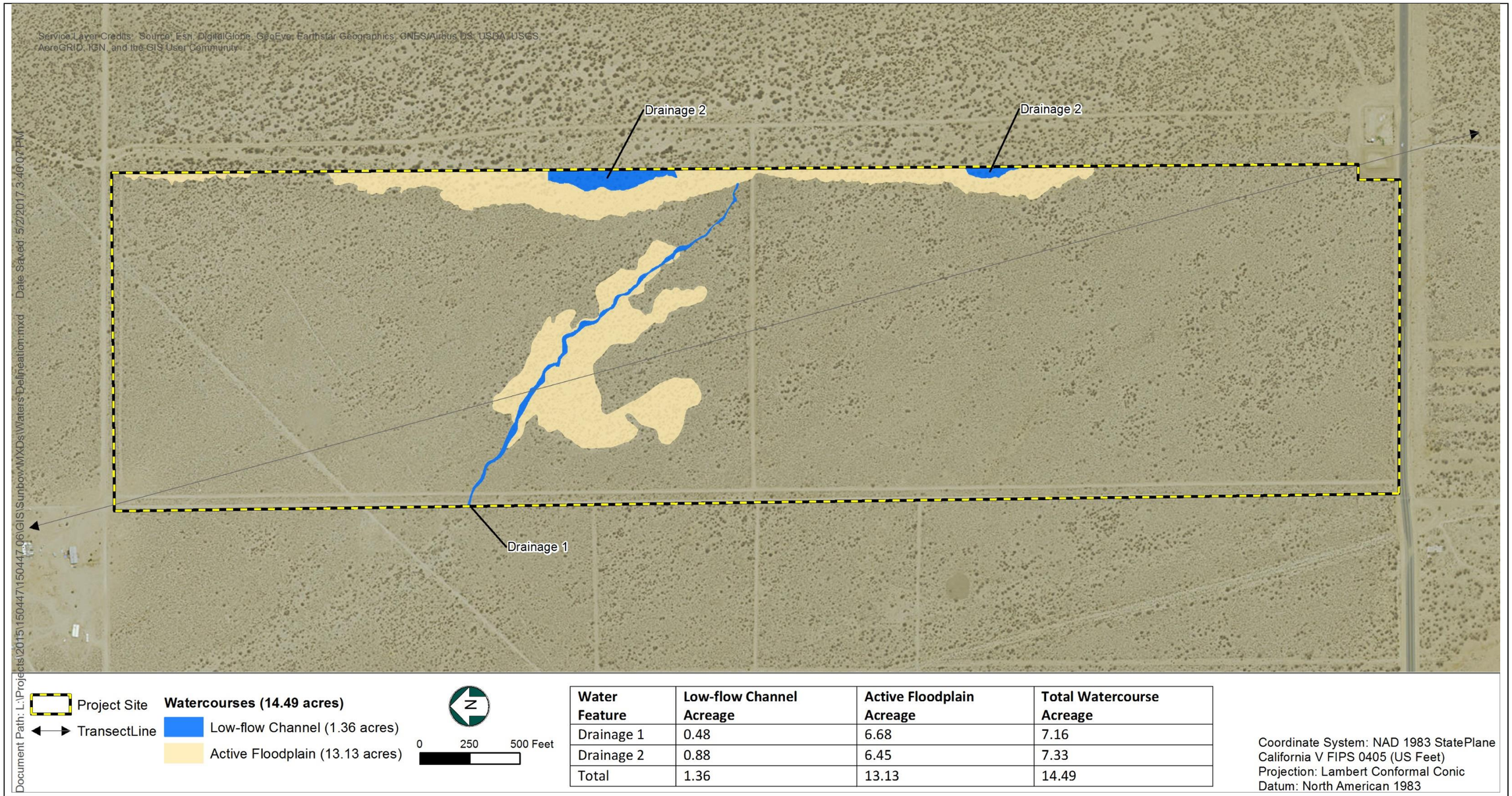
3.7.1 DRAINAGES

Drainage 1: Drainage 1 runs in a northwest – southeast orientation and extends approximately 1,820 feet across the Project site (see Figure 7). It encompasses 7.16 acres on the Project site. Of this, 0.48 acre occurs within the low-flow channel on the site and 6.68 acres occurs within the active floodplain. Fluvial indicators within the watercourse included bifurcated flow, drainage swales, flow lineations, and organic drift in the low-flow channel; mud cracks and out-of-channel flow (lateral floodplain) occurred in the active floodplain; erosion indicators included rills on the channel bottom and secondary channels.

Drainage 2: This drainage occurs along the eastern boundary of the Project site and flows in a north-south orientation, extending approximately 1,965 feet in length on the Project site (see Figure 7). The main low-flow channel primarily occurs east of the Project site boundary and was not delineated, though it was visually inspected. Smaller low-flow channel tributaries did occur on the Project site and were mapped. Drainage 2 encompasses 7.13 acres on the Project site. Of this, 0.88 acre occurs within the low-flow channel on the site and 6.45 acre occurs within the active floodplain. Fluvial indicators within the watercourse included bar mid-channel flow, bar mid-channel flow degraded, sand bars, bifurcated flow, levee ridges, sediment ramp, vegetation-channel alignment, wrack, cut bank, and headcut in the low-flow channel area; mud cracks, out of channel flow, and secondary channel indicators occurred in the active floodplain; and rills, scour, secondary channels, and water cut benches occurred as erosional indicators.

Table 3
Water Features on the Sunbow Project Site, Kern County, California

Water Feature	Linear Feet	Low-flow Channel Acreage	Active Floodplain Acreage	Total Watercourse Acreage
Drainage 1	1,820	0.48	6.68	7.16
Drainage 2	1,965	0.88	6.45	7.13
Total	**3,785**	**1.36**	**13.13**	**14.49**



Water Feature	Low-flow Channel Acreage	Active Floodplain Acreage	Total Watercourse Acreage
Drainage 1	0.48	6.68	7.16
Drainage 2	0.88	6.45	7.33
Total	1.36	13.13	14.49

Figure 7
Delineated Waters Map of the Sunbow Project Site
Kern County, California

4.0 CONCLUSIONS

Two water features were identified and delineated on the Project site. Drainage 1 and Drainage 2 contained fluvial indicators indicative of desert washes with associated active floodplains. The watercourse of Drainage 1 encompasses 7.16 acres and extends 1,820 feet in length on the Project site. The watercourse of Drainage 2 encompasses 7.33 acres and extends 1,965 feet in length on the Project site. Drainage 1 and Drainage 2 are both isolated within the general region. Neither drainage appears to connect with any features that could be classified as a water of the U.S. As isolated non-wetland drainages that do not establish connectivity with navigable waters or interstate waters, or tributaries thereof, the drainages on the Project site are not waters of the U.S. The two drainages, however, are likely waters of the State and would be under the jurisdictional authority of the RWQCB (Lahontan Region) and CDFW, which takes jurisdiction over the bed, bank, and channel of water features and associated riparian habitat.

The Project may result in a maximum of 14.49 acres of disturbance to existing watercourses. The final disturbance area will depend upon the final design and layout of the solar facilities. Impacts to the water features would require a Section 401 permit (Water Quality Certification) through the RWQCB (Lahontan Region) and a Section 1602 Lake and Streambed Alteration Agreement with the CDFW. A Section 404 permit from the USACE would not be required due to the isolated nature of the watercourses. However, a letter of non-jurisdiction may be required by the RWQCB.

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APPENDICES

APPENDIX A

PHOTOPLATES

Photograph 1: Northwest view of Drainage 1 on May 5, 2017 at GPS coordinates: 34°57’35”, -118°18’22”, by Mitchell Coleman

Photograph 2: South view of Drainage 2 on April 19, 2017 at GPS coordinates: 34°57’47.03”, -118°18’18.33”, by Tyler Schade

Representative Photos of the Sunbow Solar Site, Kern County, California

Photograph 3: West view from edge of active floodplain, overseeing upland area in distance.
April 19, 2017 at GPS coordinates: 34°57'37.39", -118°18'21.34" by Tyler Schade

Photograph 4: Southeast view of low-flow channel on Drainage 2 next to active floodplain.
April 19,2017 at GPS coordinates: 34°57'38.51", -118°18'19.35", by Tyler Schade

Representative Photos of the Sunbow Solar Site, Kern County, California

Photograph 5: Northwest view of active floodplain of Drainage 1 on May 5, 2017 at GPS coordinates: 34°57’36”, -118°18’25”, by Mitchell Coleman

Representative Photos of the Sunbow Solar Site,
Kern County, California

APPENDIX B

DATA FORMS

Episodic Stream Indicator Data Sheet			page 1 of 4
Site ID: 150447 - Sunbow	Stream ID: Drainage 1		Date: 4/11/16
Nearest Town: Rosamond		County: Kern	
Investigators: Tyler Schade			
Base Map			
Aerial Photo #:	Date:	Topographic Map Name:	Date:
GPS Data			
GPS Name:	Datum: NAD 1983	Transect Elevation:	Zone 10 / 11 GPS Error: ± 3 m
GPS co-ords start of transect:		GPS co-ords end of transect:	

Geomorphic Province (✓one)	X	Mojave		Sonoran/Colorado		Great Basin	Other:

Landform (✓ all that apply)

	Headwater		Upper fan		Middle fan		Lower fan	X	Alluvial plain		Axial valley		Playa

Channel Form (✓ one)

X	Single thread		Braided		Compound		Distributary		Discontinuous	Other:

Transect was selected to:

X	Document fluvial activity & boundaries		Document channel elevations & boundaries
	Document habitat associations		Document a change in watercourse morphology
	Other:		

Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function: Drainage occurs in wide floodplain with narrow low flow channel. Crosses project site.

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.

Left _____ Right

MESA: October 2014 5-5

Site ID: 150447 - Sunbow	Stream ID: Drainage 1	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators				Substrate Particle Size		
	Av soil horizon		Relict bars & swales	Estimated percentages		
	Biotic soil crusts		Rock fractured in place	0	% Bedrock / Cemented substrate	
	Bioturbation		Rock varnish	0	% Boulder	≥ 256 mm
	Caliche: coatings / layers / rubble		Rock weathering	5	% Cobble	≥ 64 – 256mm
	Carbonate etching		Rubified rock undersides	15	% Pebble	≥ 4 – 64 mm
	Coppice dunes: active / relict		Soil development	30	% Granule	≥ 2 – 4 mm
	Deflated surface		Surface rounding of landform	48	% Sand	≤ 2 mm
	Pavement	x	Woody debris in place	2	% Silt/Clay	Fines
	Other:					

Fluvial Indicators					
	Bars: sand / gravel	x	Mud: **cracks**		Sediment tails: sand / gravel
	Cut banks		Organic drift	x	Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches
	Exposed roots		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
40	E. nauseosa L. tridentata	E. nauseosa = 0.5m t x 0.5 m w L. tridentata = 2.5 m x 2.5m w

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): L. tridentata generally confined to upland area and in active floodplain area. There's also a greater density of L. tridentata in upland area

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): Yes, several species are restricted to the upland area including CA buckwheat, burrobush, and saltbush.

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences) Yes. Red brome, ripgut brome, and fiddleneck occurred in greater abundance in the upland/floodplain area. In the low-flow channel, filaree and fiddleneck were more abundant than in upland/floodplain area.

MESA: October 2014 5-6

Site ID: 150447- Sunbow	Stream ID: Drainage 1	page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

	Transportation, Deposition & Flow Transition Indicators			**Substrate Particle Size**		
	Bar forms: sand		Secondary channels	Estimated percentages		
	Bifurcated flow		Sediment plastering	0	% Bedrock / Cemented substrate	
x	Drainage swales		Sediment ramps: sand / gravel	0	% Boulder	≥ 256 mm
x	Flow lineations		Sediment sheets: sand / gravel	0	% Cobble	≥ 64 – 256 mm
	Imbricated gravel		Sediment sorting	5	% Pebble	≥ 4 – 64 mm
	Levee ridges: sand / gravel		Sediment tails: sand / gravel	10	% Granule	≥ 2 – 4 mm
	Mud: cracks / curls / drapes		Vegetation-channel alignments	85	% Sand	≤ 2 mm
x	Organic drift		Wrack		% Silt/Clay	Fines
	Overturned rocks		Wrinkle marks			
x	Out-of-channel flow: Lateral floodplain / Terminal floodplain					
	Ripples					
	Other:					

Erosion Indicators

	Cut banks		Rills		Water-cut benches
	Exposed roots	x	Scour		Water level mark
	Headcuts		Secondary channels		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
25	red brome, ripgut brome, fiddleneck	red brome = 1' h x 0.2' w ripgut brome 1' h x 0.2' w fiddleneck = 0.8' h x 0.5' w

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): lower density in the low-flow channel

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): fiddleneck was confined to low-flow channel; shrub species were generally absent peppergrass was only observed in low-flow channel

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences) there was more filaree and fiddleneck in low flow channel than floodplain

MESA: October 2014 5-7

Site ID 150447 - sunbow	Stream ID Drainage 1	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other:				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs See waters report

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014 5-8

Episodic Stream Indicator Data Sheet			page 1 of 4
Site ID: 150447 - Sunbow	Stream ID: Drainage 2		Date: 4/11/16
Nearest Town: Rosamond		County: Kern	
Investigators: Tyler Schade			
Base Map			
Aerial Photo #:	Date:	Topographic Map Name:	Date:
GPS Data			
GPS Name:	Datum: NAD 1983	Transect Elevation:	Zone 10 / 11 GPS Error: ± 3 m
GPS co-ords start of transect:		GPS co-ords end of transect:	

Geomorphic Province (✓one)	X	Mojave		Sonoran/Colorado		Great Basin	Other:

Landform (✓ all that apply)

	Headwater		Upper fan		Middle fan		Lower fan	X	Alluvial plain		Axial valley		Playa

Channel Form (✓ one)

X	Single thread		Braided		Compound		Distributary		Discontinuous	Other:

Transect was selected to:

X	Document fluvial activity & boundaries		Document channel elevations & boundaries
	Document habitat associations		Document a change in watercourse morphology
	Other:		

Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:

Drainage occurs in wide floodplain. Dirt road runs through floodplain area and shows severe erosional activity, likely due to vehicular access. Majority of floodplain area and low-flow channel area occurs east of site boundary.

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.

Left _____ _____ Right

MESA: October 2014 5-5

Site ID: 150447 - Sunbow	Stream ID: Drainage 2	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

	Terrestrial Indicators				**Substrate Particle Size**	
	Av soil horizon		Relict bars & swales		Estimated percentages	
	Biotic soil crusts		Rock fractured in place	0	% Bedrock / Cemented substrate	
	Bioturbation		Rock varnish	0	% Boulder	≥ 256 mm
	Caliche: coatings / layers / rubble		Rock weathering	3	% Cobble	≥ 64 – 256mm
	Carbonate etching		Rubified rock undersides	10	% Pebble	≥ 4 – 64 mm
x	Coppice dunes: active / relict		Soil development	25	% Granule	≥ 2 – 4 mm
	Deflated surface		Surface rounding of landform	60	% Sand	≤ 2 mm
	Pavement	x	Woody debris in place	2	% Silt/Clay	Fines
	Other:					

	Fluvial Indicators				
	Bars: sand / gravel	x	Mud: **cracks**		Sediment tails: sand / gravel
	Cut banks		Organic drift		Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches
	Exposed roots		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
40	E. nauseosa L. tridentata	E. nauseosa = 0.5m t x 0.5 m w L. tridentata = 2.5 m x 2.5m w

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): L. tridentata generally confined to upland area and in active floodplain area. There's also a greater density of L. tridentata in upland area

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): Yes, several species are restricted to the upland area including Coopers boxthorn, CA buckwheat, burrobush, saltbush, and E. nauseosa.

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences) Yes. Red brome, ripgut brome, fiddleneck, and common oat occurred in greater abundance in the upland/floodplain area. In the low-flow channel, filaree and peppergrass, were more abundant than in upland/floodplain area.

MESA: October 2014 5-6

Site ID: 150447- Sunbow	Stream ID: Drainage 2	page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators				Substrate Particle Size		
x	Bar forms: sand	x	Secondary channels	Estimated percentages		
x	Bifurcated flow		Sediment plastering	0	% Bedrock / Cemented substrate	
x	Drainage swales		Sediment ramps: sand / gravel	0	% Boulder	≥ 256 mm
x	Flow lineations		Sediment sheets: sand / gravel	0	% Cobble	≥ 64 – 256 mm
	Imbricated gravel	x	Sediment sorting	2	% Pebble	≥ 4 – 64 mm
	Levee ridges: sand / gravel		Sediment tails: sand / gravel	3	% Granule	≥ 2 – 4 mm
	Mud: cracks / curls / drapes		Vegetation-channel alignments	94	% Sand	≤ 2 mm
x	Organic drift	x	Wrack	1	% Silt/Clay	Fines
	Overturned rocks		Wrinkle marks			
x	Out-of-channel flow: Lateral floodplain / Terminal floodplain					
	Ripples					
	Other:					

Erosion Indicators

	Cut banks	x	Rills		Water-cut benches
	Exposed roots	x	Scour		Water level mark
	Headcuts	x	Secondary channels		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
25	red brome, ripgut brome, fiddleneck, oat	red brome = 1' h x 0.2' w ripgut brome 1' h x 0.2' w fiddleneck = 0.8' h x 0.5' w

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): lower density in the low-flow channel

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): fiddleneck was confined to low-flow channel; shrub species were generally absent peppergrass was only observed in low-flow channel

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences) there was more filaree, fiddleneck, and oat in low flow channel than floodplain

MESA: October 2014 5-7

Site ID 150447 - sunbow	Stream ID Drainage 2	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other:				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs See waters report

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014 5-8

DELINEATION OF WATERS

SYRACUSE SOLAR PROJECT SITE

KERN COUNTY, CALIFORNIA

SEPTEMBER 2016

DELINEATION OF WATERS

SYRACUSE SOLAR PROJECT SITE
KERN COUNTY, CALIFORNIA

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November 2017

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Project #15044

Table of Contents

EXECUTIVE SUMMARY *1*

SECTION 1 - INTRODUCTION *3*

SECTION 2 - METHODS *8*

SECTION 3 - RESULTS *13*

3.1 - Land Use and Topographic Relief 13
3.2 - Watersheds and Regional Hydrology 15
3.3 - Plant Communities 15
3.4 - Soils 17
3.5 - Precipitation 18
3.6 - USGS Topographic Drainages and National Wetlands Inventory 18
3.7 - Delineated Wetlands and Waters 22
3.7.1 - DRAINAGES 22
3.7.2 - DITCHES 22

SECTION 4 - CONCLUSIONS *23*

SECTION 5 - REFERENCES *24*

APPENDIX A – PHOTOPLATES *25*

APPENDIX B – DATA FORMS *27*

APPENDICES

Appendix A Photoplates

Appendix B Data Forms

List of Tables

Table 1 *Indicators of Stream Activity (Brady 2013)* *11*

Table 2 *Plants Observed on the Syracuse Solar Project Site, Kern County, California* *18*

Table 3 *Water Feature Data for Syracuse Solar Project Site, Kern County, California* *24*

List of Figures

Figure 1 *Regional Map of the Syracuse Solar Project Site, Kern County, California* *6*

Figure 2 *Vicinity Map of the Syracuse Solar Project Site, Kern County, California* *7*

Figure 3 *Project Site of the Syracuse Solar Project Site, Kern County, California* *15*

Figure 4 *FEMA Designated 100-Year Flood Zone Boundary Encompassing the Syracuse Solar Project Site, Kern County, California* *17*

Figure 5 *Soils on the Syracuse Solar Project Site, Kern County, California* *19*

Figure 6 *USGS Blue-Lines on the Syracuse Solar Project Site, Kern County, California* *21*

Figure 7 *Delineated Waters at the Syracuse Solar Project Site, Kern County, California* *22*

EXECUTIVE SUMMARY

Lend Lease Energy Development, LLC (Lend Lease) proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities. These three solar sites are known as Tours Solar, LLC, Syracuse Solar, LLC and Sunbow Solar, LLC. Collectively, these three sites are referred to as the AV Apollo Solar Project. The solar facilities will be constructed on approximately 492-acres of land at the southwestern edge of Kern County, California. The sites may be combined and constructed at the same time as a single, 60 megawatt (MW) (AC) facility, or alternatively, could be developed as three independent, 20 MW facilities. The Project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Rd. and located on the Syracuse and Tours solar sites. The Syracuse Solar (Project) site encompasses approximately 160 acres. The Project site is situated 11 miles south of State Route 58 and eight miles east of State Route 14, southwest of the intersection of Backus Road and Tehachapi Willow Springs Road. The Project site occurs within zoning district A FP (Exclusive Agriculture, Floodplain Combining), but has not been cultivated. The Project site consists of desert landscape and, except for two abandoned buildings, is generally in undisturbed condition.

QK, Inc. conducted a delineation of waters (including potential wetlands) on the Project site. These data will allow impacts to waters to be determined based upon final Project design, and the determination of any permitting that would need to be completed for the Project.

Prior to conducting field investigations, a review of available literature and a search of the National Wetlands Inventory (NWI), aerial imagery, and topographical maps were conducted. Field investigations were conducted on June 2, June 18, and July 19, 2016 to identify and delineate all water features on the Project site. The Project site was evaluated for the presence of Wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the most recent version of the *Arid West Supplement* (Version 2.0 2008a). Linear drainages and other similar waters were delineated using methodologies and diagnostic characteristics presented in the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Field Guide) (USACE 2008a). The *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* was also referenced, primarily using *Appendix G: MESA Field Guide: Mapping Episodic Stream* (MESA) document (Brady 2013).

The Project site is located within the Tropico Hill-Oak Creek Watershed in the Antelope Hydrologic Unit, within the South Lahontan Hydrologic Region. The National Hydrology Dataset (NHD) depicts two unnamed blue-line drainages occurring on the Project site. One drainage flows through the northeast corner of the Project site along a north-northwest and south-southeast axis. This drainage originates approximately 7.5 miles northwest of the Project site in the foothills of the Tehachapi Mountains. The second blue-line drainage flows through the southwest corner of the Project site, along a north-northwest and south-

southeast axis. This drainage originates approximately 4.5 miles northwest in the foothills of the Tehachapi Mountains.

QK found and delineated one additional drainage and one ditch in addition to the two unnamed blue-line drainages shown by the NHD. Drainage 1 corresponds closely with the NHD blue-line in the northeast corner of the Project site. The watercourse of Drainage 3 corresponds partially with the NHD blue-line feature in the southwest corner of the Project site. All water features are considered to be isolated episodic or ephemeral waters, which typically only flow for brief periods in response to rainfall. Four water features were identified and delineated on the Project site. The watercourse of Drainage 1 encompasses approximately 6.68 acres and extends approximately 1450 feet across the Project site. The watercourse of Drainage 2 encompasses approximately 0.061 acres and extends approximately 850 feet across the Project site. The watercourse of Drainage 3 encompasses approximately 0.069 acres and extends approximately 0.069 700 feet across the Project site. The watercourse of Ditch 1 encompasses approximately 0.055 acres and extends approximately 900 feet across the Project site. These water features are likely Waters of the State, and would would fall under the jurisdictional authority of the Regional Water Quality Control Board, which claims jurisdiction of all surface waters in accordance with the Porter-Cologne Act. The California Department of Fish and Wildlife would likely take jurisdiction over the water features and associated bank habitat in addition to the active floodplains. As isolated non-wetland drainages that do not establish connectivity with navigable waters, the water features on the Project site are not Waters of the U.S.

SECTION 1 - INTRODUCTION

Lend Lease Energy Development, LLC (Lend Lease) proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities. These three solar sites are known as Tours Solar, LLC, Syracuse Solar, LLC and Sunbow Solar, LLC. Collectively, these three sites are referred to as the AV Apollo Solar Project. The solar facilities will be constructed on approximately 492-acres of land at the southwestern edge of Kern County, California (Figures 1 and 2). The sites may be combined and constructed at the same time as a single, 60 megawatt (MW) (AC) facility, or alternatively, could be developed as three independent, 20 MW facilities. The Project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Rd. and located on the Syracuse and Tours solar sites. The Syracuse Solar (Project) site encompasses approximately 160 acres. The Project site is situated 11 miles south of State Route 58 and eight miles east of State Route 14, southwest of the intersection of Backus Road and Tehachapi Willow Springs Road. The Project site occurs within zoning district A FP (Exclusive Agriculture, Floodplain Combining), but has not been cultivated. The Project site consists of desert landscape and, except for two abandoned buildings, is generally in undisturbed condition. A number of operating solar facilities exist within a 10-mile radius of the Project site. The nearest operating solar facilities include the Catalina Renewable Energy Project, located two miles to the southwest, and SEPV Solar, which is located approximately five miles north of the Project site.

This report includes the results of a delineation of wetlands and waters that QK conducted on the Project site. Wetlands that are under federal jurisdiction are defined as:

> *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [40 CFR 230.3(t)].*

Waters of the United States are defined as:

> "All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, all impoundments of waters otherwise defined as waters of the United States under this definition, tributaries of waters previously identified, the territorial sea, and wetlands adjacent to waters (other than waters that are themselves wetlands) previously identified" *[40 CFR 230.3(s)].*

Waters of the State are defined in the California Water Code as:

> *"*Any surface water or groundwater, including saline waters, within the boundaries of the state*" [Section 13050 (e)].*

This definition for Waters of the State does not distinguish between wetlands and waters, but includes all surface waters, including non-jurisdictional wetlands. This is a much broader definition than that for Waters of the U.S.

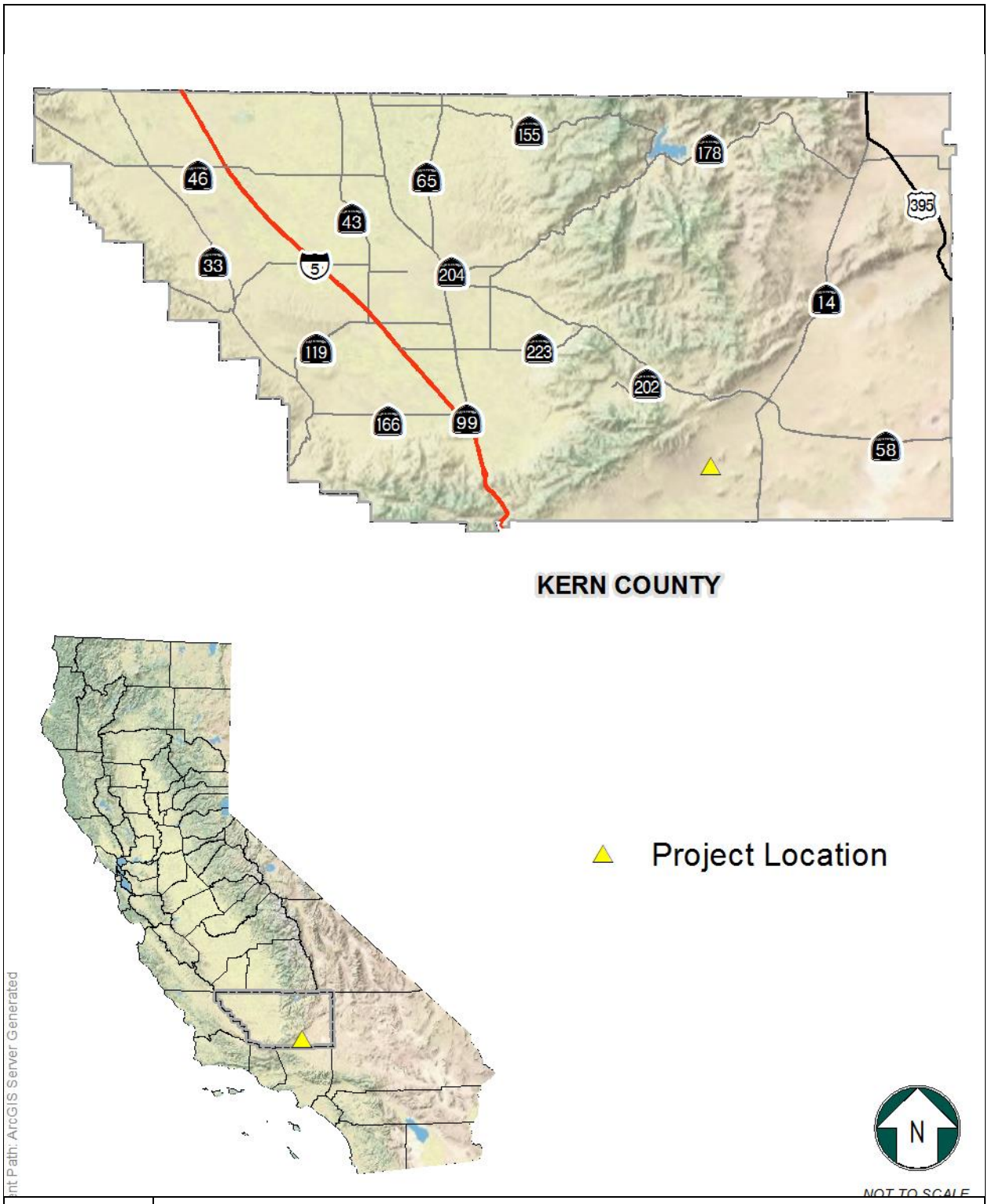

Figure 1 – Regional Map of the Syracuse Solar Project Site, Kern County, California

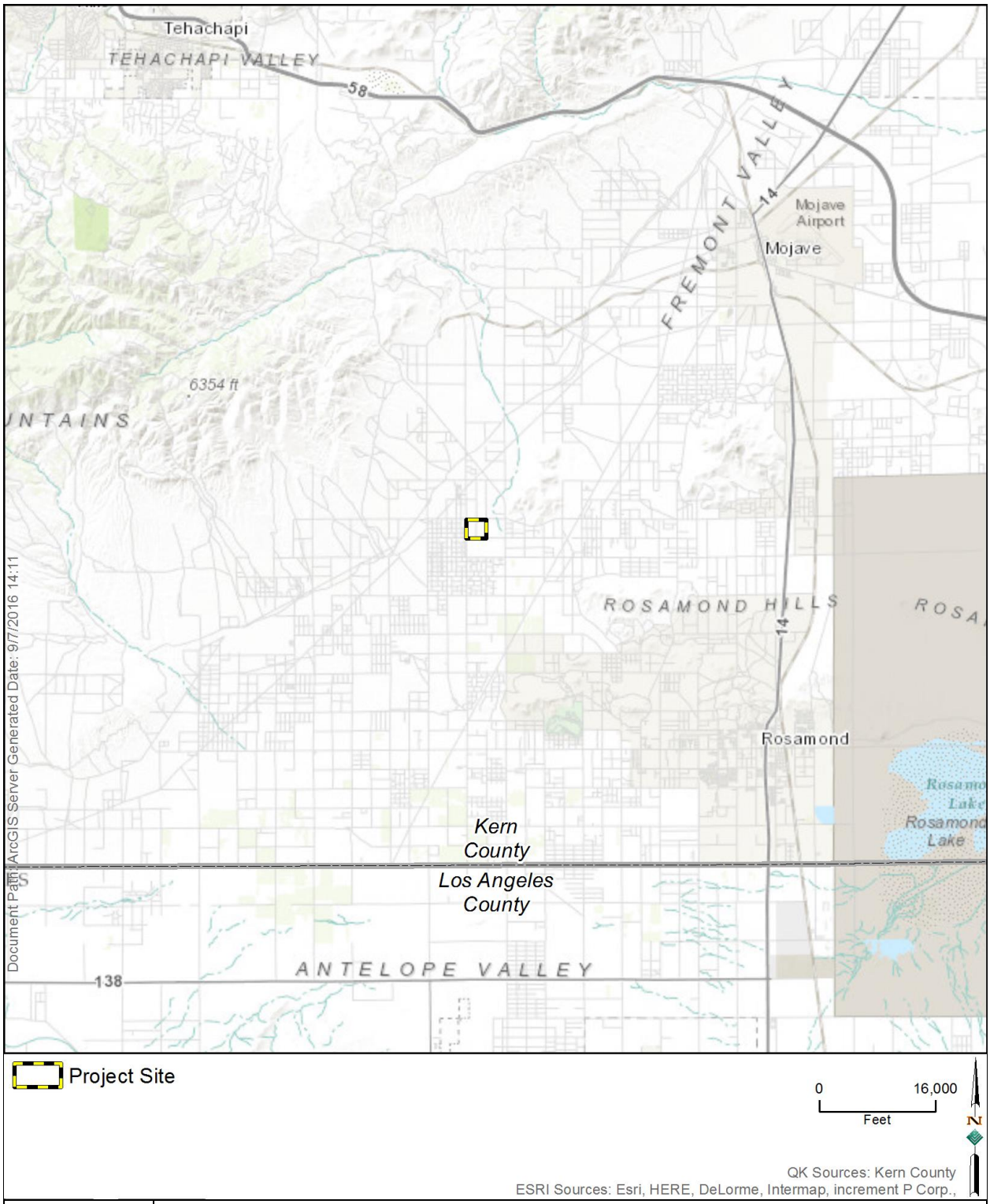

Figure 2 – Vicinity Map of the Syracuse Solar Project Site, Kern County, California

QK delineated Waters of the U.S. and Waters of the State that occur on the Project site to:

- Document existing site conditions;
- Determine the presence of waters that occur on the Project site using standardized diagnostic criteria; and,
- Delineate wetland boundaries, boundaries of the Ordinary High Water for those features that may be under the jurisdictional authority of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB), and boundaries of the watercourse for those features that may be under the jurisdictional authority of the California Department of Fish and Wildlife (CDFW).

Tasks that were completed include:

- Reviewing previous environmental reports, topographic maps and aerial photography;
- Reviewing National Wetland Inventory (NWI) data and maps and published soil survey data and maps;
- Conducting a field survey of the Project site to locate all potential waters;
- Determining potential Waters of the U.S. at the Ordinary High Water Mark (OHWM) using the *A Field Guide to the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a);
- Documenting soil conditions, hydrological conditions, and plant community composition of potential wetlands following the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* where warranted (USACE 2008b);
- Documenting soil conditions, hydrological conditions, and plant community composition of potential waters following the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* (Brady 2013);
- Determining the presence and distribution of, and mapping the boundaries of, wetlands and other waters located on the Project site based upon standardized characteristics.

This report summarizes the distribution of water features that were found on the Project site. These data will allow impacts to the water features to be determined based upon final Project design, and to determine the necessary permitting that would be needed. This report will also provide information sufficient to allow the USACE and CDFW to conduct a wetland and waters verification and prepare a jurisdictional determination for the Project.

SECTION 2 - METHODS

A literature review and database search were conducted prior to performing field investigations. The NWI (USFWS 2016) was searched for known occurrences of wetlands, and United States Geological Survey (USGS) 7.5 minute topographic maps were evaluated for the presence of known natural drainage features ("blue-line") and other potential waters occurring on and near the Project site. Aerial imagery (ArcGIS Online 2016) was reviewed to identify differences in vegetative cover, slope, and general terrain that can be indicative of water presence. Information on regional hydrology, including the National Hydrology Dataset (NHD) from the United States Geological Survey (USGS), was obtained from the Geospatial Data Gateway website of the Natural Resources Conservation Service and the Lahontan Region Basin Plan (RWQCB 2015). Weather and precipitation data were obtained from the Western Regional Climate Center (WRCC 2016) and soils data were obtained from the Web Soil Survey (USDA-NRCS 2016).

QK Associate Environmental Scientist Tyler Schade conducted field investigations on June 2, June 18, and July 19, 2016, with support from Assistant Environmental Scientists Alex Single and Mitchell Coleman on July 18 and 19, 2016, to identify and delineate wetlands and waters on the Project site. Pedestrian transects were conducted in a manner to ensure 100 percent visual coverage of the site. Due to the problematic nature of mapping wetlands and waters in arid environments, a combination of methodologies was used to conduct the delineation.

The Project site was evaluated for the presence of wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the most recent version of the *Arid West Supplement* (Version 2.0 2008). The Project site was inspected for wetland indicators including hydric soils, hydrophytic vegetation, and hydrology. When wetland conditions were met, paired sample points were located on either side of each feature boundary to obtain information describing both wetland and upland conditions. The locations of sample points were mapped using a Trimble GeoXH Global Positioning System (GPS) unit. At each sample point, the presence or absence of hydrologic indicators was noted, soils were characterized, and present vegetation was analyzed following standard procedures. Hydrologic indicators included the presence of reduced iron, water-stained leaves, drainage patterns, drift deposits, surface soil cracks, saturation visible on aerial imagery, and other diagnostic characteristics. Soil samples were excavated and soils were inspected to characterize soil profiles at each sample plot, and to compare site observations with soil conditions described in the Web Soil Survey (USDA-NRCS 2016). Soil horizonation, texture, moisture content, depth to saturation, and/or standing water was noted for each soil pit. The presence or absence of particulate organic matter, redoximorphic features, depleted matrices, gleying, and other diagnostic characteristics were noted. Soil colors were determined using Munsell soil color charts (*sensu* Munsell 2000). The cover of observed plant species was visually estimated and recorded. Dominant plant species were identified in accordance with the USACE 50/20 Rule. Plant identification was determined using the *Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). The wetland indicator status of each plant species was determined using the National Wetland Plant List: 2016 Wetland Ratings (Lichvar, R.W. 2016). The

hydrologic, soil, and vegetative data recorded at the sample points were transcribed onto USACE Arid West Region Wetland Determination Data Forms.

Linear drainages and other similar waters were delineated using methodologies and diagnostic characteristics presented in the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* (Brady 2013), with references to the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Field Guide) (USACE 2008a). Additionally, the *Review of Stream Processes and Forms in Dryland Watersheds*, which shares many similarities with the MESA guide, was also referenced (CDFW 2010). Both the MESA guide and the USACE Field Guide datasheets require entries for standard evaluative characteristics including fluvial and terrestrial indicators, vegetation cover, transportation, deposition, flow indicators, and sediment texture. The primary differences between datasheets in the USACE Field Guide and the MESA Guide pertain to the identification of geomorphic units and the significance of the OHWM. The MESA guide recommends consultation with a professional geologist to identify basic geological and geomorphic units. The MESA guide discourages using the traditional OHWM indicators to define the boundaries of a watercourse, and instead recommends using the local topography, elevations of land, and specific indicators of fluvial activity to identify the boundaries of a watercourse.

Dryland, or episodic, stream processes are often outside the normal range of the hydrologic and morphologic characteristics of their temperate and humid region counterparts, and their hydrology, sediment transport characteristics, and resultant channel forms cannot be reliably modeled by extrapolation from temperate and humid region fluvial systems (CDFW 2010) (Brady 2013). Potential water features on the Project site were initially identified by noting changes in geomorphology, vegetative distribution, fluvial indicators, and various aspects of hydrology and sedimentation. Some of the defining geomorphic characteristics of dryland stream processes include:

- Short-lived, localized, and highly variable flow, often referred to as a flashy discharge pattern;
- Great variability in flood magnitudes (high magnitude, low-frequency), such that discharge of floods tends to be significantly greater than the mean annual flow Downstream decreases in flow volume;
- Asynchronous flow that produces abrupt morphological changes at tributary confluences;
- Abrupt and episodic deposition of sediments that creates a fabric of highly varied transient channel forms;
- A flat and plane bed topography at lower reaches;
- Low sinuosity and high width-to-depth channel ratios;
- Indefinite floodplain boundaries;
- Channel bottoms that support vegetation;
- Numerous lower stream order channels that are tributaries to main watercourses; and

- Flow path uncertainty that results in alluvial fan formation.

For water features on the Project site, the active floodplain, when present, was considered to be the lateral limit of non-wetland waters. When an active floodplain was absent, the high-flow channel was considered to be the lateral limit of non-wetland waters. When the high-flow channel was absent, the bank was considered to be the lateral limit of non-wetland waters. The active floodplain is an area associated with a stream over which water and sediment from that stream overflow into when the capacity of the channel is exceeded (Brady 2013). The high-flow channel, sometimes called "secondary channels," carries water during high flows or flood flows and may include topographically higher channels (higher than low-flow channel) or out of channel flows, including those over benches or around islands. The bank is the land on the outermost edge of the channel that confines the channels' boundary when its water rises to the highest level of confinement (Brady 2013). The low-flow channel is the topographically lowest stream channel, or the dominant subchannel, within a channel watercourse (Brady 2013).

The identification of terrestrial (upland) and fluvial processes guide the mapping of the watercourse boundary (Table 1). These indicators may or may not be present in every feature, and may exhibit spatial and temporal variability in position over the length of a feature or laterally across it.

Table 1
Indicators of Stream Activity (Brady 2013)

Terrestrial Processes	Fluvial indicators	
Av horizon	Bar forms	Wrinkle marks
Biotic soil crusts	Bifurcated flow	Cut banks
Biotubation	Drainage swales	Exposed roots
Caliche	Flow lineations	Headcuts
Carbonate etching	Imbricated gravel	Rills
Coppice dunes	Levee ridged	Scour
Deflated surface	Mud (cracks, curls, drapes)	Secondary channels
Drainage swales	Organic drift	Water-cut benches
First-order streams	Out-of-channel flow	Water level marks
Over-turned rocks	Overturned rocks	Algal crusts
Pavement	Ripples	Beach ridges
Relict bar and swale	Secondary channels	Biotic soul crusts
Rock fractured in place	Sediment plastering	Sand-filled channels
Rock varnish	Sediment ramps	Springs
Rock weathering	Sediment sheets	Substrate staining
Rubified rock undersides	Sediment sorting	
Soil development	Sediment tails	
Surface rounding of landform	Vegetation-channel alignment	
Woody debris in place	Wrack	

Upland, fluvial and watercourse indicators were recorded on the Episodic Stream Indicator Data Sheet. Indicators were recorded from representative locations along the channel feature that reflected existing conditions of the channel. The MESA guide, specifically the *Review of Channel Forms and Geomorphic Units* and *Photographic Atlas*, was used to fill out the data forms and map the watercourse boundaries.

The stepwise delineation procedure that was used consisted of:

1. Aerial imagery was reviewed for evidence of stream activity. Previous site visits had been made to facilitate reconnaissance-level surveys, and, as such, the general locations of channels were known. The entire site was also surveyed by foot to identify potential watercourses and signs of fluvial activity.

2. An appropriate transect that encompassed a cross-section of the full potential watercourse was identified and endpoints were mapped.

3. The entire drainage was walked, including cross-sectional transects, and the physical setting was described. Surficial materials and conditions, including disturbance and/or anthropogenic influences on the channel, was noted.

4. A cross-sectional sketch of the watercourse from edge to edge was drawn and labeled. Approximate width and elevation differences were noted.

5. The upland indicators (terrestrial and fluvial) were marked on the data sheet. These indicators included substrate particle size, terrestrial indicators, fluvial indicators, total vegetation cover, dominant and co-dominate species and total cover, and representative height and width of dominant and co-dominant species. Differences in total vegetation density between upland and fluvially-active areas (including watercourse) were indicated.

6. The watercourse indicators were marked on the data sheet. These indicators included substrate particle size, transportation, deposition, and flow transition indicators, erosion indicators, total vegetation cover, dominant and co-dominate species and total cover, and representative height and width of dominant and co-dominant species. Differences in total vegetation density between the low-flow channel and adjacent floodplain were indicated.

7. The transition area between the low-flow channel and either the high-flow channel or the bank (depending upon the water feature) was identified by changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The low-flow channel was then delineated.

8. The transition area between either the high-flow channel or the bank and the active floodplain was identified by changes in sediment texture, vegetation cover,

vegetation maturity, dominant species composition, and topographic and geomorphic changes. The high-flow channel (or bank) was then delineated.

9. The transition area between the active floodplain and upland area was identified by changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The active floodplain was then delineated.

10. Photographs were taken of each watercourse, data point locations, and representative fluvial activity.

The watercourse includes all functionally related swales, first-order streams, single-thread channels, compound channels, braided channels, discontinuous and distributary channel networks, and active floodplains (Brady 2013). For some watercourses, the out-of-channel flow occurred in both the high-flow channel and the active floodplain, separated by topographic and/or elevation changes.

Watercourse boundaries, data points, and transects were mapped with a Trimble GeoXH Global Positioning System (GPS) unit. Data were post-processed with Pathfinder Office to ensure sub-meter accuracy. Watercourse delineation maps were produced by overlaying the survey GPS data with 2014 ortho-rectified one-foot pixel resolution color aerial imagery (ArcGIS Online 2016).

SECTION 3 - RESULTS

This section describes various characteristics of the Project site including historic and current land use, topographic relief, the presence and distribution of plant communities, the presence and distribution of soil types, precipitation and growing season, waters information based upon the NWI database, USGS topographic maps, and results of the waters delineation.

3.1 - Land Use and Topographic Relief

The Project site is located near the southwest corner of Kern County, California in the Mojave Basin and Range ecoregion (USEPA 10.2.1) and the Willow Springs United States Geological Survey (USGS) 7.5-minute topographical quadrangle. The Project site is located in the northern ½ of Section 19, Township 10 North, Range 13 West, Mount Diablo Base and Meridian (MDB&M). The Project site is approximately nine miles northwest of Rosamond, nine miles southwest of the City of Mojave, 11 miles south of State Route 58, and eight miles east of State Route 14 (see Figures 1 and 2). To the north, the Project site is bounded by Backus Road and to the east by an unnamed road (Figure 3). The site and the lands surrounding the site are zoned for agriculture, but these lands have not been cultivated. The Project site consists mostly of undisturbed Creosote shrubland. There is a matrix of dirt roads occurring on the site (see Figure 3).

The foothills of the Tehachapi Range occur approximately 5.5 miles northwest of the Project site, and the Central Transverse Range occurs 20 miles south of the Project site. The Project site and surrounding land are mostly flat and exhibit little topographic variation. The Cactus Gold Mine, which is actively operating, is located approximately 2,246 feet to the northeast of the Project site. Preserve land managed by the Bureau of Land Management (BLM) is located approximately one-mile northeast of the Project site. Three abandoned buildings and assorted heaps of trash exist on a small parcel near the southwest border of the Project site, just south of Champagne Road.

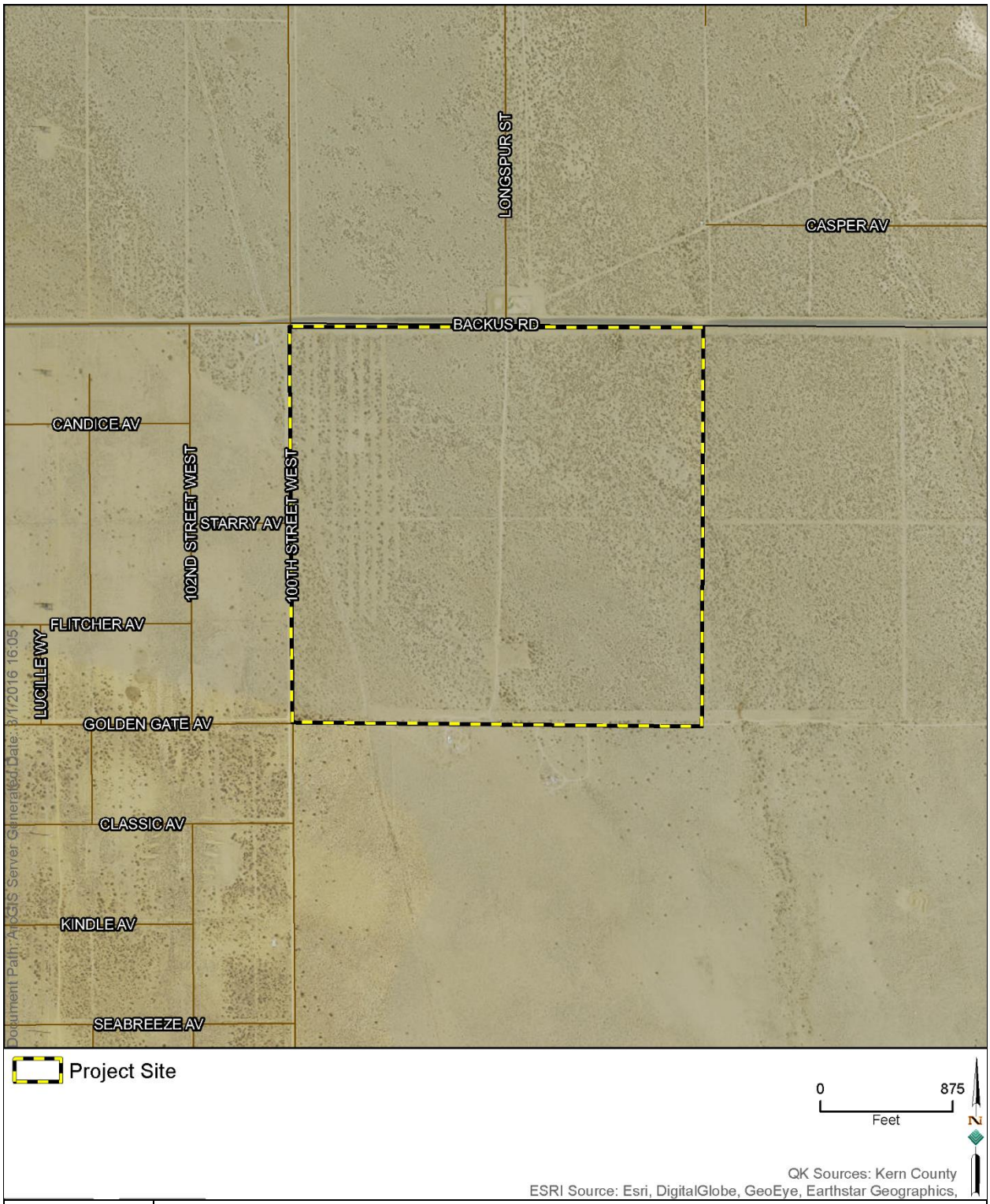

Figure 3 – Project Site of the Syracuse Solar Project Site, Kern County, California

3.2 - Watersheds and Regional Hydrology

The Project site is located within the Tropico Hill-Oak Creek Watershed in the Antelope Hydrologic Unit, within the South Lahontan Hydrologic Region. The South Lahontan Hydrologic Region represents about 17 percent of the land (26,732 square miles) area in California. The region includes Inyo County and portions of Mono, San Bernardino, Kern, and Los Angeles counties. This hydrologic region is bounded on the north by the drainage divide between Mono Lake and East Walker River; on the west and south by the Sierra Nevada, San Gabriel, San Bernardino, and Tehachapi mountains; and on the east by the State of Nevada. In addition to the Sierra Nevada, important mountain ranges in the region include the White Mountains, the Avawatz Mountains, and the Argus and Coso ranges. The mountains are separated by many U-shaped alluvial valleys, some of which are quite large. Drainage for most of the watershed in the region is internal. Along with the arid climate, this accounts for the presence of many dry lakebeds or playas in the region. Major lakes and reservoirs within the region include Mono Lake, June Lake, Convict Lake, Crowley Lake, and Tinemaha Reservoir in the north and Lake Arrowhead, Silverwood Lake, and Lake Palmdale in the south. Most of the perennial rivers are in the northern portion of this hydrologic region. These include the Owens River and Rush Creek. In the south, the Mojave and Amargosa rivers are present, but they are typically dry for most of the year.

Significant geographic features within the Antelope Hydrologic Unit include the Tehachapi Range and the Transverse Coastal Range. Both ranges act in concert to create a wide rain shadow, which contributes to the dry conditions of the Mojave Desert. The entire Project site occurs within a 100-year flood zone as defined by the Federal Emergency Management Agency (Figure 4).

3.3 - Plant Communities

The Mojave Creosote Bush Scrub vegetation community dominates the majority of the Project site, with the exception of a small matrix of dirt roads. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes (Keeler-Wolf 2000). Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation, and extending into northwestern Arizona and southern Utah. The Mojave Creosote Bush Scrub vegetation community is not a sensitive natural community but it is tracked by the California Natural Diversity Database (CNDDB). However, some creosote bush scrub associations are considered sensitive natural communities by CDFW when specific vegetation alliances or associated species are present.

The creosote scrub vegetation on the Project site is dominated by creosote bush (*Larrea tridentata*), with common shrubs including burrobush (*Ambrosia dumosa*), Cooper's boxthorn (*Lycium cooperi*), silver cholla (*Opuntia echinocarpa*), allscale saltbush (*Atriplex polycarpa*), and rubber rabbitbrush (*Ericameria nauseosa*). The Project site also includes an herbaceous layer consisting of a mixture of native and invasive annual grasses and forbs (Table 2).

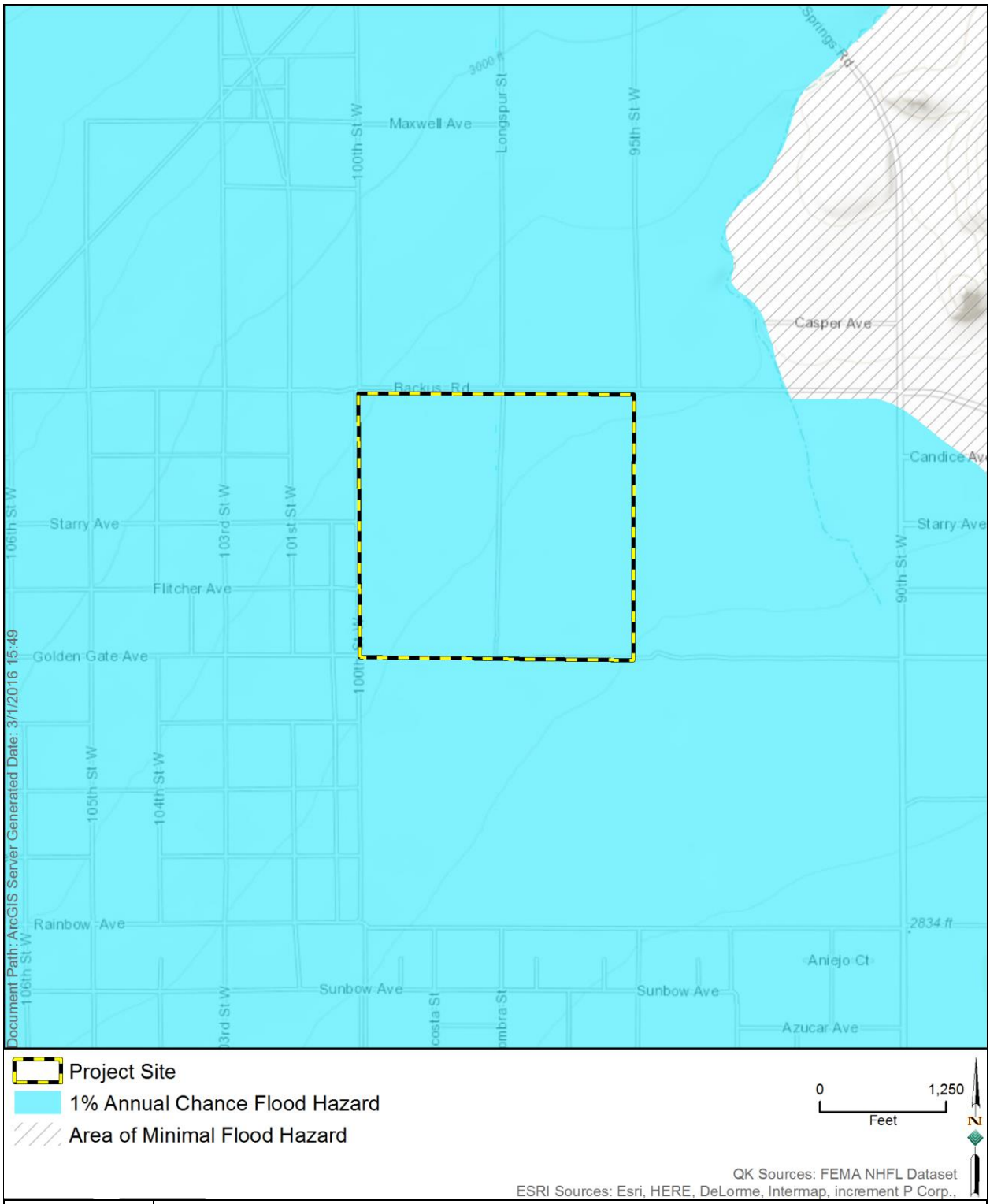

Figure 4 – FEMA Designated 100-Year Flood Zone Boundary Encompassing the Syracuse Solar Project Site, Kern County, California

Table 2
Plants Observed on the Syracuse Solar Project Site, Kern County, California

Scientific Name	Common Name
Ambrosia dumosa	burrobush
Ambrosia salsola	cheese bush
Amsinckia menziesii	common fiddleneck
Atriplex canescens	four-wing saltbush
Atriplex polycarpa	allscale saltbush
Avena spp.	oat grass
Bromus diandrus	ripgut brome
Cannabis sativa	marijuana
Croton spp.	Turkey mullein
Cylindropuntia echinocarpa	silver/ golden cholla
Datura wrightii	jimson weed
Ephedra viridis	ephedra
Ericameria nauseosa	rubber rabbitbrush
Eriogonum fasciculatum	California buckwheat
Hirschfeldia incana	wild mustard
Juniperus californica	California juniper
Krascheninnikovia lanata	winterfat
Larrea tridentata	creosote
Lycium cooperi	Cooper's boxthorn
Marubium vulgare	horehound
Optunia basilaris	beavertail cactus
Salvia columbariae	chia sage
Stephanomeria pauciflora	wire lettuce
Stipa hymenoides	Indian rice grass
Tamarix spp.	salt cedar
Xylorhiza tortifolia	Mojave aster
Yucca brevifolia	Joshua tree

3.4 - Soils

Three soil types are present on the Project site: Cajon loamy sand, Cajon gravelly loamy sand, and Garlock loamy sand. The Cajon sands dominate approximately 90 percent of the Project site. The Garlock soil occurs in the southwest corner of the Project site, covering approximately 10 percent of the area (Figure 5).

Cajon Loamy Sand and Cajon Gravelly Loamy Sand: The Cajon soil series consists of very deep, somewhat excessively well drained soils. These soils are formed in sandy alluvium from granitic rocks. Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. They have negligible to low runoff and rapid permeability; Cajon soils with sandy loam surface textures have moderate rapid to over rapid permeability.

Garlock Loamy Sand: The Garlock soil series consists of very deep, well drained soils that formed from mixed alluvium. Garlock soils are on old stream terraces and alluvial fans in the Mojave Desert. These soils are well drained with low to medium runoff, and moderately slow over very rapid permeability.

3.5 - Precipitation

The Project site occurs in the Mojave Desert, which is separated from the influence of the ocean by the Coast Range and is in a broad rain shadow, leading to relatively arid conditions year-round. On average, temperatures reach a maximum of 98.5 degrees Fahrenheit (F) in July and a minimum of 34.2F in January. In the City of Mojave, which is the largest metropolitan area in the vicinity, the average annual precipitation is approximately 6.34 inches and there are, on average, only 16 days each year of frost (Cooperative Observer Program ID: 045756) (WRCC 2016). Normally, approximately 90 percent of the precipitation occurs from November to April (WRCC 2016). The arid conditions and variable precipitation from year to year, coupled with extremes in temperature, create a harsh and unpredictable environment for a variety of wildlife. Consequently, the availability of water or soil moisture is a critical factor that determines the broad distribution of vegetation types and associated wildlife species in the region.

3.6 - USGS Topographic Drainages and National Wetlands Inventory

The National Hydrology Dataset (NHD) depicts two unnamed blue-line drainages occurring on the Project site (Figure 6). One drainage flows through the northeast corner of the Project site along a north-northwest and south-southeast axis. This drainage originates approximately 7.5 miles northwest of the Project site in the foothills of the Tehachapi Mountains. Another blue-line drainage flows through the southwest portion of the Project site, along a north-northwest and south-southeast axis. This drainage originates approximately 4.5 miles northwest of the Project site in the foothills of the Tehachapi Mountains.

One additional drainage and a ditch (drainage 2 and ditch 1, Figure 7) not shown on the USGS topographic maps or found in the NHD were mapped on the Project site. No wetlands occurred on or near the Project site. The NWI shows an excavated lacustrine feature (L2USJX) located approximately 1.80 miles northeast of the Project site, adjacent to Cactus Gold Mine.

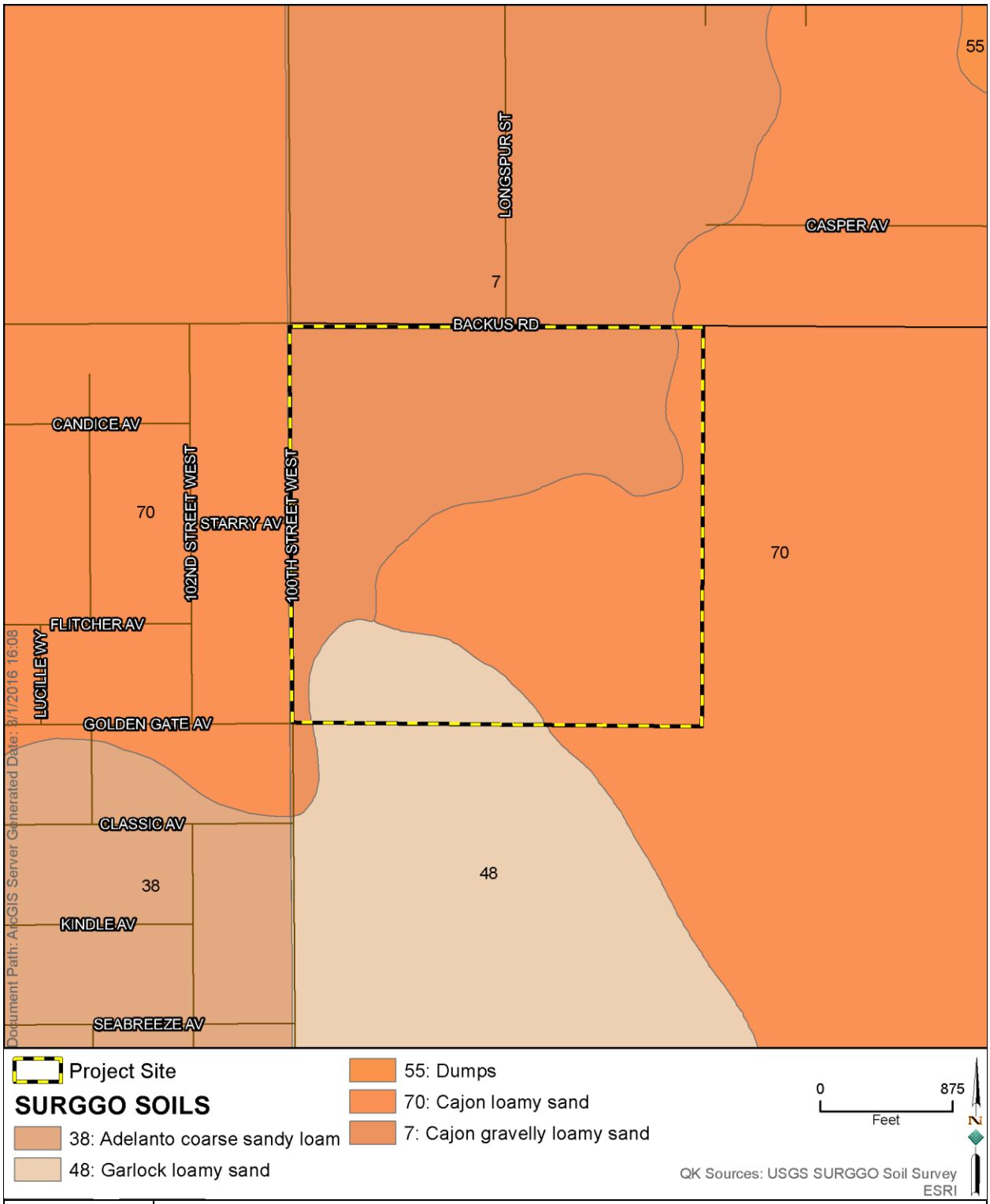

Figure 5 – Soils on the Syracuse Solar Project Site, Kern County, California

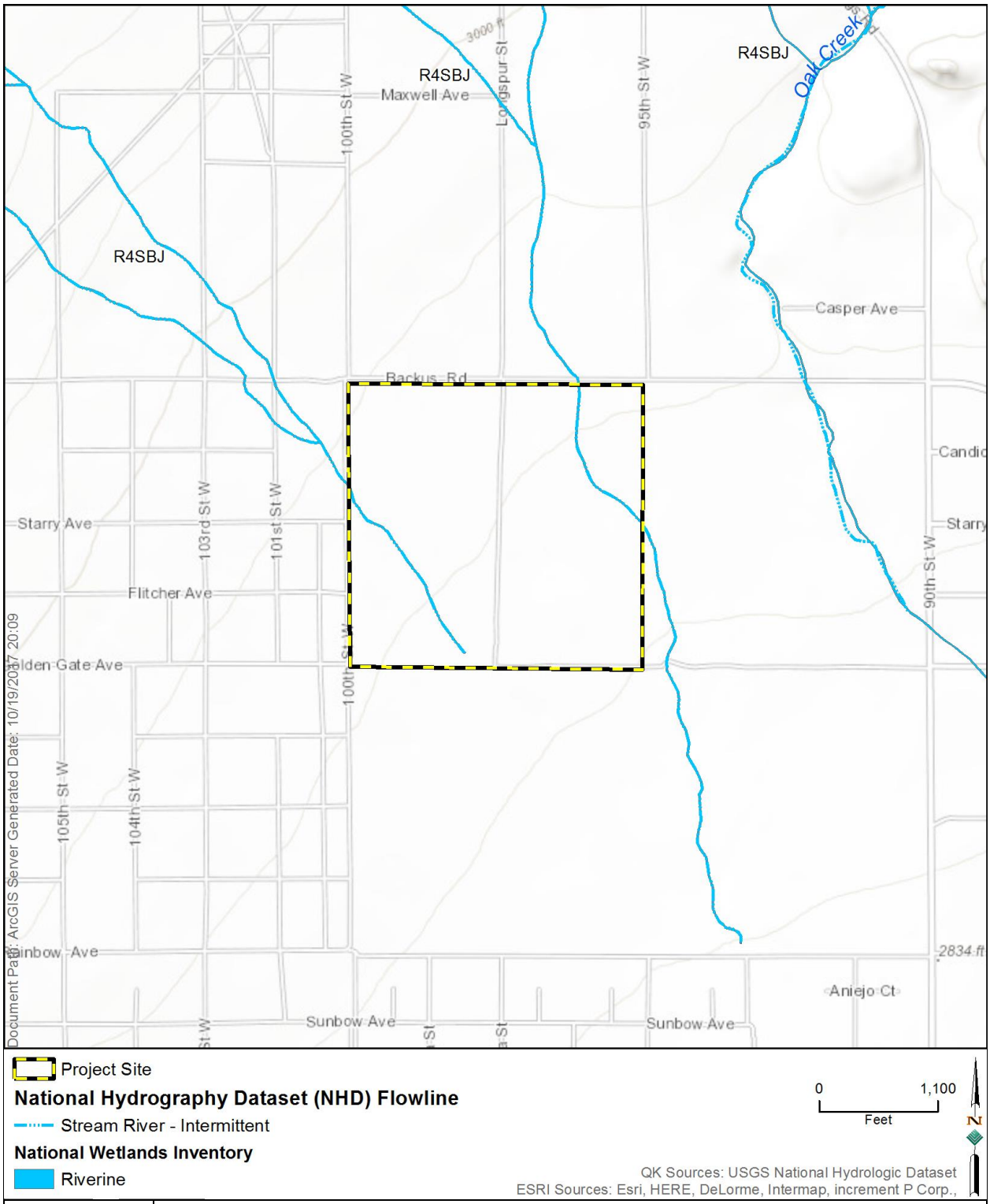

Figure 6 – USGS Blue-Lines on the Syracuse Solar Project Site, Kern County, California

Syracuse Solar Project
Kern County, California
Aquatic Resources Delineation Map

Survey Transect

Syracuse (164 acres)

Watercourses (7.42 acres)

- LFC: Low-flow Channel (0.41 acre)
- HFC: High-flow Channel (0.33 acre)
- AFP: Active Floodplain (6.64 acre)
- Bank: Bank (0.05 acre)

Water Feature	Low-flow Channel Acreage	High-flow Channel Acreage	Active Floodplain Acreage	Bank Acreage	Total Watercour Acreage
Drainage 1	0.235	0.582	5.864	0	6.681
Drainage 2	0.046	0.062	0	0	0.108
Drainage 3	0.070	0	0	0	0.070
Ditch 1	0.009	0	0	0.046	0.056
Total	0.360	0.644	5.864	0.046	6.914

N

0 375
Feet

1 inch = 375 feet

Coordinate System: NAD 1983 StatePlane California V FIPS 0405 (US Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983

Made July 29, 2016 in accordance with the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program, as amended on February 10, 2016, by: Tyler Schade, Quad Knopf, Inc.

Figure 7 – Delineated Waters at the Syracuse Solar Project Site, Kern County, California

3.7 - Delineated Wetlands and Waters

Three drainages and one ditch were delineated on the Project site (see Figure 7). The watercourse boundaries of these water features encompassed a total of approximately 6.914 acres (Table 3). All delineated water features are isolated episodic waters, which typically only flow for brief periods in response to rainfall. The three drainages were single braided channels and included fluvial indicators such as sandy bar forms, drainage swales, flow lineations, organic drift, out-of-channel flow (lateral floodplain), secondary channels, and mud cracks. The water features also included erosion indicators such as cut banks, exposed roots, rills, scour on the channel bottom, secondary channels, and water-cut benches. The ditch exhibited typical slope, bed, and bank characteristics. No riparian vegetation occurred in association with these water features.

Fluvial indicators for Drainages 1, 2, and 3 were recorded on MESA Field Guide datasheets (Appendix B).

3.7.1 - DRAINAGES

Drainage 1: This drainage is oriented in a northwest – southeast direction and extends approximately 1,450 feet across the Project site (see Figure 7). The watercourse of Drainage 1 encompasses approximately 6.68 acres on the Project site. Of the 6.68 acres, approximately 0.235 acre occurs within the low-flow channel on the site, approximately 0.582 acres occur within the high-flow channel, and approximately 5.864 acres occurs within the active floodplain. Fluvial indicators associated with this feature included cut banks, exposed roots, rills, scours, secondary channels, mud cracks, and secondary channels.

Drainage 2: This drainage flows into Drainage 1 from the north, where it originates south of Backus Road. It encompasses approximately 0.108 acre and extends approximately 850 feet on the Project site. Of the 0.108 acre, approximately 0.046 acre occurs within the low-flow channel and approximately 0.062 acre occurs within the high flow channel. No bank or active flood plain are associated with this feature. Fluvial indicators within the low-flow channel included cut banks, exposed roots, rills, and scours.

Drainage 3: The drainage occurs near the southwest corner of the Project site, encompasses approximately 0.070 acre, and extends approximately 700 feet in length. The entire 0.070 acre occurs within the low flow channel of the feature. Fluvial indicators within the watercourse included rills and scours.

3.7.2 - DITCHES

Ditch 1: This drainage occurs on the southern border of the Project site, along Champagne Road. It encompasses approximately 0.555 acre and extends approximately 900 feet along the southern border of the Project site. Of the 0.555 acre, approximately 0.009 acre occur within the low-flow channel, and approximately 0.046 acre occurs within the bank. No high flow channel or active flood plain was associated with this feature. Fluvial indicators within the watercourse included mud cracks, cut banks, rills, and scours.

Table 3
Water Feature Data for Syracuse Solar Project Site, Kern County, California

Water Feature	Low-flow Channel Acreage	High-flow Channel Acreage	Active Floodplain Acreage	Bank Acreage	Total Watercourse Acreage
Drainage 1	0.235	0.582	5.864	0	6.681
Drainage 2	0.046	0.062	0	0	0.108
Drainage 3	0.070	0	0	0	0.070
Ditch 1	0.009	0	0	0.046	0.056
Total	**0.360**	**0.644**	**5.864**	**0.046**	**6.914**

SECTION 4 - CONCLUSIONS

Four water features were identified and delineated on the Project site, including three drainages and one ditch (see Figure 7). The watercourse boundaries of these water features encompassed a total of approximately 6.914 acres on the Project site (Table 3). No riparian vegetation was associated with any of these water features.

Drainages 1 and 3 extend to the north of the Project site, but not do not appear to connect with any significant features that could be classified as a Water of the U.S. Drainage 2 appears to be isolated to the Project site, bounded by Backus Road to the north. Ditch 1 is a roadside ditch that is isolated and confined to the Project site. All water features mapped on the Project site are likely Waters of the State and would fall under the jurisdictional authority of the CDFW and the RWQCB (Lahontan Region). As isolated non-wetland drainages that do not establish connectivity with navigable waters, the water features on the Project site are not considered Waters of the U.S.

The Project may result in up to 6.914 acres of disturbance to the existing watercourses. The final disturbance area will depend upon the final design and layout of the solar facilities. Impacts to the water features would require a Section 401 permit (Water Quality Certification) through the RWQCB (Lahontan Region) and a Section 1602 Lake and Streambed Alteration Agreement with the CDFW. A Section 404 permit from the USACE would not be required.

SECTION 5 - REFERENCES

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APPENDIX A – PHOTOPLATES

Photograph 1: Drainage 1, facing north, 06/17/16.

Photograph 2: Drainage 2, facing east, 06/17/16.

Representative Photos of the Syracuse Solar Site,
Kern County, California

Photograph 3: Drainage 3, facing west, 06/17/16.

Photograph 4: Ditch 1, facing east, 08/08/16.

Representative Photos of the Syracuse Solar Site, Kern County, California

APPENDIX B – DATA FORMS

Episodic Stream Indicator Data Sheet page 1 of 4

Site ID: 150447.06 | Stream ID: Drainage 3 | Date: 7/18/2016 and 7/19/2016

Nearest Town: Rosamond | County: Kern

Investigators: Tyler Schaad, Mitchell Coleman, Alex Single

Base Map

Aerial Photo #: | Date: | Topographic Map Name: | Date:

GPS Data

GPS Name: | Datum: | Transect Elevation: | Zone 10 / 11 | GPS Error: ± ft / m

GPS co-ords start of transect: | GPS co-ords end of transect:

Geomorphic Province (✓ one) ✓ Mojave | Sonoran/Colorado | Great Basin | Other:

Landform (✓ all that apply)

Headwater | Upper fan | Middle fan | Lower fan | Alluvial plain | Axial valley | Playa

Channel Form (✓ one)

Single thread | Braided | Compound | Distributary | Discontinuous | Other:

Transect was selected to:

✓ Document fluvial activity & boundaries | Document channel elevations & boundaries

Document habitat associations | Document a change in watercourse morphology

Other:

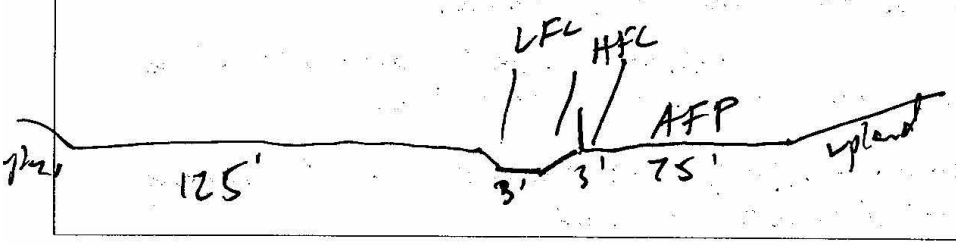
Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:

Backus Road is at the terminus of the main channel. Dirt bikes have been observed in the area.

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.

Left ——— Right



MESA: October 2014 5-5

Site ID: 150447.06	Stream ID: Drainage 3	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators				Substrate Particle Size	
				Estimated percentages	
	Av soil horizon		Relict bars & swales		% Bedrock / Cemented substrate
	Biotic soil crusts		Rock fractured in place	% Boulder	≥ 256 mm
	Bioturbation ✓		Rock varnish	% Cobble	≥ 64 – 256mm
	Caliche coatings / layers / rubble		Rock weathering	% Pebble	≥ 4 – 64 mm
	Carbonate etching		Rubified rock undersides	% Granule	≥ 2 – 4 mm
	Coppice dunes: active / relict		Soil development	% Sand	≤ 2 mm
	Deflated surface		Surface rounding of landform	% Silt/Clay	Fines
	Pavement		Woody debris in place		
	Other:				

Fluvial Indicators					
	Bars: sand / gravel ✓		Mud cracks / curls / drapes		Sediment tails: sand / gravel
	Cut banks		Organic drift		Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches ✓
	Exposed roots ✓		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
50%	creosote bush	1.5m x 1.5m

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): upland has higher density of shrubs than in the watercourse complex

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): boxthorn, winterfat, mormobush; all occur in the uplands but not in the watercourse

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences) creosote bushes slightly more abundant in the uplands ~10%, no differences otherwise

MESA: October 2014 5-6

Site ID:	Stream ID: Drainage 3	page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators				Substrate Particle Size	
	Bar forms: sand / gravel		Secondary channels ✓	Estimated percentages	
	Bifurcated flow		Sediment plastering	% Bedrock / Cemented substrate	
	Drainage swales		Sediment ramps: sand / gravel	% Boulder	≥ 256 mm
	Flow lineations		Sediment sheets: sand / gravel	% Cobble	≥ 64 – 256 mm
	Imbricated gravel		Sediment sorting	% Pebble	≥ 4 – 64 mm
	Levee ridges: sand / gravel		Sediment tails: sand / gravel	% Granule	≥ 2 – 4 mm
	Mud: cracks / curls / drapes		Vegetation-channel alignments	% Sand	≤ 2 mm
	Organic drift		Wrack	% Silt/Clay	Fines
	Overturned rocks		Wrinkle marks		
	Out-of-channel flow: Lateral floodplain / Terminal floodplain				
	Ripples				
	Other:				

Erosion Indicators

	Cut banks ✓		Rills		Water-cut benches
	Exposed roots		Scour		Water level mark
	Headcuts		Secondary channels ✓		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
40%	Creosote: 40%	1.5 m x 1.5 m

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): no Creosote in the lfc, 40% density of creosote in flood plain

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): No

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences)

No

MESA: October 2014 5-7

Site ID	Stream ID Drainage 03	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other:				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014

5-8

Episodic Stream Indicator Data Sheet page 1 of 4

Site ID: 150417.06 | Stream ID: Drainage 4 | Date: 7/19/16

Nearest Town: Rosamond, CA | County: Kern

Investigators: Tyler S. Mitchell, C.

Base Map

Aerial Photo #: | Date: | Topographic Map Name: | Date:

GPS Data

GPS Name: | Datum: | Transect Elevation: ~2800 ft | Zone 10 / 11 | GPS Error: ± ft / m

GPS co-ords start of transect: | GPS co-ords end of transect:

Geomorphic Province (✓ one) | (Mojave) | Sonoran/Colorado | Great Basin | Other:

Landform (✓ all that apply)

Headwater | Upper fan | Middle fan | Lower fan | Alluvial plain | Axial valley | Playa

Channel Form (✓ one)

(Single thread) | Braided | Compound | Distributary | Discontinuous | Other:

Transect was selected to:

- Document fluvial activity & boundaries ✓
- Document channel elevations & boundaries
- Document habitat associations
- Document a change in watercourse morphology
- Other:

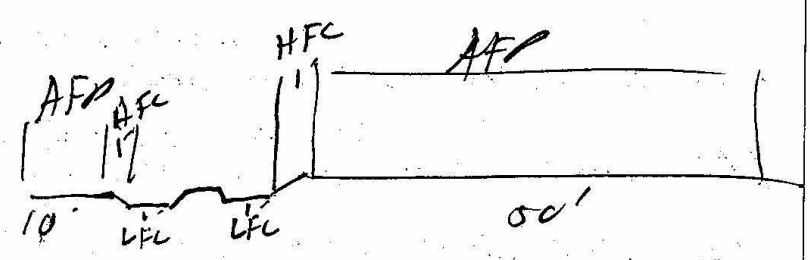
Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:

just like drainage 3

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.

Left ——— Right



MESA: October 2014 5-5

Site ID:	Stream ID: Drainage 4	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators NA			Substrate Particle Size	
	Av soil horizon	Relict bars & swales	Estimated percentages	
	Biotic soil crusts	Rock fractured in place	% Bedrock / Cemented substrate	
	Bioturbation	Rock varnish	% Boulder	≥ 256 mm
	Caliche: coatings / layers / rubble	Rock weathering	% Cobble	≥ 64 – 256mm
	Carbonate etching	Rubified rock undersides	% Pebble	≥ 4 – 64 mm
	Coppice dunes: active / relict	Soil development	% Granule	≥ 2 – 4 mm
	Deflated surface	Surface rounding of landform	% Sand	≤ 2 mm
	Pavement	Woody debris in place	% Silt/Clay	Fines
	Other:			

Fluvial Indicators NA					
	Bars: sand / gravel		Mud: cracks / curls / drapes		Sediment tails: sand / gravel
	Cut banks		Organic drift		Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches
	Exposed roots		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
50%	creosote bush: 50%	1.5m x 1.5m

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): upland has higher density of shrubs than in the water cause complex

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): box thorn, winterfat, burro bush, all of these species are found only in the uplands

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences)
creosote bush: slightly more abundant in the uplands, ~10%, no other differences

MESA: October 2014 5-6

Site ID: | Stream ID: Drainage 4 | page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators

Bar forms: sand / (gravel)	Secondary channels ✓
Bifurcated flow ✓	Sediment plastering ✓
Drainage swales ✓	Sediment ramps: sand / gravel
Flow lineations	Sediment sheets: (sand) / gravel
Imbricated gravel	Sediment sorting
Levee ridges: sand / gravel	Sediment tails: sand / gravel
Mud (cracks) / curls / drapes	Vegetation-channel alignments ✓
Organic drift	Wrack
Overturned rocks	Wrinkle marks
Out-of-channel flow: ✓ Lateral floodplain / Terminal floodplain	
Ripples ✓	
Other:	

Substrate Particle Size

Estimated percentages

% Bedrock / Cemented substrate	
% Boulder	≥ 256 mm
% Cobble	≥ 64 – 256 mm
% Pebble	≥ 4 – 64 mm
% Granule	≥ 2 – 4 mm
% Sand	≤ 2 mm
% Silt/Clay	Fines

Erosion Indicators

Cut banks ✓	Rills ✓	Water-cut benches ✓
Exposed roots ✓	Scour	Water level mark
Headcuts ✓	Secondary channels ✓	
Other:		

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
40%	creosote bush (30%) poa sp ~~[illegible]~~ (10%)	creosote: ~~[illegible]~~ 1.5m x 1.5m poa ~~[illegible]~~: 1in x 2in

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): larger density of creosote bush in the floodplain, very little density in the stream feature.

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): winterfat, burrobush California buckwheat all present in the floodplain, not present in the LFC.

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences) low flow channel does not have more abundant vegetation, vegetation more abundant in floodplain

MESA: October 2014 5-7

Site ID	Stream ID drainage 4	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other:				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014

5-8

DELINEATION OF WATERS

TOURS SOLAR PROJECT SITE

KERN COUNTY, CALIFORNIA

SEPTEMBER 2016

DELINEATION OF WATERS.

TOURS SOLAR PROJECT SITE
KERN COUNTY, CALIFORNIA

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November 2017

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Project #150447.06

Table of Contents

EXECUTIVE SUMMARY *1*

1.0 Introduction *1*

2.0 METHODS *6*

3.0 RESULTS *11*

3.1 Land Use and Topographic Relief 11
3.2 Watersheds and Regional Hydrology 13
3.3 Plant Communities 13
3.4 Soils 15
3.5 Precipitation 17
3.6 USGS Topographic Drainages and National Wetlands Inventory 17
3.7 Delineated Wetlands and Waters 19
3.7.1 DRAINAGES 19

4.0 CONCLUSIONS *22*

5.0 REFERENCES *23*

APPENDICES

Appendix A Photoplates
Appendix B Data Sheets

List of Figures

Figure 1 Regional Map of the Tours Solar Site, ... 3
Figure 2 Vicinity Map of the Tours Solar Project Site, ... 4
Figure 3 Project Site, Tours Solar Project, Kern County, California 11
Figure 4 FEMA Designated 100-Year Flood Zone Boundary Encompassing the Tours Project Site, Kern County, California 13
Figure 5 Soils on the Tours Solar Project Site, Kern County, California 15
Figure 6 USGS Blue-Lines on the Tours Solar Site, Kern County, California 17
Figure 7 Delineated Waters Map on the Tours Project Site, Kern County, California 20

List of Tables

Table 1 Indicators of Stream Activity (Brady 2013) 7
Table 2 Plants Observed on the Tours Solar Project Site, Kern County, California 14
Table 3 Water Features on the Tours Project Site, Kern County, California 19

EXECUTIVE SUMMARY

Lend Lease Energy Development, LLC (Lend Lease) proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities. These three solar sites are known as Tours Solar, LLC, Syracuse Solar, LLC and Sunbow Solar, LLC. Collectively, these three sites are referred to as the AV Apollo Solar Project. The solar facilities will be constructed on approximately 492-acres of land at the southwestern edge of Kern County, California. The sites may be combined and constructed at the same time as a single, 60 megawatt (MW) (AC) facility, or alternatively, could be developed as three independent, 20 MW facilities. The Project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Rd. and located on the Syracuse and Tours solar sites. The Tours Solar (Project) site encompasses approximately 160 acres. The Project site occurs within zoning district A FP (Exclusive Agriculture, Floodplain Combining), but has not been cultivated. The Project site consists of desert landscape and, except for two abandoned buildings, is generally in an undisturbed condition.

QK, Inc. conducted a delineation of waters (including potential wetlands) on the Project site. These data will allow impacts to waters to be determined based upon final Project design, and the determination of any permitting that would need to be completed for the Project.

Prior to conducting field investigations, a review of available literature and a search of the National Wetlands Inventory (NWI), aerial imagery, and topographical maps were conducted. Field investigations were conducted on June 2, June 18, and July 19, 2016 to identify and delineate all water features on the Project site. The Project site was evaluated for the presence of Wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the most recent version of the *Arid West Supplement* (Version 2.0 2008a). Linear drainages and other similar waters were delineated using methodologies and diagnostic characteristics presented in the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Field Guide) (USACE 2008b). The *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* was also referenced primarily using the *Appendix G: MESA Field Guide: Mapping Episodic Stream* (MESA) document.

The Project site is located within the Tropico Hill-Oak Creek Watershed in the Antelope Hydrologic Unit, within the South Lahontan Hydrologic Region. The National Hydrology Dataset (NHD) depicts two blue-line drainages occurring on the Project site: Oak Creek and an unnamed drainage. Oak Creek flows through the northeast corner of the Project site trending along a north-northwest and south-southeast axis. Oak Creek extends approximately 10 miles north of the Project site to its headwaters in the foothills of the Tehachapi Mountains and terminates approximately 0.65 miles southeast of the Project site at Montiverde Road. The unnamed drainage flows southeast across the southwestern corner of the Project site. The drainage extends approximately 6 miles to the north where its

headwaters begin in the foothill of the Tehachapi Mountains and terminates approximately 0.5 miles south of the Project site at Montiverde Road.

The delineated boundaries of Oak Creek corresponded very closely to the available blue-line map of this feature. The delineated boundaries of the unnamed blue-line feature only partially corresponded with the available blue-line map of this feature. Some of the mapped blue-line extent of this feature is actually the remains of a dilapidated, abandoned road. All water features are considered to be isolated episodic or ephemeral waters, which typically only flow for brief periods in response to rainfall.

Four water features were identified and delineated on the Project site. The watercourse of Oak Creek encompasses 5.86 acres and extends 2,500 feet in length on the Project site. The watercourse of Drainage 1 (the unnamed feature discussed above) encompasses 0.117 acre and extends approximately 300 feet in length on the Project site. The watercourse of Drainage 2 encompasses 0.329 acre and extends approximately 1,100 feet in length on the Project site. The watercourse of Drainage 3 encompasses 0.318 acre and extends approximately 500 feet in length on the Project site. As isolated non-wetland drainages that do not establish connectivity with navigable waters, the water features on the Project site are not considered Waters of the U.S. However, all four water features occurring on the Project site are likely Waters of the State and would fall under the jurisdictional authority of the Regional Water Quality Control Board. The California Department of Fish and Wildlife (CDFW) would likely also take jurisdiction over the water features, associated bank habitat, and active floodplains associated with these features.

1.0 INTRODUCTION

Lend Lease Energy Development, LLC (Lend Lease) proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities. These three solar sites are known as Tours Solar, LLC, Syracuse Solar, LLC and Sunbow Solar, LLC. Collectively, these three sites are referred to as the AV Apollo Solar Project. The solar facilities will be constructed on approximately 492-acres of land at the southwestern edge of Kern County, California (Figures 1 and 2). The sites may be combined and constructed at the same time as a single, 60 megawatt (MW) (AC) facility, or alternatively, could be developed as three independent, 20 MW facilities. The Project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Rd. and located on the Syracuse and Tours solar sites. The Tours Solar (Project) site encompasses approximately 160 acres. The Project site occurs within zoning district A FP (Exclusive Agriculture, Floodplain Combining), but has not been cultivated. The Project site consists of desert landscape and, except for two abandoned buildings, is generally in an undisturbed condition. A number of operating solar facilities exist within a 10-mile radius of the Project site. The nearest operating solar facilities include the Catalina Renewable Energy Project, located two miles to the southwest, and SEPV Solar, which is located approximately five miles north of the Project site.

This report includes the results of a delineation of wetlands and waters that QK conducted on the Project site. Wetlands that are under federal jurisdiction are defined as:

"*Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas*" [40 CFR 230.3(t)].

Waters of the United States are defined as:

"*All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, all impoundments of waters otherwise defined as waters of the United States under this definition, tributaries of waters previously identified, the territorial sea, and wetlands adjacent to waters (other than waters that are themselves wetlands) previously identified"* [40 CFR 230.3(s)].

Waters of the State are defined in the California Water Code as:

"*Any surface water or groundwater, including saline waters, within the boundaries of the state*" [Section 13050 (e)].

This definition for Waters of the State does not distinguish between wetlands and waters, but includes all surface waters, including non-jurisdictional wetlands. This is a much broader definition than that for Waters of the U.S.

QK delineated Waters of the U.S. and Waters of the State that occur on the Project site to:

- Document existing site conditions;
- Determine the presence of waters that occur on the Project site using standardized diagnostic criteria; and,
- Delineate wetland boundaries, boundaries of the Ordinary High Water for those features that may be under the jurisdictional authority of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB), and boundaries of the watercourse for those features that may be under the jurisdictional authority of the the California Department of Fish and Wildlife (CDFW).

Tasks that were completed include:

- Reviewing previous environmental reports, topographic maps and aerial photography;
- Reviewing National Wetland Inventory (NWI) data and maps and published soil survey data and maps;
- Conducting a field survey of the Project site to locate all potential waters;
- Determining potential Waters of the U.S. at the Ordinary High Water Mark (OHWM) using the *A Field Guide to the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b);
- Documenting soil conditions, hydrological conditions, and plant community composition of potential wetlands following the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* where warranted (USACE 2008a);
- Documenting soil conditions, hydrological conditions, and plant community composition of potential waters following the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* (Brady 2013);
- Determining the presence and distribution of, and mapping the boundaries of, wetlands and other waters located on the Project site based upon standardized characteristics.

This report summarizes the distribution of water features that were found on the Project site. These data will allow impacts to the water features to be determined based upon final Project design, and to determine the necessary permitting that would be needed. This report will also provide information sufficient to allow the USACE and CDFW to conduct a wetland and waters verification and prepare a jurisdictional determination for the Project.

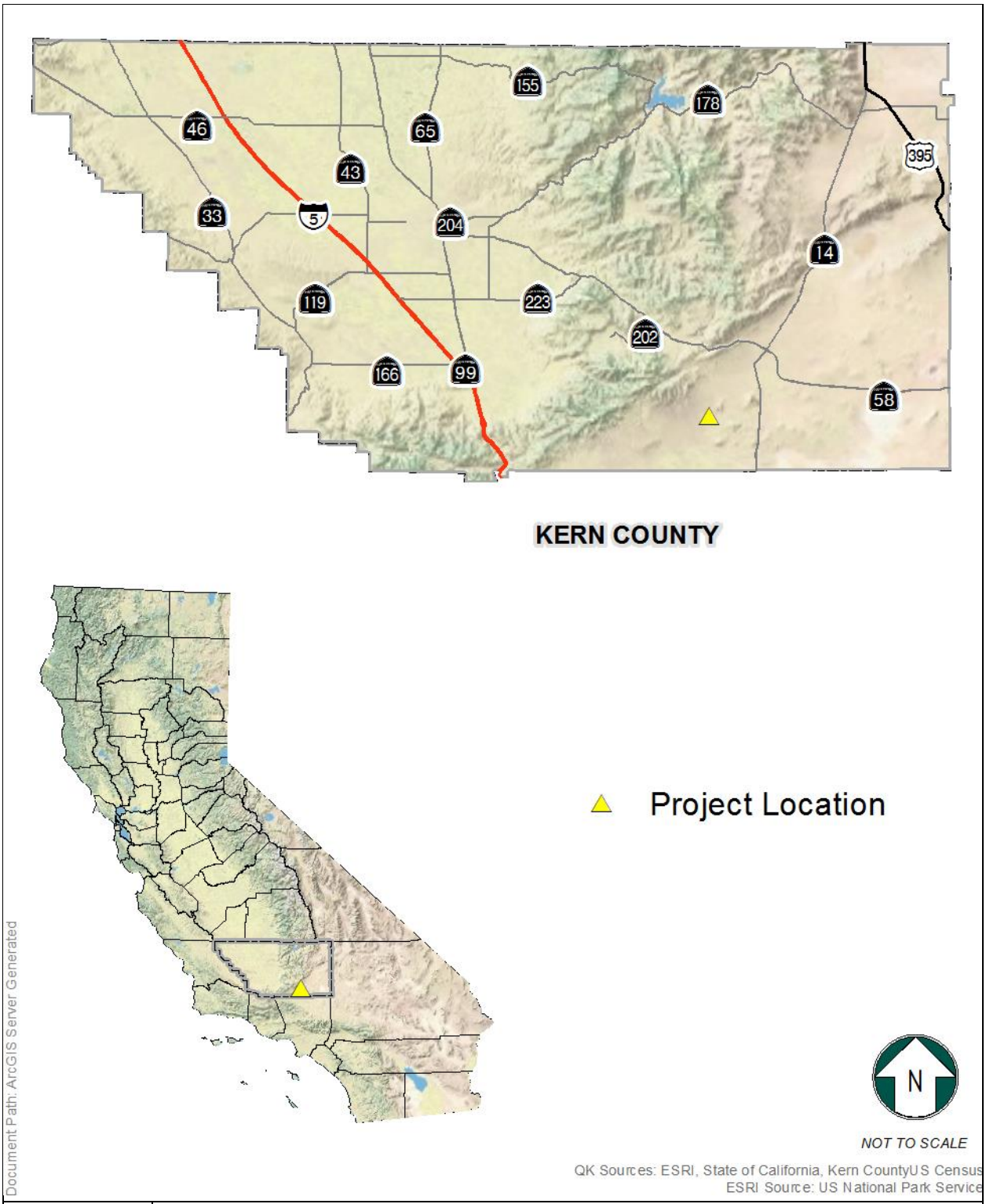


Figure 1
Regional Map of the Tours Solar Site,
Kern County, California

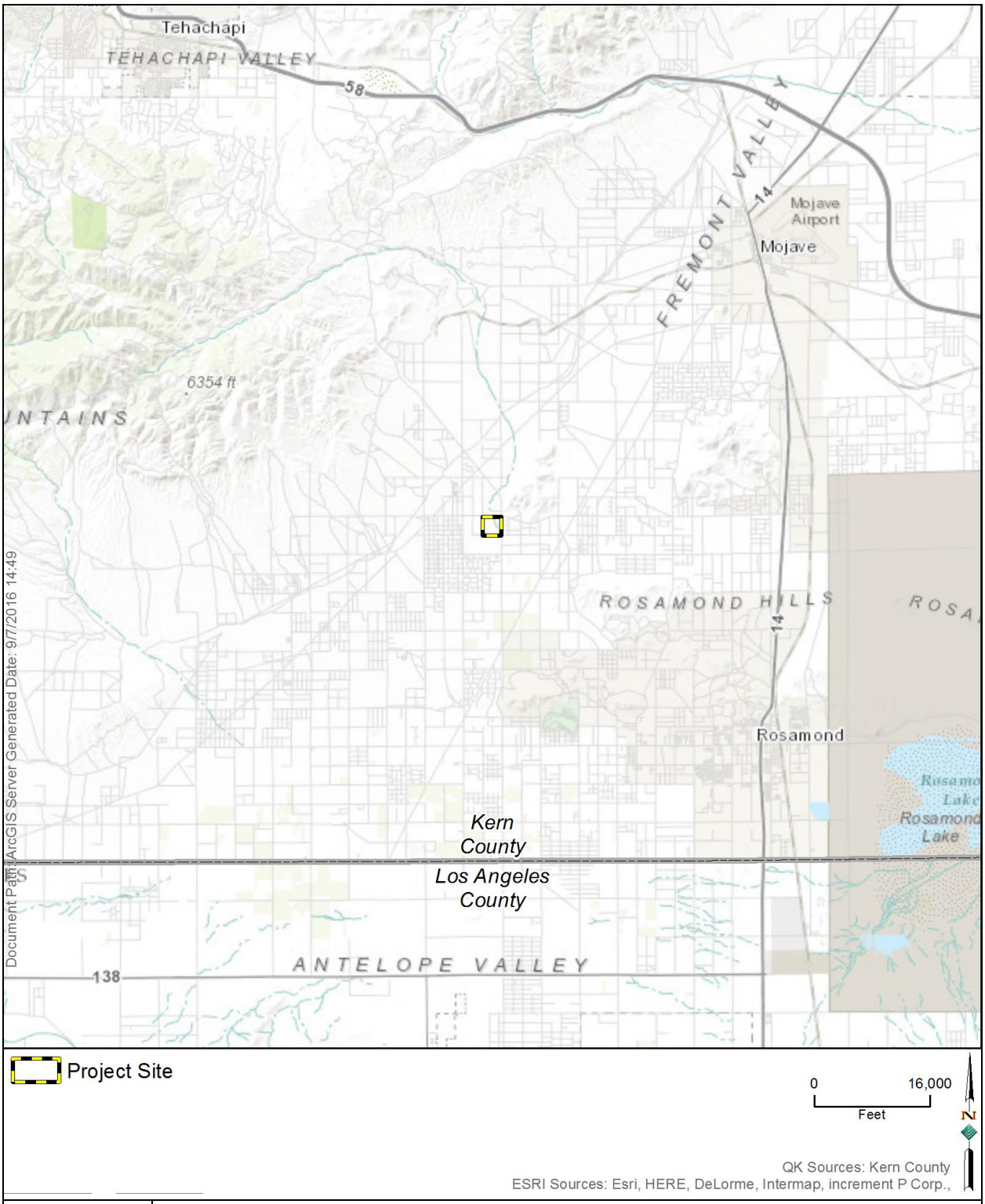


Figure 2
Vicinity Map of the Tours Solar Project Site, Kern County, California

2.0 METHODS

A literature review and database search were conducted prior to performing field investigations. The NWI (USFWS 2016) was searched for known occurrences of wetlands, and United States Geological Survey (USGS) 7.5 minute topographic maps were evaluated for the presence of known natural drainage features ("blue-line") and other potential waters occurring on and near the Project site. Aerial imagery (ArcGIS Online 2016) was reviewed to identify differences in vegetative cover, slope, and general terrain that can be indicative of water presence. Information on regional hydrology, including the National Hydrology Dataset (NHD) from the United States Geological Survey (USGS), was obtained from the Geospatial Data Gateway website of the Natural Resources Conservation Service and the Lahontan Region Basin Plan (RWQCB 2015). Weather and precipitation data were obtained from the Western Regional Climate Center (WRCC 2016) and soils data were obtained from the Web Soil Survey (USDA-NRCS 2016).

QK Associate Environmental Scientist Tyler Schade conducted field investigations on June 2, June 18, and July 19, 2016, with support from Assistant Environmental Scientists Alex Single and Mitchell Coleman on July 18 and 19, 2016, to identify and delineate wetlands and waters on the Project site. Pedestrian transects were conducted in a manner to ensure 100 percent visual coverage of the site. Due to the problematic nature of mapping wetlands and waters in arid environments, a combination of methodologies was used to conduct the delineation.

The Project site was evaluated for the presence of wetlands using standard methods described in the *1987 Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the most recent version of the *Arid West Supplement* (Version 2.0 2008a). The Project site was inspected for wetland indicators including hydric soils, hydrophytic vegetation, and hydrology. If wetland conditions were met, paired sample points were located on either side of each feature boundary to obtain information describing both wetland and upland conditions. The locations of sample points were mapped using a Trimble GeoXH Global Positioning System (GPS) unit. At each sample point, the presence or absence of hydrologic indicators was noted, soils were characterized, and present vegetation was analyzed following standard procedures. Hydrologic indicators included the presence of reduced iron, water-stained leaves, drainage patterns, drift deposits, surface soil cracks, saturation visible on aerial imagery, and other diagnostic characteristics. Soil samples were excavated and soils were inspected to characterize soil profiles at each sample plot, and to compare site observations with soil conditions described in the Web Soil Survey (USDA-NRCS 2016). Soil horizonation, texture, moisture content, depth to saturation, and/or standing water was noted for each soil pit. The presence or absence of particulate organic matter, redoximorphic features, depleted matrices, gleying, and other diagnostic characteristics were noted. Soil colors were determined using Munsell soil color charts (*sensu* Munsell 2000). The cover of observed plant species was visually estimated and recorded. Dominant plant species were identified in accordance with the USACE 50/20 Rule. Plant identification was determined using the *Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). The wetland indicator status of each plant species was determined using the National Wetland Plant List: 2016 Wetland Ratings (Lichvar, R.W. 2016). The

hydrologic, soil, and vegetative data recorded at the sample points were transcribed onto USACE Arid West Region Wetland Determination Data Forms.

Linear drainages and other similar waters were delineated using methodologies and diagnostic characteristics presented in the *Methods to Describe and Delineate Episodic Stream Processes on Arid-Landscapes for Permitting Utility-Scale Solar Power Plants: With the MESA Field Guide* (Brady 2013), with references to the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Field Guide) (USACE 2008b). Additionally, the *Review of Stream Processes and Forms in Dryland Watersheds*, which shares many similarities with the MESA guide, was also referenced (CDFW 2010). Both the MESA guide and the USACE Field Guide datasheets require entries for standard evaluative characteristics including fluvial and terrestrial indicators, vegetation cover, transportation, deposition, flow indicators, and sediment texture. The primary differences between datasheets in the USACE Field Guide and the MESA Guide pertain to the identification of geomorphic units and the significance of the OHWM. The MESA guide recommends consultation with a professional geologist to identify basic geological and geomorphic units. The MESA guide discourages using the traditional OHWM indicators to define the boundaries of a watercourse, and instead recommends using the local topography, elevations of land, and specific indicators of fluvial activity to identify the boundaries of a watercourse.

Dryland, or episodic, stream processes are often outside the normal range of the hydrologic and morphologic characteristics of their temperate and humid region counterparts, and their hydrology, sediment transport characteristics, and resultant channel forms cannot be reliably modeled by extrapolation from temperate and humid region fluvial systems (CDFW 2010) (Brady 2013). Potential water features on the Project site were initially identified by noting changes in geomorphology, vegetative distribution, fluvial indicators, and various aspects of hydrology and sedimentation. Some of the defining geomorphic characteristics of dryland stream processes include:

- Short-lived, localized, and highly variable flow, often referred to as a flashy discharge pattern;
- Great variability in flood magnitudes (high magnitude, low-frequency), such that discharge of floods tends to be significantly greater than the mean annual flow Downstream decreases in flow volume;
- Asynchronous flow that produces abrupt morphological changes at tributary confluences;
- Abrupt and episodic deposition of sediments that creates a fabric of highly varied transient channel forms;
- A flat and plane bed topography at lower reaches;
- Low sinuosity and high width-to-depth channel ratios;
- Indefinite floodplain boundaries;

- Channel bottoms that support vegetation;
- Numerous lower stream order channels that are tributaries to main watercourses; and
- Flow path uncertainty that results in alluvial fan formation.

For water features on the Project site, the active floodplain, when present, was considered to be the lateral limit of non-wetland waters. When an active floodplain was absent, the high-flow channel was considered to be the lateral limit of non-wetland waters. When the high-flow channel was absent, the bank was considered to be the lateral limit of non-wetland waters. The active floodplain is an area associated with a stream over which water and sediment from that stream overflow into when the capacity of the channel is exceeded (Brady 2013). The high-flow channel, sometimes called "secondary channels," carries water during high flows or flood flows and may include topographically higher channels (higher than low-flow channel) or out of channel flows, including those over benches or around islands. The bank is the land on the outermost edge of the channel that confines the channels' boundary when its water rises to the highest level of confinement (Brady 2013). The low-flow channel is the topographically lowest stream channel, or the dominant subchannel, within a channel watercourse (Brady 2013).

The identification of terrestrial (upland) and fluvial processes guide the mapping of the watercourse boundary (Table 1). These indicators may or may not be present in every feature, and may exhibit spatial and temporal variability in position over the length of a feature or laterally across it.

Table 1
Indicators of Stream Activity (Brady 2013)

Terrestrial Processes	Fluvial indicators	
Av horizon	Bar forms	Wrinkle marks
Biotic soil crusts	Bifurcated flow	Cut banks
Biotubation	Drainage swales	Exposed roots
Caliche	Flow lineations	Headcuts
Carbonate etching	Imbricated gravel	Rills
Coppice dunes	Levee ridged	Scour
Deflated surface	Mud (cracks, curls, drapes)	Secondary channels
Drainage swales	Organic drift	Water-cut benches
First-order streams	Out-of-channel flow	Water level marks
Over-turned rocks	Overturned rocks	Algal crusts
Pavement	Ripples	Beach ridges
Relict bar and swale	Secondary channels	Biotic soul crusts
Rock fractured in place	Sediment plastering	Sand-filled channels
Rock varnish	Sediment ramps	Springs
Rock weathering	Sediment sheets	Substrate staining
Rubified rock undersides	Sediment sorting	
Soil development	Sediment tails	
Surface rounding of landform	Vegetation-channel alignment	
Woody debris in place	Wrack	

Upland, fluvial and watercourse indicators were recorded on the Episodic Stream Indicator Data Sheet at a representative location along the channel feature that reflected existing indicators of the channel. The MESA guide, specifically the *Review of Channel Forms and Geomorphic Units* and *Photographic Atlas*, was used to fill out the data forms and map the watercourse boundaries.

The stepwise delineation procedure that was used consisted of:

1. Aerial imagery was reviewed for evidence of stream activity. Previous site visits had been made to facilitate reconnaissance-level surveys, and, as such, the general locations of channels were known. The entire site was also surveyed by foot to identify potential watercourses and signs of fluvial activity.

2. An appropriate transect that encompassed a cross-section of the full potential watercourse was identified and endpoints were mapped.

3. The entire drainage was walked, including cross-sectional transect, and the physical setting, describing surficial materials and conditions, including disturbance and/or anthropogenic influences on the channel, was noted.

4. A cross-sectional sketch of the watercourse from edge to edge was drawn and labeled. Approximate width and elevation differences were noted.

5. The upland indicators (terrestrial and fluvial) were marked on the data sheet, where applicable, including substrate particle size, terrestrial indicators, fluvial indicators, total vegetation cover, dominant and co-dominate species and total cover, and representative height and width of dominant and co-dominant species. Differences in total vegetation density between upland and fluvially-active areas (including watercourse) were indicated.

6. The watercourse indicators were marked on the data sheet, where applicable, including substrate particle size, transportation, deposition, and flow transition indicators, erosion indicators, total vegetation cover, dominant and co-dominate species and total cover, and representative height and width of dominant and co-dominant species. Differences in total vegetation density between the low-flow channel and adjacent floodplain were indicated.

7. The transition area between the low-flow channel and high-flow channel or bank, depending on water feature, was identified by observing changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The low-flow channel was then delineated.

8. The transition area between the high-flow channel or bank and active floodplain was identified by observing changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The high-flow channel or bank was then delineated.

9. The transition area between the active floodplain and upland area was identified by observing changes in sediment texture, vegetation cover, vegetation maturity, dominant species composition, and topographic and geomorphic changes. The active floodplain was then delineated.

10. Photographs were taken of each watercourse, data point locations, and representative fluvial activity.

The watercourse includes all functionally related swales, first-order streams, single-thread channels, compound channels, braided channels, discontinuous and distributary channel networks, and active floodplains (Brady 2013). For some watercourses, the out-of-channel flow occurred in both the high-flow channel and the active floodplain, separated by topographic and/or elevation changes.

Watercourse boundaries, data points, and transects were mapped with a Trimble GeoXH Global Positioning System (GPS) unit. Data were post-processed with Pathfinder Office to ensure sub-meter accuracy. Watercourse delineation maps were produced by overlaying the survey GPS data with 2014 ortho-rectified one-foot pixel resolution color aerial imagery (ArcGIS Online 2016).

3.0 RESULTS

This section describes various characteristics of the Project site including historic and current land use, topographic relief, the presence and distribution of plant communities, the presence and distribution of soil types, precipitation and growing season, waters information based upon the NWI database, USGS topographic maps, and results of the waters delineation.

3.1 Land Use and Topographic Relief

The Project site is located near the southeast region of Kern County, California in the Mojave Basin and Range ecoregion (USEPA 10.2.1) and the Willow Springs United States Geological Survey (USGS) 7.5-minute topographical quadrangle. The Project site is located in the northern ½ of Section 19, Township 10 North, Range 13 West, San Bernardino Base and Meridian (SBB&M). The Project site is approximately nine miles northwest of Rosamond, nine miles southwest of the City of Mojave, 11 miles south of State Route 58, and 8 miles east of State Route 14 (see Figures 1 and 2). To the north, the Project site is bounded by Backus Road and to the east by Tehachapi Willow Springs Road (Figure 3). The site, in addition to the surrounding lands, is zoned for agriculture but has never been cultivated. The Project site consists mostly of undisturbed Creosote shrubland with a small matrix of dirt roads (Figure 3).

The foothills of the Tehachapi Range occur approximately 5.5 miles northwest of the Project site, and the Central Transverse Range occurs 20 miles southwest of the Project site. The Project site and surrounding land are mostly flat and exhibit little topographic variation. Cactus Gold Mine, an active mine, is located approximately 2,246 feet to the northeast of the Project site. Preserve land managed by the Bureau of Land Management (BLM) is located approximately one-mile northeast of the Project site. Off-highway vehicles (dirt bikes) were been observed at Oak Creek in the northeast corner of the Project site.

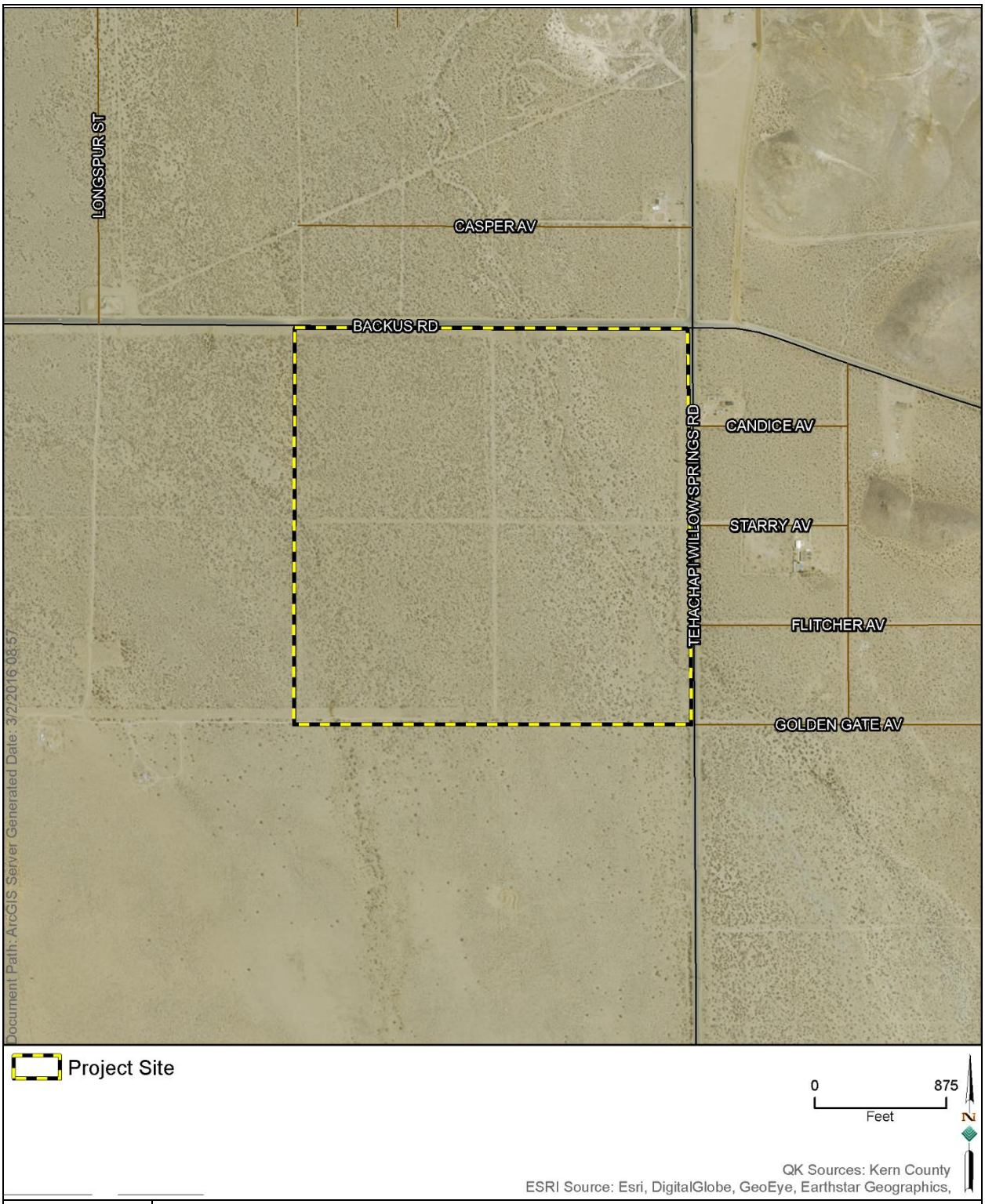


Figure 3
Project Site, Tours Solar Project,
Kern County, California

3.2 Watersheds and Regional Hydrology

The Project site is located within the Tropico Hill-Oak Creek Watershed in the Antelope Hydrologic Unit, within the South Lahontan Hydrologic Region. The South Lahontan Hydrologic Region represents about 17 percent of the land (26,732 square miles) area in California. The region includes Inyo County and portions of Mono, San Bernardino, Kern, and Los Angeles counties. It is bounded to the north by the drainage divide between Mono Lake and East Walker River; to the west and south by the Sierra Nevada, San Gabriel, San Bernardino, and Tehachapi mountains; and to the east by the State of Nevada. In addition to the Sierra Nevada, important mountain ranges in the region include the White Mountains, the Avawatz Mountains, and the Argus and Coso ranges. The mountains are separated by many U-shaped alluvial valleys, some of which are quite large. Drainage for most of the watershed in the region is internal. Along with the arid climate, this accounts for the presence of many dry lakebeds or playas in the region. Major lakes and reservoirs within the region include Mono Lake, June Lake, Convict Lake, Crowley Lake, and Tinemaha Reservoir in the north and Lake Arrowhead, Silverwood Lake, and Lake Palmdale in the south. Most of the perennial rivers are in the northern portion of this hydrologic region. These include the Owens River and Rush Creek. In the south, the Mojave and Amargosa rivers are present, but typically dry for most of the year.

Significant geographic features within the Antelope Hydrologic Unit include the Tehachapi Range and the Transverse Coastal Range. Both ranges act in concert to create a wide rain shadow, which contributes to the dry conditions of the Mojave Desert. The entire Project site occurs within a 100-year flood zone as defined by the Federal Emergency Management Agency (Figure 4).

3.3 Plant Communities

The Mojave Creosote Bush Scrub community dominates the majority of the Project site, with the exception of a small matrix of dirt roads. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes (Sawyer, Keeler-Wolf 1995). Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation, and extending into northwestern Arizona and southern Utah. Some creosote bush scrub associations are considered sensitive habitats by CDFW when specific vegetation alliances or associated species are present, and it is a natural community that is tracked in the California Natural Diversity database (CNDDB).

The creosote scrub vegetation on the Project site is dominated by creosote bush (*Larrea tridentata*). Other common shrubs occurring on the Project site include burrobush (*Ambrosia dumosa*), Cooper's boxthorn (*Lycium cooperi*), silver cholla (*Opuntia echinocarpa*), allscale saltbush (Atriplex polycarpa), and rubber rabbitbrush (*Ericameria nauseosa*). The Project site also includes an herbaceous layer consisting of a mixture of native and invasive annual grasses and forbs (Table 2).

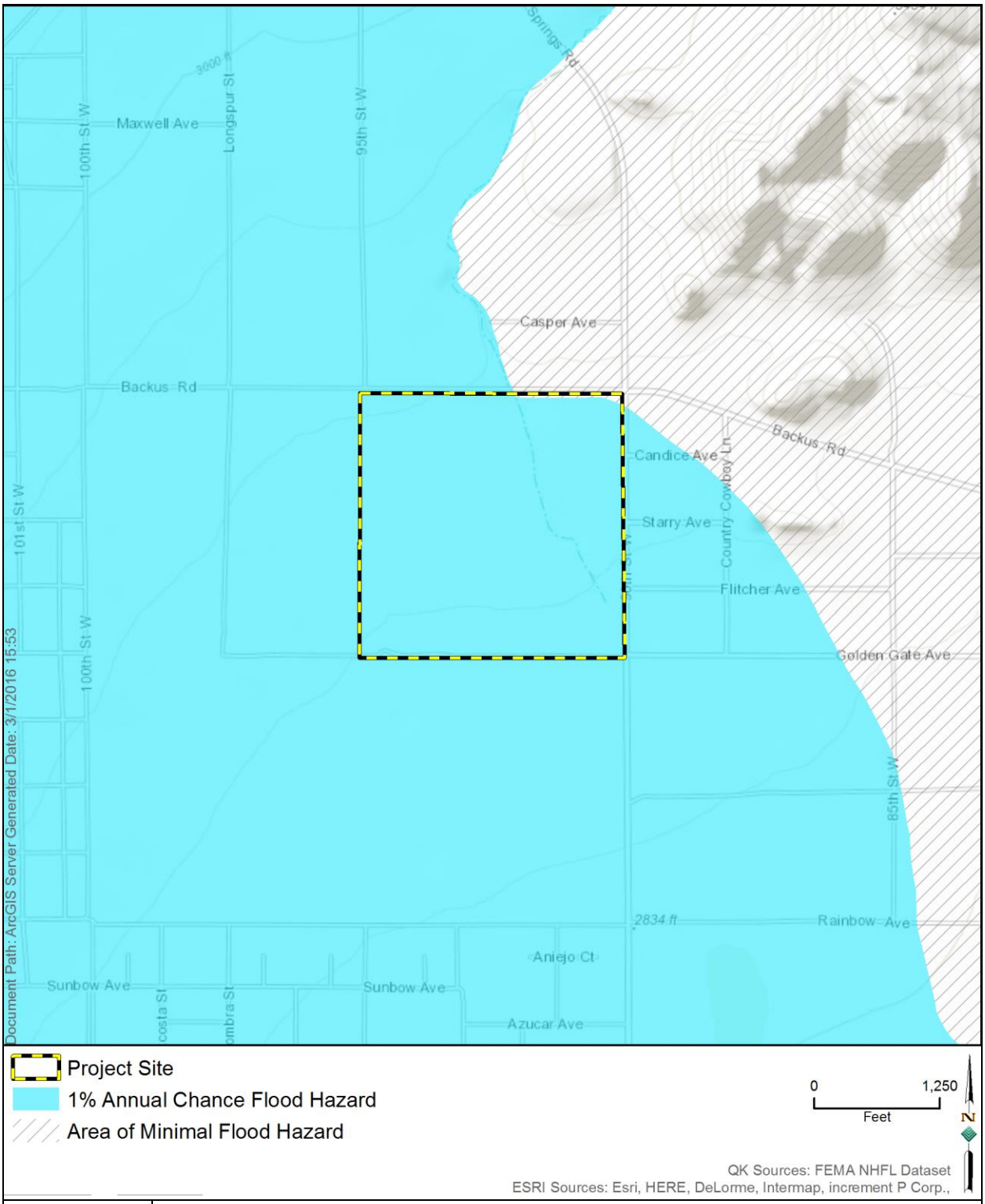


Figure 4
FEMA Designated 100-Year Flood Zone Boundary Encompassing the Tours Project Site, Kern County, California

Table 2
Plants Observed on the Tours Solar Project Site, Kern County, California

Scientific Name	Common Name
Ambrosia dumosa	burrobush
Ambrosia salsola	cheese bush
Amsinckia menziesii	common fiddleneck
Atriplex canescens	four-wing saltbush
Atriplex polycarpa	allscale saltbush
Avena spp.	oat grass
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Cannabis sativa	marijuana
Croton spp.	turkey mullein
Cylindropuntia echinocarpa	silver/ golden cholla
Datura wrightii	jimson weed
Ephedra viridis	ephedra
Ericameria nauseosa	rubber rabbitbrush
Eriogonum fasciculatum	California buckwheat
Juniperus californica	California juniper
Krascheninnikovia lanata	winterfat
Larrea tridentata	creosote
Lycium cooperi	Cooper's boxthorn
Marubium vulgare	horehound
Optunia basilaris	beavertail cactus
Salvia columbariae	chia sage
Stephanomeria pauciflora	wire lettuce
Stipa hymenoides	Indian rice grass
Tamarix spp.	salt cedar
Xylorhiza tortifolia	Mojave aster
Yucca brevifolia	Joshua tree

3.4 Soils

Two soil types are present on the Project site: Cajon loamy sand and Garlock loamy sand. The Cajon loamy sand occurs over approximately 90 percent of the Project site. The Garlock soil occurs in the northeast corner of the site on approximately 10 percent of the Project site (Figure 5).

Cajon Loamy Sand: The Cajon soil series consists of very deep, somewhat excessively well drained soils. These soils are formed in sandy alluvium from granitic rocks. Cajon soils are

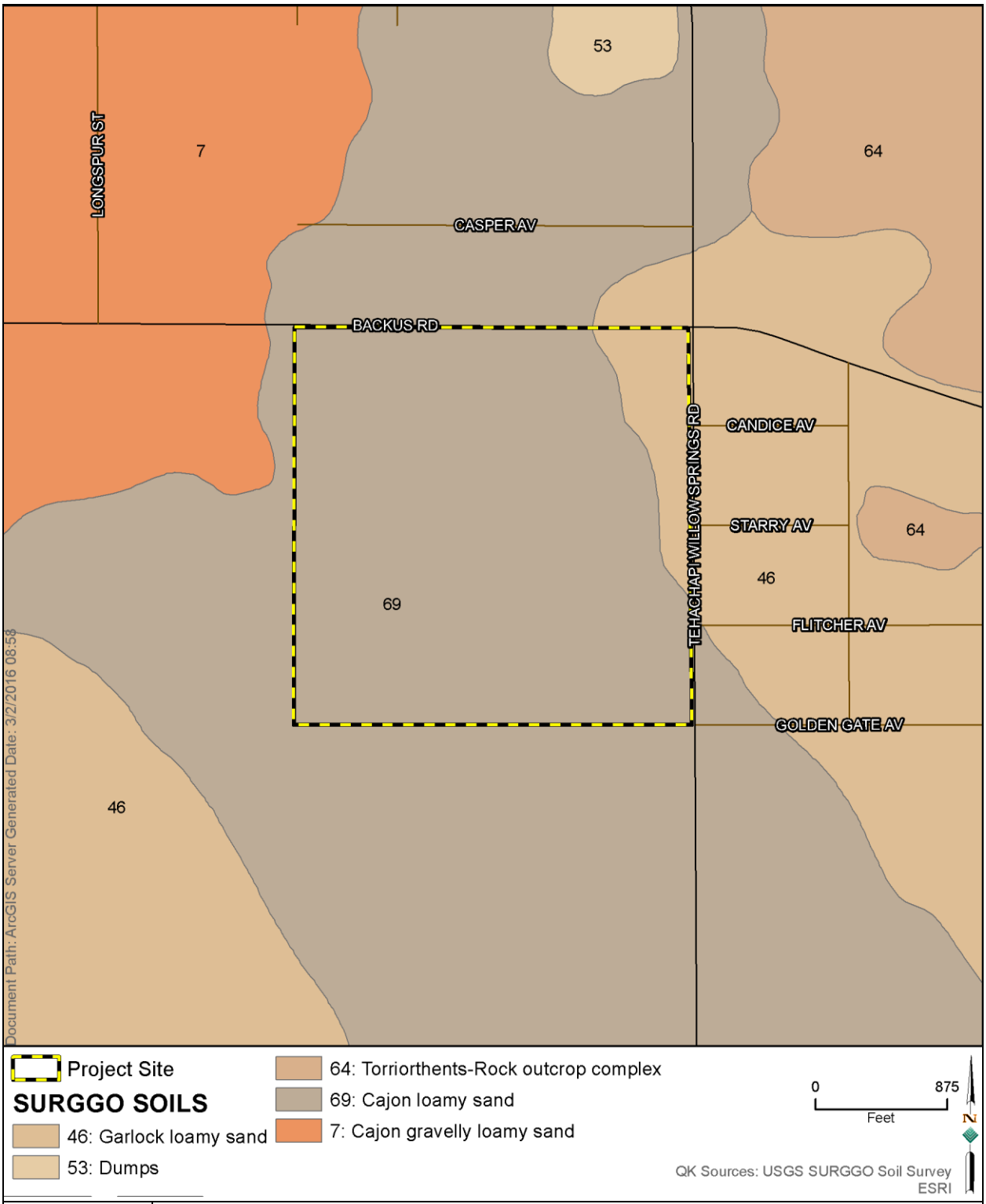


Figure 5
Soils on the Tours Solar Project Site, Kern County, California

on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. They have negligible to low runoff and rapid permeability; Cajon soils with sandy loam surface textures have moderate rapid to over rapid permeability.

Garlock Loamy Sand: The Garlock soil series consists of very deep, well drained soils that formed from mixed alluvium. Garlock soils are on old stream terraces and alluvial fans in the Mojave Desert. These soils are well drained with low to medium runoff, and moderately slow over very rapid permeability.

3.5 Precipitation

The Project site occurs in the Mojave Desert, which is separated from the influence of the ocean by the Coast Range and is in a broad rain shadow, leading to relatively arid conditions year-round. On average, temperatures reach a maximum of 98.5 degrees Fahrenheit (F) in July and a minimum of 34.2F in January. In the City of Mojave, which is the largest metropolitan area in the vicinity, the average annual precipitation is approximately 6.34 inches and there are, on average, only 16 days each year of frost (Cooperative Observer Program ID: 045756) (WRCC 2016). Normally, approximately 90 percent of the precipitation occurs from November to April (WRCC 2016). The arid conditions and variable precipitation from year to year, coupled with extremes in temperature, create a harsh and unpredictable environment for a variety of wildlife. Consequently, the availability of water or soil moisture is a critical factor that determines the broad distribution of vegetation types and associated wildlife species in the region.

3.6 USGS Topographic Drainages and National Wetlands Inventory

The National Hydrology Dataset (NHD) depicts two blue-line drainages occurring on the Project site: Oak Creek and an unnamed drainage (Figure 6). Oak Creek flows through the northeast corner of the Project site trending along a north-northwest and south-southeast axis. Oak Creek extends approximately 10 miles north of the Project site to its headwaters in the foothills of the Tehachapi Mountains. Oak Creek terminates approximately 0.65 miles southeast of the Project site at Montiverde Road. The unnamed drainage flows southeast across the southwestern corner of the Project site. The drainage extends approximately 6 miles to the north where it begins in the foothill of the Tehachapi Mountains, and terminates approximately 0.5 miles south of the Project site at Montiverde Road.

Two drainages (drainages 1 and 3, Figure 7) not shown on the USGS topographic maps or found in the NHD occurred on the Project site. No wetlands occurred on or near the Project site. The NWI shows an excavated lacustrine feature (L2USJX) located 1.61 miles northeast of the Project site, adjacent to Cactus Gold Mine.

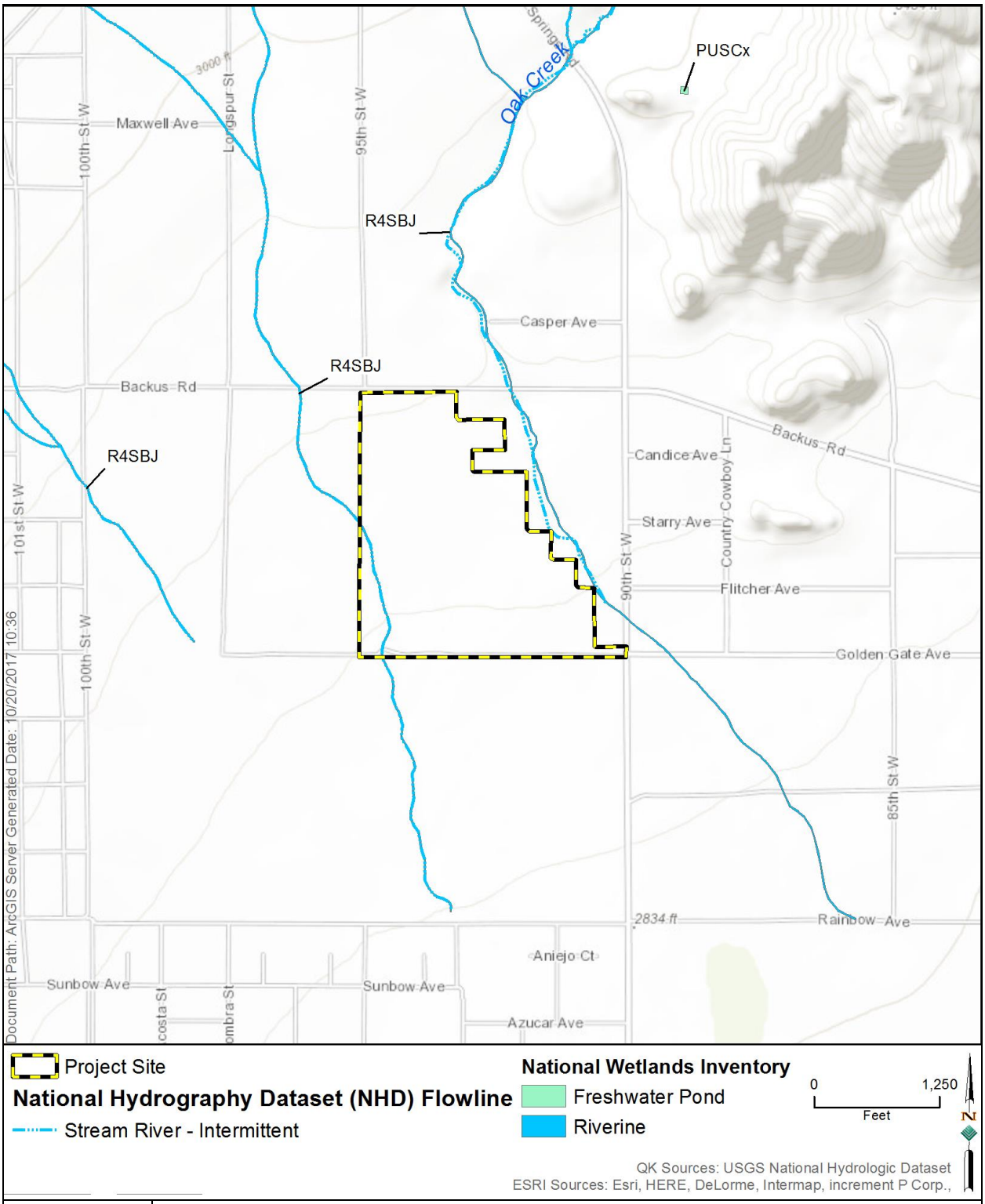


Figure 6
USGS Blue-Lines on the Tours Solar Site, Kern County, California

3.7 Delineated Wetlands and Waters

Four drainages were delineated on the Project site (see Figure 7). All delineated water features are isolated episodic waters, which typically only flow for brief periods in response to rainfall. All of the water features were single braided channels and included several fluvial indicators, including, when present, sandy bar forms, bifurcated flow, cut banks, drainage swales, flow lineations, organic drift, overturned rocks (with rubification), out-of-channel flow (lateral floodplain), secondary channels, sediment sorting, mud cracks, and wrack. All water features also included erosion indicators such as cut banks, exposed roots, rills, scour on the channel bottom, secondary channels, and water-cut benches. A total of approximately 6.62 acres of watercourse boundaries, including the low-flow channel, high-flow channel, active floodplain, and bank were delineated on the Project site (Table 2). Fluvial indicators for Oak Creek, Drainage 2, and Drainage 3 were recorded on MESA Field Guide datasheets (Appendix B).

3.7.1 DRAINAGES

Oak Creek: Oak Creek runs in a northwest – southeast orientation and extends approximately 2,500 feet across the Project site (see Figure 7). It encompasses 5.857 acres on the Project site. Of this,0.764 acre occurs within the low-flow channel on the site, 2.251 acres occur within the high-flow channel, and 2.844 acres occurs within the active floodplain.Fluvial indicators within the watercourse included sandy bar forms, bifurcated flow, drainage swales, flow lineations, organic drift, overturned rocks (with rubification), out-of-channel flow (lateral floodplain), secondary channels, sediment sorting, and wrack; erosion indicators included cut banks, exposed roots, rills, scour on the channel bottom, secondary channels, and water-cut benches.

Drainage 1: This drainage occurs south of Oak Creek on the eastern border of the Project site and flows off of Oak Creek in a southeast direction (see Figure 7). It encompasses 0.117 acre and extends approximately 300 feet onto the Project site. The low-flow channel of this drainage encompasses 0.101 acre and 0.016 acre occurs within the bank area outside the low-flow channel. No high-flow channel or active flood plain are associated with this feature. Fluvial indicators within the low-flow channel included changes in dominant vegetation cover and maturity and presence of drainage swales, break in bank slope, and channel.

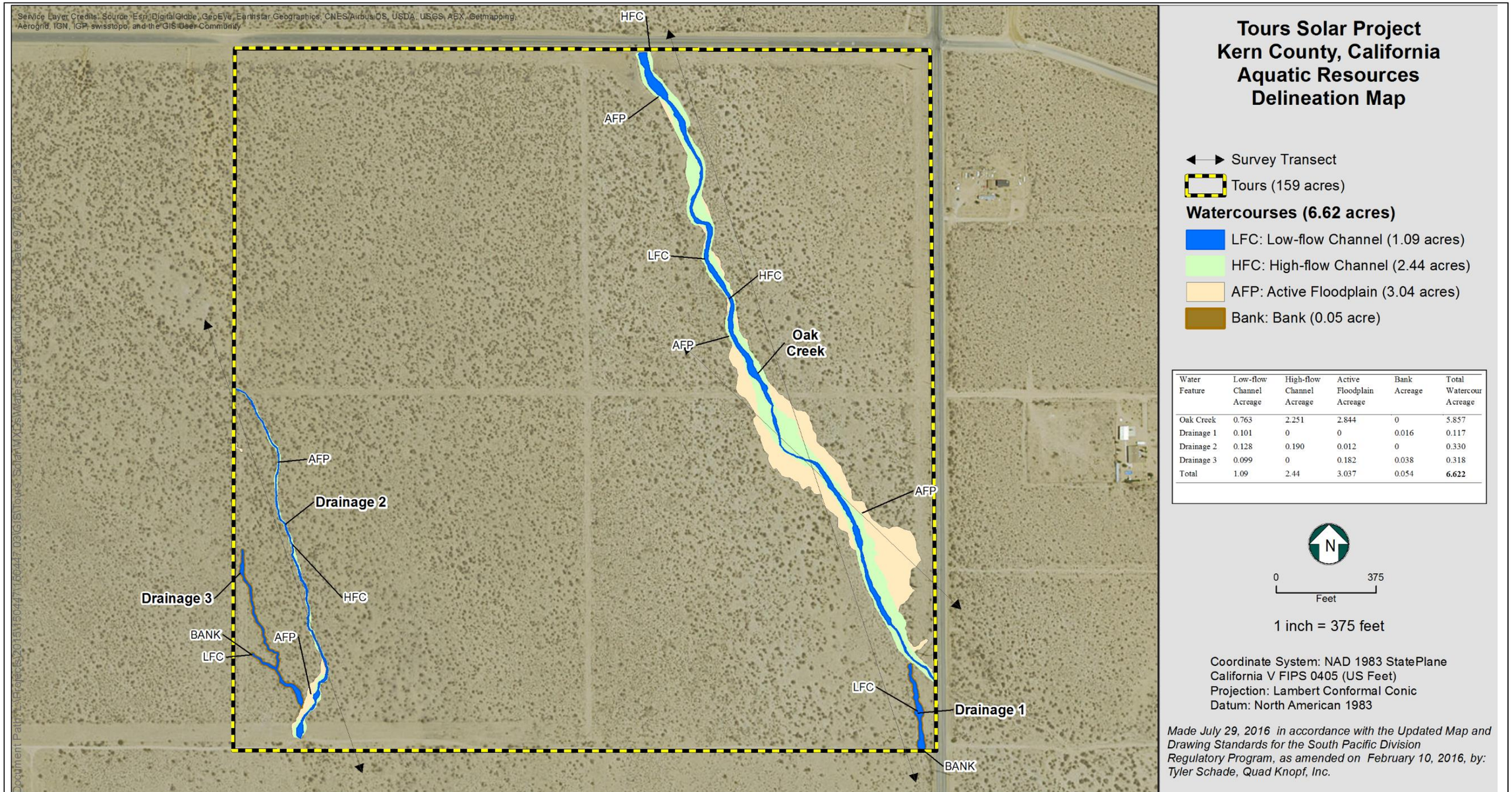
Drainage 2: This drainage occurs along the western boundary of the Project site and flows in a southeast direction (see Figure 7). It encompasses 0.330 acre and extends approximately 1100 feet in length. There is 0.128 acre within the low-flow channel, 0.190 acre within the high-flow channel, and 0.012 acre within the active flood plain. Fluvial indicators within the watercourse included drainage swales, mud cracks, out-of-channel flow, ripples, secondary channels, sediment plastering, sandy sediment sheets, and vegetation channel alignments; erosion indicators included cut banks, exposed roots, headcuts, rills, secondary channels, and water-cut benches.

Drainage 3: This drainage occurs on the eastern portion of the Project site, west of Drainage 2, and flows in a southeast direction, terminating where it joins Drainage 2 (see Figure 7). It

encompasses 0.318 acre and extends approximately 500 feet along the western border of the Project site. There is 0.099 acre within the low-flow channel, 0.038 acre of bank area beyond the low-flow channel, and 0.182 acre within the active flood plain. No high flow channel was associated with this feature. Fluvial indicators within the low-flow channel included changes in dominant vegetation cover and maturity and presence of drainage swales, break in bank slope, and channel.

Table 3
Water Features on the Tours Project Site, Kern County, California

Water Feature	Low-flow Channel Acreage	High-flow Channel Acreage	Active Floodplain Acreage	Bank Acreage	Total Watercourse Acreage
Oak Creek	0.763	2.251	2.844	0	5.857
Drainage 1	0.101	0	0	0.016	0.117
Drainage 2	0.128	0.190	0.012	0	0.330
Drainage 3	0.099	0	0.182	0.038	0.318
Total	**1.090**	**2.441**	**3.037**	**0.054**	**6.622**



Water Feature	Low-flow Channel Acreage	High-flow Channel Acreage	Active Floodplain Acreage	Bank Acreage	Total Watercour Acreage
Oak Creek	0.763	2.251	2.844	0	5.857
Drainage 1	0.101	0	0	0.016	0.117
Drainage 2	0.128	0.190	0.012	0	0.330
Drainage 3	0.099	0	0.182	0.038	0.318
Total	1.09	2.44	3.037	0.054	**6.622**

Figure 7
Delineated Waters Map of the Tours Project Site
Kern County, California

4.0 CONCLUSIONS

Four water features were identified and delineated on the Project site. Oak Creek and Drainage 2 contained fluvial indicators indicative of desert washes with associated active floodplains. Drainage 1 and Drainage 3 contained fluvial indicators indicative of typical drainage features with established bed and bank, and lacked active floodplains. The watercourse of Oak Creek encompasses 5.86 acres and extends 2,500 feet in length on the Project site. The watercourse of Drainage 1 encompasses 0.117 acre and extends 300 feet in length on the Project site. The watercourse of Drainage 2 encompasses 0.329 acre and extends 1,100 feet in length on the Project site. The watercourse of Drainage 2 encompasses 0.318 acre and extends 500 feet in length on the Project site. Drainage 1 and Drainage 3 are isolated on the Project site. Drainage 2 extends to the north and south of the Project site, but not does not appear to connect with any other significant features that could be classified as a Water of the U.S. Oak Creek extends to the north and east of the Project site, but is isolated within the general region. It does not connect with any other substantial waters, including Waters of the U.S. All water features mapped on the Project site are likely Waters of the State and would be under the jurisdictional authority of the CDFW and the RWQCB (Lahontan Region). As isolated non-wetland drainages that do not establish connectivity with navigable waters, the water features on the Project site are not Waters of the U.S.

The Project may result in a maximum of 6.62 acres of disturbance to existing watercourses. The final disturbance area will depend upon the final design and layout of the solar facilities. Impacts to the water features would require a Section 401 permit (Water Quality Certification) through the RWQCB (Lahontan Region) and a Section 1602 Lake and Streambed Alteration Agreement with the CDFW. A Section 404 permit from the USACE would not be required.

5.0 REFERENCES

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APPENDICES

APPENDIX A

PHOTOPLATES

Photograph 1: The north end of Oak Creek on the Project site, facing northwest, 07/18/2016.

Photograph 2: View of low-flow channel and benches at Oak Creek, facing northwest, 07/18/2016.

Representative Photos of the Tours Solar Site,
Kern County, California

Photograph 3: Drainage 2, west middle portion of the site, facing west, 06/02/2016.

Photograph 4: Drainage 2, west middle portion of the site, showing water cut benches, facing south, 07/18/2016.

Representative Photos of the Tours Solar Site, Kern County, California

Photo 5: View of Drainage 3 on the southwest portion of site, facing southeast, 07/18/2016.

Representative Photos of the Tours Solar Site,
Kern County, California

APPENDIX B

DATA FORMS

Episodic Stream Indicator Data Sheet page 1 of 4

Site ID: 150447.06 | Stream ID: Drainage 3 | Date: 7/18/2016 and 7/19/2016

Nearest Town: Rosamond | County: Kern

Investigators: Tyler Schaal, Mitchell Coleman, Alex Single

Base Map

Aerial Photo #: | Date: | Topographic Map Name: | Date:

GPS Data

GPS Name: | Datum: | Transect Elevation: | Zone 10 / 11 | GPS Error: ± ft / m

GPS co-ords start of transect: | GPS co-ords end of transect:

Geomorphic Province (✓ one) ✓ Mojave | Sonoran/Colorado | Great Basin | Other:

Landform (✓ all that apply)

Headwater | Upper fan | Middle fan | Lower fan | Alluvial plain | Axial valley | Playa

Channel Form (✓ one)

Single thread | Braided | Compound | Distributary | Discontinuous | Other:

Transect was selected to:

✓ Document fluvial activity & boundaries | Document channel elevations & boundaries

Document habitat associations | Document a change in watercourse morphology

Other:

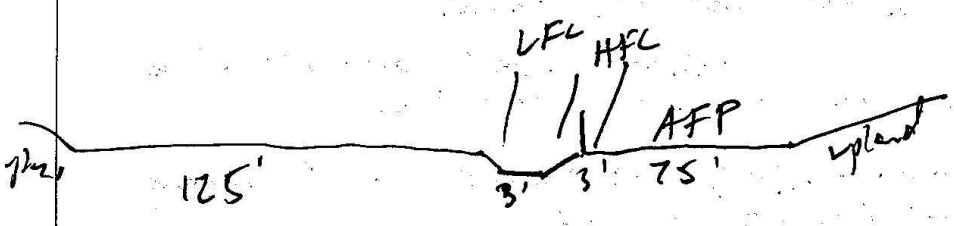
Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:

Backus Road is at the terminus of the main channel. Dirt bikes have been observed in the area.

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.

Left ——— Right



MESA: October 2014 5-5

Site ID: 150447.06	Stream ID: Drainage 3	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators				Substrate Particle Size	
	Av soil horizon		Relict bars & swales	Estimated percentages	
	Biotic soil crusts		Rock fractured in place	% Bedrock / Cemented substrate	
	Bioturbation ✓		Rock varnish	% Boulder	≥ 256 mm
	Caliche: coatings / layers / rubble		Rock weathering	% Cobble	≥ 64 – 256mm
	Carbonate etching		Rubified rock undersides	% Pebble	≥ 4 – 64 mm
	Coppice dunes: active / relict		Soil development	% Granule	≥ 2 – 4 mm
	Deflated surface		Surface rounding of landform	% Sand	≤ 2 mm
	Pavement		Woody debris in place	% Silt/Clay	Fines
	Other:				

Fluvial Indicators					
	Bars: sand / gravel ✓		Mud: cracks / curls / drapes		Sediment tails: sand / gravel
	Cut banks		Organic drift		Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches ✓
	Exposed roots ✓		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
50%	creosote bush	1.5m x 1.5m

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): upland has higher density of shrubs than in the watercourse complex

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): boxthorn, winterfat, burrobush: all occur in the uplands but not in the watercourse

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences) creosote bush: slightly more abundant in the uplands ~10%, no differences otherwise

MESA: October 2014 5-6

Site ID:	Stream ID: Drainage 3	page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators

	Bar forms: sand / gravel		Secondary channels ✓
	Bifurcated flow		Sediment plastering
	Drainage swales		Sediment ramps: sand / gravel
	Flow lineations		Sediment sheets: sand / gravel
	Imbricated gravel		Sediment sorting
	Levee ridges: sand / gravel		Sediment tails: sand / gravel
	Mud: cracks / curls / drapes		Vegetation-channel alignments
	Organic drift		Wrack
	Overturned rocks		Wrinkle marks
	Out-of-channel flow: Lateral floodplain / Terminal floodplain		
	Ripples		
	Other:		

Substrate Particle Size

Estimated percentages	
% Bedrock / Cemented substrate	
% Boulder	≥ 256 mm
% Cobble	≥ 64 – 256 mm
% Pebble	≥ 4 – 64 mm
% Granule	≥ 2 – 4 mm
% Sand	≤ 2 mm
% Silt/Clay	Fines

Erosion Indicators

	Cut banks ✓		Rills		Water-cut benches
	Exposed roots		Scour		Water level mark
	Headcuts		Secondary channels ✓		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
40%	Creosote: 40%	1.5 m x 1.5 m

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): no Creosote in the lfc, 40% density of creosote in flood plain

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): No

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences)

No

MESA: October 2014 5-7

Site ID	Stream ID Drainage B	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014

5-8

Episodic Stream Indicator Data Sheet page 1 of 4

Site ID: 150447.06 | Stream ID: Drainage 4 | Date: 7/19/16

Nearest Town: Rosamond, CA | County: Kern

Investigators: Tyler S. Mitchell, C.

Base Map

Aerial Photo #: | Date: | Topographic Map Name: | Date:

GPS Data

GPS Name: | Datum: | Transect Elevation: 2800ft | Zone 10 / 11 | GPS Error: ± ft / m

GPS co-ords start of transect: | GPS co-ords end of transect:

Geomorphic Province (✓ one) | Mojave | Sonoran/Colorado | Great Basin | Other:

Landform (✓ all that apply)

Headwater | Upper fan | Middle fan | Lower fan | Alluvial plain | Axial valley | Playa

Channel Form (✓ one)

Single thread | Braided | Compound | Distributary | Discontinuous | Other:

Transect was selected to:

Document fluvial activity & boundaries ✓ | Document channel elevations & boundaries

Document habitat associations | Document a change in watercourse morphology

Other:

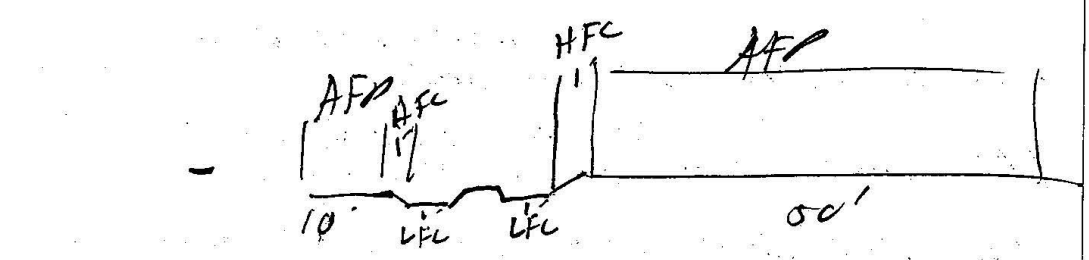
Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function:

just like drainage 3

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.

Left ——— Right



MESA: October 2014 5-5

Site ID:	Stream ID: Drainage 4	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators NA				Substrate Particle Size	
	Av soil horizon		Relict bars & swales	Estimated percentages	
	Biotic soil crusts		Rock fractured in place	% Bedrock / Cemented substrate	
	Bioturbation		Rock varnish	% Boulder	≥ 256 mm
	Caliche coatings / layers / rubble		Rock weathering	% Cobble	≥ 64 – 256mm
	Carbonate etching		Rubified rock undersides	% Pebble	≥ 4 – 64 mm
	Coppice dunes: active / relict		Soil development	% Granule	≥ 2 – 4 mm
	Deflated surface		Surface rounding of landform	% Sand	≤ 2 mm
	Pavement		Woody debris in place	% Silt/Clay	Fines
	Other:				

Fluvial Indicators NA					
	Bars: sand / gravel		Mud cracks / curls / drapes		Sediment tails: sand / gravel
	Cut banks		Organic drift		Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches
	Exposed roots		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
50%	creosote bush: 50%	1.5m x 1.5m

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): upland has higher density of shrubs than in the water course complex

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): box thorn, winterfat, burrobush, all of these species are found only in the uplands

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences)
creosote bush: slightly more abundant in the uplands, ~10%, no other differences

MESA: October 2014 5-6

Site ID: | Stream ID: Drainage 4 | page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators

Bar forms: sand / (gravel)	Secondary channels ✓	
Bifurcated flow ✓	Sediment plastering ✓	
Drainage swales ✓	Sediment ramps: sand / gravel	
Flow lineations	Sediment sheets: (sand) / gravel	
Imbricated gravel	Sediment sorting	
Levee ridges: sand / gravel	Sediment tails: sand / gravel	
Mud: (cracks) / curls / drapes	Vegetation-channel alignments ✓	
Organic drift	Wrack	
Overturned rocks	Wrinkle marks	
Out-of-channel flow: ✓ Lateral floodplain / Terminal floodplain		
Ripples ✓		
Other:		

Substrate Particle Size

Estimated percentages

% Bedrock / Cemented substrate	
% Boulder	≥ 256 mm
% Cobble	≥ 64 – 256 mm
% Pebble	≥ 4 – 64 mm
% Granule	≥ 2 – 4 mm
% Sand	≤ 2 mm
% Silt/Clay	Fines

Erosion Indicators

Cut banks ✓	Rills ✓	Water-cut benches ✓
Exposed roots ✓	Scour	Water level mark
Headcuts ✓	Secondary channels ✓	
Other:		

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
40%	creosote bush (30%)	creosote: ~~[illegible]~~ 1.5m x 1.5m
	poa ~~[illegible]~~ (10%)	poa ~~[illegible]~~: 1in x 2in

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences): larger density of creosote bush in the floodplain, very little density in the stream feature.

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): winterfat, burrobush California buckwheat all present in the floodplain, not present in the LFC.

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences) low flow channel does not have more abundant vegetation, vegetation more abundant in floodplain

MESA: October 2014 5-7

Site ID	Stream ID drainage 4	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other:				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014

5-8

Episodic Stream Indicator Data Sheet page 1 of 4

Site ID: 150447-06 | Stream ID: Oak Creek | Date: 7/18/2016

Nearest Town: Rosamond | County: Kern

Investigators: Tyler Shead, Mitchell Coleman, Alex Single

Base Map

Aerial Photo #: | Date: | Topographic Map Name: | Date:

Data point 1

GPS Data

GPS Name: | Datum: | Transect Elevation: | Zone 10 / 11 | GPS Error: ± ft / m

GPS co-ords start of transect: | GPS co-ords end of transect:

Geomorphic Province (✓ one): ✓ Mojave | Sonoran/Colorado | Great Basin | Other:

Landform (✓ all that apply)

Headwater | Upper fan | Middle fan | Lower fan | ✓ Alluvial plain | ✓ Axial valley | Playa

Channel Form (✓ one)

✓ Single thread | ✓ Braided | Compound | Distributary | Discontinuous | Other:

Transect was selected to:

✓ Document fluvial activity & boundaries | ✓ Document channel elevations & boundaries

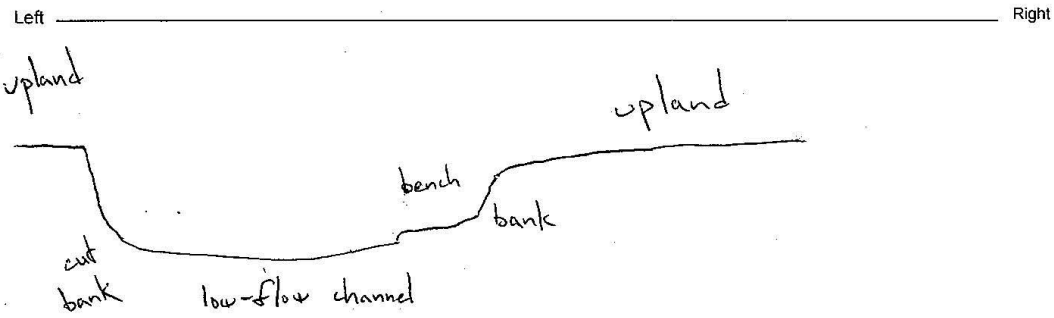
Document habitat associations | Document a change in watercourse morphology

Other:

Date of most recent runoff event (if known):

Physical Setting: Briefly describe geomorphic processes and surficial materials and conditions, including the degree of disturbance relative to an intact dryland stream ecosystem, and any anthropogenic influences on the channel form and function: Culvert in dyke that Bachtus road runs across. Construction ramp running through watercourse. Modified banks. Benches on side of watercourse. Out of channel flow.

Summary Site Description and Cross-section Sketch: View across the channel from watercourse-edge to watercourse-edge. Identify channel(s), banks, islands, interfluves, floodplains, terraces, and uplands where present. Note approximate width and elevation differences between features indicated.



MESA: October 2014 5-5

Site ID: 150447.06	Stream ID: Oak Creek	page 2 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of the representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for indicators not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

UPLAND

Terrestrial Indicators

	Av soil horizon		Relict bars & swales
	Biotic soil crusts	✓	Rock fractured in place
✓	Bioturbation	✓	Rock varnish
	Caliche: coatings / layers / rubble		Rock weathering
	Carbonate etching	✓	Rubified rock undersides
✓	Coppice dunes: active / relict		Soil development
	Deflated surface		Surface rounding of landform
	Pavement	✓	Woody debris in place
	Other:		

Substrate Particle Size

Estimated percentages

Ø	% Bedrock / Cemented substrate	
1	% Boulder	≥ 256 mm
3	% Cobble	≥ 64 – 256mm
10	% Pebble	≥ 4 – 64 mm
25	% Granule	≥ 2 – 4 mm
60	% Sand	≤ 2 mm
1	% Silt/Clay	Fines

Fluvial Indicators

	Bars: sand / gravel	✓	Mud cracks / curls / drapes		Sediment tails: sand / gravel
	Cut banks		Organic drift		Vegetation-channel alignment
	Drainage swales		Overturned rocks		Water-cut benches
	Exposed roots		Scour		Wrack
	First-order streams		Sediment ramps: sand / gravel		Wrinkle marks
	Flow lineations		Sediment sorting		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
25%	Ericameria sp. L. tridentata	Eric. = 0.5m tall, 0.5m wide L. tri. = 2.5 m. tall, 2.5m wide

Differences in total shrub/perennial density (total #shrubs/perennial plants) between upland & fluvially active units or watercourse complex? (describe and qualify the differences): Cresote confined to upland / floodplain. Greater density of cresote & total shrubs.

Are there plant species that are present in (or absent from) the uplands when compared to fluvially active units or the watercourse complex? (describe differences): Yes, several species in uplands not present in watercourse complex including boxthorn, CA buckwheat, Joshua tree

Are there plant species that are more abundant (or less abundant) in the uplands when compared to the fluvially active units or the watercourse complex? (describe and qualify differences) Rubber rabbitbrush most prevalent in the low-flow channel, not present elsewhere. ~~One~~ There was only one Juniper and it was in the watercourse. Cresote and Joshua Tree is much more prevalent outside of the watercourse. Atriplex is most common in the floodplain.

MESA: October 2014 5-6

Site ID: 150447.06	Stream ID: Oak Creek	page 3 of 4

Note presence or absence of each indicator within a minimum distance of 50 feet upstream and 50 feet downstream of a representative channel cross section. Mark each box with a plus (+) for those indicators observed, and a minus (–) for those not observed. For examples see the Photo Atlas in MESA ~ Mapping Episodic Stream Indicators.

WATERCOURSE or WATERCOURSE COMPLEX

Transportation, Deposition & Flow Transition Indicators

✓	Bar forms: sand / gravel	✓	Secondary channels
✓	Bifurcated flow		Sediment plastering
✓	Drainage swales		Sediment ramps: sand / gravel
✓	Flow lineations		Sediment sheets: sand / gravel
	Imbricated gravel	✓	Sediment sorting
	Levee ridges: sand / gravel		Sediment tails: sand / gravel
	Mud: cracks / curls / drapes		Vegetation-channel alignments
✓	Organic drift	✓	Wrack
✓	Overturned rocks		Wrinkle marks
✓	Out-of-channel flow: Lateral floodplain / Terminal floodplain		
	Ripples		
	Other:		

Substrate Particle Size

Estimated percentages		
Ø	% Bedrock / Cemented substrate	
Ø	% Boulder	≥ 256 mm
1	% Cobble	≥ 64 – 256 mm
2	% Pebble	≥ 4 – 64 mm
4	% Granule	≥ 2 – 4 mm
91	% Sand	≤ 2 mm
2	% Silt/Clay	Fines

Erosion Indicators

✓	Cut banks	✓	Rills	✓	Water-cut benches
✓	Exposed roots	✓	Scour – channel bottom		Water level mark
	Headcuts	✓	Secondary channels		
	Other:				

Vegetation

Estimated % total vegetative cover (perennial & shrub species combined):	Dominant and co-dominant species (if known) and % of total vegetative cover of each:	Representative height and width of dominant and co-dominant species:
~~40%~~ 30%	Encelia sp. L. tridentata	Enc = 0.5m tall, 1m wide L. tri = 2m tall, 2m wide

Differences in total shrub/perennial density (total #shrubs/perennial plants) between the low-flow channel(s) and the adjacent floodplain? (describe and qualify the differences):

Low density in channel.

Are there plant species that are present in (or absent from) the low-flow channel(s) when compared to the adjacent floodplain? (describe differences): Creosote confined to ~~floodplain~~ upland floodplain, not present in the low-flow channel.

Are there plant species that are more abundant (or less abundant) on the low-flow channel(s) and the adjacent floodplain? (describe and qualify differences) Rabbitbrush only perennial plant in low-flow channel.

MESA: October 2014 5-7

Site ID 150447.06	Stream ID Oak Creek	page 4 of 4

INDICATORS of PONDING & EVAPORATION and EOLIAN TRANSPORT & DEPOSITION

	Algal crusts		Sand-filled channels		
	Beach ridges		Springs		
	Coppice dunes: active / relict		Substrate staining		
	Crusts: carbonate / salt / soda		Vegetation-landscape alignments		
	Mud: cracks / curls / polygons				
	Other:				

Additional Diagrams and Notes

Vegetation cross-section diagram: Draw a cross-section that identifies the approximate locations along the transect or diagram of geomorphic units (see page 1 of data sheet) where there are changes in vegetation characteristics, as summarized in the vegetation subsections under "Upland" and "Watercourse Complex".

Photographs

Photographs should document the representative landscape units, vegetation, and the presence or absence of representative stream indicators.

Photo ID #	Description	GPS location	

MESA: October 2014 5-8

Appendix F

Phase 1 Cultural Resources Survey

ESA

PHASE I CULTURAL RESOURCES SURVEY, APOLLO SOLAR PROJECT, KERN COUNTY, CALIFORNIA

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December 2016

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TABLE OF CONTENTS

Chapter **Page**

MANAGEMENT SUMMARY iii

1. INTRODUCTION AND REGULATORY CONTEXT 1
1.1 STUDY AREA LOCATION AND DESCRIPTION 1
1.2 REGULATORY CONTEXT 2
1.2.1 CEQA 2

2. ENVIRONMENTAL AND CULTUAL BACKGROUND 5
2.1 ENVIRONMENTAL BACKGROUND 5
2.2 ETHNOGRAPHIC BACKGROUND 6
2.3 ARCHAEOLOGICAL BACKGROUND 7
2.4 HISTORICAL BACKGROUND 15

3. ARCHIVAL RECORDS SEARCH 19

4. METHODS AND RESULTS 23
4.1 SURVEY RESULTS 23

5. SUMMARY AND RECOMMENDATIONS 25
5.1 RECOMMENDATIONS 25

REFERENCES 27

CONFIDENTIAL APPENDICES 33

LIST OF FIGURES

Page

Figure 1. Location of the Apollo Solar Project area, Kern County, California, showing the Sunbow, Tours and Syracuse Solar properties.. 3
Figure 2. Sunbow study area overview, looking southeast. 5

LIST OF TABLES

Page

Table 1. Survey Reports within the Study Area..... 20
Table 2. Cultural Resources within the Study Area..... 20
Table 3. Survey Reports within 0.5-Miles of the Study Area..... 20
Table 4. Recorded Cultural Resources within 0.5-Miles Radius..... 21

MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for the Apollo Solar Project area, eastern Kern County, California. The Apollo Solar Project includes three properties that total approximately 480-acres (ac): Tours, Syracuse and Sunbow. 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 December 2016. 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 December 7, 2016, at the Southern San Joaquin Valley Information Center, California State University, Bakersfield. This indicated that portions of the project area, specifically the Tours and Syracuse properties, had been recently surveyed, but the 160-ac Sunbow property had not been covered. The Phase I fieldwork was conducted with parallel transects spaced at 15-meter (m) intervals walked across the Sunbow property study area. Three isolated artifacts, one prehistoric and two historic, were identified and recorded within the Sunbow property, with no other cultural resources identified. A reconnaissance-level survey was also completed on the previously surveyed Tours and Syracuse properties during the fieldwork. Recent surveys of these properties had resulted in the identification and recording of site P-15-016512. The location and status of this archaeological site was confirmed during the reconnaissance visit. No other significant cultural resources are present within these two properties.

P-15-016512, located within the Tours property, is a cluster of small lithic tool chipping stations. It has not been formally evaluated for significance and potential eligibility to the California Register of Historical Resources (CRHR). It appears however to have the potential to contribute to knowledge of prehistory. It is recommended that this archaeological site either be preserved in open-space or that a formal Phase II determination of significance be conducted to establish its significance and to provide final recommendations for its treatment.

Development and use of the remainder of the Apollo Solar Project area, including all remaining areas or the Tours, Syracuse and Sunbow properties, does not have the potential to result in significant adverse impacts to CRHR-eligible or unique historical resources. No additional archaeological work is recommended for the Apollo project.

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1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc., was retained by Quad Knopf, Inc., to conduct an intensive Phase I cultural resources survey for the unsurveyed portions of the Apollo Solar Project, eastern Kern County, California. This project includes three properties: Tours, Syracuse and Sunbow, each of which is 160-ac, for a total project area of 480-ac. The Sunbow property had not been previously surveyed and was the focus of this study. 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 unsurveyed portions of the project 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 December, 2016. David S. Whitley, Ph.D., RPA, served as principal investigator, assisted by ASM Associate Archaeologists Peter Carey, M.A., RPA, field director, and Robert Azpitarte, B.A., crew chief. Jeff Stephens, B.A., ASM Assistant Archaeologist, assisted in the field.

This manuscript constitutes a report on the Phase I survey and field check. 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 Apollo Solar Project consists of three 160-ac properties: Sunbow, Syracuse, and Tours. These properties are adjacent to one another and are located on a gently southeast sloping alluvial plain at the northern edge of the Antelope Valley, a western extension of the Mojave Desert. This is in an unincorporated portion of Kern County, northwest of the town of Rosamond and southwest of Mojave. Elevation changes in the project area are minor, ranging from approximately 3,070-ft above mean sea level (amsl) at the northwest corner of the Sunbow property to approximately 2,865-ft amsl at the southeast corner of the Tours property.

The Sunbow Solar study area is located in the western quarter of Section 18, straddling Township 10 North, Range 13 West (T10N/R13W) and T10N/R14W, San Bernardino Base and Meridian (SBBM). It is located north of Backus Road, and is bordered on the west by 100th Street West, on the north by Trotter Avenue, and on the east by Longspur Street (Figure 1).

The Syracuse Solar study area is located directly south of the Sunbow Solar study area and across Backus Road, in the northwest quarter of Section 19, straddling T10N/R13W and T10N/R14W,

(SBBM). It is bordered on the west by 100th Street West, on the south by an unnamed graded dirt road, and on the east by an unnamed dirt road.

The Tours Solar study area is immediately east of the Syracuse Solar study area, in the northeast quarter of Section 19, T10N/R13W, (SBBM). It is bordered on the north by Backus Road, on the east by Tehachapi/Willow Springs Road, and to the south by an unnamed graded dirt road.

1.2 REGULATORY CONTEXT

1.2.1 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.

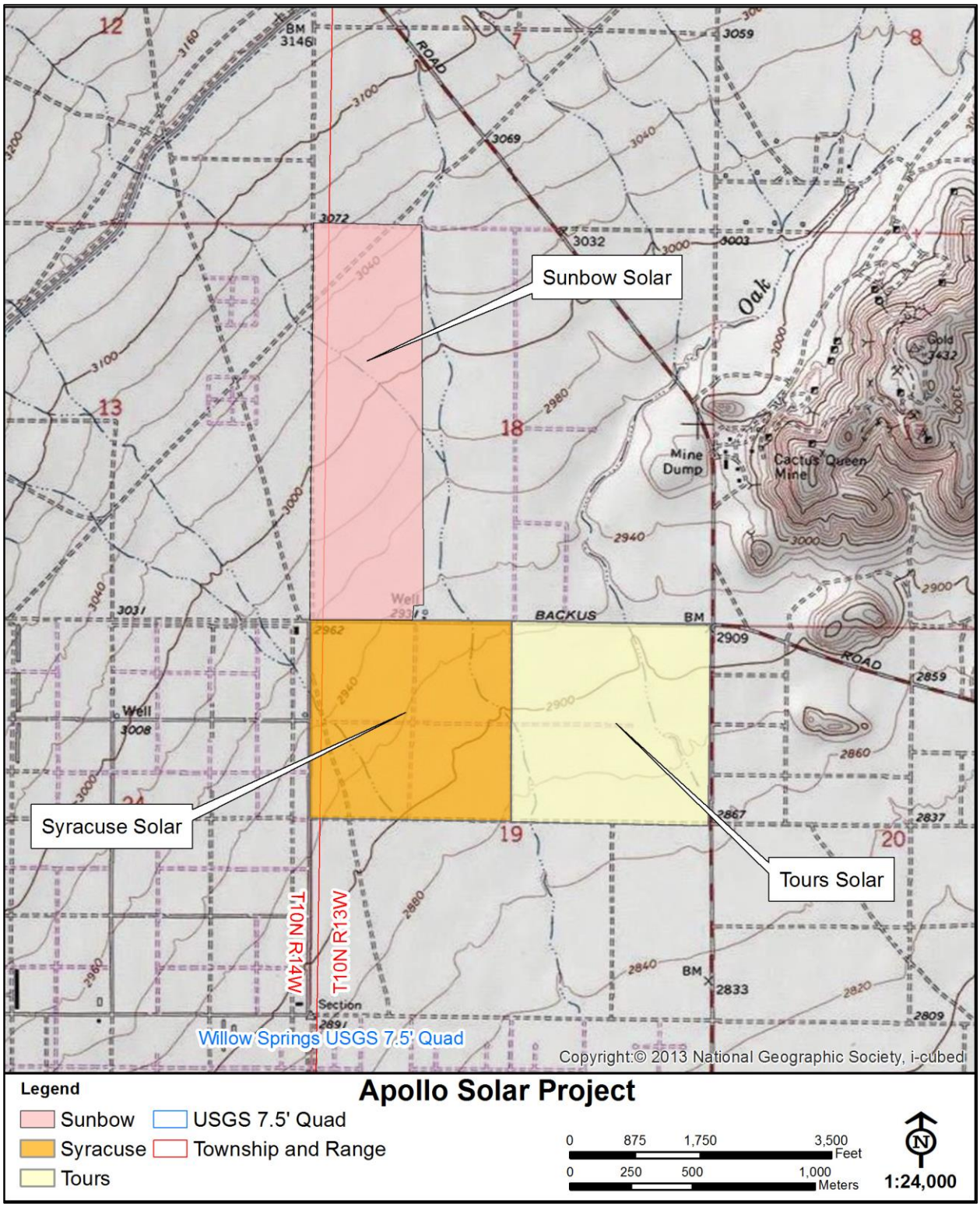

Figure 1. Location of the Apollo Solar Project area, Kern County, California, showing the Sunbow, Tours and Syracuse Solar properties.

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2. ENVIRONMENTAL AND CULTUAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

The Apollo Solar Project is located on undeveloped desert land in the Antelope Valley. Although some previous grading has occurred and infrastructure (roads, powerlines, etc.) constructed, the majority of the project area appears to be unaltered in historic or recent times. Located on a very gently southeast sloping alluvial plain, it contains active washes, including Oak Creek, an intermittent drainage, but otherwise is effectively flat terrain (Figure 2).

Vegetation in the study area is creosote scrub, typical of western Mojave Desert environs, and consists of creosote bush, brittlebush, Mojave yucca, silver cholla cactus, and seasonal grasses (cf. Schoenherr 1992). Soils in the study area consist of light brown to tan silty sand alluvium with few lithic clasts. In active washes there are clusters of large boulders, generally granite. At the time of the survey, the eastern edge of the Sunbow study area showed evidence of flooding in the form of overbank deposits from recent storms. The ground was scoured of vegetation within and around the wash due to this flooding event(s).

Figure 2. Sunbow study area overview, looking north.

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.

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 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), a short distance east of the study area. 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 and Antelope Valley. 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 - 12,000 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. Minimally by 8,100 YBP, however, 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 wet 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 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 at one point overflowed into the Fremont Valley. This high-stand is unfortunately undated, although it is widely agreed that it predates 8,000 YBP (ibid), after which dated archaeological sites have been identified 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 that Meek (ibid) outlines so clearly.

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

Pre-Clovis (before 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 (Y.B.P.). During this period, many of the valley floors of the Mojave Desert and the Great Basin where filled with a large lake system, including Pleistocene Lake China near Ridgecrest. Although a number of claims have been made for Pre-Clovis sites in the Mojave Desert generally (see Davis 1978), 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, Whitley and Dorn 1993, 2010), but still require verification by additional tests.

Paleoindian (12,000 - 9000 YBP)

The reduction of the Pleistocene lakes to shallow sloughs and swamps during the Terminal Pleistocene corresponds to the start of the Paleoindian Period, dating from about 12,000 to 9,000 Y.B.P. The hallmarks of this cultural period are fluted, collaterally-flaked and basally-thinned and -ground Clovis and Folsom spear points initially, followed by a series of large, well-flaked but unfluted, lanceolate points, some of which are stemmed. Substantial evidence of Paleoindian use of eastern California has been found in a number of areas, including NAWS China Lake (e.g., Davis 1978; Giambastiani and Bullard 2010). Fluted points have also been found on Edwards AFB and Boron, east of the study area, and the Tehachapi Mountains, to the northwest. Paleoindian sites in the Great Basin and Mojave Desert are commonly (though not exclusively) found immediately above the lake bottoms, signaling the fact that adaptation to the drying lake system was an important aspect of early prehistoric lifeways. Currently there is no firm evidence indicating that

eastern California Paleoindian peoples significantly relied on big-game hunting (or scavenging), instead potentially utilizing more wide ranging subsistence practices.

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 likely date between 11,000 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. 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.

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 terms or archaeological visibility, 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, linked this change 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 central 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 (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 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 (four miles south of the Apollo Solar study area) 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.

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 (north of the study area). The second was the construction of the Los Angeles Aqueduct (northwest of the study area), 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, it 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 southwest 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 Mine, which began in the 1870s. For over two decades the Tropico was solely involved clay mining, used 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 (Troxell 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.).

The Apollo Solar project study areas fall outside of the area of documented historical activities, which tended to be localized around springs, mineral resources and the town of Rosamond itself.

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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 the Apollo Solar study area had not been previously surveyed in its entirety. Two survey reports (KE-4225 and KE-04468; Table 1) covered portions of the Sunbow Solar, Syracuse Solar, and Tours Solar study areas. In addition, the Syracuse and Tours properties were surveyed in their entirety by Robert Parr in 2016. His survey results were however communicated to us (Jaymie Brauer, personal communications, 2016), and are summarized below. Based on these circumstances, an intensive survey of the Sunbow Solar property was determined necessary.

As a result of the previous surveys, one archaeological site (P-15-010954; Confidential Appendix C) and an isolated artifact (P-15-016851 Table 2; Confidential Appendix C) had been identified within the Sunbow Solar study area. The 2016 Parr survey of the Syracuse and Tours Solar study areas had identified one prehistoric site (P-15-016512; Confidential Appendix C), and no additional cultural resources within that 320-acres portion of the Apollo study area.

P-15-010954 (CA-KER-6343) was first recorded in 2003 as a small lithic scatter consisting of four tertiary rhyolite flakes, located near the southwest corner of the Sunbow property. The site area was revisited in 2010 and it could not be relocated at that time. The site was assumed to no longer exist.

P-15-016512 (CA-KER-9092) was first recorded in 2010 as four features and one lithic concentration located on both sides of the Oak Creek drainage. The four features consist of a total of seven rock concentrations, all of which contain a number of rocks that show evidence of heat-treating or burning, indicating they were likely hearth features. It was interpreted as a temporary camp and lithic reduction workshop. Its location was revisited and its and condition verified by Parr in 2016 (J. Brauer, personal communication, 2016).

An additional nine survey reports (Table 3) had been completed within 0.5-mi of the study area and twenty-two cultural resources exist within 0.5-mi of the study area (Table 4).

Table 1. Survey Reports within the Study Area

Report No.	Year	Author/Affiliation	Title
KE-04225	2010	Thomas Jackson, Matthew Armstrong, and Nancy Sikes/ Pacific Legacy, Inc.; Cogstone Resource Management, Inc.	Cultural Resources Inventory of the Southern California Edison Company Whirlwind to Rosamond and Rosamond to Windhub Telecommunication Line, Kern County, California
KE-04468	2013	Roberta Thomas/ Sapphos Environmental, Inc.	Archaeological Monitoring Report for Prehistoric and Historic Archaeological Sites for the Solar Element of the Catalina Renewable Energy Project

Table 2. Cultural Resources within the Study Area

Primary No.	Trinomial	Site Type	Date (Recorder)
P-15-010954	CA-KER-6343	Prehistoric AP02 (Lithic scatter)	2003 (Hubert Switalski, Rebecca Orfila, AMEC Earth and Environmental; Center for Archaeological Research, California State University, Bakersfield); 2010 (I. Strudwick, K.R. Way, Southern California Edison; Pacific Legacy, Inc.)
P-15-016512	CA-KER-9092	Prehistoric AP02 (Lithic scatter) Prehistoric AP11 (Hearths/pits)	2010 (C. Purtell, L. Carlas, D. McIntosh, K. Huebchen, R. Thomas, Sapphos Environmental, Inc.)
P-15-016851		AP02 (Lithic scatter) – Flake	2012 (C. Purtell, A. White, K. Holland, Sapphos Environmental, Inc.)

Table 3. Survey Reports within 0.5-Miles of the Study Area

Report No.	Year	Author/Affiliation	Title
KE-00680	1990	Peggy Murphy and Mark Q. Sutton/ Cultural Resource Facility, CSUB	An Archaeological Survey of 42.80 Acres of Land North of Willow Springs, Kern County, California, Tentative Tract No. 5296
KE-01101	1985	Robert A. Schiffman and Virginia Howard/ Bakersfield College	Archaeological Investigation of Middle Buttes Project, Kern County, California
KE-01295	1987	Robert A. Schiffman/ Bakersfield College	Archaeological Investigation for Coca Shumake Project, Kern County California
KE-02059	1997	Bruce Love/ CRM TECH	Cultural Resources Survey Report: Bakersfield-Rialto Fiberoptic Line Project, Kern Los Angeles, and San Bernardino Counties, California
KE-03534	2006	Elena Nisson, Russel Bevill, Michael S. Kelly, and Erin Dwyer/ URS Corporation	Archaeological Inventory of the First and Second Los Angeles Aqueducts and Selected Access Roads, Kern, Inyo, and Los Angeles Counties, CA
KE-03546	2006	Koral Ahmet, Roger Mason, and Sara Bholat/ ECORP Consulting, Inc.	Cultural Resources Survey Report for Antelope Transmission Project: Segments 2 & 3 Los Angeles and Kern Counties
KE-03699	2009	Amy Glover and Sherri Gust/ Cogstone Resource Management, Inc.	Supplemental Cultural and Paleontological Resources Assessment, Tehachapi Renewable Transmission Project, Unrecorded Historic Debris at Construction Tower 23, Kern County, California

KE-03793	2008	John F. Romani and Alan P. Garfinkel/ Compass Rose Archaeological, Inc.; California Department of Transportation	Archaeological Survey Report Tehachapi Willow Springs Road from Rosamond Boulevard to 10 Miles North, Willow Springs Area, kern County, California
KE-04229	2010	Lee Panich, Stephanie Cimino, and John Holson/ Pacific Legacy, Inc.	Supplemental Archaeological Survey Report #1, Tehachapi Renewable Transmission Project Segment 10, Kern County, California

Table 4. Recorded Cultural Resources within 0.5-Miles Radius

Primary No.	Trinomial	Site Type	Date (Recorder)
P-15-000754	CA-KER-754	Prehistoric AP02 (Lithic scatter) Prehistoric AP04 (Bedrock milling feature)	1972 (Wes Serfoss)
P-15-003549	CA-KER-3549H	Historic HP20 (Canal/aqueduct)	1992 (J. Costello, J. Marvin, J. Todoff, Foothill Resources, Ltd.); 1993 (M. Macko, Macko Archaeological Consulting); 1993 (J. Costello, J. Marwin, Foothill Resources, Ltd.); 2000 (Dr. J. Underwood, KEA Environmental, Inc.); 2009 (S. Melvin, JRP Historical Consulting); 2013 (R. Kellawan, D. Martinez, C. Connolly, Far Western); 2015 (A. Newcomb, R. Knierim, SWCA Environmental Consultants)
P-15-012808	CA-KER-7229	Prehistoric AP04 (Bedrock milling feature)	2007 (H. Blind, L. MacDonald, L. Schrader, F.H. Arellano, A. Monastero, Pacific Legacy, Inc.)
P-15-013687	CA-KER-7688H	Historic AH04 (Privies/dumps/trash scatters)	2009 (A. Belcourt, T. Ellison, Cogstone Resource Management, Inc.); 2012 (A. White, K. Holland, Sapphos Environmental, Inc.)
P-15-013688	CA-KER-7689H	Historic AH04 (Privies/dumps/trash scatters)	2009 (L. Andrews, T. Ellison, Cogstone Resource Management, Inc.); 2012 (A. White, K. Holland, Sapphos Environmental, Inc.)
P-15-013696		AP02 (Lithic scatter	2009 (D. Martinez, A. Bardsley, Cogstone Resource Management)
P-15-015233		AP02 (Lithic scatter)	2008 (J. Schmidt, J. Schmidt, Compass Rose Archaeological, Inc.)
P-15-016514	CA-KER-9094H	Historic AH04 (Privies/dumps/trash scatters) AH16 (Other)	2012 (K. Holland, A. White, Sapphos Environmental, Inc.)
P-15-016516	CA-KER-9096	AP02 (Lithic scatter)	2011 (C. Purtell, K. Holland, A. White, Sapphos Environmental, Inc.)
P-15-016520	CA-KER-9100/H	Prehistoric AP16 (Other) Historic AH04 (Privies/dumps/trash scatters) AH16 (Other)	2012 (K. Holland, A. White, Sapphos Environmental, Inc.)
P-15-016521	CA-KER-9101H	AH04 (Privies/dumps/trash scatters)	2011 (C. Purtell, K. Holland, A. White, Sapphos Environmental, Inc.)
P-15-016522	CA-KER-9102	AP02 (Lithic scatter)	2011 (K. Holland, C. Purtell, A. White, C. Backes, Sapphos Environmental, Inc.)
P-15-016523	CA-KER-9103	AP02 (Lithic scatter)	2011 (K. Holland, C. Purtell, A. White, C. Backes, Sapphos Environmental, Inc.)

P-15-016532	CA-KER-9112	AP04 (Bedrock milling feature)	2012 (C. Purtell, K. Holland, O. Sutanto, Sapphos Environmental, Inc.)
P-15-016533	CA-KER-9113	AP02 (Lithic scatter)	2012 (C. Purtell, K. Holland, O. Sutanto, Sapphos Environmental, Inc.)
P-15-016534	CA-KER-9114	AP02 (Lithic scatter)	2012 (C. Purtell, K. Holland, O. Sutanto, Sapphos Environmental, Inc.)
P-15-016846		Historic AH04 (Privies/dumps/trash scatters) – Solarized glass fragments	2012 (K. Huebchen, R. Thomas, B. Jones, Sapphos Environmental, Inc.)
P-15-016866		AP02 (Lithic scatter) – Projectile Point	2012 (R. Thomas, A. White, K. Holland, Sapphos Environmental, Inc.)
P-15-016871		AP02 (Lithic scatter)	2012 (C. Purtell, O. Sutanto, K. Holland, Sapphos Environmental, Inc.)
P-15-016872		AP02 (Lithic scatter) – Biface	2012 (C. Purtell, O. Sutanto, K. Holland, Sapphos Environmental, Inc.)
P-15-016876	CA-KER-9265	AP02 (Lithic scatter)	2012 (C. Purtell, O. Sutanto, K. Holland, Sapphos Environmental, Inc.)
P-15-018577		AP02 (Lithic scatter) – Western Stemmed Tradition point	2012 (C. Purtell, A. White, K. Holland, Sapphos Environmental, Inc.)

Historical USGS topographical quadrangles, back to 1915, and air photos, back to 1961 (at historicaerials.com) were also examined to determine if the Apollo Solar study area had been developed historically. No evidence for occupation or development was evident on any of these sources. The original Willow Springs Road, the route of which cuts diagonally across the west side of the Syracuse Solar property, is evident on all of the maps. The 1959 and 1961 Willow Springs quadrangle depict it as paved. (It may have been paved earlier but the distinction between paved and dirt roads is not clearly indicated on the earlier maps.) The road was abandoned and the current alignment, now called the Tehachapi-Willows Springs Road, was constructed between 1961 and 1965, with the original Willow Springs Road shown as a dirt road in 1965.

A well, located in the extreme southeastern corner Sunbow Solar property but excluded from the project area, is shown on the 1961 but not 1959 quadrangles. (It is still present.) In addition, air photos indicate that grading occurred in the Syracuse Solar property starting circa 1963. This consisted of the grading of parallel north-south lines on the west side of the property. Grading increased circa 1994, with additional grading occurring around the perimeters of Syracuse and Tours, and on both sides of Backus Road, into all three project properties. The drilling of the well and perhaps the grading on the Syracuse property may have been related to agricultural development and use of the property immediately west of Sunbow and Syracuse. This is shown as farmed by the early 1960s. No development or construction within the Apollo solar project area appears to have occurred historically or in recent times however, although the grading within the Syracuse property was substantial.

4. METHODS AND RESULTS

Based on the records search results, only the Sunbow Solar study area required an intensive Phase I survey, with a field reconnaissance completed for the Syracuse Solar and Tours Solar study areas. The intensive survey and reconnaissance were conducted in December, 2016, by ASM Associate Archaeologists Peter Carey, M.A., RPA, field director, and Robert Azpitarte, B.A., crew chief, with Jeff Stevens, B.A., ASM Assistant Archaeologist, assisting with the fieldwork.

The Phase I survey field methods included intensive pedestrian examination of the Sunbow Solar property 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 (m) intervals.

The field reconnaissance involved walking zig-zag transects spaced at approximate 100-m intervals across the Syracuse and Tours study areas, and a field examination of high probability areas as well as the previously recorded archaeological site.

Field conditions during the survey and reconnaissance were excellent, with minimal ground cover and therefore good surface visibility. No cultural resources were collected during the survey.

4.1 SURVEY RESULTS

The intensive Phase I survey of the Sunbow property resulted in the identification and recording of three isolated artifacts, designated SS-ISO-1 through – 3. Previously recorded site CA-KER-6343 (P-15-010954), which could not be relocated in 2010 and was then assumed to no longer exist, could not be relocated during the current study, verifying the 2010 survey results and interpretation.

The isolated artifacts identified and recorded during the survey consist of the following:

SS-ISO-1 is a prehistoric isolate consisting of a mottled white, orange, and purple cryptocrystalline-silicate (CCS) primary flake with evidence of sandblasting. The flake measures 6.0 x 3.0 x 0.5-cm.

SS-ISO-2 is a historic isolate consisting of an evaporated milk can. The can measures 4 4/16-in tall with a 2 15/16-in diameter and has a matchstick fill. The can was identified as a Type 10 evaporated milk can with an age range of 1917 to 1929 (Simonis 1997).

SS-ISO-3 is also a historic isolate consisting of an evaporated milk can. The can measures 2 7/16-in tall with a 2 8/16-in diameter and a matchstick fill. The can was identified as a Type 15 evaporated milk can with an age range of 1920 to 1931 (Simonis 1997).

No other cultural resources were identified within the Sunbow property.

The reconnaissance of the Tours and Syracuse properties relocated site CA-KER-9092 (P-15-016512). Four rock and debitage concentrations where identified east of Oak Creek drainage with a lithic scatter on the west side. No evidence of a buried archaeological deposit was evident in the sidewalls of the drainage in the site area, suggesting that the site is a surface scatter. The site is in good condition however and appears to represent a temporary camp with associated lithic workshops. No additional cultural resources were identified in these two properties.

In summary, one archaeological site, CA-KER-9092 (P-15-016512), is currently present within the Apollo Solar project area, and is located within the Tours property. A second previously recorded site within the Sunbow property, CA-KER-6343 (P-15-010954), could not be relocated in 2010 or during the current study, and apparently no longer exists. Three isolated artifacts were identified within the Sunbow property. These are categorically not significant or unique under CEQA.

5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I archaeological survey was conducted for the Apollo Solar project area, Kern County, California. This project includes three properties, Tours, Syracuse and Sunbow, each 160-ac, for a total area of approximately 480-ac. A records search of site files and maps was completed at the Southern San Joaquin Valley Information Center, California State University, Bakersfield. This indicated that the Sunbow property had never been previously whereas the Tours and Syracuse properties had been surveyed recently by Robert Parr. One prehistoric archaeological site had been recorded in 2003 within the Sunbow property, however, but this site could not be relocated in 2010 and was assumed to no longer exist. A second prehistoric site had been recorded in 2010 in the Tours property. It was relocated during a recent survey of that property by Parr.

An intensive Phase I survey was conducted in December 2016 for the Sunbow property, with parallel transects spaced at 15-meter intervals walked across the study area. The previously recorded archaeological site, CA-KER-6343 (P-15-010954), could not be relocated, confirming the 2010 conclusion that it had been destroyed. Three isolated artifacts were however identified and recorded.

A reconnaissance level survey was completed for the Tours and Syracuse properties. The previously recorded site CA-KER-9092 (P-15-016512) was relocated and found to be in good condition. No additional cultural resources were identified within these two properties, confirming the results of previous surveys of them.

5.1 RECOMMENDATIONS

Based on the results of an archival records search, background studies, and intensive, on-foot surface surveys, the Apollo Solar project area, Kern County, California, contains one archaeological site that may constitute a significant historical resource. This is CA-KER-9092 (P-15-016512), which is located within the Tours Solar property component of the larger Apollo Solar project area. Previously recorded site CA-KER-6343 (P-15-010954), within the Sunbow Solar property, could not be relocated in 2010 nor during the current study, and it apparently no longer exists. Three isolated artifacts were identified and recorded within the Sunbow property. The recording of these isolates, which are categorically not significant or unique under CEQA nor NRHP/CRHR eligible, has served to mitigate any adverse impacts that might accrue to them, and no additional archaeological work is recommended.

The proposed project has the potential to result in adverse impacts to CA-KER-9092 (P-15-016512) within the Tours Solar property. Following CEQA, it is recommended that potential adverse impacts to this site be mitigated by preservation in place. However, the project design of the Tours property will avoid the area surrounding CA-KER-9092 (P-15016512), which is identified as a no-build area and will remain undeveloped. Development and use of the remainder of the Tours, Syracuse and Sunbow components of the project area do not have the potential to adversely impact significant or unique historical resources, and no additional archaeological work is recommended. In the unlikely event that archaeological materials are discovered during

construction in the project area, however, it is recommended that a qualified archaeologist be contacted to evaluate the discovery.

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APPENDICES

APPENDIX A:

Project Maps

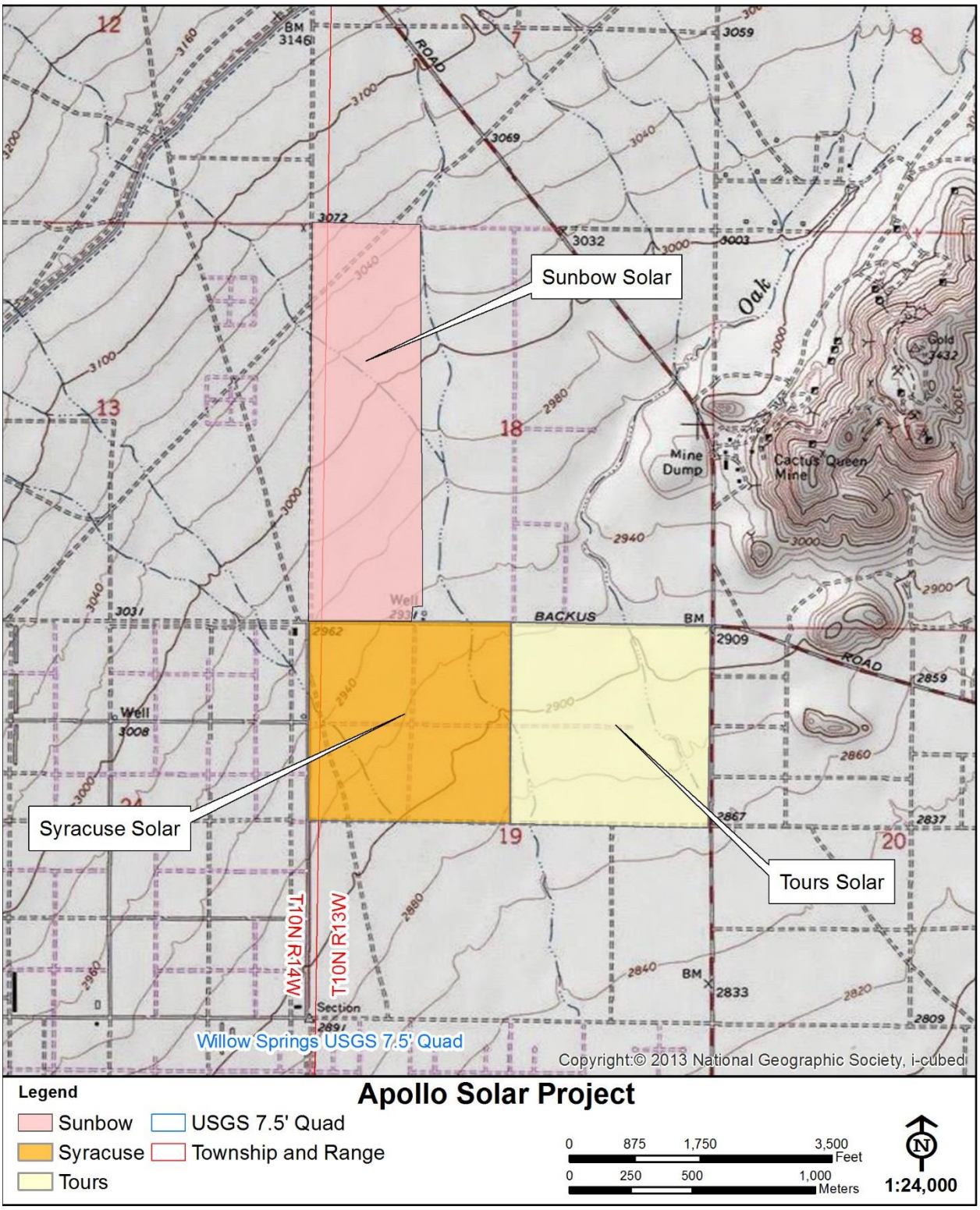

Figure 1: Apollo Solar Study Area

Appendix G

Phase 1 Environmental Site Assessments

ESA

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Sunbow Solar Site

Backus Road and 100th Street West
Rosamond, California

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Project 160505.0175

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1-1
- 1.1. Subject Property Description 1-1
- 1.2. Historical Recognized Environmental Condition (HREC) 1-1
- 1.3. Controlled Recognized Environmental Condition (CREC) 1-1
- 1.4. Recognized Environmental Condition (REC) 1-2
- 1.5. Opinion and Recommendations 1-2

2. INTRODUCTION 2-1
- 2.1. Purpose 2-1
- 2.2. Detailed Scope of Services 2-1
- 2.3. Deviations 2-1
- 2.4. Significant Assumptions 2-1
- 2.5. Limitations and Exceptions 2-2
- 2.6. Special Terms and Conditions (User Reliance) 2-3

3. SITE DESCRIPTION 3-1
- 3.1. Location and Legal Description 3-1
- 3.2. Site and Vicinity General Characteristics 3-2
- 3.3. Current Use of the Property 3-2
- 3.4. Current Use of Adjoining Properties 3-3

4. USER PROVIDED INFORMATION 4-1
- 4.1. Title Records 4-1
- 4.2. Environmental LieNs/Activity and Use Limitations 4-1
- 4.3. Specialized Knowledge 4-1
- 4.4. Commonly Known or Reasonably Ascertainable Information 4-1
- 4.5. Valuation reduction for environmental Issues 4-1
- 4.6. Owner, Property Manager, and occupant information 4-1
- 4.7. Reason for Performing this Phase I ESA 4-1

5. RECORDS REVIEW 5-1
- 5.1. Standard Environmental Record Sources 5-1
- 5.2. Additional Environmental Records Sources 5-3
  - *5.2.1. GeoTracker Online Database 5-3*
  - *5.2.2. Oil and Gas and Water Well Report 5-3*
  - *5.2.3. Property Tax Map 5-3*
  - *5.2.4. Sanborn Map 5-3*
  - *5.2.5. Vapor Encroachment Screen 5-3*
- 5.3. Site Physical Setting 5-4
- 5.4. Historical Use Information- Property and adjoining Properties 5-4
  - *5.4.1. Historical Aerial Photographs 5-4*
  - *5.4.2. Historical Topographic Maps 5-5*
  - *5.4.3. City Directory Abstract 5-6*
  - *5.4.4. Previous Environmental Studies 5-8*

6. SITE RECONNAISSANCE 6-1

6.1. Methodology and Limiting Conditions **6-1**
6.2. Site Visit Findings **6-1**
6.2.1. Hazardous Substance Use, Storage and Disposal *6-1*
6.2.2. Other Petroleum Products *6-1*
6.2.3. Unidentified Substance Containers *6-1*
6.2.4. Underground Storage Tanks (USTs) *6-1*
6.2.5. Aboveground Storage Tanks (ASTs) *6-1*
6.2.6. Polychlorinated Biphenyls (PCBs) *6-1*
6.2.7. Nonhazardous Solid Waste *6-2*
6.2.8. Wastewater *6-2*
6.2.9. Pits, Ponds, and Lagoons *6-2*
6.2.10. Septic Systems *6-2*
6.2.11. Stormwater Management System *6-2*
6.2.12. Stained Soil/Stressed Vegetation *6-2*
6.2.13. Wells *6-2*
6.2.14. Other Observations *6-2*

7. INTERVIEWS **7-1**
7.1. Property Owner, Representative Interviews **7-1**
7.2. Regulatory Agency Interviews **7-1**

8. FINDINGS
8.1. Historical Recognized Environmental Condition (HREC) **8-1**
8.2. Controlled Recognized Environmental Condition (CREC) **8-1**
8.3. Recognized Environmental Condition (REC) **8-1**
8.4. Observed Condition of the site with Respect to Intended Use **8-2**
8.5. Data Gaps **8-2**
8.6. Opinion and Recommendations **8-2**

9. NON-SCOPE SERVICES **8-1**

10. REFERENCES **9-1**

APPENDIX A: SITE PHOTOGRAPHS A-1

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION B-1

EDR AERIAL PHOTO PACKAGE

EDR HISTORICAL TOPOGRAPHIC MAP REPORT

EDR CITY DRECTORY ABSTRACT

EDR PROPERTY TAX MAP REPORT

EDR ENVIRONMENTAL LIENSEARCH

APPENDIX C: REGULATORY RECORDS DOCUMENTATION C-1

APPENDIX D: SUPPORTING DOCUMENTATION D-1

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL E-1

LIST OF FIGURES

Figure 3-1 USGS Topographic Map –Willow Springs, CA 3-1

Figure 3-2 General Property Improvements and Site Survey Findings 3-2

LIST OF TABLES

Table 3-1 Description of Structures and Other Improvements 3-3

Table 5-1 Summary of Regulatory Database Findings 5-1

Table 5-2 Orphan Site Listing 5-2

Table 5-3 Historical Property Use Based on Aerial Photography 5-4

Table 5-4 Historical Property Use Based on Topographic Maps 5-5

Table 5-5 City Directory Abstract 5-6

1. EXECUTIVE SUMMARY

1.1. SUBJECT PROPERTY DESCRIPTION

Insight Environmental Consultants, Inc. (IEC) has performed a Phase I Environmental Site Assessment (ESA) for an undeveloped property located at the northeast corner of Backus Road and 100th Street West in Rosamond, California. 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 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 revealed evidence suggesting the Property may potentially be impacted by an identified REC. IEC observed discarded motor oil and coolant (anti-freeze) in deteriorating containers along the western unpaved road on the Property.

1.5. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted. The containers of coolant and motor oil observed; however, must be removed and recycled or 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

The 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 environmental assessment is limited by the availability of information at the time of the assessment, including: (1) information derived from the property inspection conducted on October

62016; (2) interviews and inquiries conducted on October 6, 2016; (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. IEC 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 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, its parent company Trinity Consultants, nor its successors or assignees does not warrant that there are no toxic or hazardous substances or contamination, nor does IEC accept any liability if such are found at some future time, or could have been found if sampling or additional studies were conducted. IEC 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.

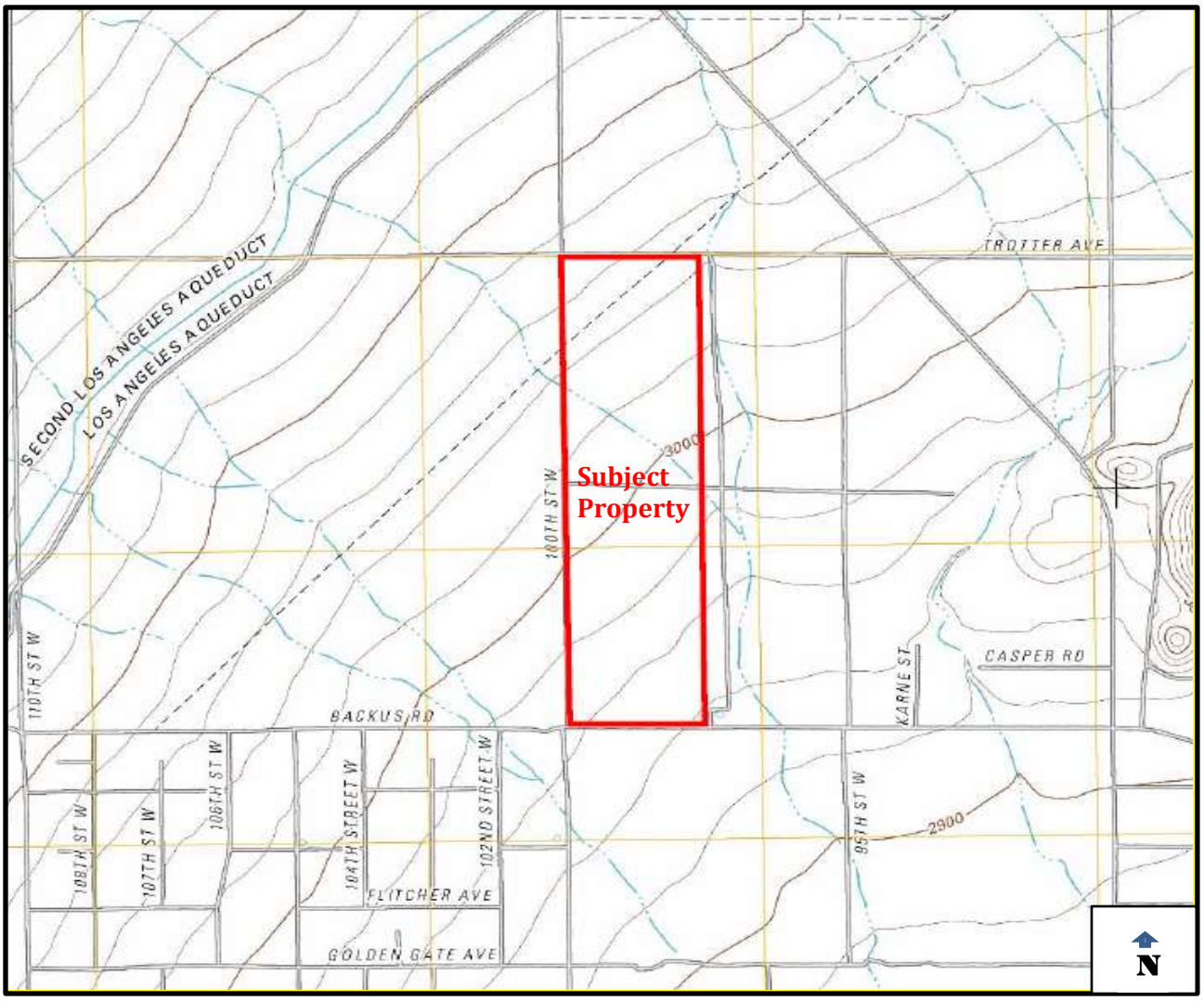
2.6. SPECIAL TERMS AND CONDITIONS (USER RELIANCE)

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 is located at the northeast corner of Backus Road and 100th Street West in Rosamond, California (as generally depicted in **Figure 3-1**). The legal description of the parcel 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) 346-131-12, 346-131-13, 346-131-15, 346-131-16, 346-131-17, 346-131-18 and 346-131-19 is vested in Discountland, Inc., dated 5/25/2006, which was conveyed from Jack Schneider. The title for Deed 2 for APN 346-131-14 is vested also in Discountland, Inc., dated 5/25/2006, which was conveyed from Marvin Frieder MC Trustee. According to Kern County Assessor's parcel map included in **Appendix B,** the subject parcel of land consists of approximately 160 acres.

Figure 3-1. USGS Topographic Map – Willow Springs, CA Quadrangle



3.2. SITE AND VICINITY GENERAL CHARACTERISTICS

The Property is undeveloped and currently covered with vegetation consisting of native grass, desert brush plants and a few scattered Joshua trees. The adjacent properties to the east and west and directly to the south (across Backus Road) are undeveloped. The adjacent property to the northwest (southeast corner of Trotter Avenue and 100th Street West) has a residential structure. The Property is zoned agriculture (A) with floodplain-secondary combining (FPS) designation. The surrounding properties have a mixed zoning of agriculture, residential subdivision combining (RS), mobile home combining (MH) and platted lands (PL).

3.3. CURRENT USE OF THE PROPERTY

The Property is currently vacant. With the exception of some power poles along the western perimeter, there are no improvements at the Site. The general improvements to the property, including site findings, are shown in **Figure 3-2** and discussed in **Table 3-1**.

Figure 3-2. General Property Improvements and Site Survey Findings

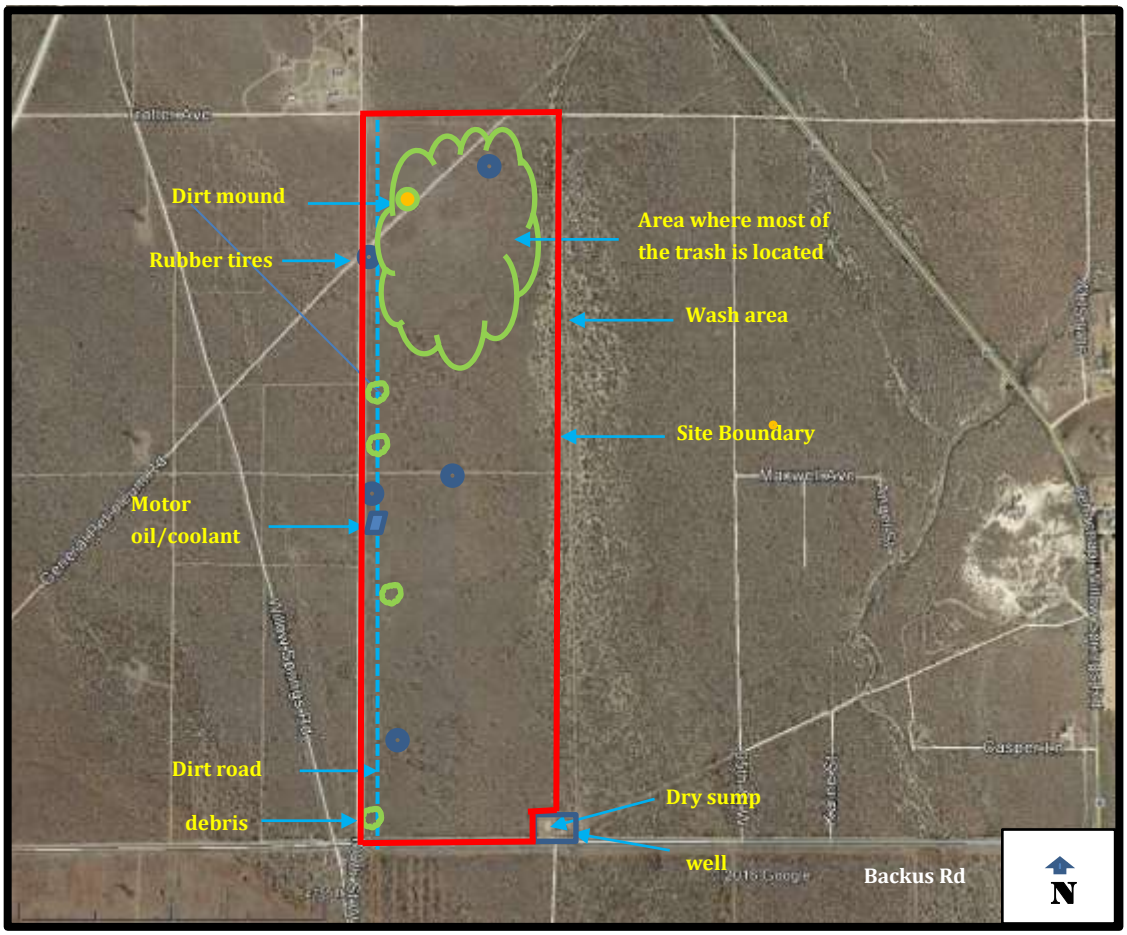


Table 3-1. Description of Structures and Other Improvements

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 Backus Road and Trotter Avenue (off Tehachapi-Willow Springs Road).
Paved or Concrete Areas (including parking)	The site is not paved.
Landscaped Areas	Property is predominantly covered with native grass, desert brush plants and a few scattered Joshua trees.
Surface Water	No surface water was observed during the Site visit.
Potable Water Source	N/A; water services can be obtained from a local water provider
Sanitary Sewer Utility	None
Electrical / Natural Gas Utility	N/A; Site is not occupied
Current Occupancy Status	Unoccupied
Structures	None observed or identified in the research.
Other Improvements	Power poles

3.4. CURRENT USE OF ADJOINING PROPERTIES

The current uses of the properties adjacent to the subject Property are as follows:

- North: Undeveloped
- Northwest: one residential housing along 100th Street West/Trotter Avenue
- South: Undeveloped
- East: Undeveloped
- West: Undeveloped; powerlines extend parallel just outside of the western boundary of the Property

4.1. TITLE RECORDS

Discountland, Inc. holds a 100% interest in the Property. The title for Deed 1 consisting of APNs 346-131-12, 346-131-13, 346-131-15, 346-131-16, 346-131-17, 346-131-18 and 346-131-19 was received from Jack Schneider. Discountland, Inc. also holds a 100% interest in parcel APN 346-131-14. The title was received from Marvin Frieder MC Trustee. The legal descriptions 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

The User provided information regarding property environmental liens or activity and use limitations **(Appendix D** – User Questionnaire**).** 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 parcel.

4.3. SPECIALIZED KNOWLEDGE

The User provided no specialized knowledge of the Site, based on the completed User 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's knowledge of the Site is limited to understanding of the current use.

4.5. VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

It is the User's opinion that the current purchase price for the property reflects fair market value.

4.6. OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The owners of the Property are listed in the Title records (Section 4.1). The Property is currently vacant.

4.7. REASON FOR PERFORMING THIS PHASE I ESA

IEC 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.

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	No	0
Local Registered Storage Tanks	¼ mile	No	0
Other Ascertainable Records	¼ mile	No	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

Table 5-2 below lists orphan sites from the EDR Radius Map™ Report with GeoCheck®.

Table 5-2 Orphan Site Listing

Site Name	Site Address	Site Zip	Database
N/A	HWY 46 (8-10 MI W OF WASCO)	N/A[1]	CDL
N/A	HWY 65 & LERDO HWY (1MI N OF LERDO H)	N/A[1]	CDL
N/A	ON COUNTY LINE ROAD, 1/2 MI EAST OF ROAD 192, NEAR DELANO, CA	N/A[1]	CDL
N/A	DAWN RD, 0.5 MILE E OF HWY 14, CA	N/A[1]	CDL
N/A	SB HWY 99/S OF SEVEN STANDARD ROAD, CA	N/A[1]	CDL
N/A	KYTE RD, 1 MI S OF POND ROAD, CA	N/A[1]	CDL
N/A	0.1 MILE E OF ZERKER RD/1 MI S SAMOSO, CA	N/A[1]	CDL
N/A	N-I5/NORTH OF SR 43, CA	N/A[1]	CDL
N/A	SR99 NO BOUND LANE/1 MI S OF HWY 166, CA	N/A[1]	CDL
N/A	W OF MCFARLAND, SEE GREEN FOR DETAILS, CA	N/A[1]	CDL
N/A	SHERWOOD AVE, 1/2 MI E OF WALLACE, CA	N/A[1]	CDL
N/A	NORTH SIDE HART RD,1/2 MI W OF KITE R, CA	N/A[1]	CDL
N/A	1 MI SOUTH OF HWY 58 ON WHEATPATCH, CA	N/A[1]	CDL
N/A	HWY 58, 1 MIL N OF MOJAVE, CA	93501[1]	CDL
N/A	70TH ST WEST, 1.5 MI S OF BACCUS RD	93501[1]	CDL
N/A	2 MI E OF MOJAVE RD	N/A[1]	CDL
N/A	8 ML E OF MOJAVE TROPILO RD 3 ML SO	N/A[1]	CDL
N/A	0.8 MILE N OF BACAUS RD/MOJAVE TROPICO	N/A[1]	CDL
BLM-CACTUS GOLD MINES CO	STAR RTE 1-BACKUS RD & TEHACHAPI-WILLOW	93501[2]	SEMS-ARCHIVE
CATALINA SOLAR II	130TH STREET AND GENERAL PETROLEUM ROAD	93560[1]	NPDES
AVENUE A	1/2 MI W OF W 10TH ST ALONG AVENUE A	93560[1]	SEMS-ARCHIVE

[1]This site is not within 1 mile of the EDR map findings search radius. These sites represent a de minimis environmental concern due to distance.

[2] This site appears to be located near the edge of the 1-mile radius. This site represents a de minimis environmental concern since it is listed only in the SEMS Archived database. This database lists sites that EPA has determined to have completed assessment and no further steps are taken unless new information is found at a later date.

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. No projects were found on either Backus Road or 100th Street West in Kern County (search address used).

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:**

- 1 federal USGS water well and 1 state CAD water well were identified within 1 mile of the Site. These wells appear to be the same well.
- No public water supply system was found within 1 mile of the Site.

The well is located near the southern perimeter of the Property. 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 "no coverage" as shown 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 conducted using EDR's VEC App software using previously or currently contaminated sites identified in the EDR search and supplemented with local regulatory records and site observations. For sites with petroleum hydrocarbon COC, the area of concern (AOC) is 528 feet in the up-gradient area, 30 feet in the downgradient area if there is assumed to be only dissolved petroleum contamination in groundwater, and 95 feet in the cross-gradient areas if there is

assumed to be only dissolved petroleum contamination in the groundwater. Distance measurements are from the known or suspected contaminated property to the target property boundary as defined by the user.

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 northeast corner of Backus Road and 100th Street West in Rosamond, California. Based on a review of the USGS 7.5 Digital Elevation Model, the Property slopes generally to the south southeast and is located at elevations ranging from 2,908 to 3,136 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 south 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 Site is located within the 100-yr flood zone.
- There is a wetland identified in the National Wetland Inventory located east of the Property.
- The dominant soil type at the Site is Cajon, which is a somewhat excessively drained soil characterized with high infiltration rates.

No information was provided with respect to groundwater quality, velocity, or flow direction. Groundwater depth measured on the USGS well USGS40000158682 was 337.85 feet below surface in 2004 and 345.5 feet below surface in 1992 **(Appendix C).**

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 5-3. Historical Property Use Based on Aerial Photography

Period	Identified Historical Uses		RECs
	Subject Property	Surrounding Property	
1956	No evidence of development.	No evidence of development except for dirt roads on the western adjacent property.	None

1963	No significant changes.	No significant changes except for a well on the adjacent property to the southeast and north of Backus Rd.	As Above
1972	No significant changes except for an unpaved road that transects the Property from east to west.	No significant changes.	As above
1987	No significant changes.	No significant changes except for the addition of more unpaved roads on the western adjacent property.	As Above
1992	No significant changes.	No significant changes.	As Above
1995	No significant changes.	No significant changes.	As Above
2005	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 above. Copies of the topographic maps are presented in **Appendix B**. Observations made from the reviewed topographic maps are presented in the following table.

Table 5-4. 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 except for an unimproved road that transects the northern area of the Property.	No evidence of development. There are hydrologic drainage features running SW-NE located east and west of the Site.	None
1917/Elizabeth Lake	No significant changes.	No significant changes.	As Above
1943/Willow Springs	No significant changes.	No significant changes except for a water tank on the eastern adjacent property and evidence of the gold mine further east.	As Above

1965/Willow Springs	No significant changes except for a hydrologic drainage feature running NW-SE through the Site.	Additional roads are visible on the east side of the Site across Tehachapi Willow Springs Road and to the west. A well is located at the property to the north across Backus Rd.	As Above
1974/Willow Springs	No significant changes.	No significant changes.	As Above
2012/Willow Springs	No significant changes except for Maxwell Avenue in the middle of the Site.	No significant changes.	As above

5.4.3. City Directory Abstract

EDR researched historical city directories for the Property and immediate vicinity (**Appendix B**). The city directory search disclosed the following available information with respect to the subject site and immediate vicinity in Rosamond, California.

Table 5-5. City Directory Abstract

Year	Address	Property Use	Source
2013	5464 Backus Rd	Christopher Watts	Cole Information Services
	6350 Backus Rd	Andrea Haynes	Cole Information Services
	454 100th Street W	Occupant Unknown	Cole Information Services
	737 100th Street W	Charles Oloughlin	Cole Information Services
	767 100th Street W	Occupant Unknown	Cole Information Services
	1290 100th Street W	Jon Cashbaugh	Cole Information Services
	1326 100th Street W	Howard Bannister	Cole Information Services
	1358 100th Street W	Panfilo Castillo	Cole Information Services
	1460 100th Street W	Jeffrey Martineau	Cole Information Services
	1734 100th Street W	Occupant Unknown	Cole Information Services
	1747 100th Street W	Occupant Unknown	Cole Information Services
	100th Street W	Wllmar Farms	Cole Information Services
	1760 100th Street W	James Moore	Cole Information Services
	2057 100th Street W	Carol Robertson	Cole Information Services
	2193 100th Street W	Fred Hinkle	Cole Information Services
	2359 100th Street W	Michael Gibson	Cole Information Services
	2513 100th Street W	Richard Bolin	Cole Information Services
	2601 100th Street W	Richard Dearborn	Cole Information Services
	2619 100th Street W	Occupant Unknown	Cole Information Services
	3022 100th Street W	Gilli Roy	Cole Information Services
	3144 100th Street W	Erik Petersen	Cole Information Services
	7000 100th Street W	Occupant Unknown	Cole Information Services

	51260 100th Street W	Janet Winters	Cole Information Services
2008	737 100th Street W	Judy Oloughlin	Cole Information Services
	745 100th Street W	Terence Parsons	Cole Information Services
	767 100th Street W	Eleanore Kertzman	Cole Information Services
	1268 100th Street W	Occupant Unknown	Cole Information Services
	1290 100th Street W	Jon Cashbaugh	Cole Information Services
	1326 100th Street W	Occupant Unknown	Cole Information Services
	1358 100th Street W	Panfilo Castillo	Cole Information Services
	1704 100th Street W	Occupant Unknown	Cole Information Services
	1710 100th Street W	Occupant Unknown	Cole Information Services
	1734 100th Street W	Occupant Unknown	Cole Information Services
	1747 100th Street W	Occupant Unknown	Cole Information Services
	100th Street W	Wilmar Farms	Cole Information Services
	1760 100th Street W	Jr Breed	Cole Information Services
	2057 100th Street W	R Klein	Cole Information Services
	2193 100th Street W	Fred Hinkle	Cole Information Services
	2359 100th Street W	Alan Hersey	Cole Information Services
	100th Street W	Alan Hersey	Cole Information Services
	100th Street W	Chueweka	Cole Information Services
	2513 100th Street W	Robert Morris	Cole Information Services
	2601 100th Street W	Richard Dearborn	Cole Information Services
	2619 100th Street W	Ronald Adams	Cole Information Services
	2860 100th Street W	Ralph Deleon	Cole Information Services
	2929 100th Street W	James Ewing	Cole Information Services
	3022 100th Street W	Gilli Roy	Cole Information Services
	3144 100th Street W	Erik Petersen	Cole Information Services
	7000 100th Street W	Occupant Unknown	Cole Information Services
	51260 100th Street W	Rae Winters	Cole Information Services
2003	367 100th Street W	James Seles	Cole Information Services
	745 100th Street W	Occupant Unknown	Cole Information Services
	767 100th Street W	Occupant Unknown	Cole Information Services
	1400 100th Street W	Jose Brorel	Cole Information Services
	1704 100th Street W	James Seles	Cole Information Services
	1710 100th Street W	Lance Langon	Cole Information Services
	1747 100th Street W	Scott Harter	Cole Information Services
	100th Street W	Wilmar Farms	Cole Information Services
	2057 100th Street W	John Ferguson	Cole Information Services
	2193 100th Street W	Fred Hinkle	Cole Information Services
	2359 100th Street W	Alan Hersey	Cole Information Services
	2400 100th Street W	Gabriela Borroel	Cole Information Services
	2513 100th Street W	Robyn Bolin	Cole Information Services
	2619 100th Street W	Occupant Unknown	Cole Information Services
	2860 100th Street W	Wayne Bishop	Cole Information Services
	3022 100th Street W	Occupant Unknown	Cole Information Services
	7000 100th Street W	Robert Pruitt	Cole Information Services
	51260 100th Street W	Occupant Unknown	Cole Information Services

	52600 100th Street W	Valerie Wilson	Cole Information Services
1999	737 100th Street W	Charles Oloughlin	Cole Information Services
	745 100th Street W	Sharon Parsons	Cole Information Services
	767 100th Street W	Eleanore Kertzman	Cole Information Services
	1747 100th Street W	Wilmar Farms	Cole Information Services
	1760 100th Street W	Jr Breed	Cole Information Services
	2057 100th Street W	Teresa Thopsan	Cole Information Services
	2193 100th Street W	Fred Hinkle	Cole Information Services
	2513 100th Street W	Robert Morris	Cole Information Services
	2601 100th Street W	Richard Dearborn	Cole Information Services
	2619 100th Street W	Ronald Adams	Cole Information Services
	3144 100th Street W	Erik Petersen	Cole Information Services
	51260 100th Street W	Janet Winters	Cole Information Services
1995	1747 100th Street W	Wilmar Farms	Cole Information Services
1992	100th Street W	Wilmar Farms	Cole Information Services
	1747 100th Street W	George W. Hornbrook	Cole Information Services
	2359 100th Street W	Alan Hersey	Cole Information Services
1990	2057 100th Street W	Audrey Griva	Haines Criss-Cross Directory
	2193 100th Street W	Audrey Griva	Haines Criss-Cross Directory
	2359 100th Street W	Alan Hersey	Haines Criss-Cross Directory
	3022 100th Street W	Robert W. Glass	Haines Criss-Cross Directory
	100th Street W	Gail Baumgartner	Haines Criss-Cross Directory
	100th Street W	Bruce R. Baumgartner	Haines Criss-Cross Directory
	100th Street W	B. E. Blackwell	Haines Criss-Cross Directory
	100th Street W	David J. Harvey	Haines Criss-Cross Directory
	100th Street W	Geo W. Hornbrook	Haines Criss-Cross Directory
	100th Street W	Walter Kertzman	Haines Criss-Cross Directory
	100th Street W	William McManus	Haines Criss-Cross Directory
	100th Street W	Helen Morgan	Haines Criss-Cross Directory
	100th Street W	Charles Oloughlin	Haines Criss-Cross Directory
	100th Street W	Fred Rushton	Haines Criss-Cross Directory
	100th Street W	Wilmar Farms	Haines Criss-Cross Directory
	100th Street W	R.E. Winters	Haines Criss-Cross Directory

5.4.4. Previous Environmental Studies

No previous environmental studies for the Site were identified by the current property owner.

6.1. METHODOLOGY AND LIMITING CONDITIONS

A physical inspection of the Site and surrounding area was conducted on October 6, 2016 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 low to mid-70'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 by the adjoining properties and around the Site boundaries, 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 southwest or southeast corner of the Property along Backus Road and from the north side along Trotter Avenue off Tehachapi-Willow Springs Road. In addition to the features described in **Section 3.4**, the following were the observations during the Site reconnaissance:

6.2.1. Hazardous Substance Use, Storage and Disposal

IEC observed two 1-gal plastic container of coolant (anti-freeze) and five 1-quart plastic container of motor oil. Some of the containers were not empty. One of the motor oil was leaking on top of a wooden debris. There was no leak or staining observed on the ground.

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 indications of USTs during the Site reconnaissance.

6.2.5. Aboveground Storage Tanks (ASTs)

IEC did not observe indications of ASTs during the Site reconnaissance

6.2.6. Polychlorinated Biphenyls (PCBs)

IEC did not observe indications of PCBs during the Site reconnaissance.

6.2.7. Nonhazardous Solid Waste

Several surface scatter sites (trash) and windblown trash were observed near the western boundary of the Property and in the northwestern portion of the Property. The surface solid wastes observed include household wastes, plastic tarps, old metal fence, wood debris, old cans, bottles and rubber tires. Rubber tires were observed at several locations at the Site.

6.2.8. Wastewater

No wastewater or stormwater drains, or underground injection system were observed on the Property during the Site reconnaissance. See also Section 6.2.11.

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 other than the wash that was observed along the eastern perimeter of the Property. The Site is not paved and stormwater would flow into the streams, percolate, flow to low spots or follow the topographic gradient. Some minor erosion was observed at a portion of the dirt access road adjacent to the western perimeter road (100th Street West).

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 were observed during the site reconnaissance or reported during interviews.

6.2.14. Other Observations

Power poles were observed along the western perimeter of the Property (100th Street West). A small mound of dirt, which was approximately 12” high and 24” diameter) was observed near the northwestern corner of the Property. There were wood chips around the base but no staining on the dirt was observed. A dry sump was observed adjacent to the southeastern corner of the Property. There was no soil staining observed in the sump.

7.1. PROPERTY OWNER, REPRESENTATIVE INTERVIEWS

Ms. Jaymie Brauer, an agent for the Property, completed a Current Property Owner Questionnaire that is provided in **Appendix D**. Ms. Brauer is not aware of any known activity and/or use limitations associated with the Property, any valuation reductions or any environmental issues for the Property with respect to hazardous substances or petroleum products.

7.2. REGULATORY AGENCY INTERVIEWS

Ms. Lydia Von Sydow with Kern County Environmental Health Services, was interviewed on October 6, 2016. Ms. Von Sydow reported that there were no reported hazardous material complaints, violations or permits for the Property.

8. FINDINGS

Insight Environmental Consultants, Inc. has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice 1527-13 of APN 346-022-03 located at the southwest corner of Tehachapi Willow Springs Road and Backus Road 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 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 revealed evidence suggesting the Property may potentially be impacted by an identified REC. IEC has observed discarded motor oil and coolant (anti-freeze) in old containers along the western dirt road on the Property.

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 1956 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. The REC that was identified should be addressed by removing the oil and anti-freeze observed and disposed of them at an approved recycling or disposal facility.

Qualifications/signatures 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.

For Insight Environmental Consultants, *a Trinity Consultants Company*

Dolores Gough 11/1/2016

Dolores Gough, P.E. C-62599 Date

Resume(s) provided in **Appendix E.**

9. 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, Vapor Intrusion, Biological Agents, and Mold.

10. 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

Old broken television observed along the western side of the property, 10-6-2016

Old mattress observed near the northwestern quarter of the property, 10-6-2016

Mound of dirt approximately 12” high near the western side of the property, some wood chips at the base, no staining observed, 10-6-2016

Metal fence and windblown trash along the western side of the property, 10-6-2016

Two antifreeze plastic containers along the western side of the property, one has liquid in it, no leak or ground staining observed, 10-6-2016

Plastic quart containers of motor oil near the antifreeze containers in the above photo, some are not empty, one was leaking, 10-6-2016

Wooden debris at adjacent property to the west, 10-6-2016

Examples of household trash observed at the northern portion of the Site, 10-6-2016

Perimeter road on the west side (100th Street West) facing north from SW corner of the Site; Site is on the right side, 10-6-2016

View of property facing east from the SW corner of the Site; Backus Road is to the right, 10-6-2016

House at adjacent property to the northwest, 10-6-2016

Adjacent property to the north/northwest, 10-6-2016

Unlined sump adjacent to the fenced area with a tank, sump is outside the fence, 10-6-2016

View of eastern side of the property adjacent to the sump in previous photo, 10-6-2016

Concrete berm (for water well?) within a fenced area adjacent to the Site along Backus Road, 10-6-2016

Shed and tank within the fenced area near the concrete berm in above photo, 10-6-2016

Eastern perimeter of the property (wash), 10-6-2016

Old carpet in the wash area along the eastern perimeter of the property, 10-6-2016

Old 5-gal plastic bucket observed on the northern side of the property, 10-6-2016

Example of trash observed on the northwestern portion of the property, 10-6-2016

Vehicle tires observed along the southwestern quarter of the property, 10-6-2016

Vehicle tires observed along the western side of the property, 10-6-2016

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION

EDR AERIAL PHOTO PACKAGE

Sunbow Solar

NE of Backus Rd/100th Street West

Rosamond, CA 93560

Inquiry Number: 4744597.12

October 06, 2016

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

10/06/16

Site Name:

Sunbow Solar
NE of Backus Rd/100th Street
Rosamond, CA 93560
EDR Inquiry # 4744597.12

Client Name:

Insight Environmental Consultants, Inc.
5500 Ming Avenue
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
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1995	1"=500'	Acquisition Date: October 04, 1995	USGS/DOQQ
1992	1"=500'	Flight Date: January 01, 1992	USGS
1987	1"=500'	Flight Date: January 01, 1987	USGS
1972	1"=500'	Flight Date: January 01, 1972	USGS
1963	1"=500'	Flight Date: January 01, 1963	USGS
1956	1"=500'	Flight Date: January 01, 1956	USGS

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INQUIRY #: 4744597.12
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 4744597.12
YEAR: 2012
= 500'
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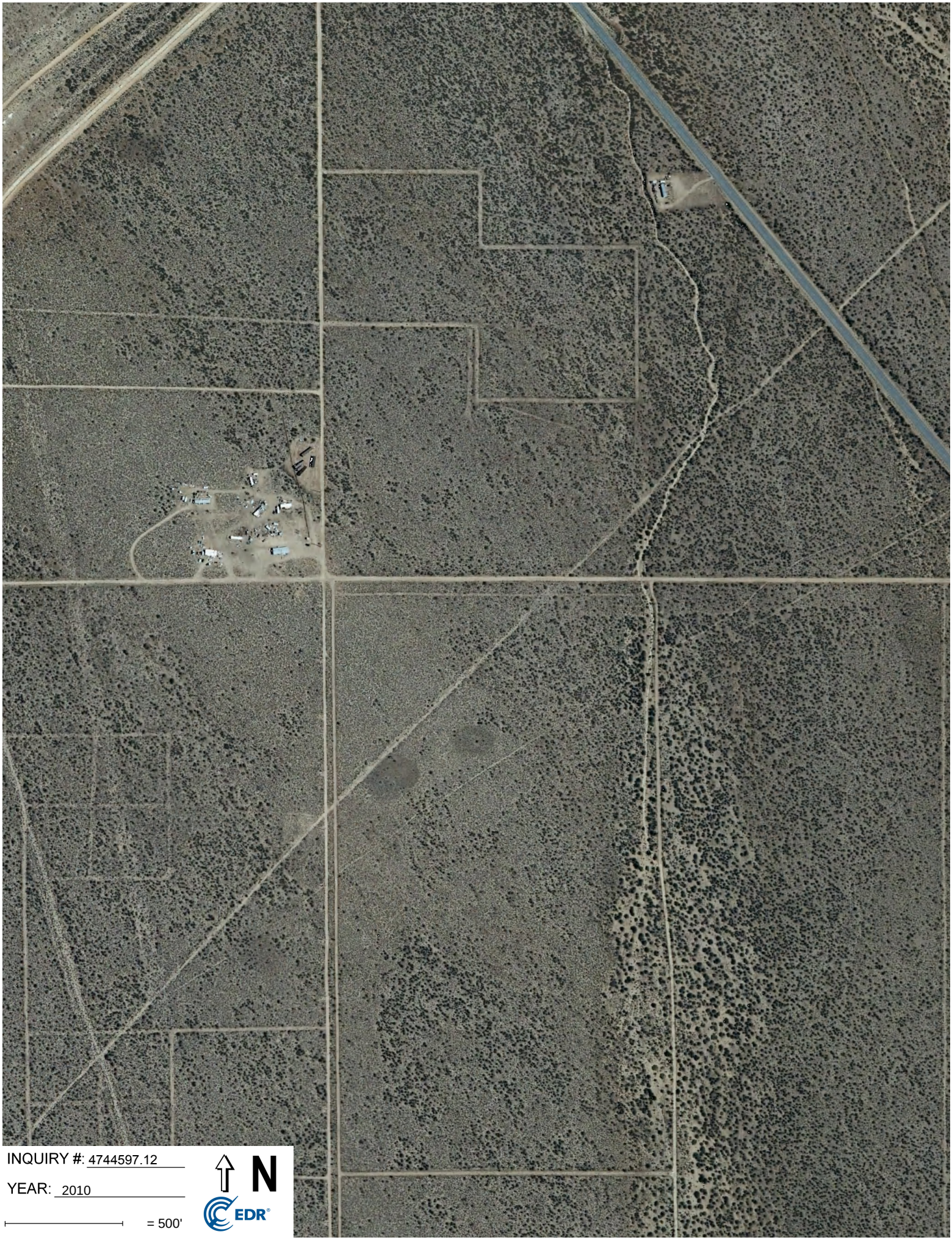
EDR

INQUIRY #: 4744597.12
YEAR: 2010
= 500'
N
EDR



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YEAR: 2010

= 500'

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EDR

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EDR

INQUIRY #: 4744597.12
YEAR: 2009
= 500'
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EDR

INQUIRY #: 4744597.12

YEAR: 1963

= 500'

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EDR

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YEAR: 1995

= 500'

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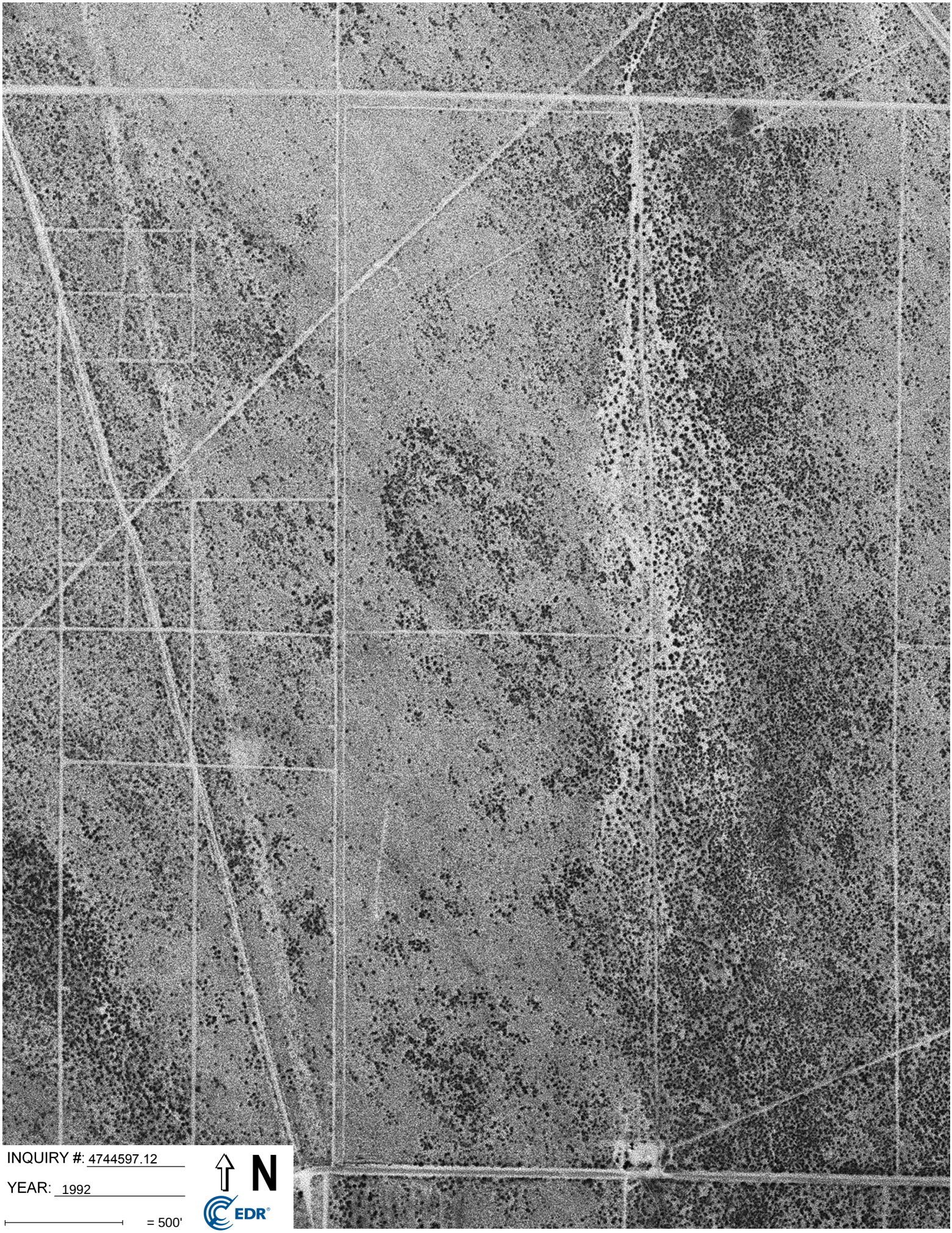
EDR



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EDR

INQUIRY #: 4744597.12
YEAR: 1987
= 500'
N
EDR

INQUIRY #: 4744597.12

YEAR: 1972

= 500'

N

EDR

EDR HISTORICAL TOPOGRAPHIC MAP REPORT

Sunbow Solar

NE of Backus Rd/100th Street West

Rosamond, CA 93560

Inquiry Number: 4744597.4

October 04, 2016

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

10/04/16

Site Name:	Client Name:
Sunbow Solar	Insight Environmental Consultants, Inc.
NE of Backus Rd/100th Street	5500 Ming Avenue
Rosamond, CA 93560	Bakersfield, CA 93309
EDR Inquiry # 4744597.4	Contact: Dolores Gough

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Insight Environmental Consultants, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	34.957983 34° 57' 29" North
Project:	Sunbow Solar Site	**Longitude:**	-118.307233 -118° 18' 26" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	380648.29
		UTM Y Meters:	3869163.76
		Elevation:	2998.12' above sea level

Maps Provided:

2012
1974
1965
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

Willow Springs
2012
7.5-minute, 24000

1974 Source Sheets

Willow Springs
1974
7.5-minute, 24000
Photo Revised 1974
Aerial Photo Revised 1963

1965 Source Sheets

Willow Springs
1965
7.5-minute, 24000
Aerial Photo Revised 1963

1943 Source Sheets

Willow Springs
1943
15-minute, 62500
Aerial Photo Revised 1943

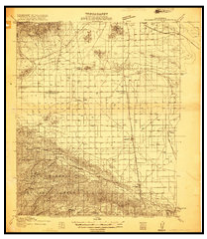
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1917 Source Sheets

Elizabeth Lake
1917
30-minute, 125000

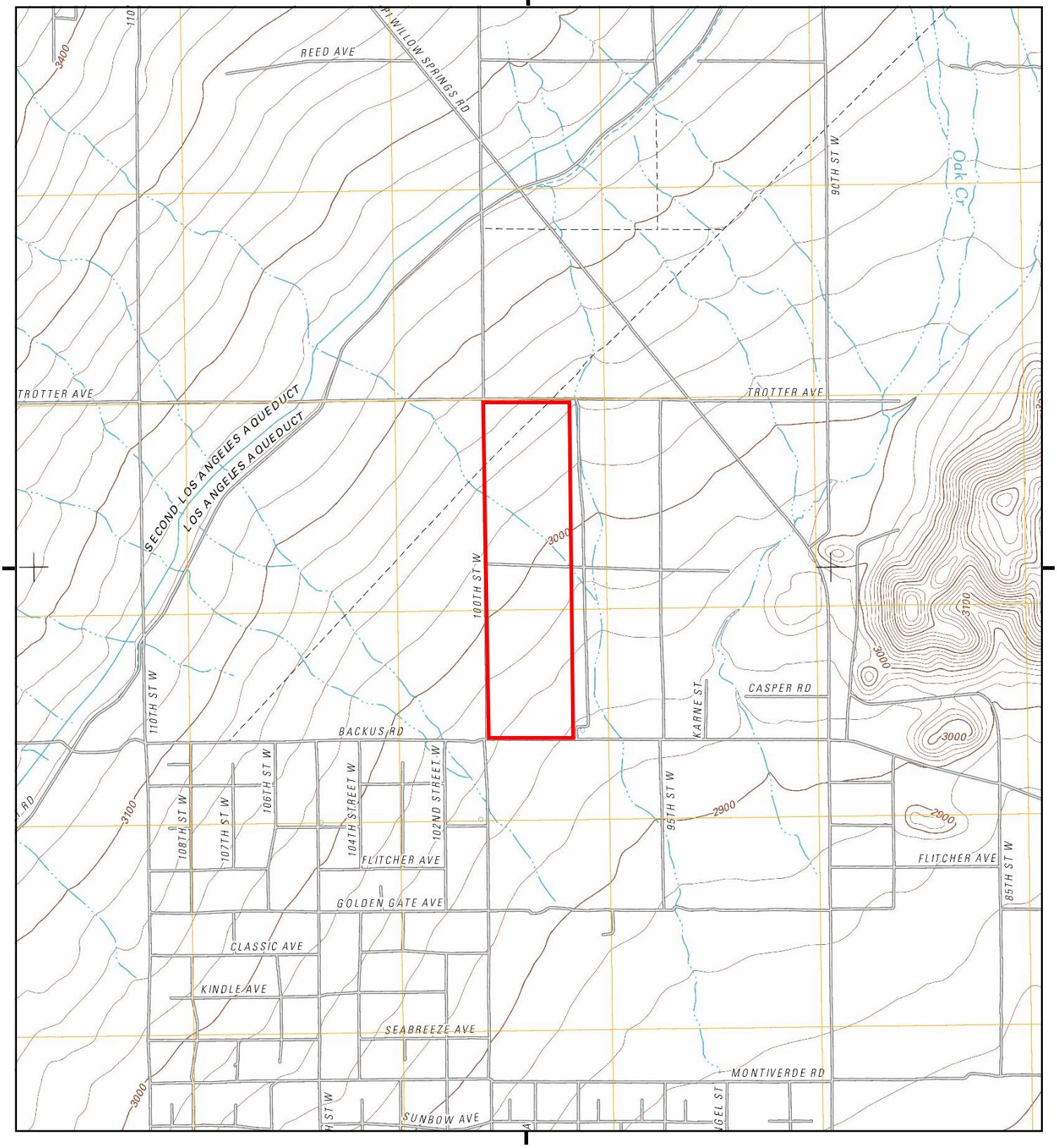
1915 Source Sheets



Elizabeth Lake
1915
30-minute, 96000

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

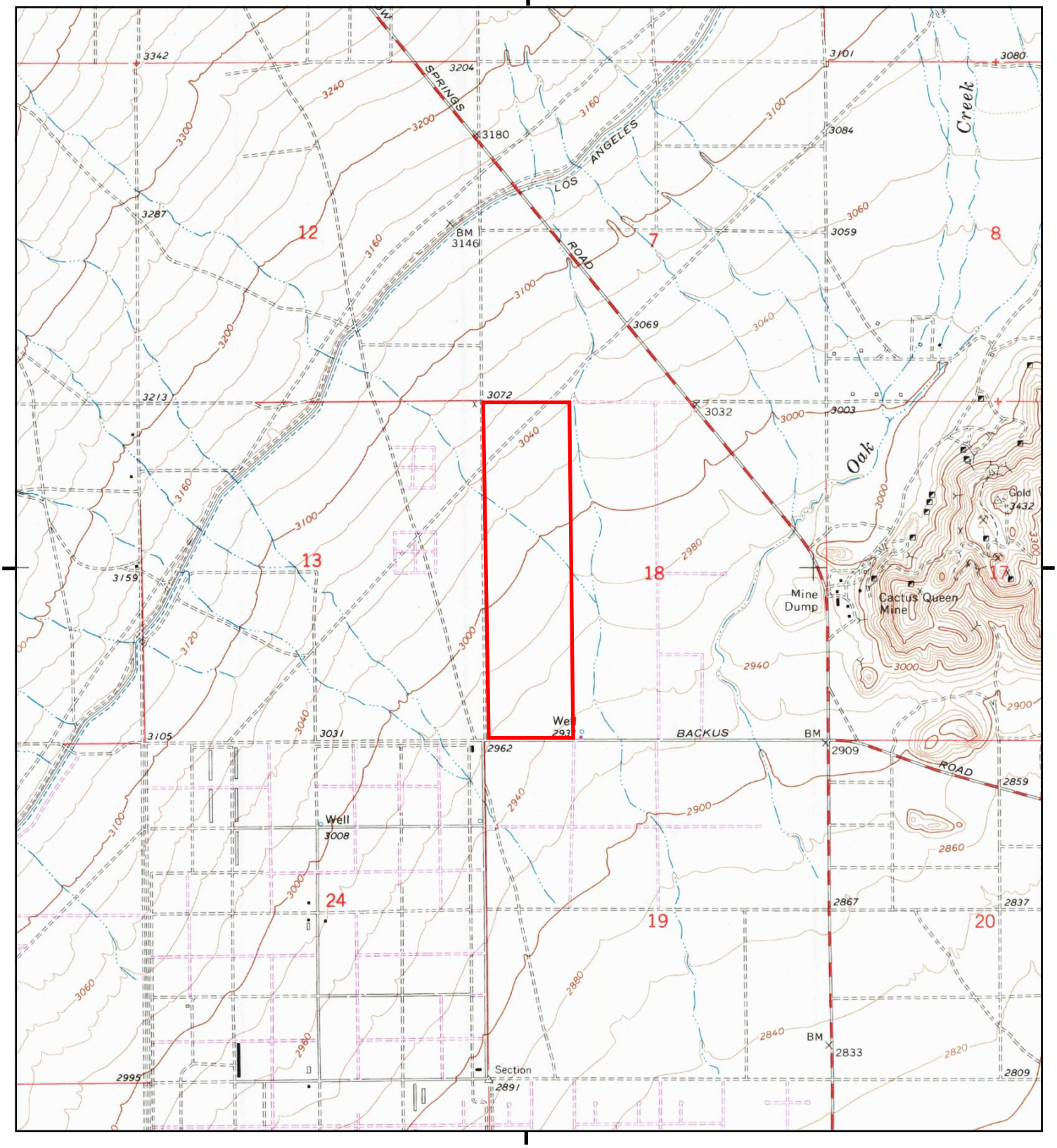
TP, Willow Springs, 2012, 7.5-minute

SITE NAME: Sunbow Solar
ADDRESS: NE of Backus Rd/100th Street West
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1974



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NW N NE
W E
SW S SE

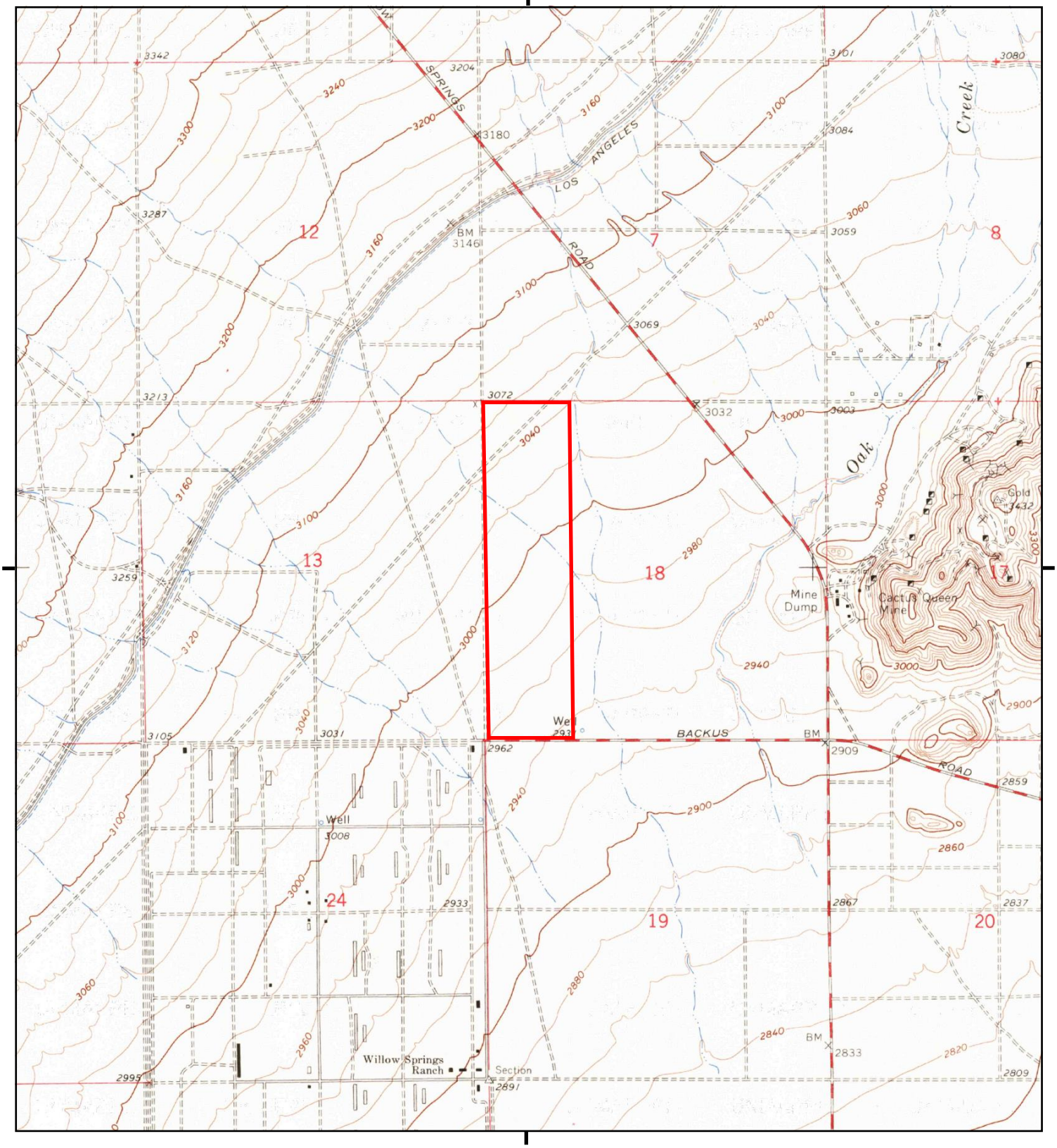
TP, Willow Springs, 1974, 7.5-minute

SITE NAME: Sunbow Solar
ADDRESS: NE of Backus Rd/100th Street West
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1965



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W E
SW S SE

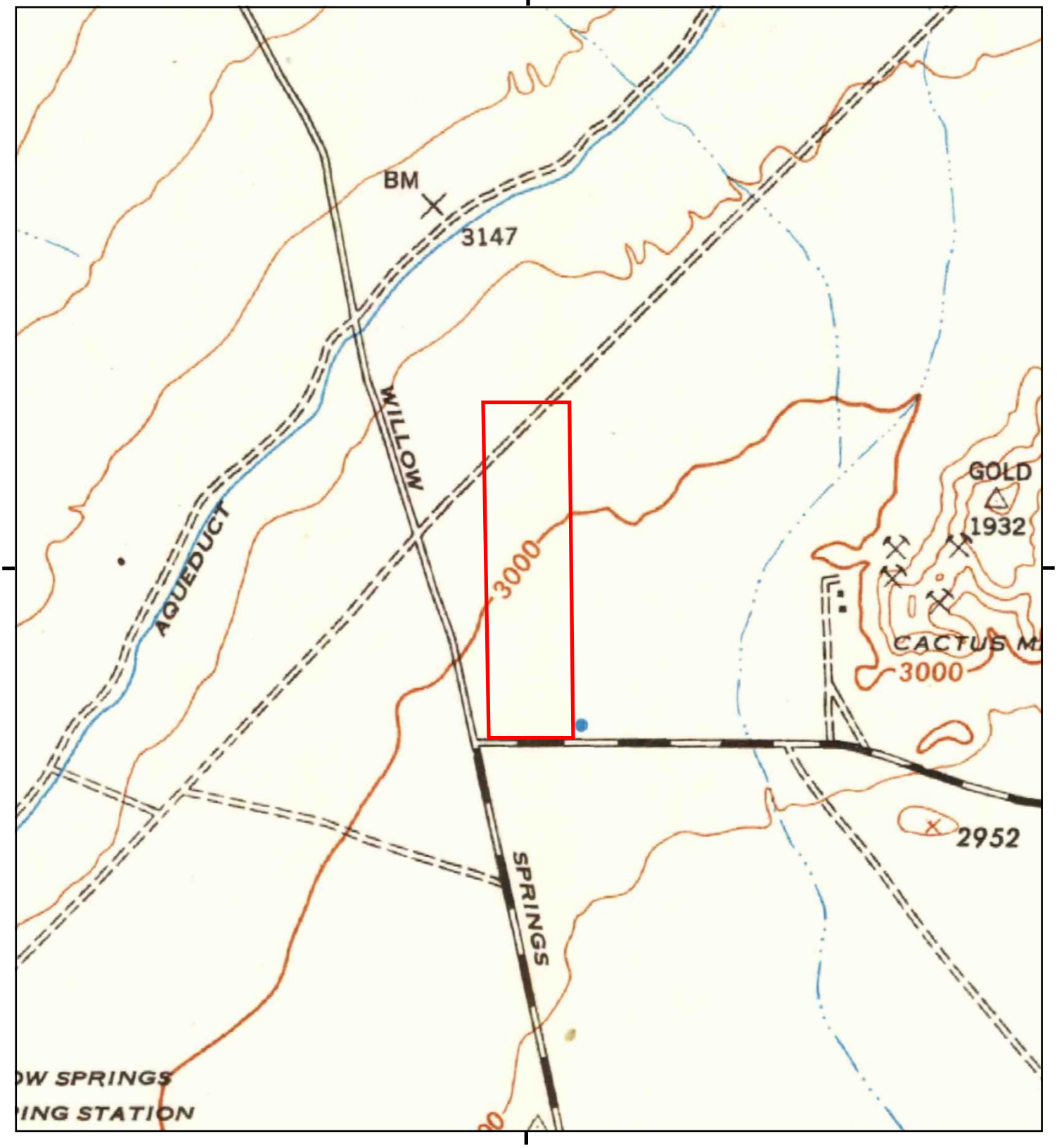
TP, Willow Springs, 1965, 7.5-minute

SITE NAME: Sunbow Solar
ADDRESS: NE of Backus Rd/100th Street West
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1943



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0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

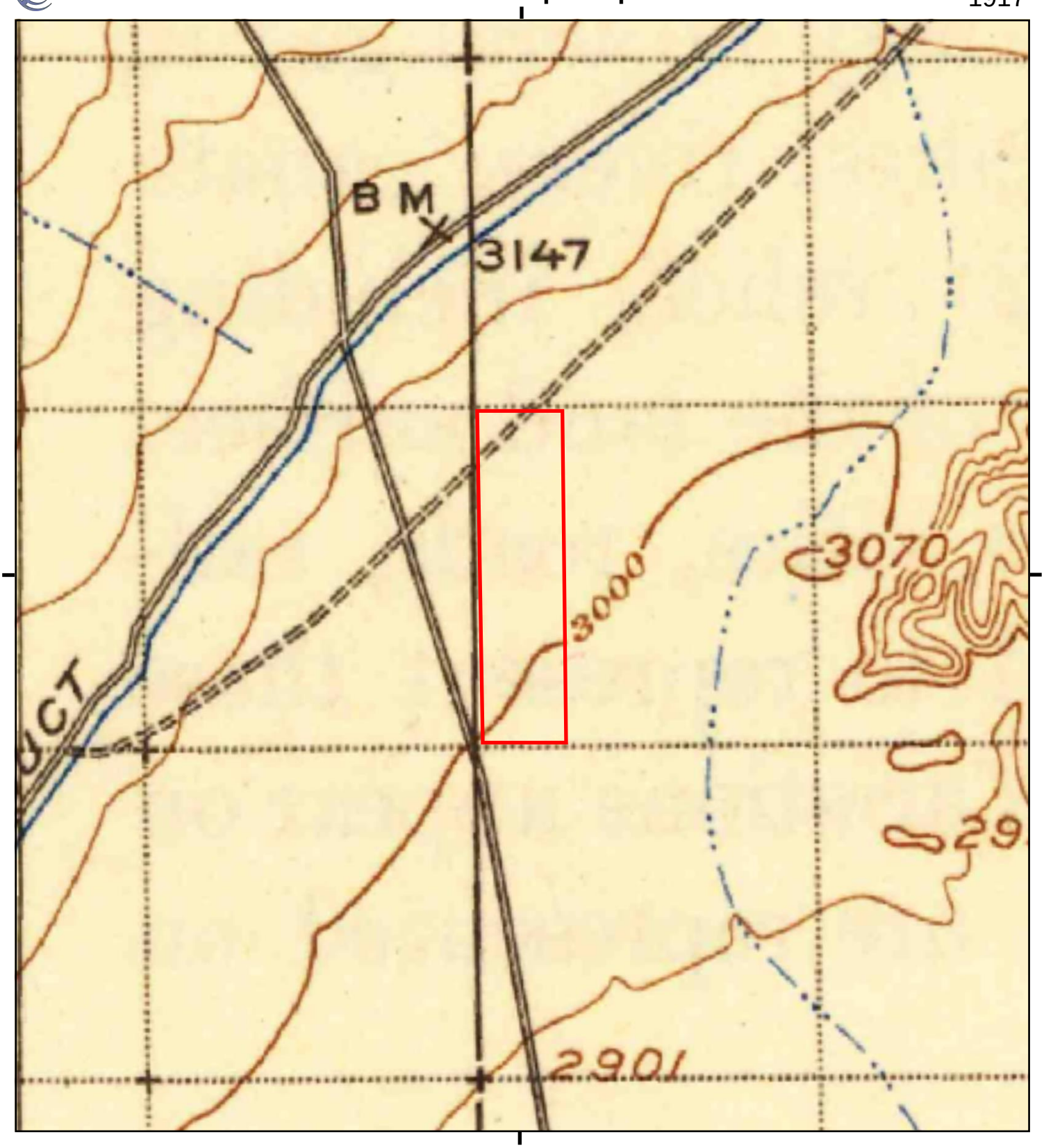
TP, Willow Springs, 1943, 15-minute

SITE NAME: Sunbow Solar
ADDRESS: NE of Backus Rd/100th Street West
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1917



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

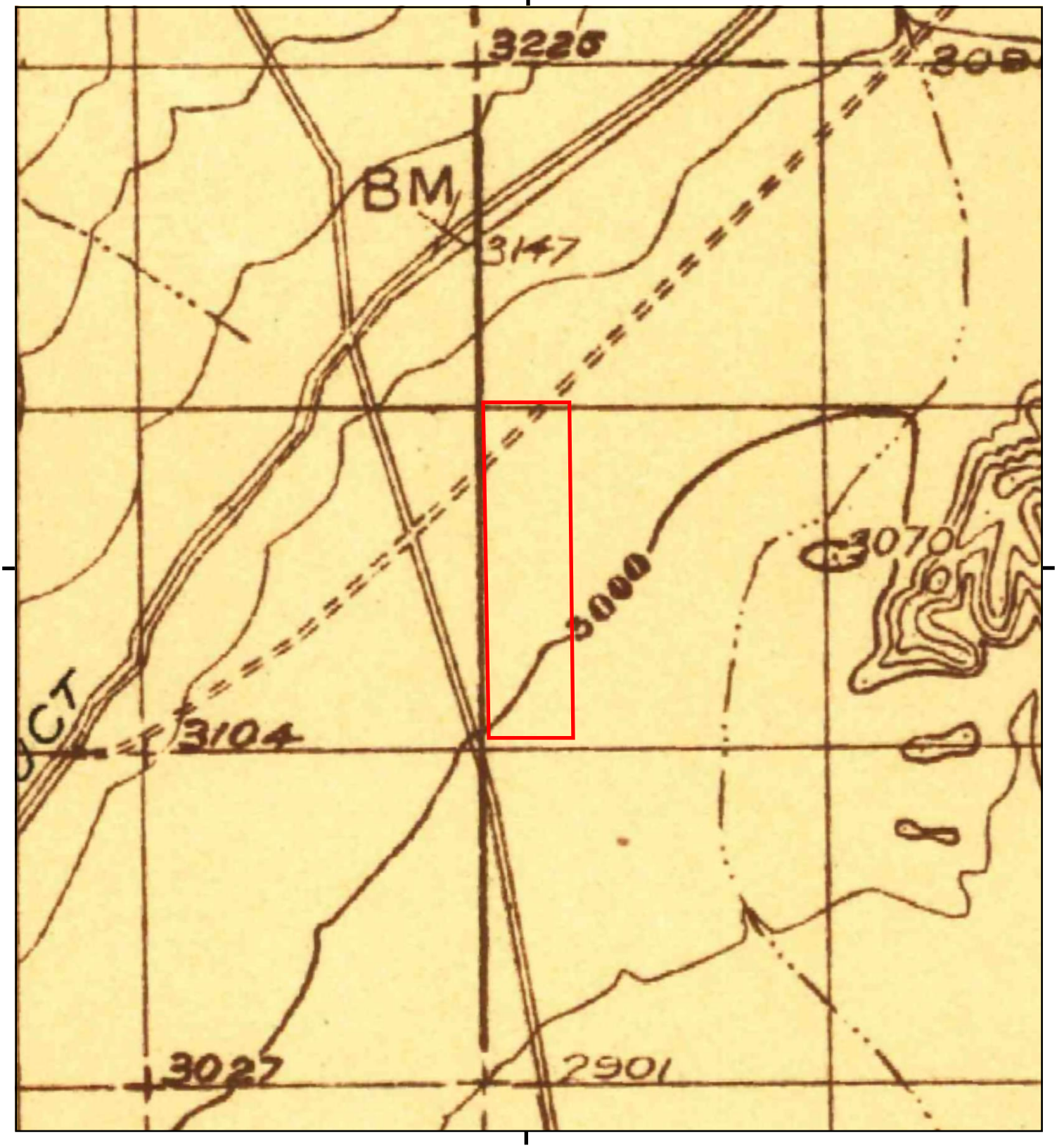
TP, Elizabeth Lake, 1917, 30-minute

SITE NAME: Sunbow Solar
ADDRESS: NE of Backus Rd/100th Street West
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1915



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: Sunbow Solar
ADDRESS: NE of Backus Rd/100th Street West
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

EDR CITY DRECTORY ABSTRACT

Sunbow Solar
NE of Backus Rd & 100th Street West
Rosamond, CA 93560

Inquiry Number: 4744597.5
October 05, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

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

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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*
2013	☑	☑	Cole Information Services
2008	☐	☑	Cole Information Services
2003	☐	☑	Cole Information Services
1999	☐	☑	Cole Information Services
1995	☐	☑	Cole Information Services
1992	☐	☑	Cole Information Services
1990	☐	☑	Haines Criss-Cross Directory
1985	☐	☐	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

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FINDINGS

TARGET PROPERTY STREET

NE of Backus Rd & 100th Street West
Rosamond, CA 93560

Year	***CD Image***	***Source***	
BACKUS RD			
2013	pg A2	Cole Information Services	
2008	-	Cole Information Services	Target and Adjoining not listed in Source
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1990	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	CD Image	Source	
100TH ST W			
2013	pg. A1	Cole Information Services	
2008	pg. A3	Cole Information Services	
2003	pg. A4	Cole Information Services	
1999	pg. A5	Cole Information Services	
1995	pg. A6	Cole Information Services	
1992	pg. A7	Cole Information Services	
1990	pg. A8	Haines Criss-Cross Directory	
1985	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1980	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1975	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	Cole Information Services

100TH ST W 2013

454	OCCUPANT UNKNOWN
737	CHARLES OLOUGHLIN
745	SHARON PARSONS
767	OCCUPANT UNKNOWN
1290	JON CASHBAUGH
1326	HOWARD BANNISTER
1358	PANFILO CASTILLO
1460	JEFFREY MARTINEAU
1734	OCCUPANT UNKNOWN
1747	OCCUPANT UNKNOWN
	WLLMAR FARMS
1760	JAMES MOORE
2057	CAROL ROBERTSON
2193	FRED HINKLE
2359	MICHAEL GIBSON
2513	RICHARD BOLIN
2601	RICHARD DEARBORN
2619	OCCUPANT UNKNOWN
3022	GILLI ROY
3144	ERIK PETERSEN
7000	OCCUPANT UNKNOWN
51260	JANET WINTERS

Target Street	Cross Street	Source
✓	-	Cole Information Services

BACKUS RD 2013

5464	CHRISTOPHER WATTS
6350	ANDREA HAYNES

Target Street	Cross Street	Source
-	✓	Cole Information Services

100TH ST W 2008

737	JUDY OLOUGHLIN
745	TERRENCE PARSONS
767	ELEANORE KERTZMAN
1268	OCCUPANT UNKNOWN
1290	JON CASHBAUGH
1326	OCCUPANT UNKNOWN
1358	PANFILO CASTILLO
1704	OCCUPANT UNKNOWN
1710	OCCUPANT UNKNOWN
1734	OCCUPANT UNKNOWN
1747	OCCUPANT UNKNOWN
	WILMAR FARMS
1760	JR BREED
2057	R KLEIN
2193	FRED HINKLE
2359	ALAN HERSEY
	ALAN HERSEY
	CHUEWEKA
2513	ROBERT MORRIS
2601	RICHARD DEARBORN
2619	RONALD ADAMS
2860	RALPH DELEON
2929	JAMES EWING
3022	GILLI ROY
3144	ERIK PETERSEN
7000	OCCUPANT UNKNOWN
51260	RAE WINTERS

Target Street	Cross Street	Source
-	✓	Cole Information Services

100TH ST W 2003

367	JAMES SELES
745	OCCUPANT UNKNOWN
767	OCCUPANT UNKNOWN
1400	JOSE BROREL
1704	JAMES SELES
1710	LANCE LANGON
1747	SCOTT HARTER
	WILMAR FARMS
2057	JOHN FERGUSON
2193	FRED HINKLE
2359	ALAN HERSEY
2400	GABRIELA BORROEL
2513	ROBYN BOLIN
2619	OCCUPANT UNKNOWN
2860	WAYNE BISHOP
3022	OCCUPANT UNKNOWN
7000	ROBERT PRUITT
51260	OCCUPANT UNKNOWN
52600	VALERIE WILSON

Target Street	Cross Street	Source
-	✓	Cole Information Services

100TH ST W 1999

737	CHARLES OLOUGHLIN
745	SHARON PARSONS
767	ELEANORE KERTZMAN
1747	WILMAR FARMS
1760	JR BREED
2057	TERESA THOPSAN
2193	FRED HINKLE
2513	ROBERT MORRIS
2601	RICHARD DEARBORN
2619	RONALD ADAMS
3144	ERIK PETERSEN
51260	JANET WINTERS

Target Street	Cross Street	Source
-	✓	Cole Information Services

100TH ST W 1995

1747 WILMAR FARMS

Target Street	Cross Street	Source
-	✓	Cole Information Services

100TH ST W 1992

0	WILMAR FARMS
1747	HORNBROOK, GEORGE W
2359	HERSEY, ALAN

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

100TH ST W 1990

100TH W 93560
ROSAMOND

2057	GRIVA Audrey	256-2901	+0
2193	GRIVA Audrey	256-4546	+0
2359	HERSEY Alan	256-4936	9
3022	GLASS Robert W	256-2351	9
NO #	BAUMGARTNER Gail	256-3201	
NO #	BAUMGARTNER R Bruce	256-3201	
NO #	BLACKWELL B E	256-2436	
NO #	HARVEY David J	256-3160	+0
NO #	HORNBROOK Geo W	256-2162	
NO #	KERTZMAN Walter	256-2122	5
NO #	MCMANUS William	256-2697	
NO #	MORGAN Helen	256-3856	9
NO #	OLOUGHLIN Charles	256-3378	
NO #	RUSHTON Fred	256-2645	+0
NO #	**★WILMAR FARMS**	**256-2436**	
NO #	WINTERS R E	256-2654	6

★ 1 BUS 15 RES 4 NEW

EDR PROPERTY TAX MAP REPORT

Sunbow Solar
NE of Backus Rd/100th Street West
Rosamond, CA 93560

Inquiry Number: 4744597.6
October 04, 2016

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.

NO COVERAGE

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

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EDR ENVIRONMENTAL LIENSEARCH

Sunbow Solar
NE of Backus Rd/100th Street West
Rosamond, CA 93560

Inquiry Number: 4744597.7
October 12, 2016

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

NE of Backus Rd/100th Street West
Sunbow Solar
Rosamond, CA 93560

RESEARCH SOURCE

Source 1:

Kern Recorder
Kern, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	Discountland Inc
Title received from:	Jack Schneider
Deed Dated	5/25/2006
Deed Recorded:	6/27/2006
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	Discountland Inc
Parcel # / Property Identifier:	346-131-12, 346-131-13, 346-131-15, 346-131-16, 346-131-17, 346-131-18, 346-131-19
Comments:	See Exhibit

Deed 2:

Type of Deed:	deed
Title is vested in:	Discountland Inc
Title received from:	Marvin Frieder MC Trustee
Deed Dated	5/25/2006
Deed Recorded:	6/23/2006
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	

EDR Environmental Lien and AUL Search

Miscellaneous Comments:

Legal Description: See Exhibit

Legal Current Owner: Discountland Inc

Parcel # / Property Identifier: 346-131-14

Comments: See Exhibit

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

Deed Exhibit 1

1-1

RECORDING REQUESTED BY:
Alliance Title Insurance(Bakersfield)

AND WHEN RECORDED MAIL TO:

DISCOUNTLAND INC.
C/O Barry Pressman
74 Bell Canyon
Bell Canyon, CA 91307

Order No. **15151374**
Escrow No. **81952-B**
Parcel No. 346-131-12, 13, 15
16, 17, 18 #19

James W. Fitch, Assessor–Recorder
Kern County Official Records
Recorded at the request of
Alliance Title

JASON
6/27/2006
8:01 AM

DOC#: **0206155785**

Stat Types: 1 Pages: 1

Fees	7.00
Taxes	0.00
Others	0.00
PAID	$7.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

THE UNDERSIGNED GRANTOR DECLARES THAT DOCUMENTARY TRANSFER TAX IS $ Gift and CITY $

- ☐ computed on full value of property conveyed, or
- ☐ computed on full value less liens or encumbrances remaining at the time of sale.
- ☒ unincorporated area: Kern ☐ CITY OF

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Jack Schneider, a married man as his sole and separate property

hereby **GRANTS** to **DISCOUNTLAND INC., a California Corporation**

the following described real property in the unincorporated area, County of **Kern**, State of California:

Parcels 1,2,4 thru 8, of Parcel Map No. 8985, as per map recorded February 13, 1990 in Book 39, Page(s) 199 and 200, of Parcel Maps, in the Office of the County Recorder of said County.

Date May 25, 2006

By: Jack Schneider

STATE OF CALIFORNIA }
} S.S.
COUNTY OF Los Angeles }

On May 31, 2006, before me, Carrie L. Dranow, a notary, public, personally appeared Jack Schneider ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

Signature Carrie L. Dranow

CARRIE L. DRANOW
Commission # 1452375
Notary Public - California
Los Angeles County
My Comm. Expires Nov 21, 2007

Mail Tax Statement to: SAME AS ABOVE or Address Noted Below

Deed Exhibit 2

2-107

RECORDING REQUESTED BY:
Alliance Title Insurance(Bakersfield)

AND WHEN RECORDED MAIL TO:

DISCOUNTLAND INC.
C/O Barry pressman
74 Bell Canyon Road
Bell Canyon, CA 91307

Order No. **15151374**
Escrow No. **81952-B**
Parcel No.

James W. Fitch, Assessor – Recorder
Kern County Official Records

JASON
6/23/2006
8:00 AM

Recorded at the request of
Alliance Title

DOC#: **0206153453**

Stat Types: 1 Pages: 1

Fees	27.00
Taxes	** Conf **
Others	0.00
PAID	$27.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

346-131-14

GRANT DEED

THE UNDERSIGNED GRANTOR DECLARES THAT DOCUMENTARY TRANSFER TAX IS and CITY $

- ☐ computed on full value of property conveyed, or
- ☐ computed on full value less liens or encumbrances remaining at the time of sale.
- x unincorporated area: Kern ☐ CITY OF

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Marvin Frieder M.D., Trustee of The Marvin Frieder, M.D., Inc. Money Purchase Pension Plan, who acquired title as Marvin Frieder M.D., Trustee of The Marvin Frieder M.D. Inc. Money Purchase Pension Trust.
hereby **GRANTS** to **DISCOUNTLAND INC., a California Corporation**

the following described real property in the unincorporated area, County of **Kern**, State of California:

Parcels 3, inclusive of Parcel Map No. 8985, as per map recorded February 13, 1990 in Book 39, Page(s) 199 and 200, of Parcel Maps, in the Office of the County Recorder of said County.

Date May 25, 2006

The Marvin Frieder, M.D., Inc. Money Purchase Pension ~~Trust~~ Plan MF

By: Marvin Frieder, Trustee

STATE OF CALIFORNIA }
} S.S.
COUNTY OF LOS ANGELES }

On 6-1-06, before me Cecilia Castellanos, a notary, public, personally appeared MARVIN FRIEDER. personally known to me (or proved to me on the basis of satisfactory evidence) to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

Signature

CECILIA CASTELLANOS
Commission # 1622854
Notary Public - California
Los Angeles County
My Comm. Expires Nov 19, 2009

Mail Tax Statement to: SAME AS ABOVE or Address Noted Below

APPENDIX C: REGULATORY RECORDS DOCUMENTATION

Sunbow Solar
NE of Backus Rd/100th Street West
Rosamond, CA 93560

Inquiry Number: 4744597.2s
October 04, 2016

The EDR Radius Map™ Report with GeoCheck®

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

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	9
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	PSGR-1

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

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EXECUTIVE SUMMARY

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

TARGET PROPERTY INFORMATION

ADDRESS

NE OF BACKUS RD/100TH STREET WEST
ROSAMOND, CA 93560

COORDINATES

Latitude (North):	34.9579830 - 34˚ 57' 28.73''
Longitude (West):	118.3072330 - 118˚ 18' 26.03''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	380645.5
UTM Y (Meters):	3868966.2
Elevation:	2999 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5630781 WILLOW SPRINGS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140705
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
NE OF BACKUS RD/100TH STREET WEST
ROSAMOND, CA 93560

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

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

Federal CERCLIS NFRAP site list

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

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

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

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List

EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

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
SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

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

State and tribal voluntary cleanup sites

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

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
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

EXECUTIVE SUMMARY

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

Local Lists of Registered Storage Tanks

SWEEPS UST	SWEEPS UST Listing
HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database

Local Land Records

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

Records of Emergency Release Reports

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

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
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

EXECUTIVE SUMMARY

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
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
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
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
ICE	ICE
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner	EDR Exclusive Historic Dry 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 not identified.

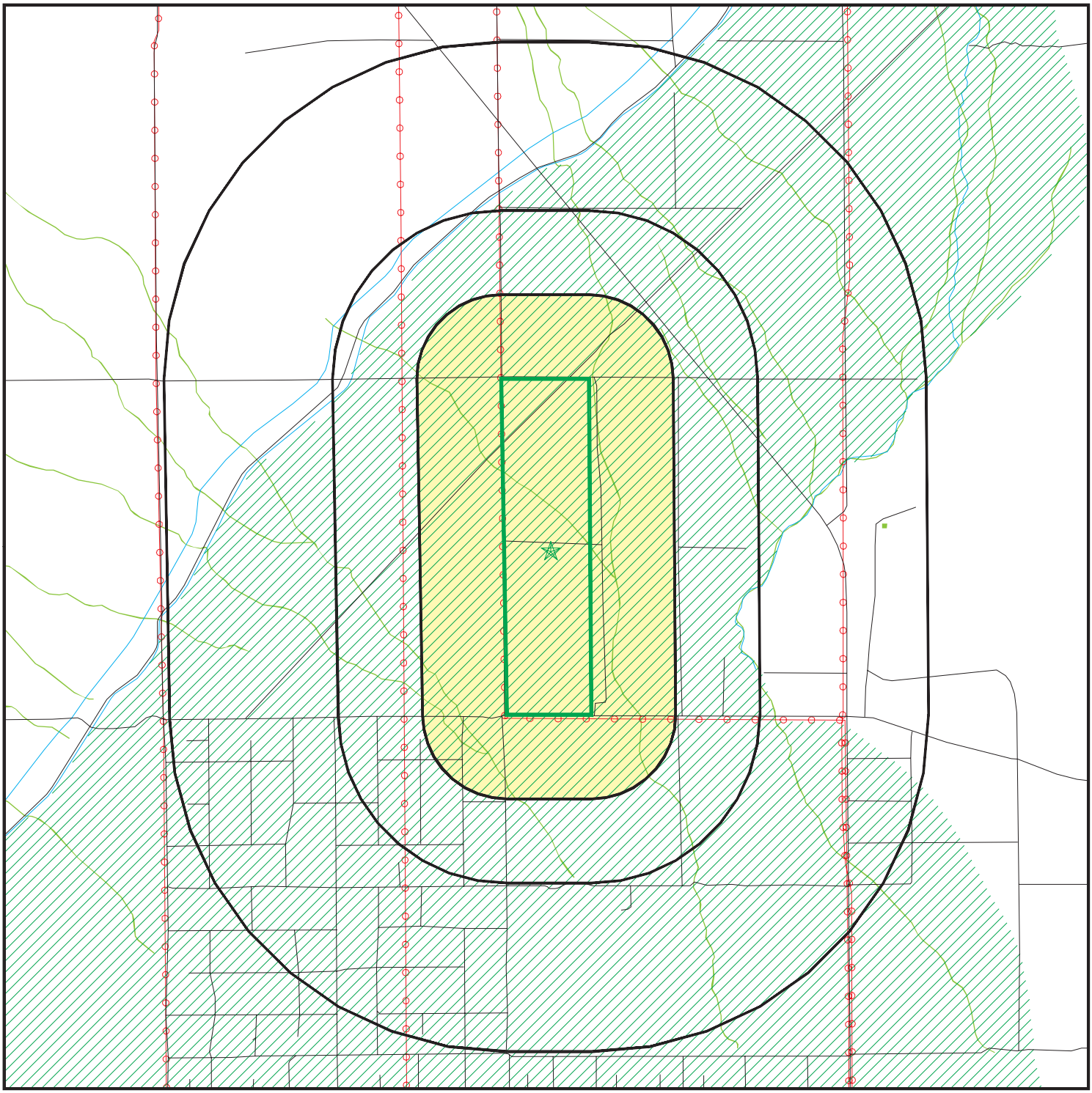
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 21 records.

Site Name	Database(s)
CATALINA SOLAR II	NPDES
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
BLM-CACTUS GOLD MINES CO.	SEMS-ARCHIVE
AVENUE A	SEMS-ARCHIVE

OVERVIEW MAP - 4744597.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

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: Sunbow Solar	CLIENT: Insight Environmental Consultants, Inc.
ADDRESS: NE of Backus Rd/100th Street West Rosamond CA 93560	CONTACT: Dolores Gough
LAT/LONG: 34.957983 / 118.307233	INQUIRY #: 4744597.2s
	DATE: October 04, 2016 3:06 pm

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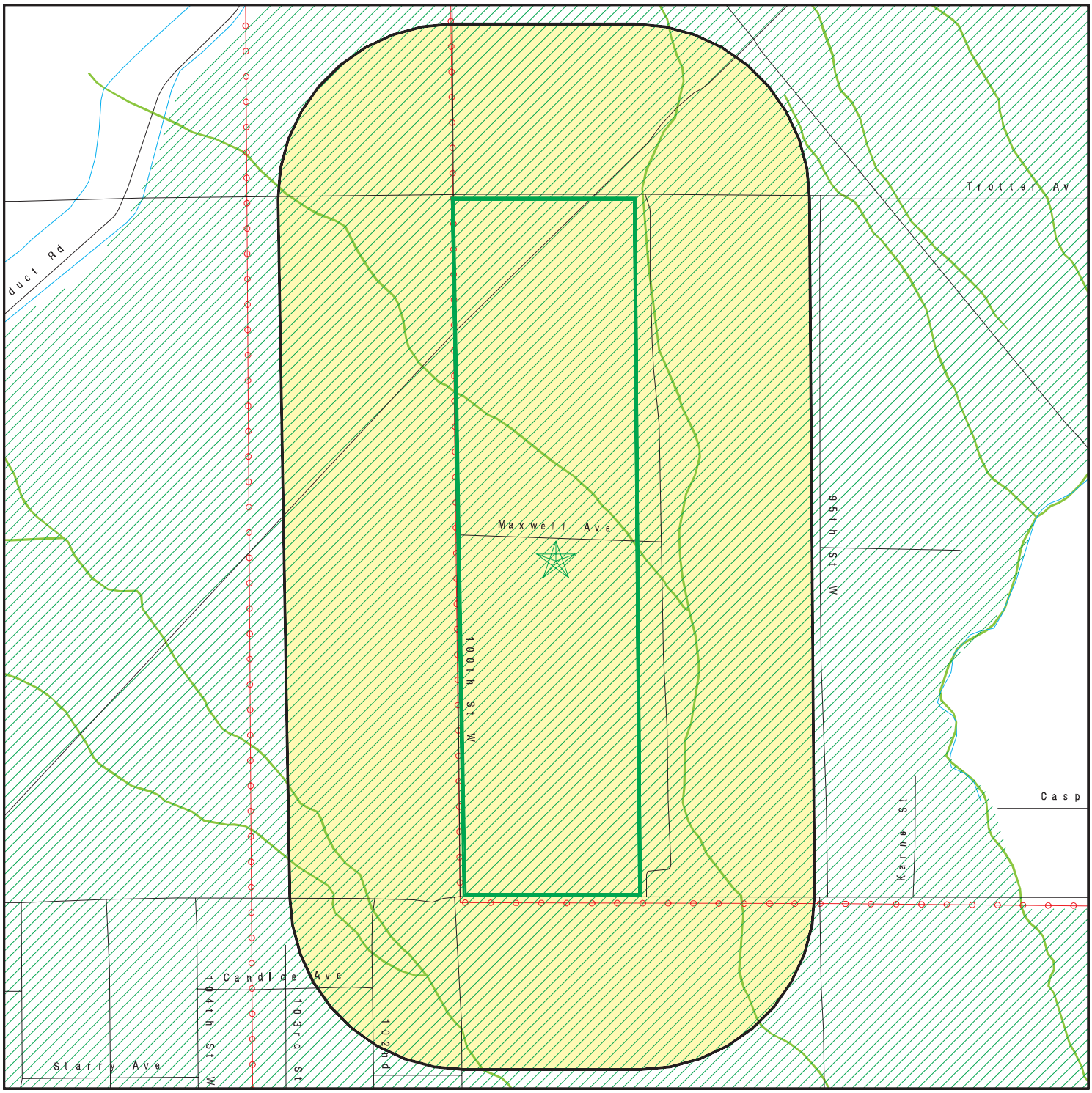
DETAIL MAP - 4744597.2S



0 1/8 1/4 1/2 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
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- 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: Sunbow Solar	CLIENT: Insight Environmental Consultants, Inc.
ADDRESS: NE of Backus Rd/100th Street West Rosamond CA 93560	CONTACT: Dolores Gough INQUIRY #: 4744597.2s
LAT/LONG: 34.957983 / 118.307233	DATE: October 04, 2016 3:07 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	0.001		0	NR	NR	NR	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-CESQG	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 CONTROL	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
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	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
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0

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
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
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	0.001		0	NR	NR	NR	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
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
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
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
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

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
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
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
ICE	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 21 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KERN COUNTY	S107538866		HWY 46 (8-10 MI W OF WASCO)		CDL
KERN COUNTY	S107538873		HWY 65 & LERDO HWY (1MI N OF L		CDL
KERN COUNTY	S107539787		ON COUNTY LINE ROAD, 1/2 MI EA		CDL
KERN COUNTY	S107538271		DAWN RD, 0.5 MILE E OF HWY 14		CDL
KERN COUNTY	S107540608		SB HWY 99/S OF SEVEN STANDARD		CDL
KERN COUNTY	S107539143		KYTE RD, 1 MI S OF POND ROAD		CDL
KERN COUNTY	S107526542		0.1 MILE E OF ZERKER RD/1 MI S		CDL
KERN COUNTY	S107539479		N-I5/NORTH OF SR 43		CDL
KERN COUNTY	S107540761		SR99 NO BOUND LANE/1 MI S OF H		CDL
KERN COUNTY	S107541105		W OF MCFARLAND, SEE GREEN FOR		CDL
KERN COUNTY	S107540666		SHERWOOD AVE, 1/2 MI E OF WALL		CDL
KERN COUNTY	S107539581		NORTH SIDE HART RD,1/2 MI W OF		CDL
KERN COUNTY	S107526566		1 MI SOUTH OF HWY 58 ON WHEATP		CDL
MOJAVE	S107538871		HWY 58, 1 MIL N OF MOJAVE	93501	CDL
MOJAVE	S107535927		70TH ST WEST, 1.5 MI S OF BACC	93501	CDL
MOJAVE	S107530460		2 MI E OF MOJAVE RD		CDL
MOJAVE	S107536416		8 ML E OF MOJAVE TROPILO RD 3		CDL
MOJAVE	S107526549		0.8 MILE N OF BACAUS RD/MOJAVE	93501	CDL
MOJAVE	1003879733	BLM-CACTUS GOLD MINES CO.	STAR RTE 1-BACKUS RD & TEHACHA	93501	SEMS-ARCHIVE
ROSAMOND	S117347787	CATALINA SOLAR II	130TH STREET AND GENERAL PETRO	93560	NPDES
ROSAMOND	1003879424	AVENUE A	1/2 MI W OF W 10TH ST ALONG AV	93560	SEMS-ARCHIVE

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: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
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: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 07/07/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 10/17/2016
	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: 11/13/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/06/2016	Telephone: 703-603-8704
Date Made Active in Reports: 05/20/2016	Last EDR Contact: 07/06/2016
Number of Days to Update: 135	Next Scheduled EDR Contact: 10/17/2016
	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: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 07/22/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 10/31/2016
	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: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
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: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - 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). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
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: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
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: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

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: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
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: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

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

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 34

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/16/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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 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: Varies

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 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 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: 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

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
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: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
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: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

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: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

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: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
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: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
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: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

SLIC: Statewide SLIC Cases
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: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
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: Quarterly

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: Semi-Annually

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: Varies

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: Semi-Annually

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: Semi-Annually

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: Semi-Annually

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: Annually

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: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 55

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
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: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

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: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

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: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

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: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
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: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

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: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

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: 02/29/2016
Date Data Arrived at EDR: 03/07/2016
Date Made Active in Reports: 05/04/2016
Number of Days to Update: 58

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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: 06/21/2016
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/21/2016
Next Scheduled EDR Contact: 01/02/2017
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: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
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: 08/05/2016
Next Scheduled EDR Contact: 11/14/2016
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: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

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: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
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: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
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: 12/31/2015
Date Data Arrived at EDR: 05/10/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 10/24/2016
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

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: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

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: 06/07/2016
Date Data Arrived at EDR: 06/09/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 14

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/12/2016
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

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: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

DEED: Deed Restriction Listing

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

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
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: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/03/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing
The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing
The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
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: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 11/28/2016
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: 05/08/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 107

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
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: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
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: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
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: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
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: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
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: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
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: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
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: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
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: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
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: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
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: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
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: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
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: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
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: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
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: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
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: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 51

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 48

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
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: 05/25/2016
Date Data Arrived at EDR: 05/27/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 54

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/25/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 49

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
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: 12/31/2014
Date Data Arrived at EDR: 10/14/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 58

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

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

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/23/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 56

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/11/2016
Date Data Arrived at EDR: 07/13/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 36

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/16/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
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: 09/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 02/12/2016
Date Data Arrived at EDR: 03/16/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 89

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
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 board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/09/2017
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: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/23/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 56

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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 Historic Gas 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 Historic Dry 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:

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: 07/07/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/09/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 12

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 18

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 07/20/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 60

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 22

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 55

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/01/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 04/08/2016
Date Data Arrived at EDR: 05/03/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 50

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 75

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

FRESNO COUNTY:

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: 07/13/2016
Date Data Arrived at EDR: 07/19/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 21

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/08/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 41

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/20/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 80

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/27/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 26

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 04/26/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 51

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 08/19/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

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: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/05/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/18/2016
Date Data Arrived at EDR: 04/20/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 42

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/19/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/29/2016
Date Data Arrived at EDR: 04/06/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 68

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/18/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 32

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 04/07/2016
Date Data Arrived at EDR: 04/26/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 36

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/17/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 32

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 21

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/24/2016
Date Data Arrived at EDR: 06/27/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 43

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/17/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 35

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/17/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 35

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/11/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/09/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 50

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/13/2016
Date Data Arrived at EDR: 04/15/2016
Date Made Active in Reports: 05/09/2016
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/13/2016
Date Data Arrived at EDR: 07/18/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 21

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 07/06/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 43

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/06/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 07/06/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 43

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/05/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

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: 06/09/2016
Date Data Arrived at EDR: 06/10/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 40

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

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: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/02/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

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: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

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: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 49

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/23/2016
Date Data Arrived at EDR: 05/24/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 28

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 57

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

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

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/26/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 49

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 05/31/2016
Date Data Arrived at EDR: 06/02/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 19

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/14/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 57

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 55

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 07/10/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 28

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2016
Date Data Arrived at EDR: 07/05/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 44

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 16

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/03/2016
Date Data Arrived at EDR: 05/10/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 38

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

VENTURA COUNTY:

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: 06/28/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 54

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/05/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 35

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/29/2016
Date Data Arrived at EDR: 05/03/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 45

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/11/2016
Next Scheduled EDR Contact: 10/24/2016
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: 08/01/2016
Date Data Arrived at EDR: 08/03/2016
Date Made Active in Reports: 09/09/2016
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
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

SUNBOW SOLAR
NE OF BACKUS RD/100TH STREET WEST
ROSAMOND, CA 93560

TARGET PROPERTY COORDINATES

Latitude (North):	34.957983 - 34˚ 57’ 28.74’’
Longitude (West):	118.307233 - 118˚ 18’ 26.04’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	380645.5
UTM Y (Meters):	3868966.2
Elevation:	2999 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property 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 principal 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).

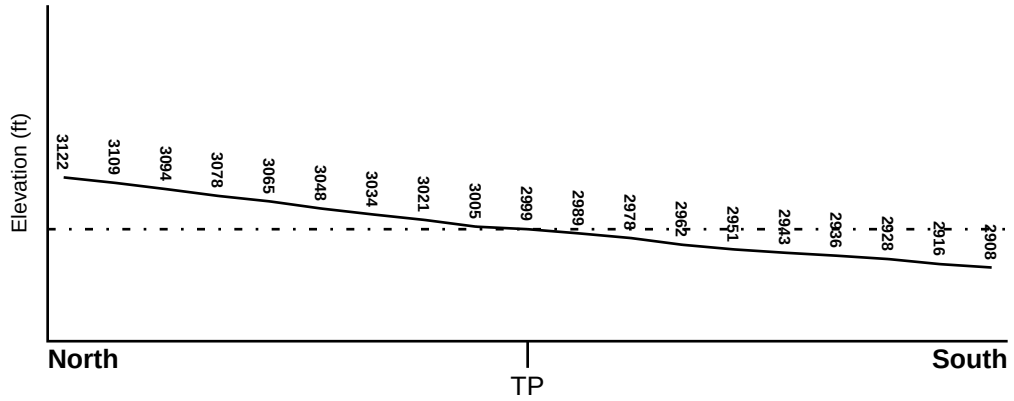
TOPOGRAPHIC INFORMATION

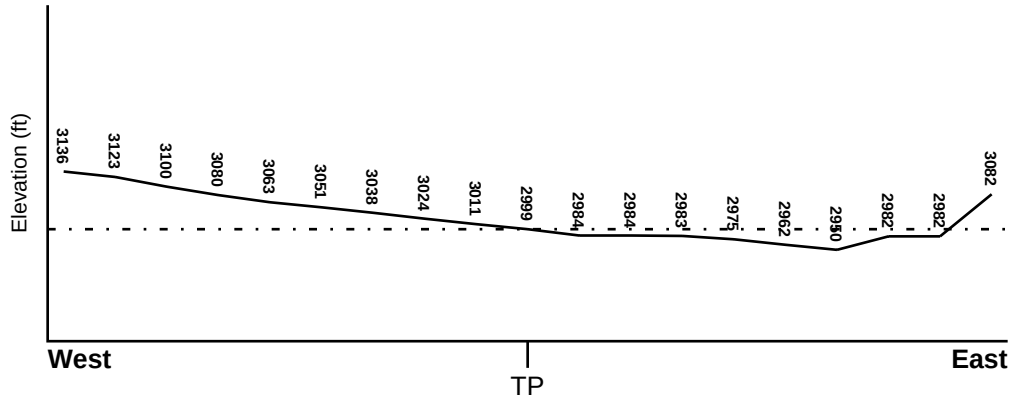
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 2999 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06029C3650E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
WILLOW SPRINGS	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

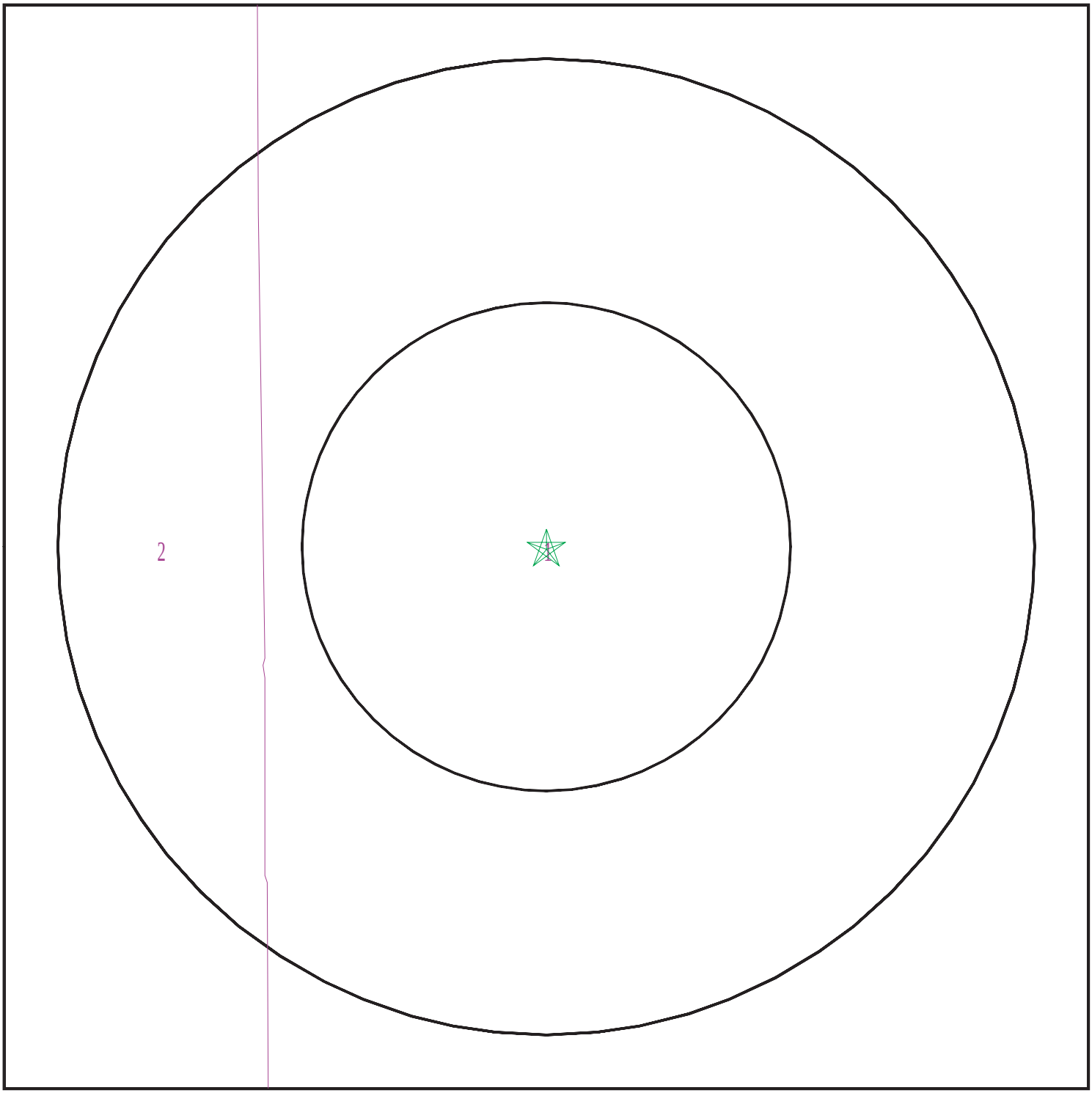
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4744597.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Sunbow Solar	CLIENT:	Insight Environmental Consultants, Inc.
ADDRESS:	NE of Backus Rd/100th Street West Rosamond CA 93560	CONTACT:	Dolores Gough
		INQUIRY #:	4744597.2s
LAT/LONG:	34.957983 / 118.307233	DATE:	October 04, 2016 3:08 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: CAJON

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	35 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 2

Soil Component Name: Cajon

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
2	9 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000158682	1/2 - 1 Mile SSW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

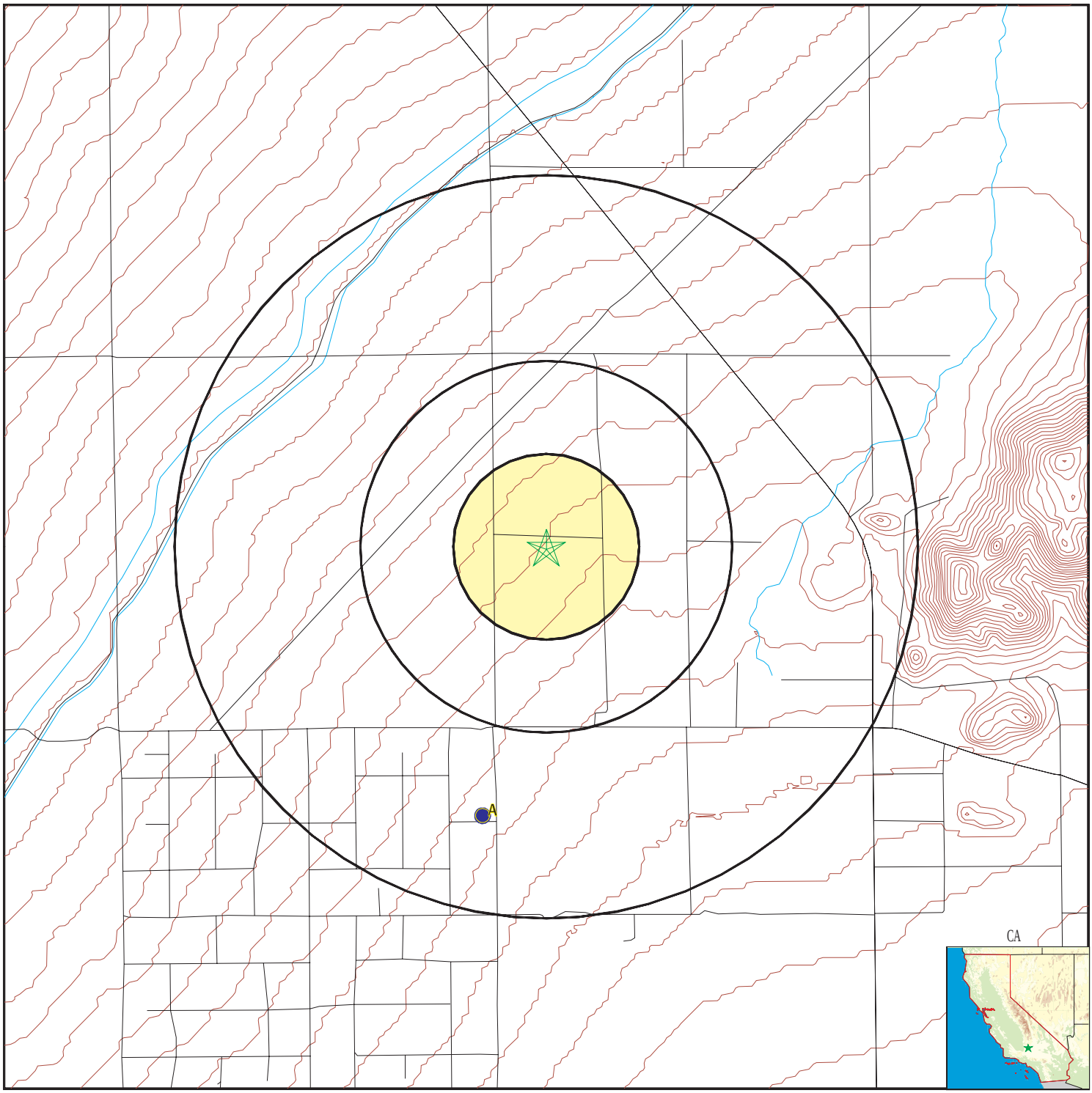
Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	CADW60000028401	1/2 - 1 Mile SSW

PHYSICAL SETTING SOURCE MAP - 4744597.2s



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

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME:	Sunbow Solar	CLIENT:	Insight Environmental Consultants, Inc.
ADDRESS:	NE of Backus Rd/100th Street West Rosamond CA 93560	CONTACT:	Dolores Gough
		INQUIRY #:	4744597.2s
LAT/LONG:	34.957983 / 118.307233	DATE:	October 04, 2016 3:08 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **SSW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000158682**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-345651118183201		
Monloc name:	010N014W24A001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18030003	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.9474737
Longitude:	-118.3098014	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	2945.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 26

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-03-29	337.85		2003-03-24	338.11	
2002-03-26	338.32		2001-03-21	340.12	
2000-03-21	340.09		1999-03-18	341.06	
1998-03-18	343.51		1997-03-03	345.85	
1996-04-18	345.45		1995-04-20	344.59	
1994-04-11	343.52		1993-04-20	343.63	
1992-04-16	345.50		1991-03-22	346.50	
1990-03-15	343.62		1989-03-23	341.78	
1988-03-28	341.25		1987-03-11	341.32	
1986-03-25	341.47		1985-03-25	341.39	
1983-04-14	338.60		1982-02-18	338.59	
1981-04-17	338.55		1980-04-16	338.70	
1979-02-22	337.92		1978-12-05	346.35	

A2 **SSW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000028401**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Objectid:	28401
Latitude:	34.9475
Longitude:	-118.3107
Site code:	349475N1183107W001
State well numbe:	10N14W24A001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	15
County name:	Kern
Basin code:	’6-44’
Basin desc:	Antelope Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000028401

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 & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
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.

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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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

Questionnaire

Insight Environmental Consultants, Inc. has been retained to complete a Phase I Environmental Site Assessment of the property listed below. Completion of this questionnaire is required of the Current Property Owner based on the American Standard for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-13 and by the Code of Federal Regulations (40 CFR 312) All "Appropriate Inquiry". The responses provided on this questionnaire are considered confidential. Please complete the questionnaire to the best of your knowledge and return the completed form by email (preferred), Fax or US Postal Service to:

Ms. Dolores Gough
Insight Environmental Consultants, Inc.
5500 Ming Ave., Suite 140
Bakersfield, CA 93309
T: 661-282-2200 | F: 661-282-2204
Email: dgough@insenv.com

Property Name: Sunbow Solar
Property Address: NE of Backus Road/100th Street West, Rosamond, Kern County, CA

1. Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject property?

   ☒ No ☐ Yes _____

2. Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject property?

   ☒ No ☐ Yes _____

3. Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?

   ☒ No ☐ Yes _____

4. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   ☒ No ☐ Yes _____

5. Are you aware of any commonly known or reasonably ascertainable information about the property? For example: Do you know the past uses of the property?

   ☒ No ☐ Yes _____

6. Do you know specific chemicals that are present or once were present at the property?

   ☒ No ☐ Yes _____

7. Do you know of spills or other chemical releases that have taken place at the property?

☒ No ☐ Yes _____

8. Do you know of environmental cleanups that have taken place at the property?

☒ No ☐ Yes _____

9. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence of contamination at the property?

☒ No ☐ Yes _____

10. Is the property or has the property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, waste treatment/storage/disposal or recycling facility?

☒ No ☐ Yes _____

11. Are you aware of any damaged or discarded automotive or industrial batteries, pesticides, paints or other chemicals at the subject property?

☒ No ☐ Yes _____

12. Are there currently any industrial drums or other bulk chemicals at the subject property?

☒ No ☐ Yes _____

13. Are you aware of contaminated fill dirt at the subject property, i.e. fill dirt brought onto the property which came from a contaminated site or an unknown location?

☒ No ☐ Yes _____

14. Are there currently any pits, ponds or lagoons in connection with waste disposal or treatment at the subject property?

☒ No ☐ Yes _____

15. Are there any current or previous registered or unregistered storage tanks (aboveground or underground) at the property?

☒ No ☐ Yes _____

16. Are there any vent pipes, fill pipes or access ways protruding from the ground at the property?

☒ No ☐ Yes _____

17. Is the subject property served by a private well/non-public water system or a private septic system?

☒ No ☐ Yes _____

18. Is any industrial wastewater (other than sanitary sewer) discharged from the subject property?

☒ No ☐ Yes _____

19. Are you aware of any flooring, drains or walls located within the subject property that are stained by substances other than water, or that are emitting foul odors at the subject property?

☒ No ☐ Yes _____

20. Are there any monitoring wells at the subject property?

☒ No ☐ Yes _____

21. Is there any transformer, capacitor, or any other hydraulic equipment that contains polychlorinated biphenyls (PCBs) or that contains unknown dielectric fluids on the subject property?

☒ No ☐ Yes _____

22. What year did you/or current owner purchase the subject property? _____

Additional Comments: There is some trash on the site.

Please provide the following documents, if available:

- ☐ Environmental site assessment reports
- ☐ Environmental compliance audit reports
- ☐ Geotechnical studies
- ☐ Reports regarding hydrogeological 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

Identity of Person Providing This Information:

Printed Name: Jaymie Brauer Signature: _____

Title/Relationship to Property: authorized agent of the leaseholder Date: _____

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL

Dolores Gough, P.E.

Senior Consultant — Bakersfield

AREAS OF SPECIALIZATION

- NPDES Permitting
- Waste and Wastewater Management
- SPCC Plan and SWPPP Development
- Phase I & II Environmental Assessments
- Soil & Groundwater Remediation
- Air Quality Permitting

EDUCATION

M.S., Environmental Engineering, University of So. California
B.S., Chemical Engineering, University of Santo Tomas

AFFILIATIONS

National and California Environmental Health Association

CERTIFICATIONS

Registered Professional Civil Engineer in CA
Registered Environmental Health Specialist in CA
Construction 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, storm water pollution prevention plans (SWPPP) for construction projects and industrial activities, spill prevention control and countermeasures plans (SPCC), technical reports for waste water discharges to land, and Phase I and II environmental assessments. She is also experienced in soil and water/wastewater investigation.

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 permit engineer for the local air district

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, 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 - 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.

NPDES Permitting - Conducted preliminary assessments of industrial operations to determine storm water permitting requirements. Developed Storm Water Pollution Prevention plans or Technical Reports. Prepared Reports of Waste Discharge in support of applications to reclaim waste water by applying it to land as part of Waste Discharge Requirements (WDR) permits.

EMPLOYMENT HISTORY

2014 – Present Trinity Consultants – Senior Consultant
2009 – Present Columbia Southern University, College of Safety & Emergency Services – Adjunct 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

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Syracuse Site

SWC Backus Rd/Tehachapi Willow Springs Rd
Rosamond, California

Prepared For:

Quad Knopf, 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
5500 Ming Avenue, Suite 140
Bakersfield, CA 93309
661-282-2200

March 2016

Project 160505.0077

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1-1
- 1.1. Subject Property Description 1-1
- 1.2. Historical Recognized Environmental Condition (HREC) 1-1
- 1.3. Controlled Recognized Environmental Condition (CREC) 1-1
- 1.4. Recognized Environmental Condition (REC) 1-2
- 1.5. Opinion and Recommendations 1-2

2. INTRODUCTION 2-1
- 2.1. Purpose 2-1
- 2.2. Detailed Scope of Services 2-1
- 2.3. Deviations 2-1
- 2.4. Significant Assumptions 2-1
- 2.5. Limitations and Exceptions 2-2
- 2.6. Special Terms and Conditions (User Reliance) 2-3

3. SITE DESCRIPTION 3-1
- 3.1. Location and Legal Description 3-1
- 3.2. Site and Vicinity General Characteristics 3-2
- 3.3. Current Use of the Property 3-2
- 3.4. Current Use of Adjoining Properties 3-3

4. USER PROVIDED INFORMATION 4-1
- 4.1. Title Records 4-1
- 4.2. Environmental LieNs/Activity and Use Limitations 4-1
- 4.3. Specialized Knowledge 4-1
- 4.4. Commonly Known or Reasonably Ascertainable Information 4-1
- 4.5. Valuation reduction for environmental Issues 4-1
- 4.6. Owner, Property Manager, and occupant information 4-1
- 4.7. Reason for Performing this Phase I ESA 4-1

5. RECORDS REVIEW 5-1
- 5.1. Standard Environmental Record Sources 5-1
- 5.2. Additional Environmental Records Sources 5-2
  - *5.2.1. GeoTracker Online Database* *5-2*
  - *5.2.2. Oil and Gas and Water Well Report* *5-2*
  - *5.2.3. Property Tax Map* *5-2*
  - *5.2.4. Sanborn Map* *5-2*
  - *5.2.5. Vapor Encroachment Screen* *5-2*
- 5.3. Site Physical Setting 5-3
- 5.4. Historical Use Information- Property and adjoining Properties 5-3
  - *5.4.1. Historical Aerial Photographs* *5-3*
  - *5.4.2. Historical Topographic Maps* *5-4*
  - *5.4.3. City Directory Abstract* *5-5*
  - *5.4.4. Previous Environmental Studies* *5-6*

6. SITE RECONNAISSANCE 6-1

6.1. Methodology and Limiting Conditions **6-1**
6.2. Site Visit Findings **6-1**
6.2.1. Hazardous Substance Use, Storage and Disposal *6-1*
6.2.2. Other Petroleum Products *6-1*
6.2.3. Unidentified Substance Containers *6-1*
6.2.4. Underground Storage Tanks (USTs) *6-1*
6.2.5. Aboveground Storage Tanks (ASTs) *6-1*
6.2.6. Polychlorinated Biphenyls (PCBs) *6-2*
6.2.7. Nonhazardous Solid Waste *6-2*
6.2.8. Wastewater *6-2*
6.2.9. Pits, Ponds, and Lagoons *6-2*
6.2.10. Septic Systems *6-2*
6.2.11. Stormwater Management System *6-2*
6.2.12. Stained Soil/Stressed Vegetation *6-2*
6.2.13. Wells *6-2*
6.2.14. Other Observations *6-3*

7. INTERVIEWS **7-1**
7.1. Property Owner, Representative Interviews **7-1**
7.2. Regulatory Agency Interviews **7-1**

8. FINDINGS **8-1**
8.1. Historical Recognized Environmental Condition (HREC) **8-1**
8.2. Controlled Recognized Environmental Condition (CREC) **8-1**
8.3. Recognized Environmental Condition (REC) **8-1**
8.4. Observed Condition of the site with Respect to Intended Use **8-2**
8.5. Data Gaps **8-2**
8.6. Opinion and Recommendations **8-2**

9. QUALIFICATIONS/SIGNATURES OF ENVIRONMENTAL PROFESSIONAL(S) **9-1**

10. NON-SCOPE SERVICES **10-1**

11. REFERENCES **11-1**

APPENDIX A: SITE PHOTOGRAPHS **A-1**

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION **B-1**

EDR AERIAL PHOTO PACKAGE **B-1**

EDR HISTORICAL TOPOGRAPHIC MAP REPORT **B-1**

EDR CITY DRECTORY ABSTRACT **B-2**

EDR PROPERTY TAX MAP REPORT **B-3**

EDR ENVIRONMENTAL LIENSEARCH **B-4**

APPENDIX C: REGULATORY RECORDS DOCUMENTATION **C-1**

APPENDIX D: SUPPORTING DOCUMENTATION **D-1**

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL E-1

LIST OF FIGURES

Figure 3-1 USGS Topographic Map –Willow Springs, CA 3-1

Figure 3-2 General Property Improvements 3-2

LIST OF TABLES

Table 3-1. Description of Structures and Other Improvements 3-3

Table 5-1 Summary of Regulatory Database Findings 5-1

Table 5-2. Historical Property Use Based on Aerial Photography 5-4

Table 5-3. Historical Property Use Based on Topographic Maps 5-4

Table 5-4. City Directory Abstract 5-5

1. EXECUTIVE SUMMARY

1.1. SUBJECT PROPERTY DESCRIPTION

Insight Environmental Consultants, Inc. (IEC) has performed a Phase I Environmental Site Assessment (ESA) for an undeveloped property located at the southwest corner of Backus Road and Tehachapi Willow Springs Road in Rosamond, California. 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 with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the Property.

The Property consists of 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."*

IEC has not identified any RECs in connection with the Property.

1.5. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted as there were no RECs identified that could have impacted the Property. The surface scatter sites (wind-blown trash); however, should be cleaned up. Information on the unidentifiable well casing observed should be researched to determine if it was properly abandoned or closed.

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

The 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 environmental assessment is limited by the availability of information at the time of the assessment, including: (1) information derived from the property inspection conducted on March 23 and 25, 2016; (2) interviews and inquiries conducted on March 15, 17 and 23, 2016; (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. IEC 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 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, its parent company Trinity Consultants, nor its successors or assignees does not warrant that there are no toxic or hazardous substances or contamination, nor does IEC accept any liability if such are found at some future time, or could have been found if sampling or additional studies were conducted. IEC 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.

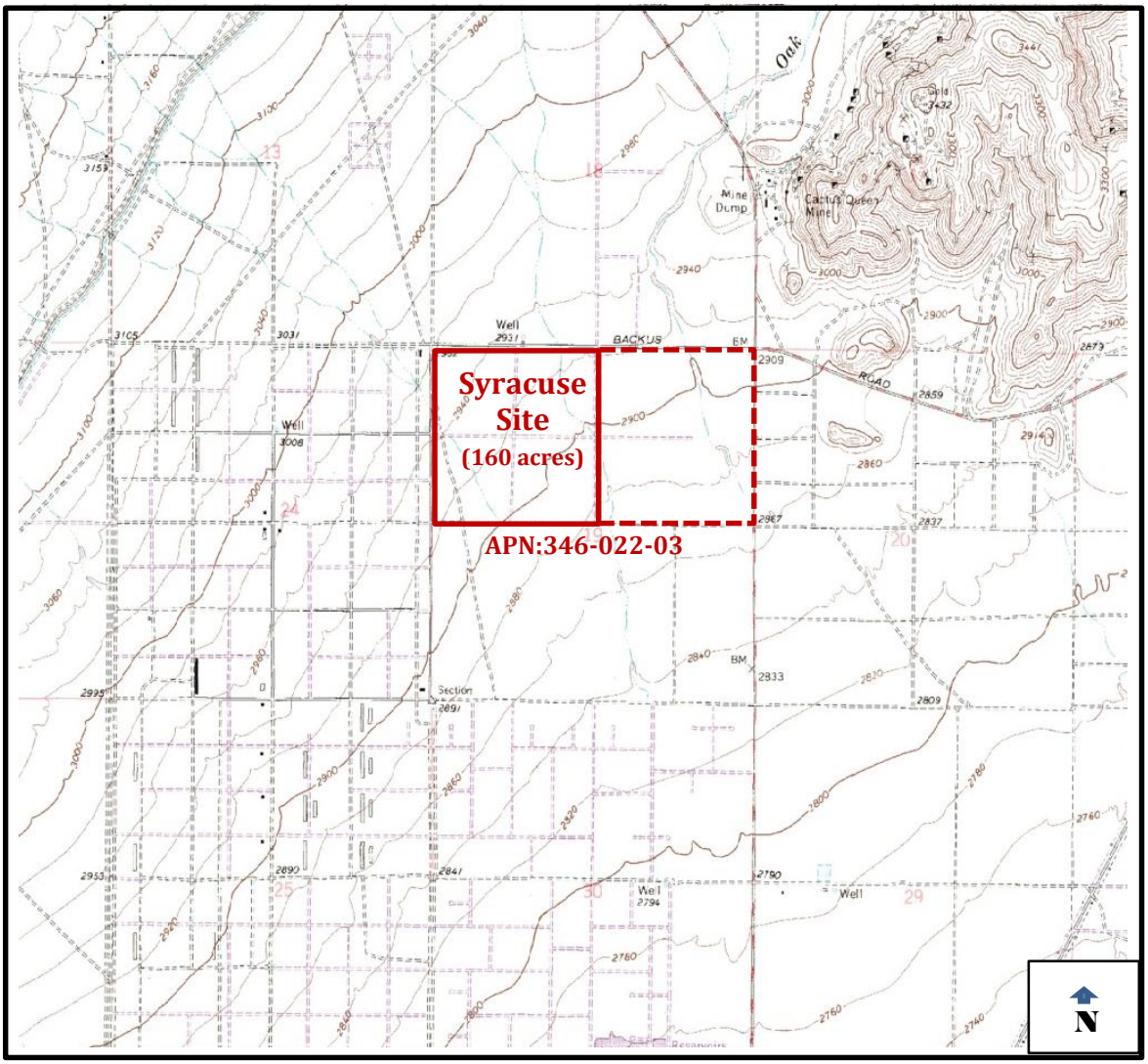
2.6. SPECIAL TERMS AND CONDITIONS (USER RELIANCE)

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 is located at the southwest corner of Backus Road and Tehachapi Willow Springs Road in Rosamond, California (as generally depicted in **Figure 3-1**). The legal description of the parcel as well as vesting and conveyance information is included in **Appendix B** (EDR Environmental LienSearch™). According to the EDR report, the title for the deed to Assessor's Parcel Number (APN) 346-022-03 is vested in Domenic International Ltd, Vervactor Enterprises Ltd and Civitas, Inc., Dated 3/18/2006, which was conveyed from Royal Investor Group, LLC. According to Kern County Assessor's parcel map included in **Appendix B,** the subject parcel of land consists of 320 acres. The subject Site consists of the westerly half (160 acres) of this parcel of land.

Figure 3-1. USGS Topographic Map – Willow Springs, CA Quadrangle



3.2. SITE AND VICINITY GENERAL CHARACTERISTICS

The Property is undeveloped and currently covered with vegetation consisting of native grass, Larrea tridentata bushes, desert brush plants and a few scattered Joshua trees. The property to the northeast is a gold mine (Cactus Gold Mine). The properties directly to the north and east (easterly half of the parcel) are also undeveloped with the exception of a few residential houses. The adjacent properties to the west and south are both undeveloped. The Property is zoned agriculture (A) with floodplain (FP) designation. The surrounding properties have a mixed zoning of agriculture, residential subdivision combining (RS), mobile home combining (MH) and platted lands (PL).

3.3. CURRENT USE OF THE PROPERTY

The Property is currently vacant. With the exception of some power poles along the northern perimeter, there are no improvements at the Site. The general improvements to the property including site findings are shown in **Figure 3-2** and discussed in **Table 3-1**.

Figure 3-2 General Property Improvements

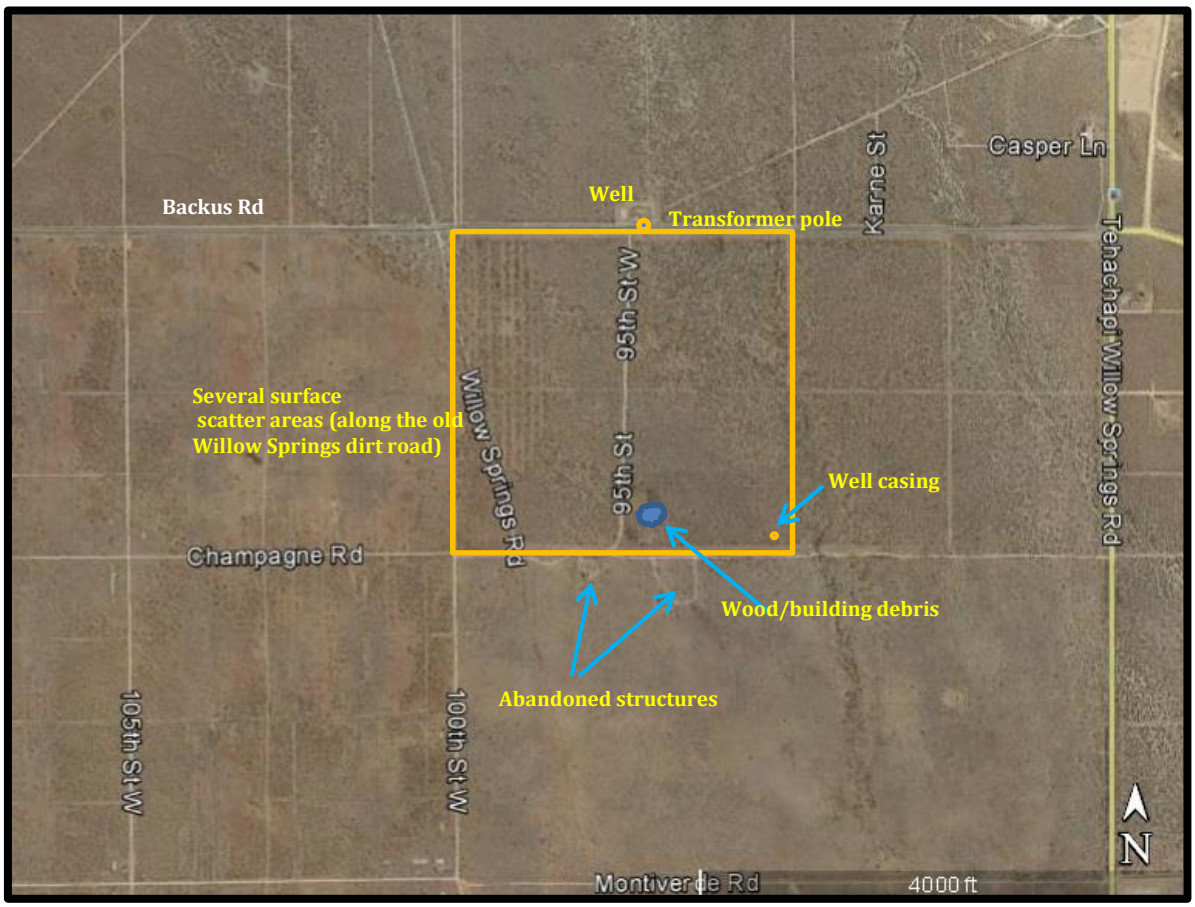


Table 3-1. Description of Structures and Other Improvements

Approximate Size of Property	160 acres
General Topography of Property	Generally level and sloping gently to the south southeast.
Adjoining and/or Ingress/Egress Roads	Site is not fenced and can be accessed through the northwest corner of the Property
Paved or Concrete Areas (including parking)	The site is not paved.
Landscaped Areas	Property is predominantly covered with native grass, desert brush plants, Larrea tridentate bushes and a few scattered Joshua trees.
Surface Water	No surface water was observed during the Site visit.
Potable Water Source	N/A; water services can be obtained from a local water provider
Sanitary Sewer Utility	None
Electrical / Natural Gas Utility	N/A; Site is not occupied
Current Occupancy Status	Unoccupied
Structures	None observed or identified in the research.
Other Improvements	Power poles

3.4. CURRENT USE OF ADJOINING PROPERTIES

The current uses of the properties adjacent to the subject Property are as follows:

- North: Undeveloped; one residential housing along Tehachapi Willow Springs Rd.
- Northeast: Gold mine
- South: Undeveloped.
- East: Undeveloped; two housing across Tehachapi Willow Springs Rd.
- West: Undeveloped; further west have power lines running in a N-S direction.

4.1. TITLE RECORDS

Domenic International Ltd, a Hong Kong corporation holds an 80% interest in the property, and Vervactor Enterprises, a New Jersey company and Civitas Inc., a California corporation each hold 10% interest in the Property. Titles were received from Royal Investors Group, LLC, a California Limited Liability Company. The legal descriptions of the parcel as well as the aforementioned conveyances are included in **Appendix B** (EDR Environmental LienSearch™).

4.2. ENVIRONMENTAL LIENS/ACTIVITY AND USE LIMITATIONS

The User provided information regarding property environmental liens or activity and use limitations **(Appendix D** – User Questionnaire**).** 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 parcel.

4.3. SPECIALIZED KNOWLEDGE

The User provided no specialized knowledge of the site, based on the completed User 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's knowledge of the site is limited to understanding of the current use.

4.5. VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

It is the User's opinion that the current purchase price for the property reflects fair market value.

4.6. OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The owners of the Property are listed in the Title records (Section 4.1). The current leaseholder is WDG Capital Partners. The Property is currently vacant.

4.7. REASON FOR PERFORMING THIS PHASE I ESA

IEC 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.

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 4-1.**

Table 4-1 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	No	0

Local Registered Storage Tanks	¼ mile	No	0
Other Ascertainable Records	¼ mile	No	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

One orphan site, BLM-Cactus Gold Mine, was reported which was determined to be on the northeast corner of Backus Rd and Tehachapi Willow Springs Rd.

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. No projects were found on either Backus Road or Tehachapi Willow Springs Road in Kern County (search address used).

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:**

- 2 federal USGS water wells were identified within 1 mile of the site and these same wells are also listed in the state databases.
- No public water supply system was found within 1 mile of the site.

The wells are located near the southern and western perimeter of the Property. 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 "no coverage" as shown 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 conducted using EDR's VEC App software using previously or currently contaminated sites identified in the EDR search and supplemented with local regulatory records and site observations. For sites with petroleum hydrocarbon COC, the area of concern (AOC) is 528 feet in the up-gradient area, 30 feet in the downgradient area if there is assumed to be only dissolved petroleum contamination in groundwater, and 95 feet in the cross-gradient areas if there is assumed to be only dissolved petroleum contamination in the groundwater. Distance measurements are from the known or suspected contaminated property to the target property boundary as defined by the user.

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 southwest corner of Backus Road and Tehachapi Willows Spring Road in Rosamond, California. Based on a review of the USGS 7.5 Digital Elevation Model, the Property slopes generally to the south southeast and is located at elevations ranging from 2,824 to 3,011 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 south 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 Site is located within the 100-yr flood zone.
- There is a wetland identified in the National Wetland Inventory that transects the Property in a N-S direction.
- The dominant soil type at the Site is Cajon, which is a somewhat excessively drained soil characterized with high infiltration rates.

No information was provided with respect to groundwater quality, velocity, or flow direction. Groundwater depth measured on the southern well was 319 feet below surface in 1989 and 338 feet below surface in 2004 for the western well **(Appendix C).**

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	
1952	No evidence of development. There appears to be two hydrologic features (stream/drainage) running N-SE across the Site, one on the eastern side and the other on the western side.	No evidence of development.	None
1968	No significant changes.	No significant changes except for a well at the property to the northwest across Backus Rd. A small structure is also visible at the northern boundary of the adjacent property to the south.	As Above
1973	No significant changes.	No significant changes except for a rectangular area at the adjacent property to the west (westerly parcel).	As above
1987	No significant changes.	No significant changes.	As Above
1995	No significant changes.	No significant changes except for another structure east of the structure that was visible in 1968.	As Above
2005	No significant changes.	No significant changes.	As Above
2009	No significant changes.	No significant changes.	As above
2010	No significant changes	No significant changes.	As Above
2012	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 above. 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. There is a hydrologic feature (stream)	None

Map Year/Quad	Identified Historical Uses		RECs
	Subject Property	Surrounding Property	
		running N-SE across the Site.	
1917/Elizabeth Lake	No significant changes.	No significant changes.	As Above
1943/Willow Springs	No significant changes except a road that originated from the NE corner of the Site going SE is visible.	No significant changes except for a road SW of the gold mine is visible.	As Above
1965/Willow Springs	No significant changes. There is another hydrologic feature (stream) that is visible at the western side of the Site.	Additional roads are visible on the east side of the Site across Tehachapi Willow Springs Rd and to the west. A well is located at the property to the north across Backus Rd.	As Above
1974/Willow Springs	No significant changes other than a road at the western perimeter and a road halfway to the south are visible.	No significant changes.	As Above
2012/Willow Springs	No significant changes.	No significant changes.	As above

5.4.3. City Directory Abstract

EDR researched historical city directories for the Property and immediate vicinity (**Appendix B**). The city directory search disclosed the following available information with respect to the subject site and immediate vicinity in Rosamond, California.

Table 5-4. City Directory Abstract

Year	Address	Property Use	Source
2013	5464 Backus Rd	Christopher Watts	Cole Information Services
	6350 Backus Rd	Andrea Haynes	Cole Information Services
	3720 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4730 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4752 Tehachapi Willow Springs Rd	Elizabeth Ayala	Cole Information Services
	4822 Tehachapi Willow Springs Rd	Edward Goodwin	Cole Information Services
	4890 Tehachapi Willow Springs Rd	Harold Bragg	Cole Information Services
	5488 Tehachapi Willow Springs Rd	Robin Reichard	Cole Information Services
	5491 Tehachapi Willow Springs Rd	Cathy House	Cole Information Services
	5792 Tehachapi Willow Springs Rd	Cecilia Wiley	Cole Information Services
	6503 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services

Year	Address	Property Use	Source
	6963 Tehachapi Willow Springs Rd	Jose Morales	Cole Information Services
	7500 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	8884 Tehachapi Willow Springs Rd	Don Mumford	Cole Information Services
	9428 Tehachapi Willow Springs Rd	Jane Huddleston	Cole Information Services
	11715 Tehachapi Willow Springs Rd	Darwin McNeil	Cole Information Services
2008	4730 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4752 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4822 Tehachapi Willow Springs Rd	Martin Gjelsvik	Cole Information Services
	4890 Tehachapi Willow Springs Rd	Harold Bragg	Cole Information Services
	5488 Tehachapi Willow Springs Rd	Robin Reichard Alesso Farms	Cole Information Services
	5491 Tehachapi Willow Springs Rd	Gene House	Cole Information Services
	5792 Tehachapi Willow Springs Rd	Cecilia Wiley	Cole Information Services
	6963 Tehachapi Willow Springs Rd	Jose Morales	Cole Information Services
	8884 Tehachapi Willow Springs Rd	Don Mumford	Cole Information Services
	9428 Tehachapi Willow Springs Rd	Jane Huddleston	Cole Information Services
	11715 Tehachapi Willow Springs Rd	Darwin McNeil	Cole Information Services
2003	6963 Tehachapi Willow Springs Rd	Calandri John Farms	Cole Information Services
1999	4822 Tehachapi Willow Springs Rd	Martin Gjelsvik	Cole Information Services
	4890 Tehachapi Willow Springs Rd	Harold Bragg	Cole Information Services
	5488 Tehachapi Willow Springs Rd	Robin Reichard	Cole Information Services
	5491 Tehachapi Willow Springs Rd	Gene House	Cole Information Services
	5792 Tehachapi Willow Springs Rd	Cecilia Wiley	Cole Information Services
	6963 Tehachapi Willow Springs Rd	Jose Morales	Cole Information Services
	8884 Tehachapi Willow Springs Rd	Don Mumford	Cole Information Services
	9428 Tehachapi Willow Springs Rd	Jane Huddleston	Cole Information Services
	11715 Tehachapi Willow Springs Rd	Debra McNeil	Cole Information Services

5.4.4. Previous Environmental Studies

No previous environmental studies for the Site were identified by the current property owner.

6.1. METHODOLOGY AND LIMITING CONDITIONS

A physical inspection of the Site and surrounding area was conducted on March 23, 2016 by Dolores Gough and Gordy Guillen of IEC, and on March 25, 2016 by Dolores Gough. The Site was accessible during the inspection. Weather conditions at the time of both inspections were sunny with temperatures in the mid-60's to low 70'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 by the adjoining properties and around the Site boundaries, 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 Backus Road. In addition to the features described in **Section 3.4**, the following were the observations during the Site reconnaissance:

6.2.1. Hazardous Substance Use, Storage and Disposal

No hazardous substances were observed in use, storage or disposal at the Property. Electrical transformers were observed on one pole approximately halfway on the northern perimeter of the Property (directly across the well); however, the type of transformer oil used was not determined. See Section 6.2.6.

6.2.2. Other Petroleum Products

IEC did not observe any other petroleum products 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 indications of USTs during the Site reconnaissance.

6.2.5. Aboveground Storage Tanks (ASTs)

IEC did not observe indications of ASTs during the Site reconnaissance

6.2.6. Polychlorinated Biphenyls (PCBs)

As indicated in **Section 6.2.1**, one pole-mounted electrical transformer was observed on the Property. Based on visual inspection, the transformers were not observed to be leaking and are not considered to be an environmental liability to the Property owner.

6.2.7. Nonhazardous Solid Waste

Remnants of an old asphalt road that matched Willow Springs Road in the aerial map were observed. Several surface scatter sites (trash) were observed along the western boundary of the Property and along the old road. The surface solid wastes observed include old sheet rocks, plywood, old cans, bottles, rubber tires and cardboards.

6.2.8. Wastewater

No wastewater or stormwater drains, or underground injection system were observed on the Property during the Site reconnaissance. See also Section 6.2.11.

6.2.9. Pits, Ponds, and Lagoons

No pits, ponds or lagoons were observed on the Property 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 other than the two intermittent streams crossing the property to the easterly parcel in a generally N-S direction. The Site is not paved and stormwater would flow into the streams, percolate, flow to low spots or follow the topographic gradient. Some erosion was observed at the southern boundary of the Property.

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 were observed during the site reconnaissance or reported during interviews. However, there was an unidentifiable protruding well casing with a circular metal cap that was observed approximately 0.5 miles from the southwest corner of the Property. There was no staining observed around the casing.

6.2.14. Other Observations

Power poles were observed at the northern perimeter of the Property.

7.1. PROPERTY OWNER, REPRESENTATIVE INTERVIEWS

Mr. Carlo Bondanelli, an agent for the Property, completed a Current Property Owner Questionnaire that is provided in **Appendix D**. Mr. Bondanelli is not aware of any known activity and/or use limitations associated with the Property, any valuation reductions or any environmental issues for the Property with respect to hazardous substances or petroleum products.

Mr. Elliott MacDougall, VP of Development for WDG Capital Partners, the current leaseholder of the Property, completed a User Questionnaire that is also provided in Appendix D. Mr. MacDougall is not any known activity and/or use limitations associated with the Property, any valuation reductions or any environmental issues for the Property.

7.2. REGULATORY AGENCY INTERVIEWS

Ms. Lydia Von Sydow with Kern County Environmental Health Services, was interviewed on March 23, 2016. Ms. Von Sydow reported that there were no reported hazardous material complaints, violations or permits for the Property.

Mr. Michael van Raalte with the Department of Water Resources was contacted on March 28, 2016 regarding the unidentifiable well that was observed. Mr. Raalte found one water well in Section 19, T10N, R13W that was completed in 1989 in their database. The exact location of this well is unclear so it cannot be determined if this is the same well as the one on the Site. An inquiry regarding well abandonments in Rosamond was also made to the Antelope Valley – East Kern Water Agency (AVEK). Mr. Tom Barnes with AVEK indicated that they do not have well abandonment records.

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Insight Environmental Consultants, Inc. has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice 1527-13 of APN 346-022-03 located at the southwest corner of Tehachapi Willow Springs Road and Backus Road 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 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."*

IEC has not identified any RECs in connection with the Property.

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:

- Aerial photographs of the Property from 1915 to 1951 were not available. Other historical sources including topographical maps were reviewed for this ESA; therefore, this data gap is not considered to be significant.
- 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.
- There is some uncertainty on the information obtained on the well casing located near the southern boundary of the Property. This data gap may be considered significant if this well was not properly closed.

8.6. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted at this time as no RECs were identified that may have impacted the Property. The surface scatter (windblown trash) sites; however, should be cleaned up. Information on the unidentifiable well casing observed should be researched to determine if it was properly abandoned or closed.

9. QUALIFICATIONS/SIGNATURES 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.

For Insight Environmental Consultants, *a Trinity Consultants Company*

Dolores Gough 3/30/16

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, Vapor Intrusion, 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

Trash (mainly sheetrock) located along the western perimeter of the Site, 3-23-2016

Trash consisting of old cans, wood, bottles, etc located along the western side of the Site (by the old road, 3-23-2016

Well located on the property directly north of the Site across Backus Rd, 3-23-2016

Transformer pole about halfway along the northern perimeter of the Site, 3-23-2016

Asphalt paved section of an old road, near the western perimeter of the Site (appeared to be Willow Springs Rd), 3-23-2016

Closer view of asphalt paving in above photograph, 3-23-2016

Tehachapi Willow Springs Rd looking north from Backus Rd. Cactus Gold Mine on the right, 3-23-2016

Tehachapi Willow Springs Rd looking south from Backus Rd., 3-23-2016

Cactus Gold Mine located northeast corner of Backus Rd and Tehachapi Willow Springs Rd, 3-23-2016

Cactus Gold Mine office – equipment yard, Tehachapi Willow Springs Rd, 3-23-2016

Wood/building debris along south ern boundary of the Site, 3-25-2016

Protruding well casing with a circular metal cap , approx. 0.5 miles from SW corner of Syracuse Site, 3-25-2016

Old plywood along western boundary of the Site, 3-23-2016

Sheet rock along western boundary of the Site, 3-23-2016

Road running N-S bisecting Tours (left) and Syracuse (right) sites, 3-25-2016

View of general Site landscape , NE corner, 3-25-2016

General Site landscape near northwestern portion of the Property, 3-23-2016

General Site landscape on western part of the Property (cleared areas of bushes/shrubs) , 3-23-2016

Abandoned wooden structure off south side of the Site, 3-25-2016

View of general Site landscape (sparse vegetation) , south side of the subject parcel, 3-25-2016

Concrete slab just of NW corner of the Syracuse Site, looking south, 3-25-2016

Power lines to the west of the Syracuse Site, running N-S, 3-25-2016

Rubber tires, old cardboards, etc observed near western side of the Property, 3-23-2016

Trash consisting of old lumber, old cans, etc observed on the western side of the Property, 3-23-2016

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION

EDR AERIAL PHOTO PACKAGE

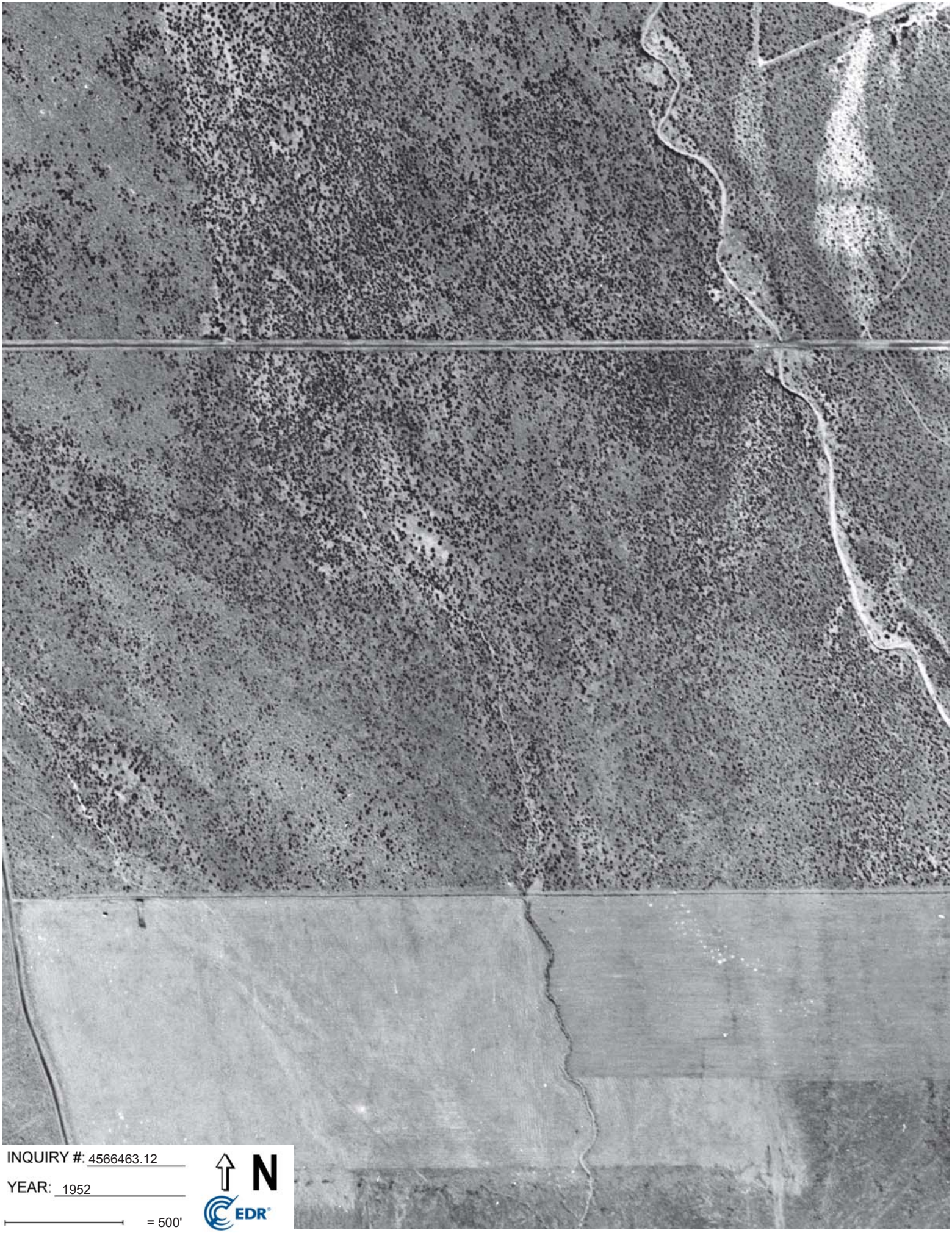
INQUIRY #: 4566463.12

YEAR: 1968

= 500'

N

EDR


INQUIRY #: 4566463.12
YEAR: 1952
= 500'
N
EDR

Syracuse - Tours Site

Backus Rd/Tehachapi Willow Springs Rd

Rosamond, CA 93560

Inquiry Number: 4566463.12

March 24, 2016

The EDR Aerial Photo Decade Package

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

EDR Aerial Photo Decade Package

03/24/16

Site Name:

Syracuse - Tours Site
Backus Rd/Tehachapi Willow S
Rosamond, CA 93560
EDR Inquiry # 4566463.12

Client Name:

Insight Environmental Consultants, Inc.
5500 Ming Avenue
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
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1995	1"=500'	Acquisition Date: October, 04 1995	USGS/DOQQ
1987	1"=500'	Flight Date: July, 25 1987	USGS
1973	1"=500'	Flight Date: May, 01 1973	USGS
1968	1"=500'	Flight Date: January, 01 1968	Teledyne
1952	1"=500'	Flight Date: January, 01 1952	Robinson

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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INQUIRY #: 4566463.12
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 1995
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 1987
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 1973
= 500'
N
EDR

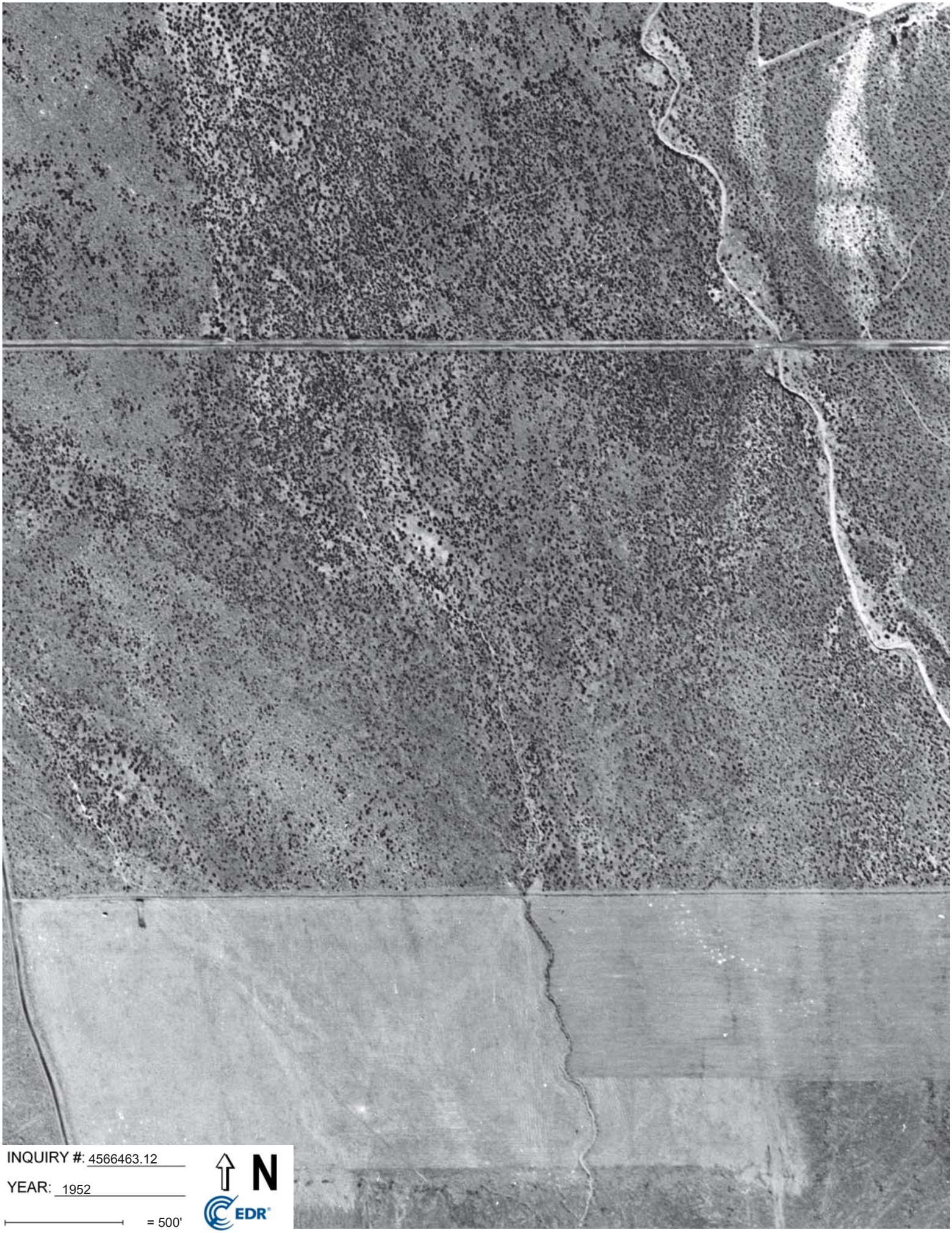
INQUIRY #: 4566463.12

YEAR: 1968

= 500'

N

EDR


INQUIRY #: 4566463.12
YEAR: 1952
= 500'
N
EDR

EDR HISTORICAL TOPOGRAPHIC MAP REPORT

Syracuse - Tours Site

Backus Rd/Tehachapi Willow Springs Rd

Rosamond, CA 93560

Inquiry Number: 4566463.4

March 24, 2016

EDR Historical Topo Map Report

with QuadMatch™

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

EDR Historical Topo Map Report

03/24/16

Site Name:	Client Name:
Syracuse - Tours Site	Insight Environmental Consultants, Inc.
Backus Rd/Tehachapi Willow S	5500 Ming Avenue
Rosamond, CA 93560	Bakersfield, CA 93309
EDR Inquiry # 4566463.4	Contact: Dolores Gough

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Insight Environmental Consultants, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	34.94731 34° 56' 50" North
Project:	160505.0076	**Longitude:**	-118.30091 -118° 18' 3" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	381210.23
		UTM Y Meters:	3867972.54
		Elevation:	0.00' above sea level

Maps Provided:

2012
1974
1965
1943
1917
1915

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Topo Sheet Key

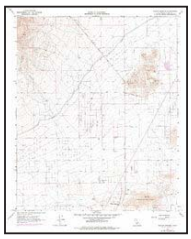
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Willow Springs

7.5-minute, 24000

1974 Source Sheets



Willow Springs

7.5-minute, 24000
Photo Revised 1974
Aerial Photo Revised 1963

1965 Source Sheets

Willow Springs

7.5-minute, 24000
Aerial Photo Revised 1963

1943 Source Sheets

Willow Springs

15-minute, 62500
Aerial Photo Revised 1943

Topo Sheet Key

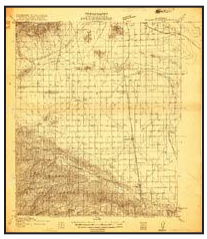
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1917 Source Sheets

Elizabeth Lake

30-minute, 125000

1915 Source Sheets

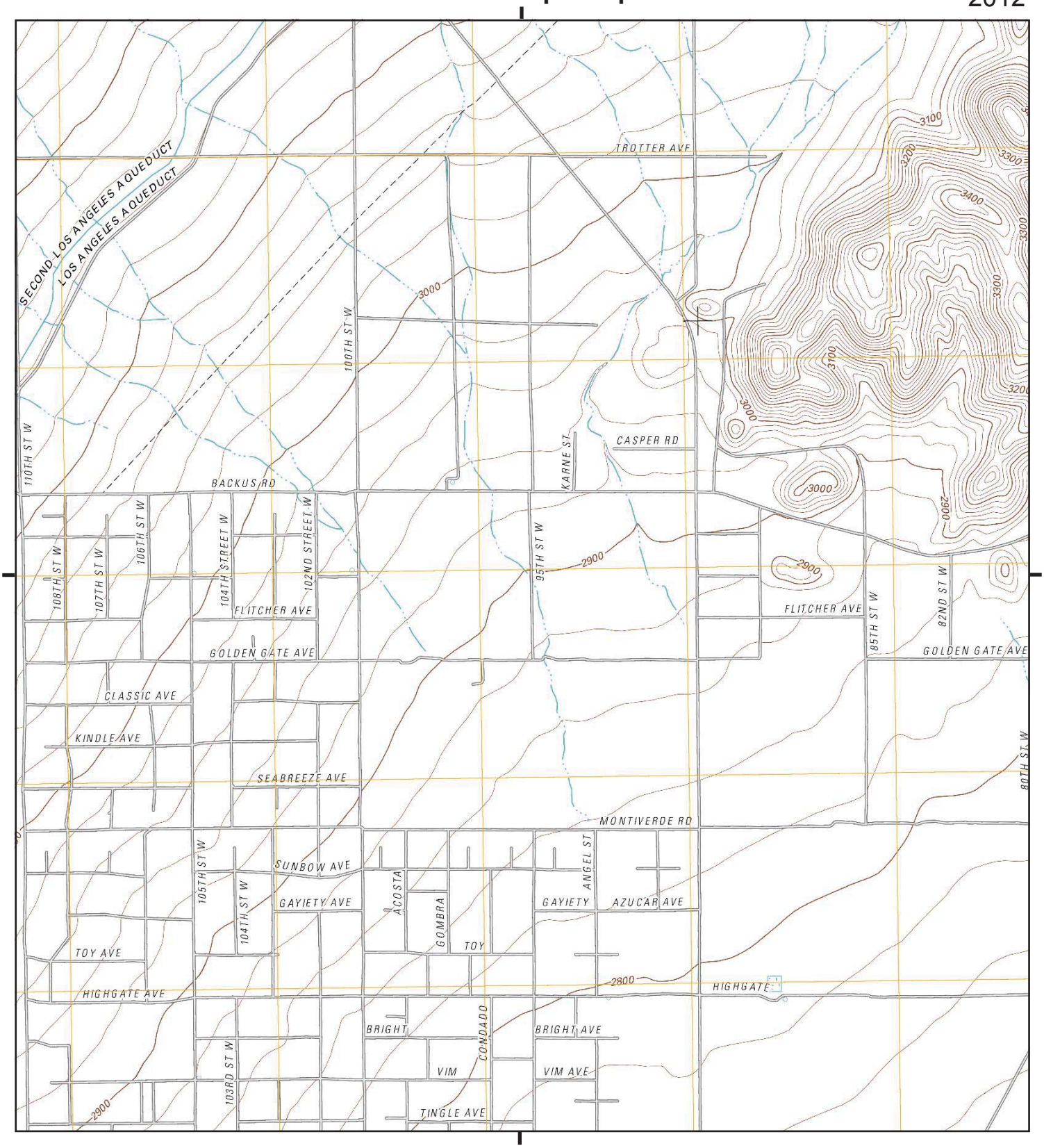


Elizabeth Lake

30-minute, 96000

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

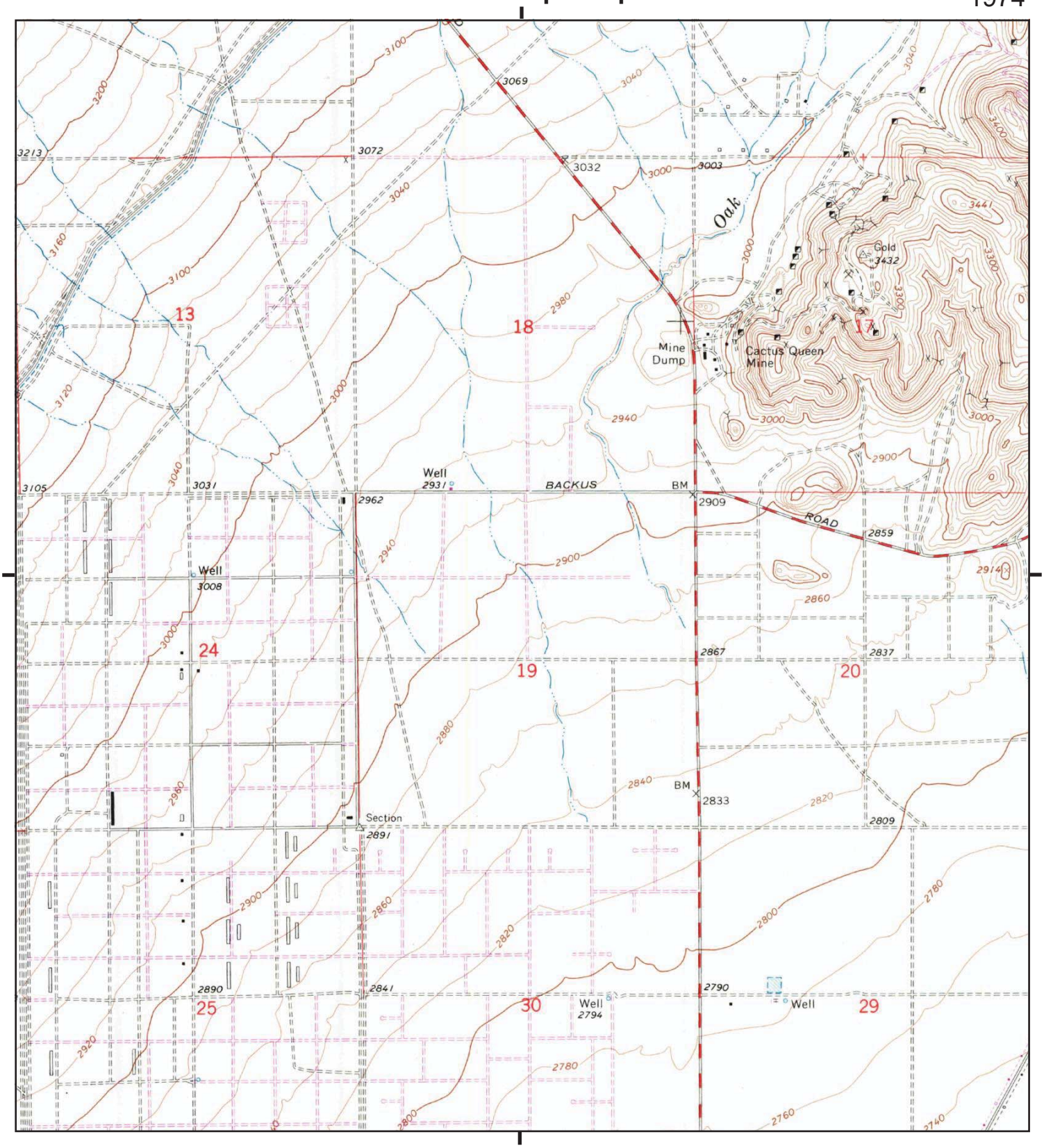
TP, Willow Springs, 2012, 7.5-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

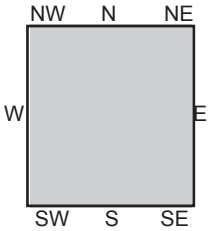
Historical Topo Map

1974



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



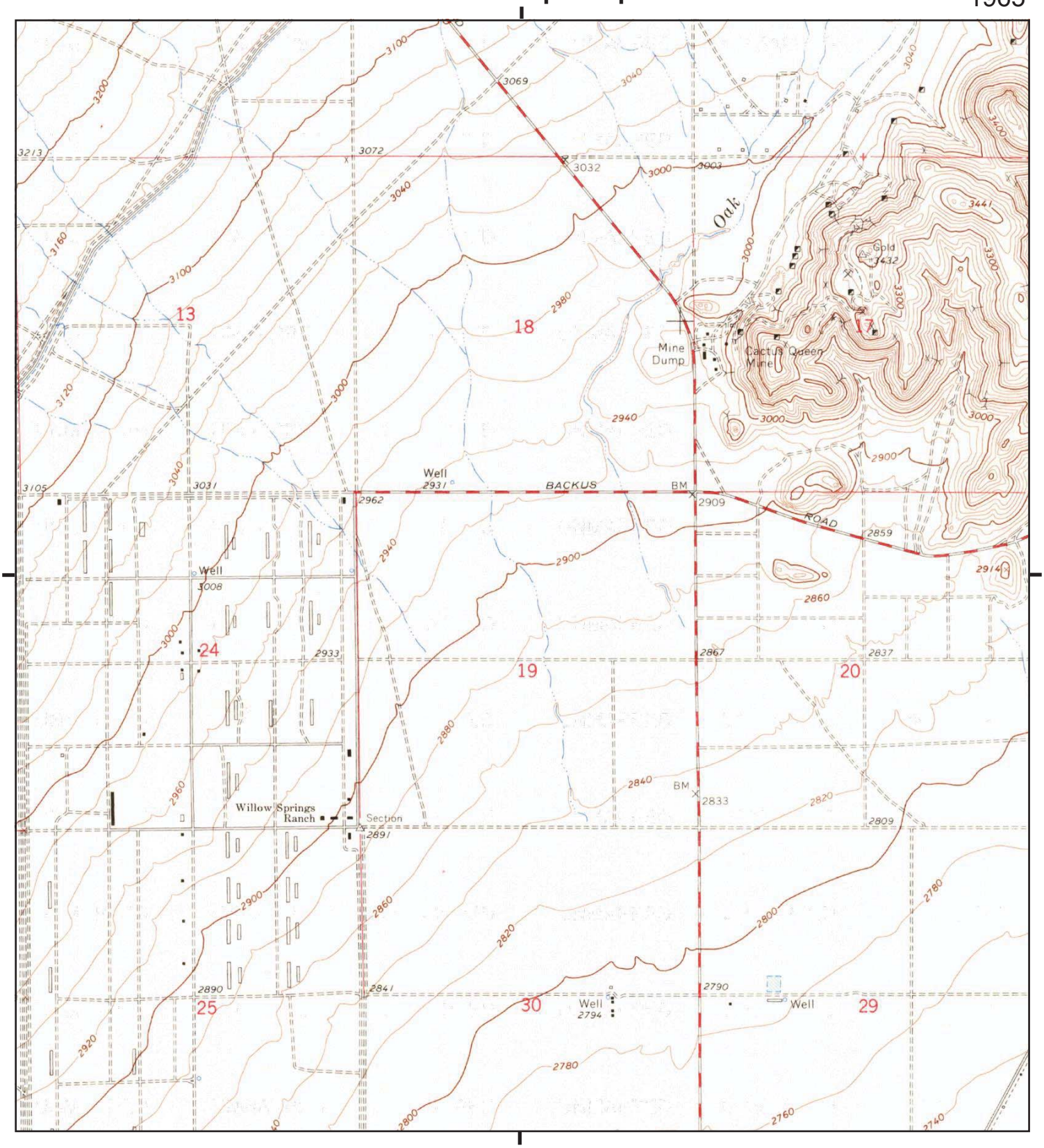
TP, Willow Springs, 1974, 7.5-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

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

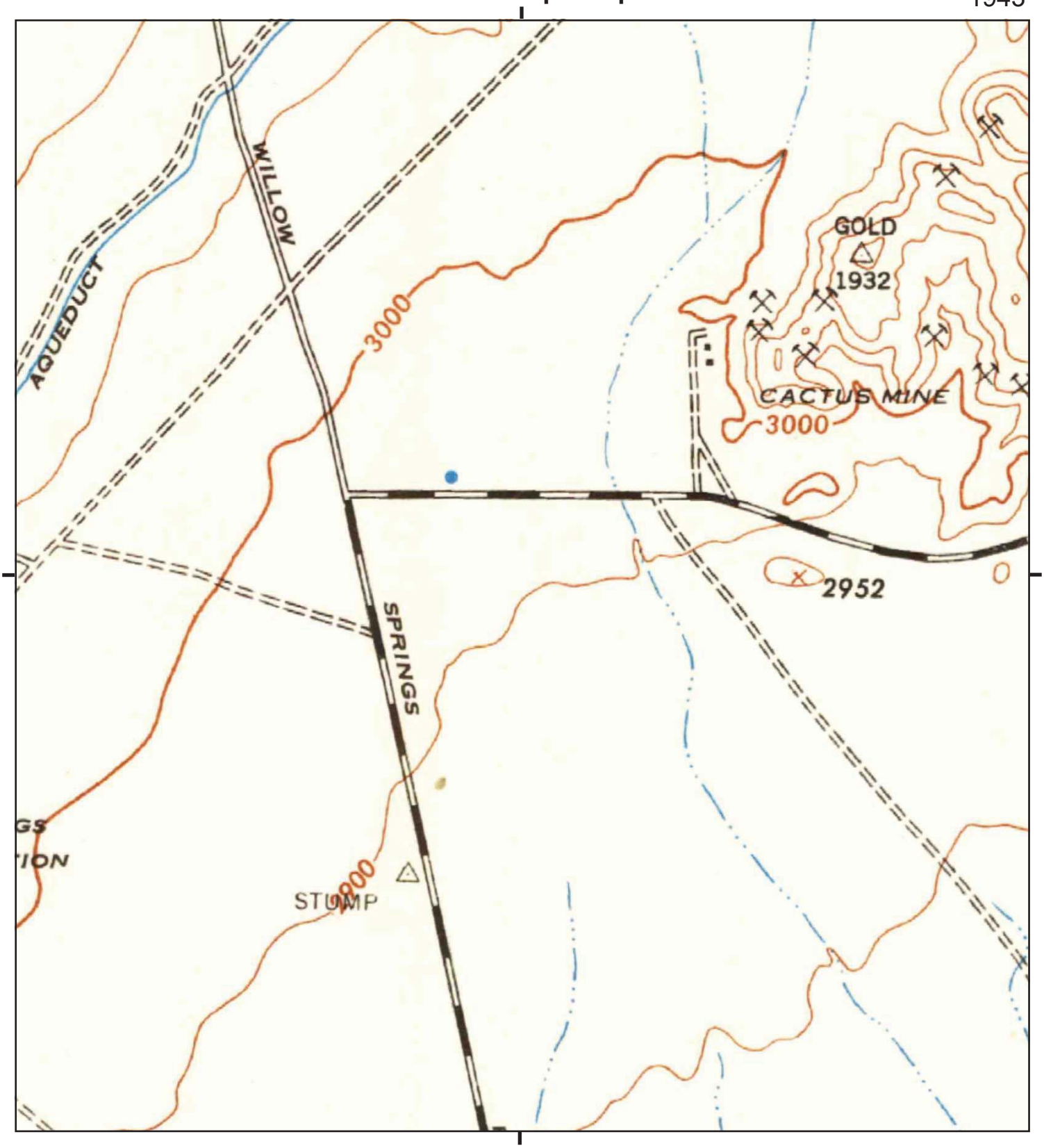
TP, Willow Springs, 1965, 7.5-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1943



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

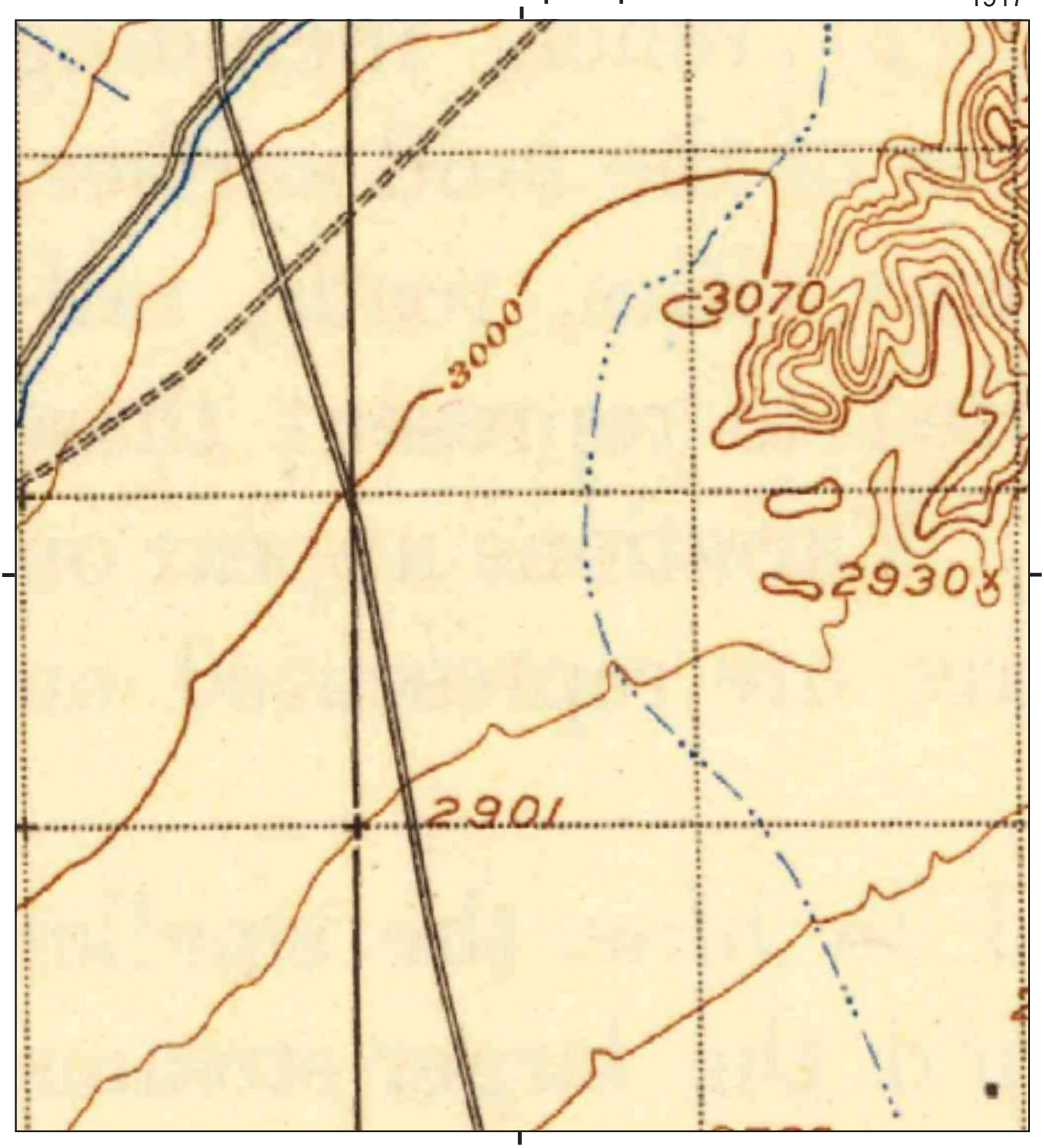
TP, Willow Springs, 1943, 15-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1917



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

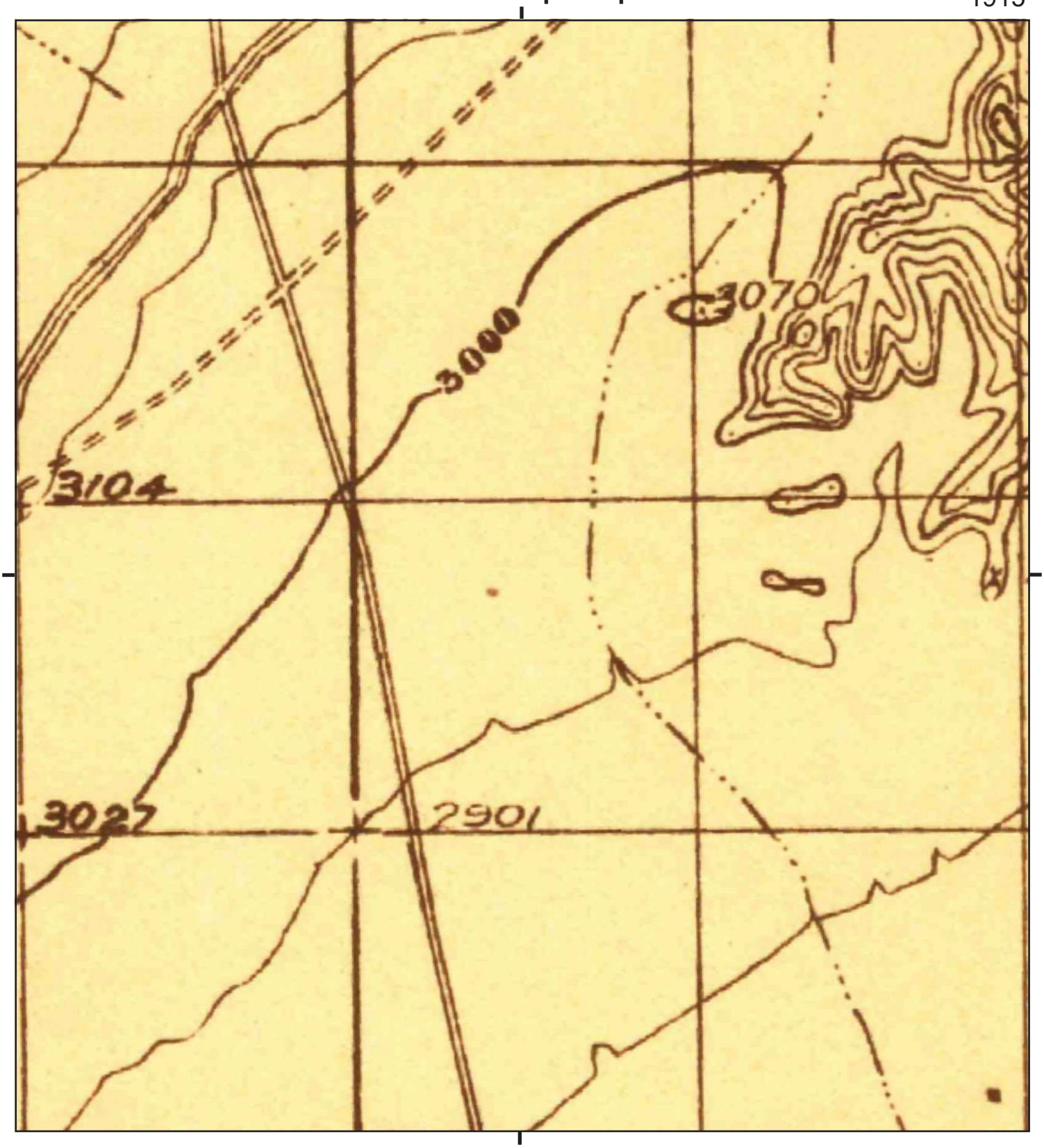
TP, Elizabeth Lake, 1917, 30-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1915



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: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

EDR CITY DRECTORY ABSTRACT

Syracuse - Tours Site
Backus Rd & Tehachapi Willow Springs Rd
Rosamond, CA 93560

Inquiry Number: 4566463.5
March 17, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

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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.

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
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services
1995	☐	☐	Cole Information Services
1992	☐	☐	Cole Information Services
1990	☐	☐	Haines Criss-Cross Directory
1985	☐	☐	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

Backus Rd & Tehachapi Willow Springs Rd
Rosamond, CA 93560

Year	CD Image	Source	
BACKUS RD			
2013	pg A1	Cole Information Services	
2008	-	Cole Information Services	Target and Adjoining not listed in Source
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1990	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source
TEHACHAPI WILLOW SPRINGS RD			
2013	pg A2	Cole Information Services	
2008	pg A3	Cole Information Services	
2003	pg A4	Cole Information Services	
1999	pg A5	Cole Information Services	
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1990	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

BACKUS RD 2013

5464 CHRISTOPHER WATTS
6350 ANDREA HAYNES

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 2013

3720	OCCUPANT UNKNOWN
4730	OCCUPANT UNKNOWN
4752	ELIZABETH AYALA
4822	EDWARD GOODWIN
4890	HAROLD BRAGG
5488	ROBIN REICHARD
5491	CATHY HOUSE
5792	CECILIA WILLEY
6503	OCCUPANT UNKNOWN
6963	JOSE MORALES
7500	OCCUPANT UNKNOWN
8884	DON MUMFORD
9428	JANE HUDDLESTON
11715	DARWIN MCNEIL

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 2008

4730	OCCUPANT UNKNOWN
4752	OCCUPANT UNKNOWN
4822	MARTIN GJELSVIK
4890	HAROLD BRAGG
5488	ALESSO FARMS
	ROBIN REICHARD
5491	GENE HOUSE
5792	CECILIA WILLEY
6963	JOSE MORALES
8884	DON MUMFORD
9428	JANE HUDDLESTON
11715	DARWIN MCNEIL

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 2003

6963 CALANDRI JOHN FARMS

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 1999

4822	MARTIN GJELSVIK
4890	HAROLD BRAGG
5488	ROBIN REICHARD
5491	GENE HOUSE
5792	CECILIA WILLEY
6963	JOSE MORALES
8884	DON MUMFORD
9428	JANE HUDDLESTON
11715	DEBRA MCNEIL

EDR PROPERTY TAX MAP REPORT

EDR ENVIRONMENTAL LIENSEARCH

APPENDIX C: REGULATORY RECORDS DOCUMENTATION

Syracuse - Tours Site
Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560

Inquiry Number: 4566463.2s
March 24, 2016

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

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

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	9
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-7
Physical Setting Source Map Findings	A-9
Physical Setting Source Records Searched	PSGR-1

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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) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

BACKUS RD/TEHACHAPI WILLOW SPRINGS RD
ROSAMOND, CA 93560

COORDINATES

Latitude (North):	34.9473080 - 34˚ 56' 50.30''
Longitude (West):	118.3009140 - 118˚ 18' 3.29''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	381207.1
UTM Y (Meters):	3867775.0
Elevation:	2900 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5630781 WILLOW SPRINGS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120623
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
BACKUS RD/TEHACHAPI WILLOW SPRINGS RD
ROSAMOND, CA 93560

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

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

Federal CERCLIS NFRAP site list

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

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

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

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

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
SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

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

State and tribal voluntary cleanup sites

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

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

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

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

Local Lists of Registered Storage Tanks

SWEEPS UST	SWEEPS UST Listing
HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database

Local Land Records

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

Records of Emergency Release Reports

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

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
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

EXECUTIVE SUMMARY

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
FINDS	Facility Index System/Facility Registry System
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
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
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner	EDR Exclusive Historic Dry 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 not identified.

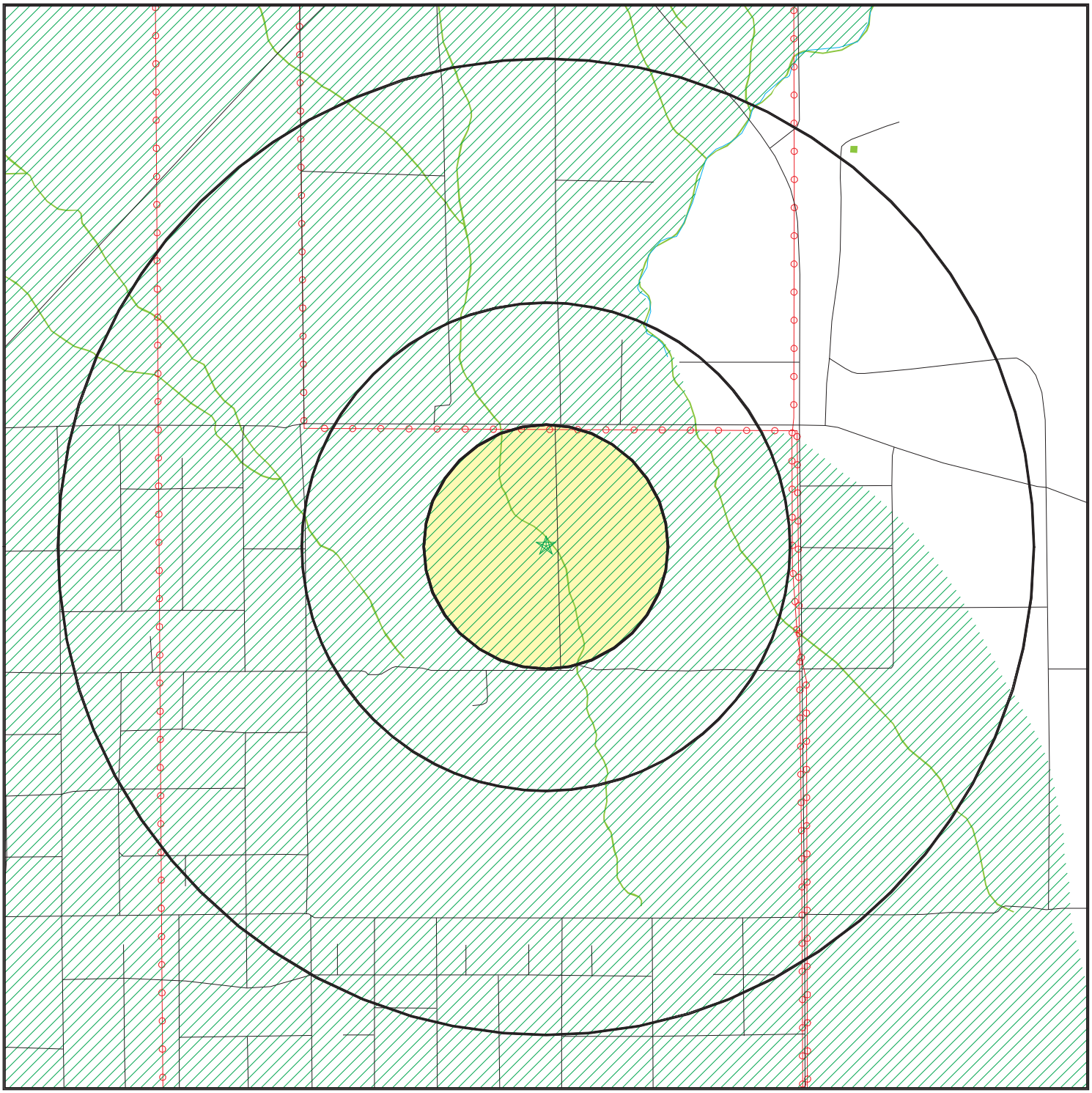
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
BLM-CACTUS GOLD MINES CO.	SEMS-ARCHIVE

OVERVIEW MAP - 4566463.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- 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: Syracuse - Tours Site ADDRESS: Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560 LAT/LONG: 34.947308 / 118.300914	CLIENT: Insight Environmental Consultants, Inc. CONTACT: Dolores Gough INQUIRY #: 4566463.2s DATE: March 24, 2016 5:30 pm

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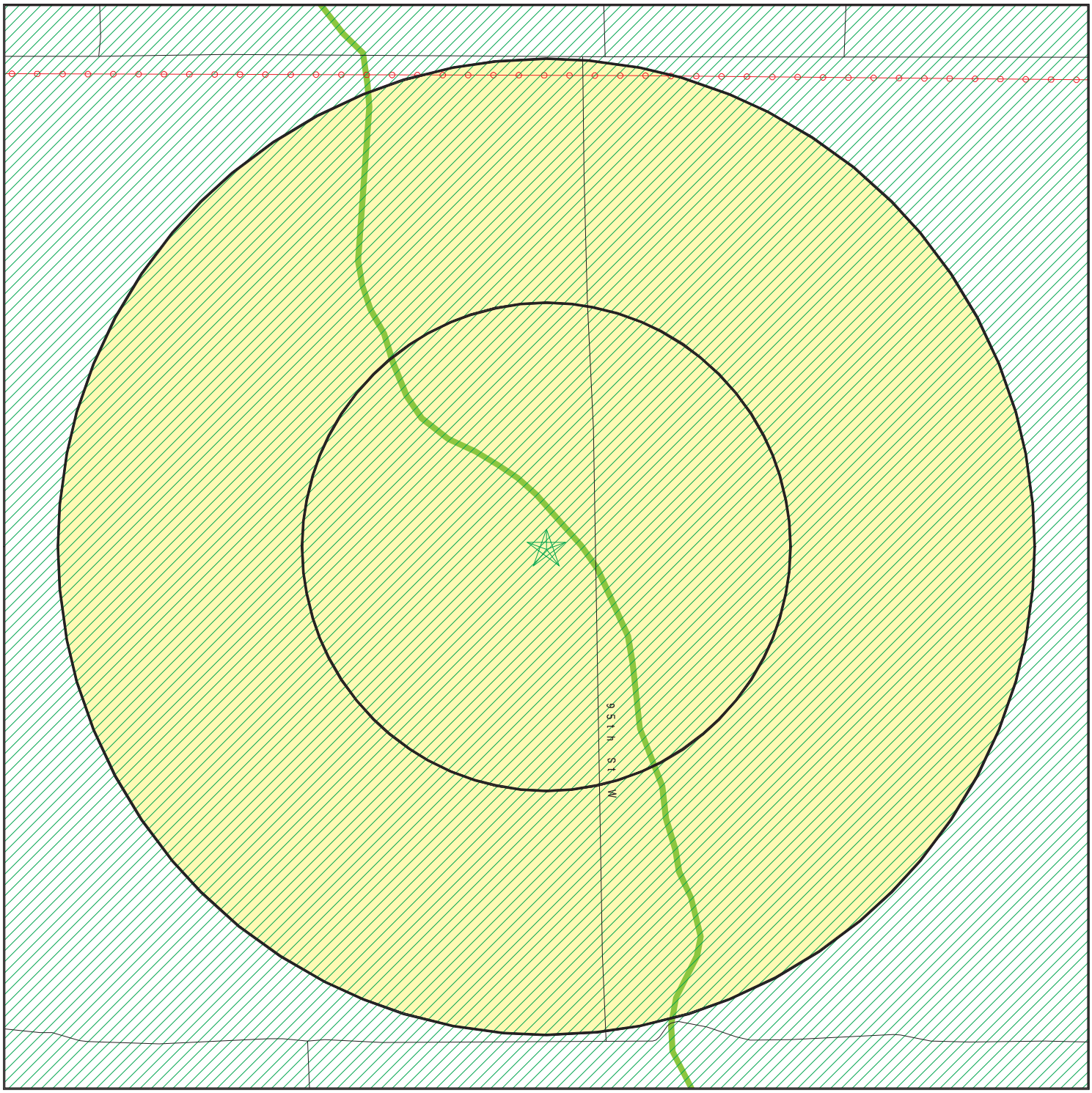
DETAIL MAP - 4566463.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

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: Syracuse - Tours Site ADDRESS: Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560 LAT/LONG: 34.947308 / 118.300914	CLIENT: Insight Environmental Consultants, Inc. CONTACT: Dolores Gough INQUIRY #: 4566463.2s DATE: March 24, 2016 5:32 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	TP		NR	NR	NR	NR	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-CESQG	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 CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	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
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0

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
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	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
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
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	TP		NR	NR	NR	NR	NR	0
MWMP	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
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MOJAVE	1003879733	BLM-CACTUS GOLD MINES CO.	STAR RTE 1-BACKUS RD & TEHACHA	93501	SEMS-ARCHIVE

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: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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: 10/30/2015	Source: EPA
Date Data Arrived at EDR: 11/07/2015	Telephone: N/A
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 01/26/2016
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/18/2016
	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: 03/26/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/08/2015	Telephone: 703-603-8704
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 01/06/2016
Number of Days to Update: 64	Next Scheduled EDR Contact: 04/18/2016
	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: 01/11/2016	Source: EPA
Date Data Arrived at EDR: 01/22/2016	Telephone: 800-424-9346
Date Made Active in Reports: 03/18/2016	Last EDR Contact: 02/19/2016
Number of Days to Update: 56	Next Scheduled EDR Contact: 06/06/2016
	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: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 06/06/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - 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). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

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: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
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: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/29/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

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

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 11/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 64

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/17/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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 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: Varies

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 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 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 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: 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: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

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: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

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: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases
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: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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: Quarterly

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: Semi-Annually

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: Varies

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: Semi-Annually

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: Semi-Annually

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: Semi-Annually

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: Annually

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: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

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: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

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: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/28/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/04/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2015
Date Data Arrived at EDR: 12/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
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: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 58

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/14/2016
Next Scheduled EDR Contact: 05/30/2016
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: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
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: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: No Update Planned

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: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
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: 09/30/2015
Date Data Arrived at EDR: 01/19/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 63

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
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

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: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

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: 11/25/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 16

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/13/2016
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

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: 12/17/2015
Date Data Arrived at EDR: 12/22/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
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: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/30/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

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: 12/16/2015
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 55

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing
The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing
The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

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: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
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: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
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: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
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: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/04/2016
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: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
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: 08/01/2015
Date Data Arrived at EDR: 08/26/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
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: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2016
Next Scheduled EDR Contact: 04/25/2016
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: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
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: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

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: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/26/2015
Date Data Arrived at EDR: 07/10/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 95

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
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: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/09/2016
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: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/07/2016
Next Scheduled EDR Contact: 04/18/2016
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: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

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: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
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: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
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: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
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: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
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: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2015
Date Data Arrived at EDR: 09/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 125

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/02/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
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: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

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: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/28/2015
Date Data Arrived at EDR: 12/29/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 23

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/29/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/10/2015
Date Data Arrived at EDR: 08/27/2015
Date Made Active in Reports: 10/01/2015
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/05/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 09/25/2015
Date Made Active in Reports: 11/05/2015
Number of Days to Update: 41

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
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: 01/26/2016
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 01/28/2016
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 59

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
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: 12/31/2014
Date Data Arrived at EDR: 10/14/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 58

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Annually

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

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
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: 01/11/2016
Date Data Arrived at EDR: 01/13/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 40

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Varies

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: 11/10/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 11/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 64

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/17/2016
Next Scheduled EDR Contact: 05/30/2016
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: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 03/01/2016
Number of Days to Update: 75

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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: 09/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
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: 07/23/2015
Date Data Arrived at EDR: 09/15/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 28

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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 board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 06/16/2016
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
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: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/23/2016
Next Scheduled EDR Contact: 07/04/2016
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: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

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 Historic Gas 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 Historic Dry 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:

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: 01/11/2016
Date Data Arrived at EDR: 01/12/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 41

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/14/2016
Date Made Active in Reports: 03/01/2016
Number of Days to Update: 47

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 02/02/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 18

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/28/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2015
Date Data Arrived at EDR: 09/22/2015
Date Made Active in Reports: 10/14/2015
Number of Days to Update: 22

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/01/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 48

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/22/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/07/2016
Number of Days to Update: 31

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/30/2015
Date Data Arrived at EDR: 12/03/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 49

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

FRESNO COUNTY:

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: 01/05/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 45

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/04/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/02/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 48

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/25/2016
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 26

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/19/2015
Date Data Arrived at EDR: 06/18/2015
Date Made Active in Reports: 07/22/2015
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

KINGS COUNTY:

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: 11/19/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 18

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 27

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

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: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/19/2016
Date Data Arrived at EDR: 01/20/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 62

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/20/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/12/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 24

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 03/07/2016
Number of Days to Update: 84

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 10/05/2015
Date Data Arrived at EDR: 10/08/2015
Date Made Active in Reports: 10/15/2015
Number of Days to Update: 7

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 34

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 51

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 12/10/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 60

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/27/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/01/2015
Date Data Arrived at EDR: 11/17/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 65

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/03/2015
Date Data Arrived at EDR: 08/10/2015
Date Made Active in Reports: 09/11/2015
Number of Days to Update: 32

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/01/2015
Date Data Arrived at EDR: 11/11/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/10/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 12/11/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 41

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 60

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 60

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

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: 11/02/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

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: 12/14/2015
Date Data Arrived at EDR: 12/18/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 52

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

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: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/18/2015
Date Data Arrived at EDR: 12/22/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 48

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/21/2016
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/14/2015
Date Data Arrived at EDR: 10/15/2015
Date Made Active in Reports: 11/16/2015
Number of Days to Update: 32

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

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

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/17/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 59

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 18

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/14/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 39

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/05/2016
Date Data Arrived at EDR: 01/07/2016
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 32

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 9

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/29/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 42

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

VENTURA COUNTY:

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: 12/28/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/30/2015
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/14/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

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: 12/28/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/30/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/17/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 46

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/18/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

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, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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 & Game
Telephone: 916-445-0411

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

SYRACUSE - TOURS SITE
BACKUS RD/TEHACHAPI WILLOW SPRINGS RD
ROSAMOND, CA 93560

TARGET PROPERTY COORDINATES

Latitude (North):	34.947308 - 34˚ 56’ 50.31’’
Longitude (West):	118.300914 - 118˚ 18’ 3.29’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	381207.1
UTM Y (Meters):	3867775.0
Elevation:	2900 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property 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 principal 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).

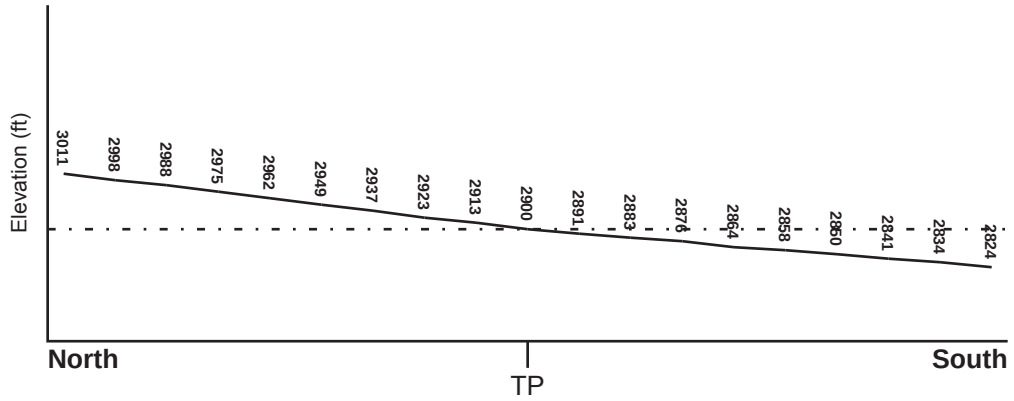
TOPOGRAPHIC INFORMATION

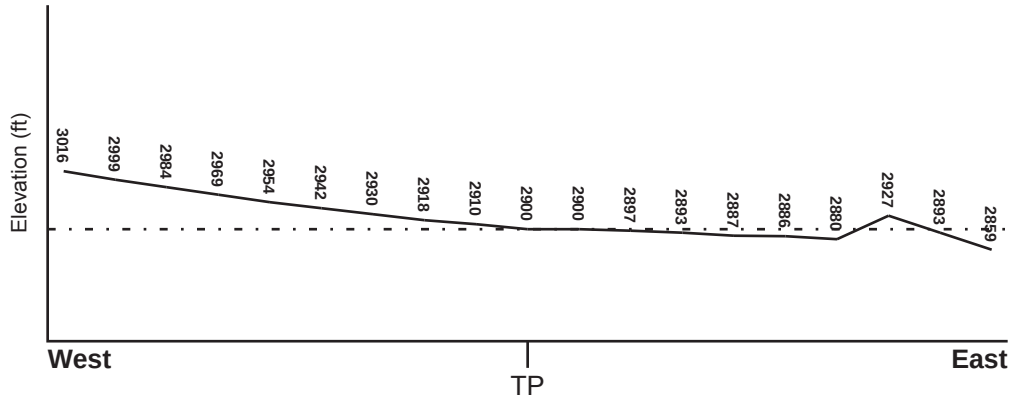
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 2900 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
KERN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06029C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
WILLOW SPRINGS	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

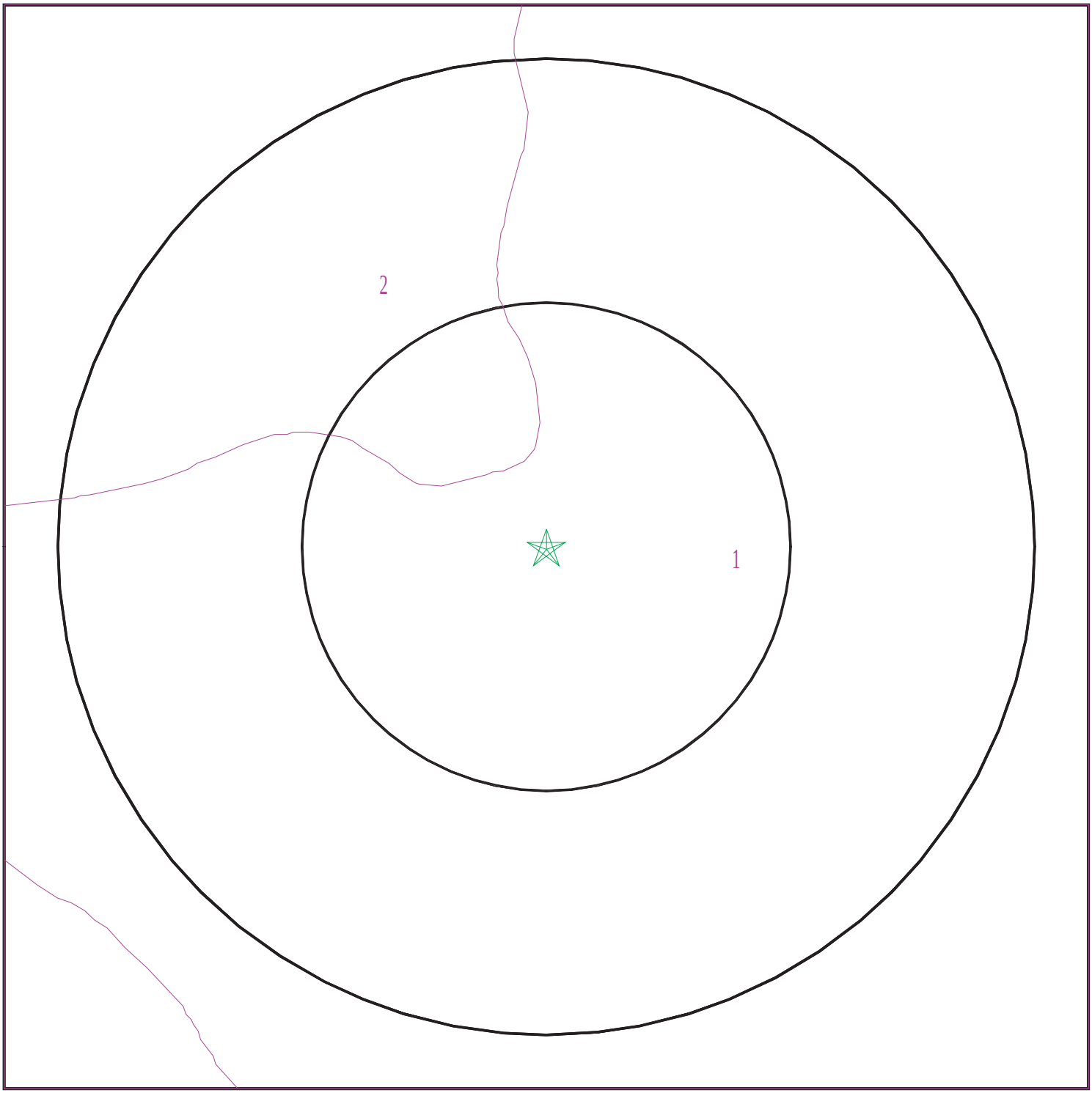
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4566463.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Syracuse - Tours Site	CLIENT:	Insight Environmental Consultants, Inc.
ADDRESS:	Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560	CONTACT:	Dolores Gough
		INQUIRY #:	4566463.2s
LAT/LONG:	34.947308 / 118.300914	DATE:	March 24, 2016 5:33 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: CAJON

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	20 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 2

Soil Component Name: CAJON

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	35 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

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
A1	USGS40000158587	1/4 - 1/2 Mile SW
B3	USGS40000158682	1/2 - 1 Mile West

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

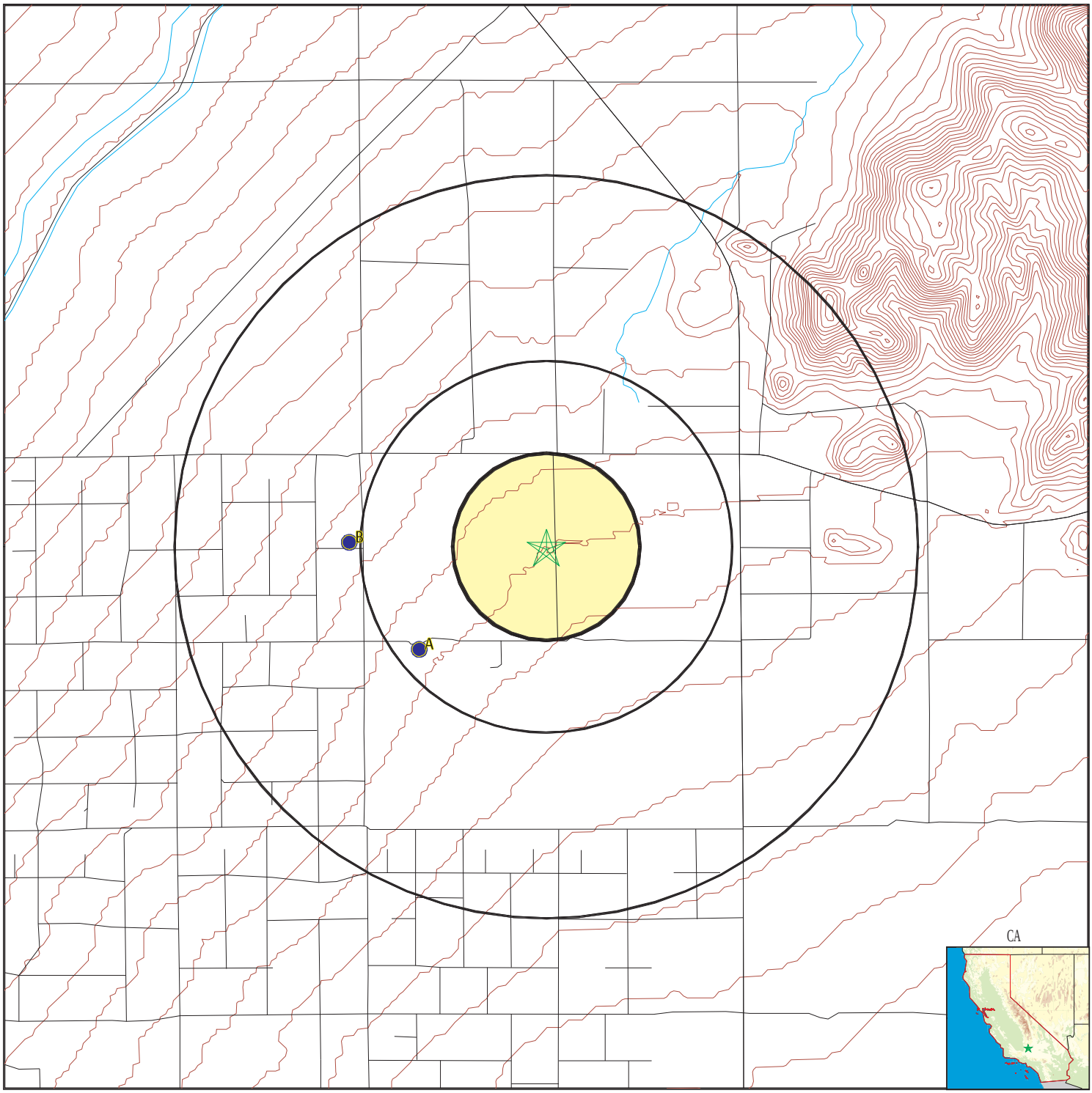
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	CADW60000033313	1/4 - 1/2 Mile SW
B4	CADW60000028401	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 4566463.2s



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

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME: Syracuse - Tours Site ADDRESS: Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560 LAT/LONG: 34.947308 / 118.300914	CLIENT: Insight Environmental Consultants, Inc. CONTACT: Dolores Gough INQUIRY #: 4566463.2s DATE: March 24, 2016 5:33 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **SW** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000158587**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-345636118182001		
Monloc name:	010N013W19M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18030003	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.9433073
Longitude:	-118.3064679	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	2905.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1952	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	770
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 73

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1989-10-19	319.47		1989-03-23	317.89	
1988-03-28	317.33		1987-11-03	317.30	
1987-02-23	316.81		1986-10-22	317.20	
1986-03-25	317.14		1985-10-30	317.28	
1985-03-25	317.13		1984-10-30	317.20	
1984-03-05	317.23		1983-10-27	317.28	
1983-04-26	317.25		1982-10-06	317.32	
1982-02-18	317.27		1981-11-19	317.23	
1981-04-17	316.83		1980-10-15	316.97	
1980-04-16	317.18		1979-10-24	317.15	
1979-02-28	316.59		1978-10-17	316.56	
1978-03-27	316.80		1977-10-12	316.69	
1977-03-07	316.49		1976-11-04	316.33	
1976-02-12	316.25		1975-10-15	316.29	
1975-02-05	316.31		1974-10-22	315.67	
1974-02-15	316.01		1973-10-04	315.52	
1973-03-24	315.81		1972-10-11	316.08	
1972-03-14	316.53		1971-10-26	317.04	
1971-03-15	318.00		1970-10-20	318.25	
1970-03-16	319.14		1969-09-18	319.38	
1969-04-14	318.92		1968-10-31	319.13	
1968-04-02	318.38		1967-11-01	318.55	
1967-10-10	318.51		1967-03-22	317.65	
1966-10-18	318.08		1966-03-08	316.85	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1965-10-18	316.94		1965-03-15	315.35	
1964-10-08	315.71		1964-03-04	314.60	
1963-11-06	314.77		1963-03-13	313.92	
1962-11-07	313.80		1962-03-01	311.88	
1961-11-08	312.07		1961-02-27	310.00	
1960-11-10	309.66		1960-03-02	309.15	
1959-12-01	309.25		1959-03-09	306.61	
1958-11-04	307.32		1958-03-04	305.60	
1957-11-15	304.11		1957-03-05	303.97	
1956-09-26	304.12		1956-05-21	304.10	
1956-03-21	302.34		1955-03-01	299.12	
1954-11-29	299.20		1954-02-08	295.76	
1953-01-20	291.61				

A2
SW
1/4 - 1/2 Mile
Higher

CA WELLS **CADW60000033313**

Objectid:	33313
Latitude:	34.9433
Longitude:	-118.3074
Site code:	349433N1183074W001
State well numbe:	10N13W19M001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	15
County name:	Kern
Basin code:	’6-44’
Basin desc:	Antelope Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000033313

B3
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000158682**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-345651118183201		
Monloc name:	010N014W24A001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18030003	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.9474737
Longitude:	-118.3098014	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	2945.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 26

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-03-29	337.85		2003-03-24	338.11	
2002-03-26	338.32		2001-03-21	340.12	
2000-03-21	340.09		1999-03-18	341.06	
1998-03-18	343.51		1997-03-03	345.85	
1996-04-18	345.45		1995-04-20	344.59	
1994-04-11	343.52		1993-04-20	343.63	
1992-04-16	345.50		1991-03-22	346.50	
1990-03-15	343.62		1989-03-23	341.78	
1988-03-28	341.25		1987-03-11	341.32	
1986-03-25	341.47		1985-03-25	341.39	
1983-04-14	338.60		1982-02-18	338.59	
1981-04-17	338.55		1980-04-16	338.70	
1979-02-22	337.92		1978-12-05	346.35	

B4
West
1/2 - 1 Mile
Higher

CA WELLS **CADW60000028401**

Objectid:	28401
Latitude:	34.9475
Longitude:	-118.3107
Site code:	349475N1183107W001
State well numbe:	10N14W24A001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	15
County name:	Kern
Basin code:	’6-44’
Basin desc:	Antelope Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000028401

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, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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 & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
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.

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

5500 Ming Ave | Suite 140 | Bakersfield, CA 93309 | **P** (661) 282-2200 | **F** (661) 282-2204
trinityconsultants.com

Insight Environmental Consultants | Trinity Consultants

Project Number: 160505.0076

Current Property Owner Questionnaire

Insight Environmental Consultants, Inc. has been retained to complete a Phase I Environmental Site Assessment of the property listed below. Completion of this questionnaire is required of the Current Property Owner based on the American Standard for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-13 and by the Code of Federal Regulations (40 CFR 312) All "Appropriate Inquiry". The responses provided on this questionnaire are considered confidential. Please complete the questionnaire to the best of your knowledge and return the completed form by email (preferred), Fax or US Postal Service to:

Mr. Ronald W. Hunter
Insight Environmental Consultants, Inc.
5500 Ming Ave., Suite 140
Bakersfield, CA 93309
T: 661-282-2200 | F: 661-282-2204
Email: rhunter@insenv.com

Property Name:	**Trafalgar, APN: 346-022-03**
Property Address:	**N/2 Sec 19 T10N R13W SBM**

1. **Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject property?**

   ☒ No ☐ Yes _____

2. **Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject property?**

   ☒ No ☐ Yes _____

3. **Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?**

   ☒ No ☐ Yes _____

4. **Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?**

   ☒ No ☐ Yes _____

5. **Are you aware of any commonly known or reasonably ascertainable information about the property? For example: Do you know the past uses of the property?**

   ☒ No ☐ Yes _____

6. Do you know specific chemicals that are present or once were present at the property?

☒ No ☐ Yes _____

7. Do you know of spills or other chemical releases that have taken place at the property?

☒ No ☐ Yes _____

8. Do you know of environmental cleanups that have taken place at the property?

☒ No ☐ Yes _____

9. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence of contamination at the property?

☒ No ☐ Yes _____

10. Is the property or has the property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, waste treatment/storage/disposal or recycling facility?

☒ No ☐ Yes _____

11. Are you aware of any damaged or discarded automotive or industrial batteries, pesticides, paints or other chemicals at the subject property?

☒ No ☐ Yes _____

12. Are there currently any industrial drums or other bulk chemicals at the subject property?

☒ No ☐ Yes NOT AWARE OF

13. Are you aware of contaminated fill dirt at the subject property, i.e. fill dirt brought onto the property which came from a contaminated site or an unknown location?

☒ No ☐ Yes _____

14. Are there currently any pits, ponds or lagoons in connection with waste disposal or treatment at the subject property?

☒ No ☐ Yes NOT AWARE OF

15. Are there any current or previous registered or unregistered storage tanks (aboveground or underground) at the property?

☒ No ☐ Yes NOT AWARE OF

16. Are there any vent pipes, fill pipes or access ways protruding from the ground at the property?

☒ No ☐ Yes NOT AWARE OF

17. Is the subject property served by a private well/non-public water system or a private septic system?

☒ No ☐ Yes _____

18. Is any industrial wastewater (other than sanitary sewer) discharged from the subject property?

☒ No ☐ Yes _____

19. Are you aware of any flooring, drains or walls located within the subject property that are stained by substances other than water, or that are emitting foul odors at the subject property?

☒ No ☐ Yes _____

20. Are there any monitoring wells at the subject property?

☒ No ☐ Yes _____

21. Is there any transformer, capacitor, or any other hydraulic equipment that contains polychlorinated biphenyls (PCBs) or that contains unknown dielectric fluids on the subject property?

☒ No ☐ Yes _____

22. What year did you/or current owner purchase the subject property? MARCH 2006

Additional Comments: _____

Please provide the following documents, if available:

N/A

- ☐ Environmental site assessment reports
- ☐ Environmental compliance audit reports
- ☐ Geotechnical studies
- ☐ Reports regarding hydrogeological 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

Identity of Person Providing This Information:

Printed Name: CARLO BONDANELLI Signature: [signature]

Title/Relationship to Property: AGENT Date: MARCH 15, 2016

5500 Ming Ave | Suite 140 | Bakersfield, CA 93309 | P (661) 282-2200 | F (661) 282-2204
trinityconsultants.com

Insight Environmental Consultants | Trinity Consultants

USER QUESTIONNAIRE

Property: APN 346-022-03, N/2 Sec 19 T10N R13W SBM, California

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)?
__X_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)?
__X_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)?
__X_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 __X_YES If yes, please explain: Fair Market Price.

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*?

__X_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)?
__X_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
- X Risk assessments

Name (Print)	Elliott MacDougall
Signature	
Title	VP, Development
Date	3/17/16
Representing	WDG Capital Partners III, LP
Address	PO Box 31159 Santa Barbara, CA 93130
Phone Number	805-617-0309
Email Address	emacdougall@wdgcp.com

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

ORIGINAL
File with DWR

Do not fill in
No. 275526

Notice of Intent No. 239175
Local Permit No. or Date 9/24/89

State Well No.
Other Well No.

(1) [redacted]
Add
City

(2) LOCATION OF WELL (See instructions):
County Kern Owner's Well Number 1
Well address if different from above
Township 10 N Range 13 W Section 19
Distance from cities, roads, railroads, fences, etc. 6 mi. S. of Mojave
W. on Backus Rd. 5.9 mi. to Johnson sign
200 yds. S. on dirt road to well site

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 3/8
Diameter of bore 10
Packed from seal to bottom

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	425	6	3/8

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
145	425	3/8

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☑ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☑ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known NA ft.
Standing level after well completion 290 ft.

(11) WELL TESTS:
Was well test made? Yes ☑ No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 290 ft. At end of test 425 ft.
Discharge 2 gal/min after 2 hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 425 ft. Completed depth 425 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	419	sand with a few cobbles
419	425	blue clay

complete mud drill top to bottom, exact location of water unknown.

Work started 9/25 1989 Completed 10/4 1989

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed (Well Driller)
NAME Rainbow Drilling Company (Person, firm, or corporation) (Typed or printed)
Address 9228 Navaho
City Weldon, Ca ZIP 93283
License No. 497540 Date of this report 10/5/89

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DWR 188 (REV. 12-86) 86 96355

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL

Dolores Gough, P.E.

Senior Consultant — Bakersfield

AREAS OF SPECIALIZATION

- NPDES Permitting
- Waste and Wastewater Management
- SPCC Plan and SWPPP Development
- Phase I & II Environmental Assessments
- Soil & Groundwater Remediation
- Air Quality Permitting

EDUCATION

M.S., Environmental Engineering, University of So. California
B.S., Chemical Engineering, University of Santo Tomas

AFFILIATIONS

National and California Environmental Health Association

CERTIFICATIONS

Registered Professional Civil Engineer in CA
Registered Environmental Health Specialist in CA
Construction 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, storm water pollution prevention plans (SWPPP) for construction projects and industrial activities, spill prevention control and countermeasures plans (SPCC), technical reports for waste water discharges to land, and Phase I and II environmental assessments. She is also experienced in soil and water/wastewater investigation.

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 permit engineer for the local air district

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, 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 - 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.

NPDES Permitting - Conducted preliminary assessments of industrial operations to determine storm water permitting requirements. Developed Storm Water Pollution Prevention plans or Technical Reports. Prepared Reports of Waste Discharge in support of applications to reclaim waste water by applying it to land as part of Waste Discharge Requirements (WDR) permits.

EMPLOYMENT HISTORY

2014 – Present Trinity Consultants – Senior Consultant
2009 – Present Columbia Southern University, College of Safety & Emergency Services – Adjunct 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

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Tours Site

SWC Backus Rd/Tehachapi Willow Springs Rd
Rosamond, California

Prepared For:

Quad Knopf, 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
5500 Ming Avenue, Suite 140
Bakersfield, CA 93309
661-282-2200

March 2016

Project 160505.0077

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1-1
- 1.1. Subject Property Description 1-1
- 1.2. Historical Recognized Environmental Condition (HREC) 1-1
- 1.3. Controlled Recognized Environmental Condition (CREC) 1-1
- 1.4. Recognized Environmental Condition (REC) 1-2
- 1.5. Opinion and Recommendations 1-2

2. INTRODUCTION 2-1
- 2.1. Purpose 2-1
- 2.2. Detailed Scope of Services 2-1
- 2.3. Deviations 2-1
- 2.4. Significant Assumptions 2-1
- 2.5. Limitations and Exceptions 2-2
- 2.6. Special Terms and Conditions (User Reliance) 2-3

3. SITE DESCRIPTION 3-1
- 3.1. Location and Legal Description 3-1
- 3.2. Site and Vicinity General Characteristics 3-2
- 3.3. Current Use of the Property 3-2
- 3.4. Current Use of Adjoining Properties 3-3

4. USER PROVIDED INFORMATION 4-1
- 4.1. Title Records 4-1
- 4.2. Environmental LieNs/Activity and Use Limitations 4-1
- 4.3. Specialized Knowledge 4-1
- 4.4. Commonly Known or Reasonably Ascertainable Information 4-1
- 4.5. Valuation reduction for environmental Issues 4-1
- 4.6. Owner, Property Manager, and occupant information 4-1
- 4.7. Reason for Performing this Phase I ESA 4-1

5. RECORDS REVIEW 5-1
- 5.1. Standard Environmental Record Sources 5-1
- 5.2. Additional Environmental Records Sources 5-2
  - *5.2.1. GeoTracker Online Database* *5-2*
  - *5.2.2. Oil and Gas and Water Well Report* *5-2*
  - *5.2.3. Property Tax Map* *5-2*
  - *5.2.4. Sanborn Map* *5-2*
  - *5.2.5. Vapor Encroachment Screen* *5-2*
- 5.3. Site Physical Setting 5-3
- 5.4. Historical Use Information- Property and adjoining Properties 5-3
  - *5.4.1. Historical Aerial Photographs* *5-3*
  - *5.4.2. Historical Topographic Maps* *5-4*
  - *5.4.3. City Directory Abstract* *5-5*
  - *5.4.4. Previous Environmental Studies* *5-6*

6. SITE RECONNAISSANCE 6-1

6.1. Methodology and Limiting Conditions **6-1**
6.2. Site Visit Findings **6-1**
6.2.1. Hazardous Substance Use, Storage and Disposal *6-1*
6.2.2. Other Petroleum Products *6-1*
6.2.3. Unidentified Substance Containers *6-1*
6.2.4. Underground Storage Tanks (USTs) *6-1*
6.2.5. Aboveground Storage Tanks (ASTs) *6-1*
6.2.6. Polychlorinated Biphenyls (PCBs) *6-2*
6.2.7. Nonhazardous Solid Waste *6-2*
6.2.8. Wastewater *6-2*
6.2.9. Pits, Ponds, and Lagoons *6-2*
6.2.10. Septic Systems *6-2*
6.2.11. Stormwater Management System *6-2*
6.2.12. Stained Soil/Stressed Vegetation *6-2*
6.2.13. Wells *6-2*
6.2.14. Other Observations *6-2*

7. INTERVIEWS **7-1**
7.1. Property Owner, Representative Interviews **7-1**
7.2. Regulatory Agency Interviews **7-1**

8. FINDINGS **8-1**
8.1. Historical Recognized Environmental Condition (HREC) **8-1**
8.2. Controlled Recognized Environmental Condition (CREC) **8-1**
8.3. Recognized Environmental Condition (REC) **8-1**
8.4. Observed Condition of the site with Respect to Intended Use **8-2**
8.5. Data Gaps **8-2**
8.6. Opinion and Recommendations **8-2**

9. QUALIFICATIONS/SIGNATURES OF ENVIRONMENTAL PROFESSIONAL(S) **9-1**

10. NON-SCOPE SERVICES **10-1**

11. REFERENCES **11-1**

APPENDIX A: SITE PHOTOGRAPHS **A-1**

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION **B-1**

EDR AERIAL PHOTO PACKAGE **B-1**

EDR HISTORICAL TOPOGRAPHIC MAP REPORT **B-1**

EDR CITY DRECTORY ABSTRACT **B-2**

EDR PROPERTY TAX MAP REPORT **B-3**

EDR ENVIRONMENTAL LIENSEARCH **B-4**

APPENDIX C: REGULATORY RECORDS DOCUMENTATION **C-1**

APPENDIX D: SUPPORTING DOCUMENTATION **D-1**

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL E-1

LIST OF FIGURES

Figure 3-1 USGS Topographic Map –Willow Springs, CA 3-1

Figure 3-2 General Property Improvements 3-2

LIST OF TABLES

Table 3-1. Description of Structures and Other Improvements 3-3

Table 5-1 Summary of Regulatory Database Findings 5-1

Table 5-2. Historical Property Use Based on Aerial Photography 5-4

Table 5-3. Historical Property Use Based on Topographic Maps 5-4

Table 5-4. City Directory Abstract 5-5

1. EXECUTIVE SUMMARY

1.1. SUBJECT PROPERTY DESCRIPTION

Insight Environmental Consultants, Inc. (IEC) has performed a Phase I Environmental Site Assessment (ESA) for an undeveloped property located at the southwest corner of Backus Road and Tehachapi Willow Springs Road in Rosamond, California. 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 with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the Property.

The Property consists of 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."*

IEC has not identified any RECs in connection with the Property.

1.5. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted as there were no RECs identified that could have impacted the Property.

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

The 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 environmental assessment is limited by the availability of information at the time of the assessment, including: (1) information derived from the property inspection conducted on March 23 and 25, 2016; (2) interviews and inquiries conducted on March 15, 17 and 23, 2016; (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. IEC 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 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, its parent company Trinity Consultants, nor its successors or assignees does not warrant that there are no toxic or hazardous substances or contamination, nor does IEC accept any liability if such are found at some future time, or could have been found if sampling or additional studies were conducted. IEC 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.

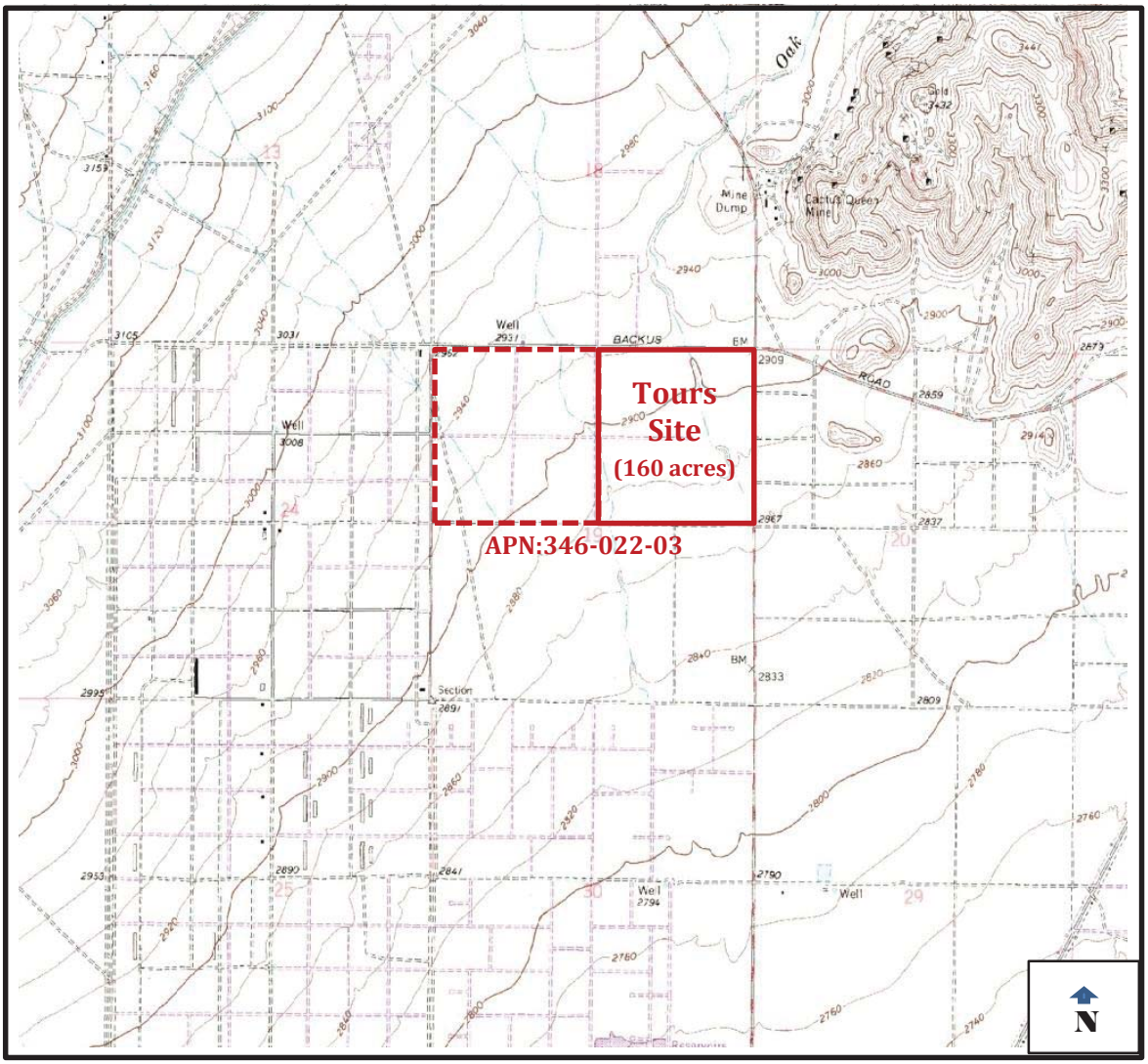
2.6. SPECIAL TERMS AND CONDITIONS (USER RELIANCE)

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 is located at the southwest corner of Backus Road and Tehachapi Willow Springs Road in Rosamond, California (as generally depicted in **Figure 3-1**). The legal description of the parcel as well as vesting and conveyance information is included in **Appendix B** (EDR Environmental LienSearch™). According to the EDR report, the title for the deed to Assessor's Parcel Number (APN) 346-022-03 is vested in Domenic International Ltd, Vervactor Enterprises Ltd and Civitas, Inc., Dated 3/18/2006, which was conveyed from Royal Investor Group, LLC. According to Kern County Assessor's parcel map included in **Appendix B,** the subject parcel of land consists of 320 acres. The subject Site consists of the easterly half (160 acres) of this parcel of land.

Figure 3-1. USGS Topographic Map – Willow Springs, CA Quadrangle



3.2. SITE AND VICINITY GENERAL CHARACTERISTICS

The Property is undeveloped and currently covered with vegetation consisting of native grass, Larrea tridentata bushes, desert brush plants and a few scattered Joshua trees. The property to the northeast is a gold mine (Cactus Gold Mine). The properties directly to the north and east are also undeveloped with the exception of a few residential houses. The adjacent properties to the west (the westerly half of the parcel) and south are both undeveloped. The Property is zoned agriculture (A) with floodplain (FP) designation. The surrounding properties have a mixed zoning of agriculture, residential subdivision combining (RS), mobile home combining (MH) and platted lands (PL).

3.3. CURRENT USE OF THE PROPERTY

The Property is currently vacant. With the exception of some power poles along the northern and eastern perimeter, there are no improvements at the Site. The general improvements to the property including site findings are shown in **Figure 3-2** and discussed in **Table 3-1**.

Figure 3-2 General Property Improvements

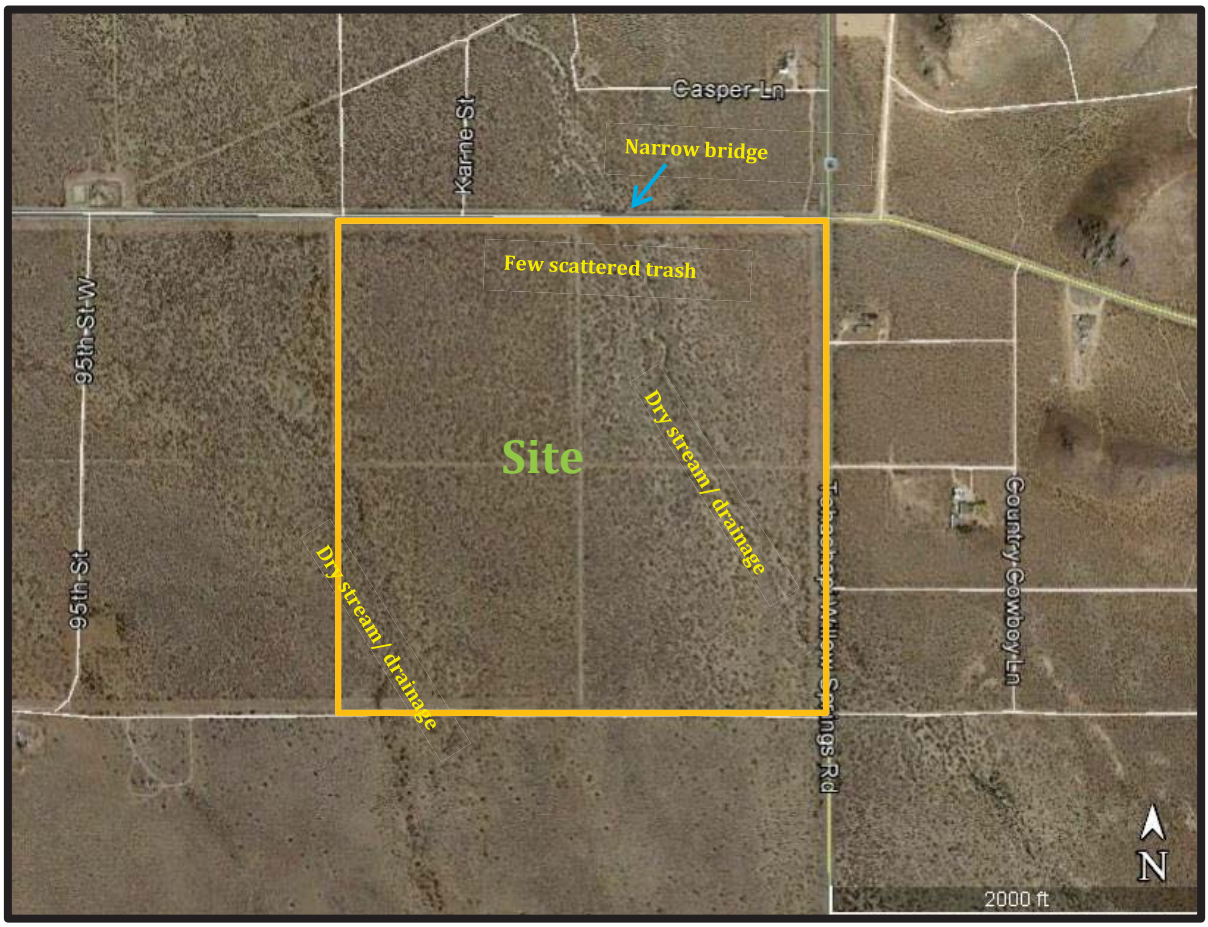


Table 3-1. Description of Structures and Other Improvements

Approximate Size of Property	160 acres
General Topography of Property	Generally level and sloping gently to the south southeast.
Adjoining and/or Ingress/Egress Roads	Site is not fenced and can be accessed through the southwest corner of Tehachapi Willow Springs Rd and Backus Rd
Paved or Concrete Areas (including parking)	The site is not paved.
Landscaped Areas	Property is predominantly covered with native grass, desert brush plants, Larrea tridentate bushes and a few scattered Joshua trees.
Surface Water	There are two hydrologic features (intermittent streams) crossing the Property; no water was observed during the Site visit.
Potable Water Source	N/A; water services can be obtained from a local water provider
Sanitary Sewer Utility	None
Electrical / Natural Gas Utility	N/A
Current Occupancy Status	Unoccupied
Structures	None observed or identified in the research.
Other Improvements	Power poles

3.4. CURRENT USE OF ADJOINING PROPERTIES

The current uses of the properties adjacent to the subject Property are as follows:

- North: Undeveloped; one residential housing along Tehachapi Willow Springs Rd.
- Northeast: Gold mine
- South: Undeveloped.
- East: Undeveloped; two housing across Tehachapi Willow Springs Rd.
- West: Undeveloped (the other 160 acres of the parcel); further west have power lines running in a N-S direction.

4.1. TITLE RECORDS

Domenic International Ltd, a Hong Kong corporation holds an 80% interest in the property, and Vervactor Enterprises, a New Jersey company and Civitas Inc., a California corporation each hold 10% interest in the Property. Titles were received from Royal Investors Group, LLC, a California Limited Liability Company. The legal descriptions of the parcel as well as the aforementioned conveyances are included in **Appendix B** (EDR Environmental LienSearch™).

4.2. ENVIRONMENTAL LIENS/ACTIVITY AND USE LIMITATIONS

The User provided information regarding property environmental liens or activity and use limitations **(Appendix D** – User Questionnaire**).** 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 parcel.

4.3. SPECIALIZED KNOWLEDGE

The User provided no specialized knowledge of the site, based on the completed User 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's knowledge of the site is limited to understanding of the current use.

4.5. VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

It is the User's opinion that the current purchase price for the property reflects fair market value.

4.6. OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The owners of the Property are listed in the Title records (Section 4.1). The current leaseholder is WDG Capital Partners. The Property is currently vacant.

4.7. REASON FOR PERFORMING THIS PHASE I ESA

IEC 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.

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 4-1.**

Table 4-1 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	No	0

Local Registered Storage Tanks	¼ mile	No	0
Other Ascertainable Records	¼ mile	No	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

One orphan site, BLM-Cactus Gold Mine, was reported which was determined to be on the northeast corner of Backus Rd and Tehachapi Willow Springs Rd.

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. No projects were found on either Backus Road or Tehachapi Willow Springs Road in Kern County (search address used).

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:**

- 2 federal USGS water wells were identified within 1 mile of the site and these same wells are also listed in the state databases.
- No public water supply system was found within 1 mile of the site.

The wells are located near the southern and western perimeter of the Property. 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 "no coverage" as shown 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 conducted using EDR's VEC App software using previously or currently contaminated sites identified in the EDR search and supplemented with local regulatory records and site observations. For sites with petroleum hydrocarbon COC, the area of concern (AOC) is 528 feet in the up-gradient area, 30 feet in the downgradient area if there is assumed to be only dissolved petroleum contamination in groundwater, and 95 feet in the cross-gradient areas if there is assumed to be only dissolved petroleum contamination in the groundwater. Distance measurements are from the known or suspected contaminated property to the target property boundary as defined by the user.

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 southwest corner of Backus Road and Tehachapi Willows Spring Road in Rosamond, California. Based on a review of the USGS 7.5 Digital Elevation Model, the Property slopes generally to the south southeast and is located at elevations ranging from 2,824 to 3,011 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 south 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 Site is located within the 100-yr flood zone.
- There is a wetland identified in the National Wetland Inventory that transects the Property in a N-S direction.
- The dominant soil type at the Site is Cajon, which is a somewhat excessively drained soil characterized with high infiltration rates.

No information was provided with respect to groundwater quality, velocity, or flow direction. Groundwater depth measured on the southern well was 319 feet below surface in 1989 and 338 feet below surface in 2004 for the western well **(Appendix C).**

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	
1952	No evidence of development. There appears to be two hydrologic features (stream/drainage) running N-SE across the Site, one on the eastern side and the other on the western side.	No evidence of development.	None
1968	No significant changes.	No significant changes except for a well at the property to the northwest across Backus Rd. A small structure is also visible at the northern boundary of the adjacent property to the south.	As Above
1973	No significant changes.	No significant changes except for a rectangular area at the adjacent property to the west (westerly parcel).	As above
1987	No significant changes.	No significant changes.	As Above
1995	No significant changes.	No significant changes except for another structure east of the structure that was visible in 1968.	As Above
2005	No significant changes.	No significant changes.	As Above
2009	No significant changes.	No significant changes.	As above
2010	No significant changes	No significant changes.	As Above
2012	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 above. 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. There is a hydrologic feature (stream)	None

Map Year/Quad	Identified Historical Uses		RECs
	Subject Property	Surrounding Property	
		running N-SE across the Site.	
1917/Elizabeth Lake	No significant changes.	No significant changes.	As Above
1943/Willow Springs	No significant changes except a road that originated from the NE corner of the Site going SE is visible.	No significant changes except for a road SW of the gold mine is visible.	As Above
1965/Willow Springs	No significant changes. There is another hydrologic feature (stream) that is visible at the western side of the Site.	Additional roads are visible on the east side of the Site across Tehachapi Willow Springs Rd and to the west. A well is located at the property to the north across Backus Rd.	As Above
1974/Willow Springs	No significant changes other than a road at the western perimeter and a road halfway to the south are visible.	No significant changes.	As Above
2012/Willow Springs	No significant changes.	No significant changes.	As above

5.4.3. City Directory Abstract

EDR researched historical city directories for the Property and immediate vicinity (**Appendix B**). The city directory search disclosed the following available information with respect to the subject site and immediate vicinity in Rosamond, California.

Table 5-4. City Directory Abstract

Year	Address	Property Use	Source
2013	5464 Backus Rd	Christopher Watts	Cole Information Services
	6350 Backus Rd	Andrea Haynes	Cole Information Services
	3720 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4730 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4752 Tehachapi Willow Springs Rd	Elizabeth Ayala	Cole Information Services
	4822 Tehachapi Willow Springs Rd	Edward Goodwin	Cole Information Services
	4890 Tehachapi Willow Springs Rd	Harold Bragg	Cole Information Services
	5488 Tehachapi Willow Springs Rd	Robin Reichard	Cole Information Services
	5491 Tehachapi Willow Springs Rd	Cathy House	Cole Information Services
	5792 Tehachapi Willow Springs Rd	Cecilia Wiley	Cole Information Services
	6503 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services

Year	Address	Property Use	Source
	6963 Tehachapi Willow Springs Rd	Jose Morales	Cole Information Services
	7500 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	8884 Tehachapi Willow Springs Rd	Don Mumford	Cole Information Services
	9428 Tehachapi Willow Springs Rd	Jane Huddleston	Cole Information Services
	11715 Tehachapi Willow Springs Rd	Darwin McNeil	Cole Information Services
2008	4730 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4752 Tehachapi Willow Springs Rd	Occupant Unknown	Cole Information Services
	4822 Tehachapi Willow Springs Rd	Martin Gjelsvik	Cole Information Services
	4890 Tehachapi Willow Springs Rd	Harold Bragg	Cole Information Services
	5488 Tehachapi Willow Springs Rd	Robin Reichard Alesso Farms	Cole Information Services
	5491 Tehachapi Willow Springs Rd	Gene House	Cole Information Services
	5792 Tehachapi Willow Springs Rd	Cecilia Wiley	Cole Information Services
	6963 Tehachapi Willow Springs Rd	Jose Morales	Cole Information Services
	8884 Tehachapi Willow Springs Rd	Don Mumford	Cole Information Services
	9428 Tehachapi Willow Springs Rd	Jane Huddleston	Cole Information Services
	11715 Tehachapi Willow Springs Rd	Darwin McNeil	Cole Information Services
2003	6963 Tehachapi Willow Springs Rd	Calandri John Farms	Cole Information Services
1999	4822 Tehachapi Willow Springs Rd	Martin Gjelsvik	Cole Information Services
	4890 Tehachapi Willow Springs Rd	Harold Bragg	Cole Information Services
	5488 Tehachapi Willow Springs Rd	Robin Reichard	Cole Information Services
	5491 Tehachapi Willow Springs Rd	Gene House	Cole Information Services
	5792 Tehachapi Willow Springs Rd	Cecilia Wiley	Cole Information Services
	6963 Tehachapi Willow Springs Rd	Jose Morales	Cole Information Services
	8884 Tehachapi Willow Springs Rd	Don Mumford	Cole Information Services
	9428 Tehachapi Willow Springs Rd	Jane Huddleston	Cole Information Services
	11715 Tehachapi Willow Springs Rd	Debra McNeil	Cole Information Services

5.4.4. Previous Environmental Studies

No previous environmental studies for the Site were identified by the current property owner.

6.1. METHODOLOGY AND LIMITING CONDITIONS

A physical inspection of the Site and surrounding area was conducted on March 23, 2016 by Dolores Gough and Gordy Guillen of IEC, and on March 25, 2016 by Dolores Gough. The Site was accessible during the inspection. Weather conditions at the time of both inspections were sunny with temperatures in the mid-60's to low 70'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 by the adjoining properties and around the Site boundaries, 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 Backus Road. In addition to the features described in **Section 3.4**, the following were the observations during the Site reconnaissance:

6.2.1. Hazardous Substance Use, Storage and Disposal

No hazardous substances were observed in use, storage or disposal at the Property. Electrical transformers were observed on one pole at the northern perimeter of the adjacent Property to the west (the westerly parcel); however, the type of transformer oil used was not determined. See Section 6.2.6.

6.2.2. Other Petroleum Products

IEC did not observe any other petroleum products 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 indications of USTs during the Site reconnaissance.

6.2.5. Aboveground Storage Tanks (ASTs)

IEC did not observe indications of ASTs during the Site reconnaissance

6.2.6. Polychlorinated Biphenyls (PCBs)

As indicated in **Section 6.2.1**, one pole-mounted electrical transformer was observed at the adjacent property to the west (proposed Syracuse Site). Based on visual inspection, the transformers were not observed to be leaking and are not considered to be an environmental liability to the Property owner.

6.2.7. Nonhazardous Solid Waste

A few solid wastes that include old cans and cardboards were observed scattered at the northeastern portion of the Property.

6.2.8. Wastewater

No wastewater or stormwater drains, or underground injection system were observed on the Property during the Site reconnaissance. See also Section 6.2.11.

6.2.9. Pits, Ponds, and Lagoons

No pits, ponds or lagoons were observed on the Property 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 other than the two intermittent streams crossing the property in a generally N-S direction. The Site is not paved and stormwater would flow into the streams, percolate, flow to low spots or follow the topographic gradient. Some erosion was observed at the intermittent stream areas and at the southern boundary of the Property.

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 were observed during the site reconnaissance or reported during interviews. The well observed (shown in the topographic map) is located at the property to the north across Backus Rd.

6.2.14. Other Observations

Power poles were observed at the eastern and northern perimeter of the Property.

7.1. PROPERTY OWNER, REPRESENTATIVE INTERVIEWS

Mr. Carlo Bondanelli, an agent for the Property, completed a Current Property Owner Questionnaire that is provided in **Appendix D**. Mr. Bondanelli is not aware of any known activity and/or use limitations associated with the Property, any valuation reductions or any environmental issues for the Property with respect to hazardous substances or petroleum products.

Mr. Elliott MacDougall, VP of Development for WDG Capital Partners, the current leaseholder of the Property, completed a User Questionnaire that is also provided in Appendix D. Mr. MacDougall is not any known activity and/or use limitations associated with the Property, any valuation reductions or any environmental issues for the Property.

7.2. REGULATORY AGENCY INTERVIEWS

Ms. Lydia Von Sydow with Kern County Environmental Health Services, was interviewed on March 23, 2016. Ms. Von Sydow reported that there were no reported hazardous material complaints, violations or permits for the Property.

.

Insight Environmental Consultants, Inc. has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice 1527-13 of APN 346-022-03 located at the southwest corner of Tehachapi Willow Springs Road and Backus Road 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 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."*

IEC has not identified any RECs in connection with the Property.

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:

- Aerial photographs of the Property from 1915 to 1951 were not available. Other historical sources including topographical maps were reviewed for this ESA; therefore, this data gap is not considered to be significant.
- 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.

8.6. OPINION AND RECOMMENDATIONS

Based on the findings of this Phase I ESA, additional assessment does not appear warranted at this time as no RECs were identified that may have impacted the Property.

9. QUALIFICATIONS/SIGNATURES 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.

For Insight Environmental Consultants, *a Trinity Consultants Company*

Dolores Gough 3/30/16

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, Vapor Intrusion, 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

Minor scattered trash (old cans, cardboards) along the northeastern portion of the Site, 3-23-2016

View of tree debris, common throughout the Site, predominantly Larrea tridentata (bush) , 3-23-2016

View of general Site landscape, NW corner, dominated by a creosote bush, brush and grass, 3-25-2016

View of general Site landscape , NE corner, 3-23-2016

Tehachapi Willow Springs Rd looking north from Backus Rd. Cactus Gold Mine on the right, 3-23-2016

Tehachapi Willow Springs Rd looking south from Backus Rd., 3-23-2016

Cactus Gold Mine located northeast corner of Backus Rd and Tehachapi Willow Springs Rd, 3-23-2016

Cactus Gold Mine office – equipment yard, Tehachapi Willow Springs Rd, 3-23-2016

Culvert under the Tehachapi Willow Springs Rd, SE section of the stream taken near southeast corner of the Site,, 3-25-2016

View of the SE end of the dry stream , looking north, some erosion, 3-25-2016

Stream (dry) looking south, some erosion observed on the right side, 3-23-2016

Stream traversing the Site, looking south, 3-23-2016

Narrow Bridge on Backus Road for stream (currently dry) traversing the Site in a NW to SE direction, 3-23-2016

Stream excavation on the Site, looking north, 3-23-2016

Shallow bermed area, west of narrow bridge, no staining observed, overgrown with grass, 3-23-2016

View of Backus Rd and north side of the Site, looking west, 3-23-2016

Road running N-S bisecting APN 346-022-03 sites, 3-25-2016

View of general Site landscape , SW corner, 3-25-2016

APPENDIX B: HISTORICAL RESEARCH DOCUMENTATION

EDR AERIAL PHOTO PACKAGE

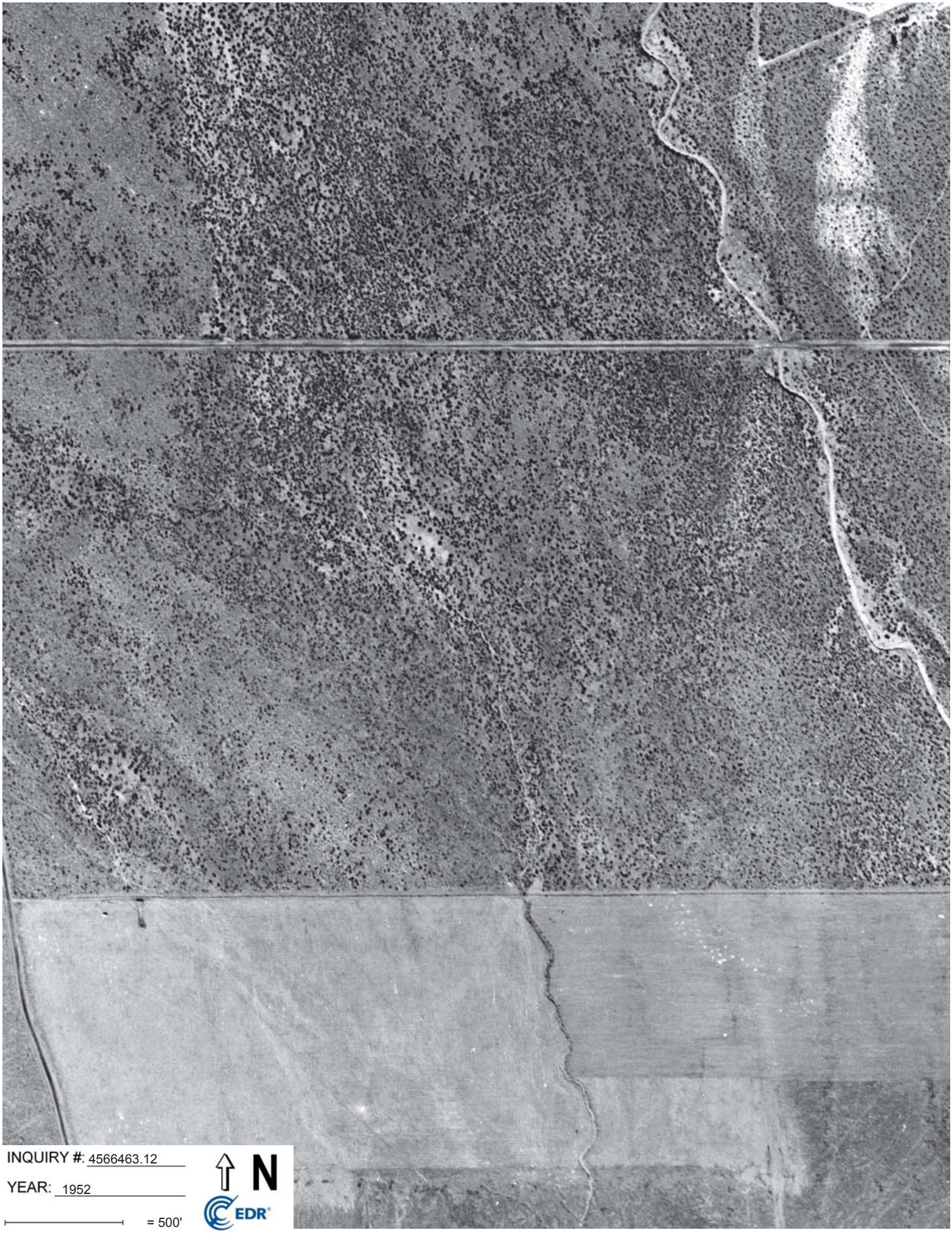
INQUIRY #: 4566463.12

YEAR: 1968

= 500'

N

EDR


INQUIRY #: 4566463.12
YEAR: 1952
= 500'
N
EDR

Syracuse - Tours Site

Backus Rd/Tehachapi Willow Springs Rd

Rosamond, CA 93560

Inquiry Number: 4566463.12

March 24, 2016

The EDR Aerial Photo Decade Package

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

EDR Aerial Photo Decade Package

03/24/16

Site Name:

Syracuse - Tours Site
Backus Rd/Tehachapi Willow S
Rosamond, CA 93560
EDR Inquiry # 4566463.12

Client Name:

Insight Environmental Consultants, Inc.
5500 Ming Avenue
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
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1995	1"=500'	Acquisition Date: October, 04 1995	USGS/DOQQ
1987	1"=500'	Flight Date: July, 25 1987	USGS
1973	1"=500'	Flight Date: May, 01 1973	USGS
1968	1"=500'	Flight Date: January, 01 1968	Teledyne
1952	1"=500'	Flight Date: January, 01 1952	Robinson

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INQUIRY #: 4566463.12
YEAR: 2012
= 500'
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EDR

INQUIRY #: 4566463.12
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4566463.12
YEAR: 2009
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N
EDR

INQUIRY #: 4566463.12
YEAR: 2005
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YEAR: 1973
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EDR

INQUIRY #: 4566463.12

YEAR: 1968

= 500'

N

EDR

INQUIRY #: 4566463.12
YEAR: 1952
= 500'
N
EDR

EDR HISTORICAL TOPOGRAPHIC MAP REPORT

Syracuse - Tours Site

Backus Rd/Tehachapi Willow Springs Rd

Rosamond, CA 93560

Inquiry Number: 4566463.4

March 24, 2016

EDR Historical Topo Map Report

with QuadMatch™

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

EDR Historical Topo Map Report

03/24/16

Site Name:	Client Name:
Syracuse - Tours Site	Insight Environmental Consultants, Inc.
Backus Rd/Tehachapi Willow S	5500 Ming Avenue
Rosamond, CA 93560	Bakersfield, CA 93309
EDR Inquiry # 4566463.4	Contact: Dolores Gough

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Insight Environmental Consultants, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	34.94731 34° 56' 50" North
Project:	160505.0076	**Longitude:**	-118.30091 -118° 18' 3" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	381210.23
		UTM Y Meters:	3867972.54
		Elevation:	0.00' above sea level

Maps Provided:

2012
1974
1965
1943
1917
1915

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Topo Sheet Key

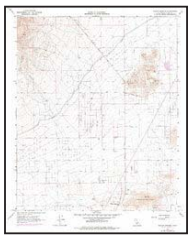
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Willow Springs

7.5-minute, 24000

1974 Source Sheets



Willow Springs

7.5-minute, 24000
Photo Revised 1974
Aerial Photo Revised 1963

1965 Source Sheets

Willow Springs

7.5-minute, 24000
Aerial Photo Revised 1963

1943 Source Sheets

Willow Springs

15-minute, 62500
Aerial Photo Revised 1943

Topo Sheet Key

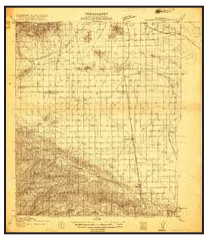
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1917 Source Sheets

Elizabeth Lake

30-minute, 125000

1915 Source Sheets

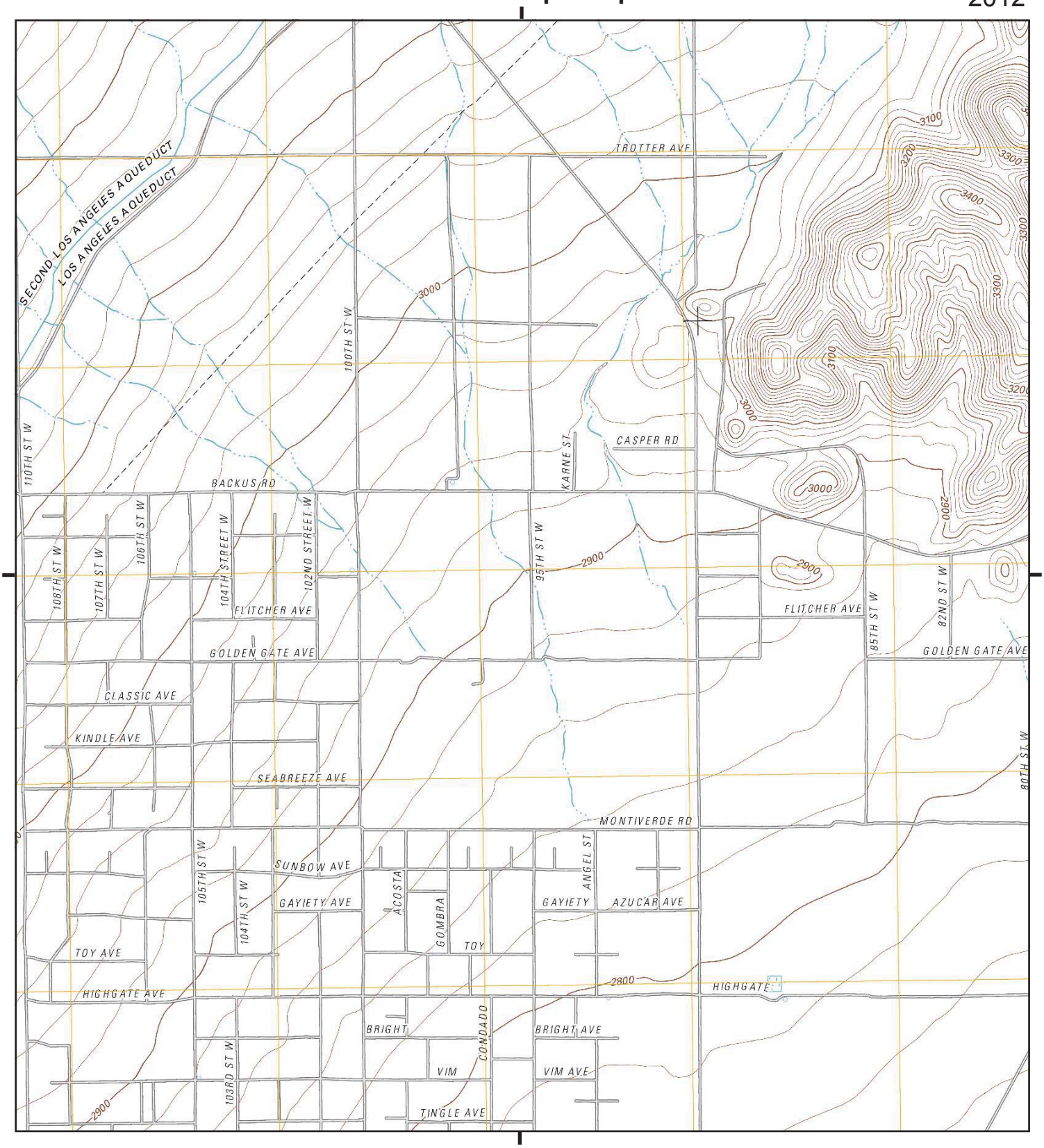


Elizabeth Lake

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

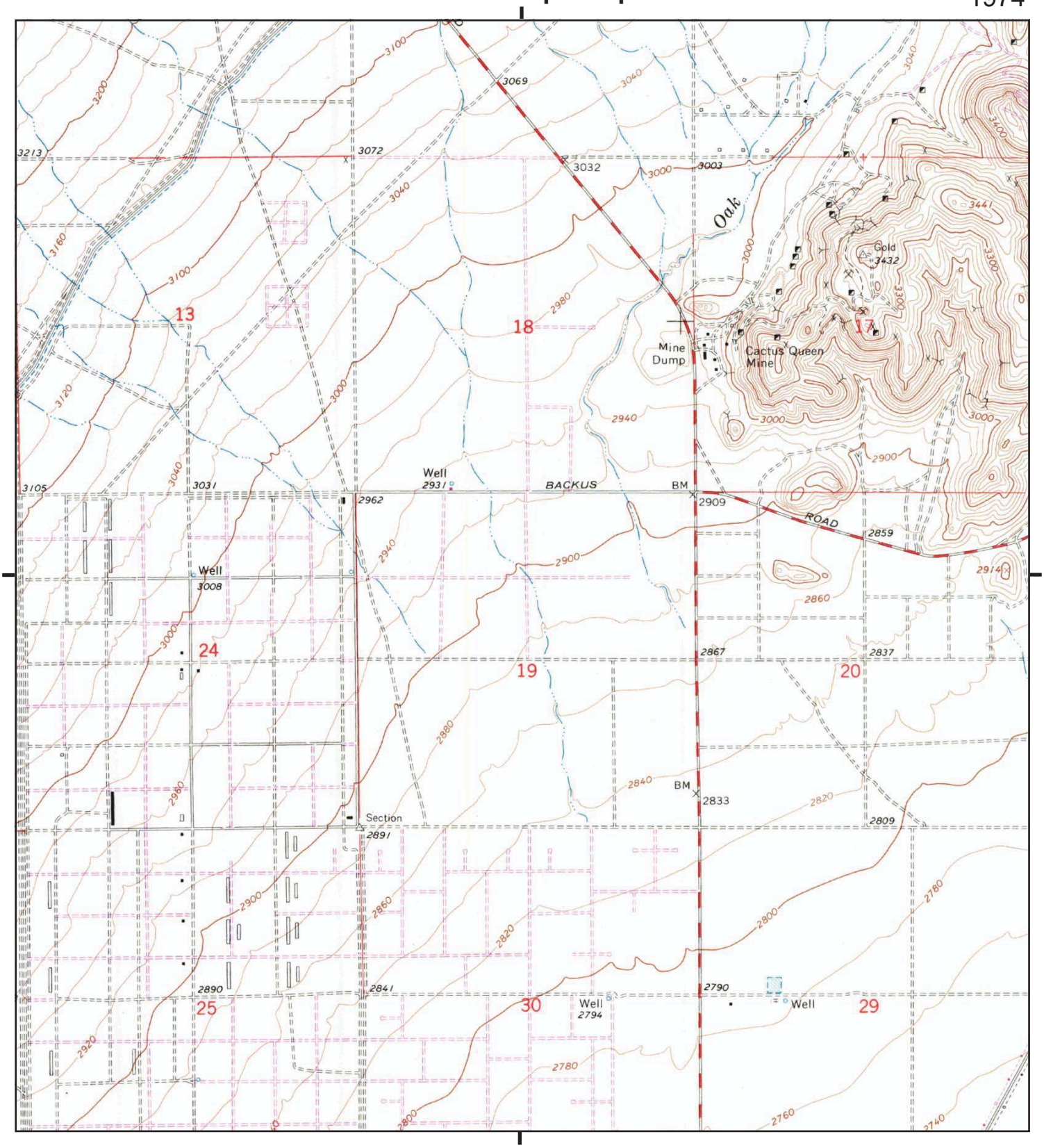
TP, Willow Springs, 2012, 7.5-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1974



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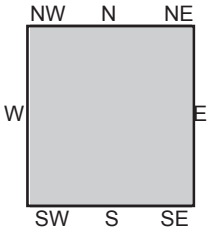


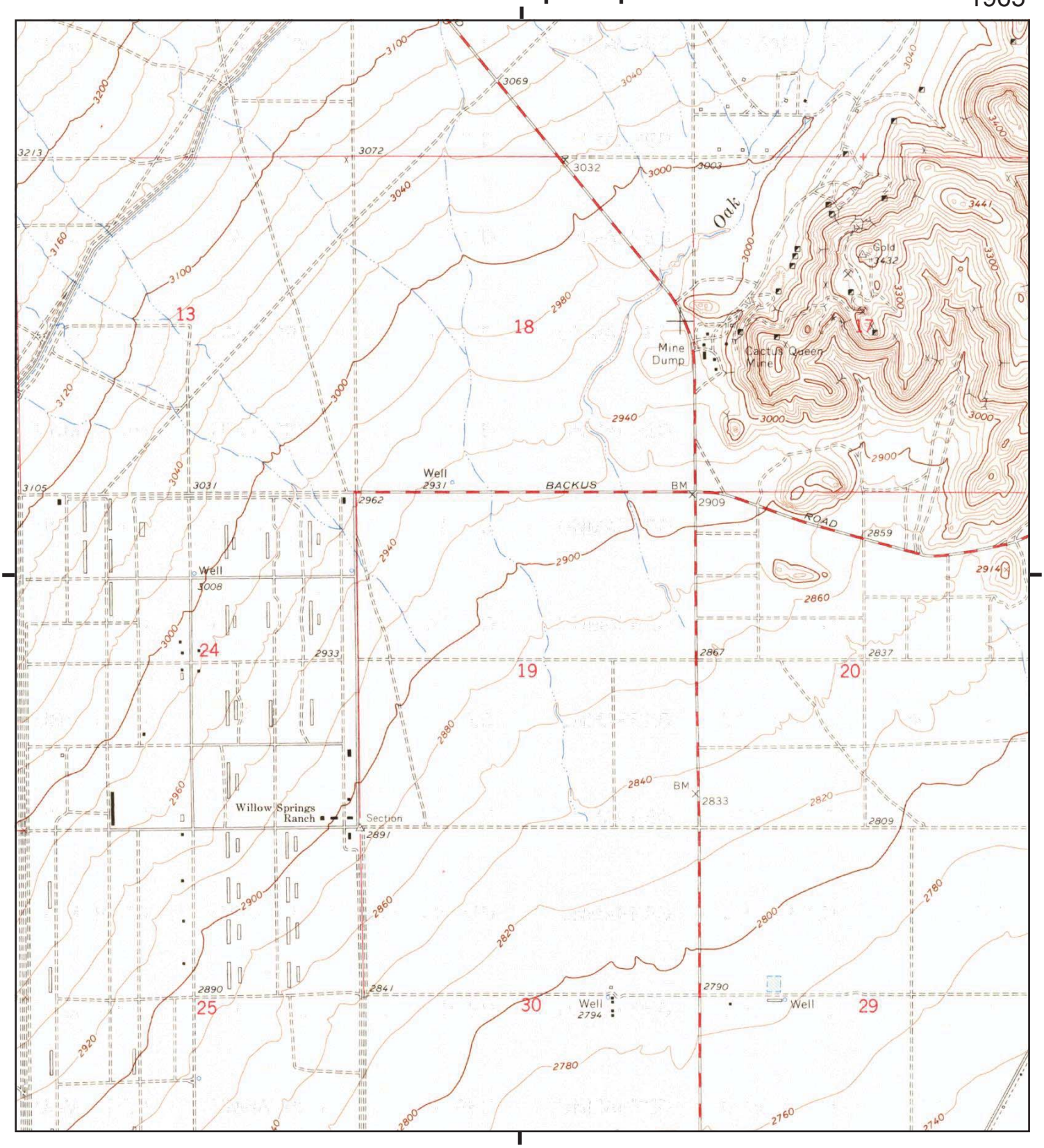
TP, Willow Springs, 1974, 7.5-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1965



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W E
SW S SE

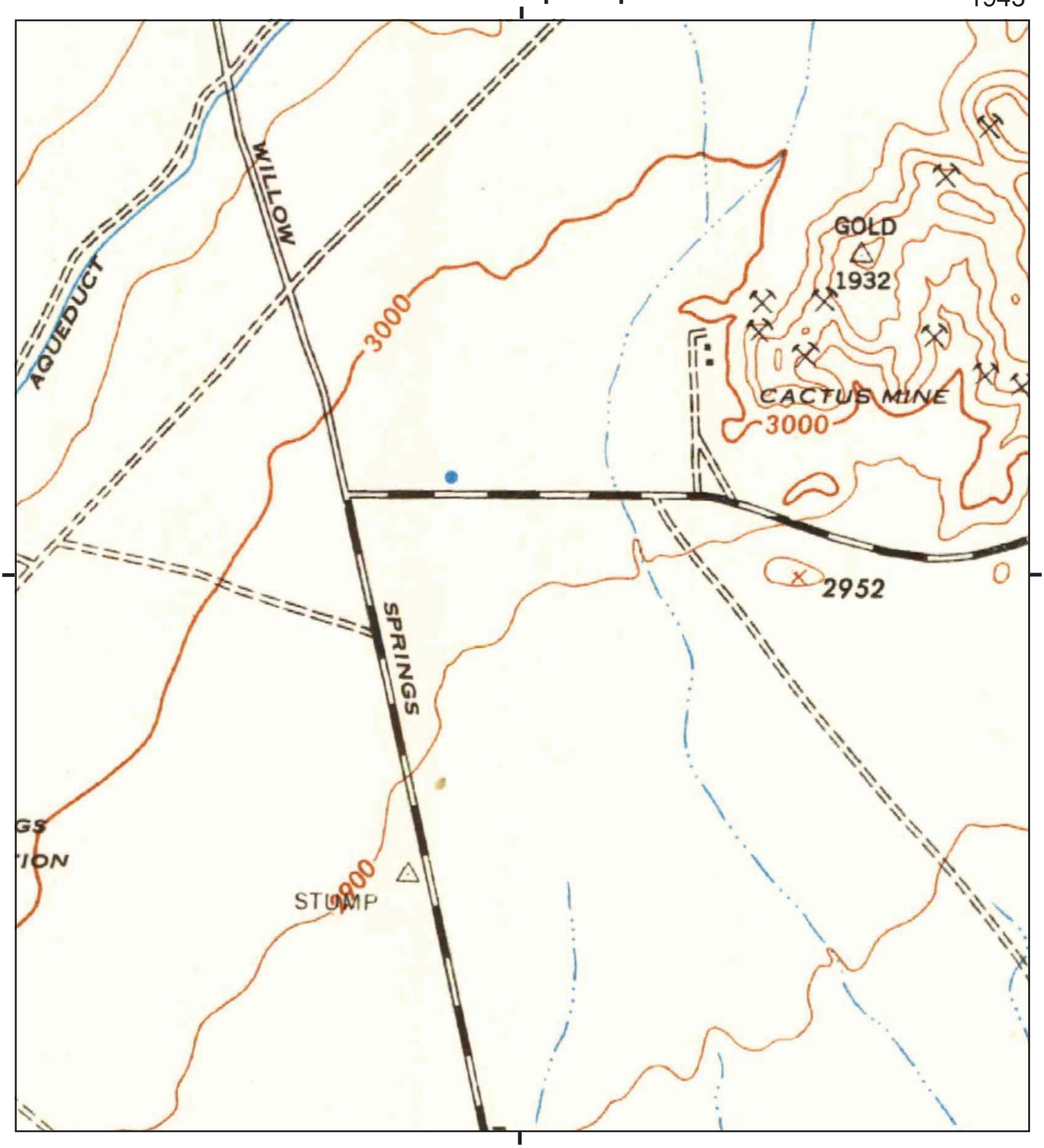
TP, Willow Springs, 1965, 7.5-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1943



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

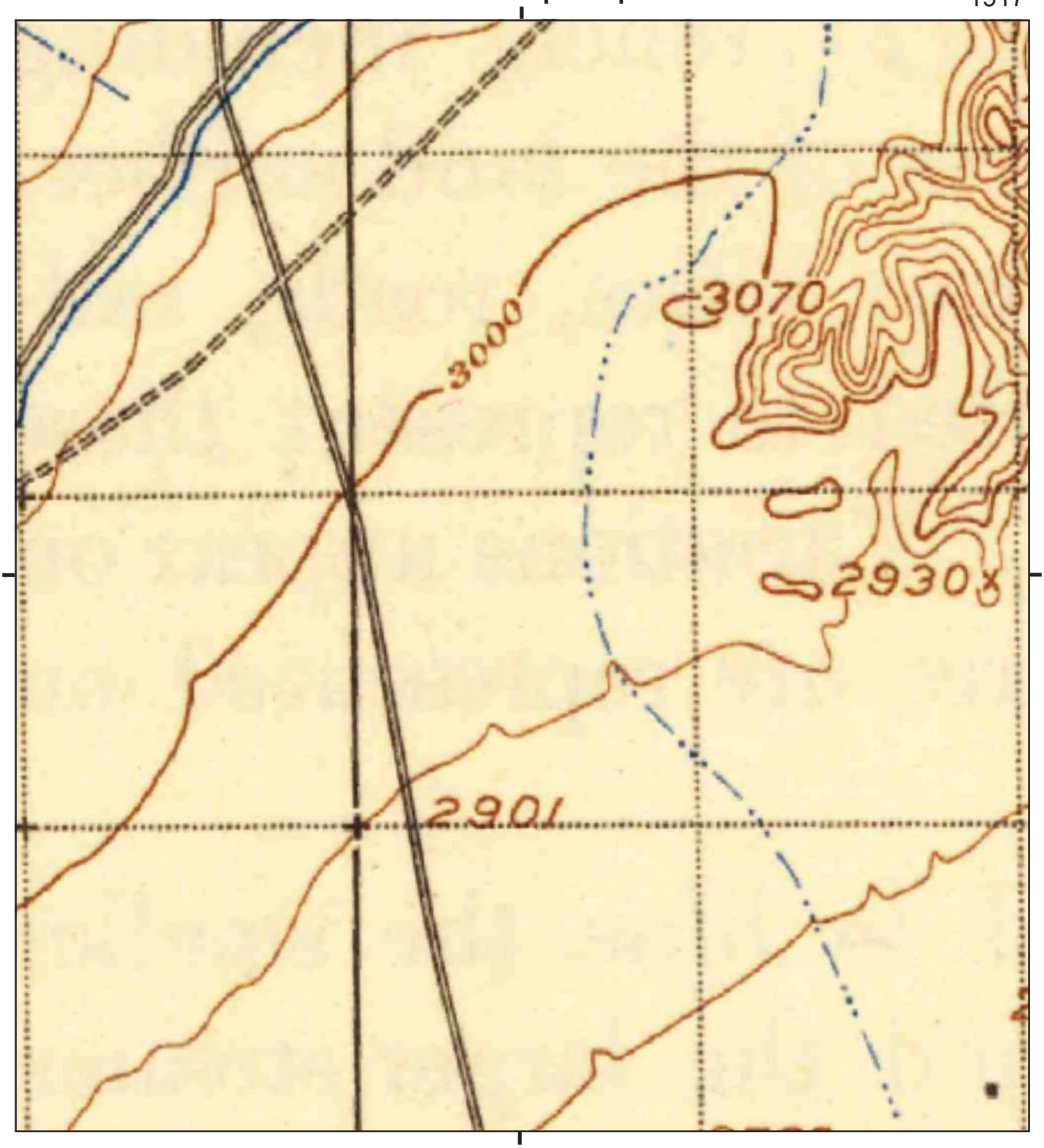
TP, Willow Springs, 1943, 15-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1917



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

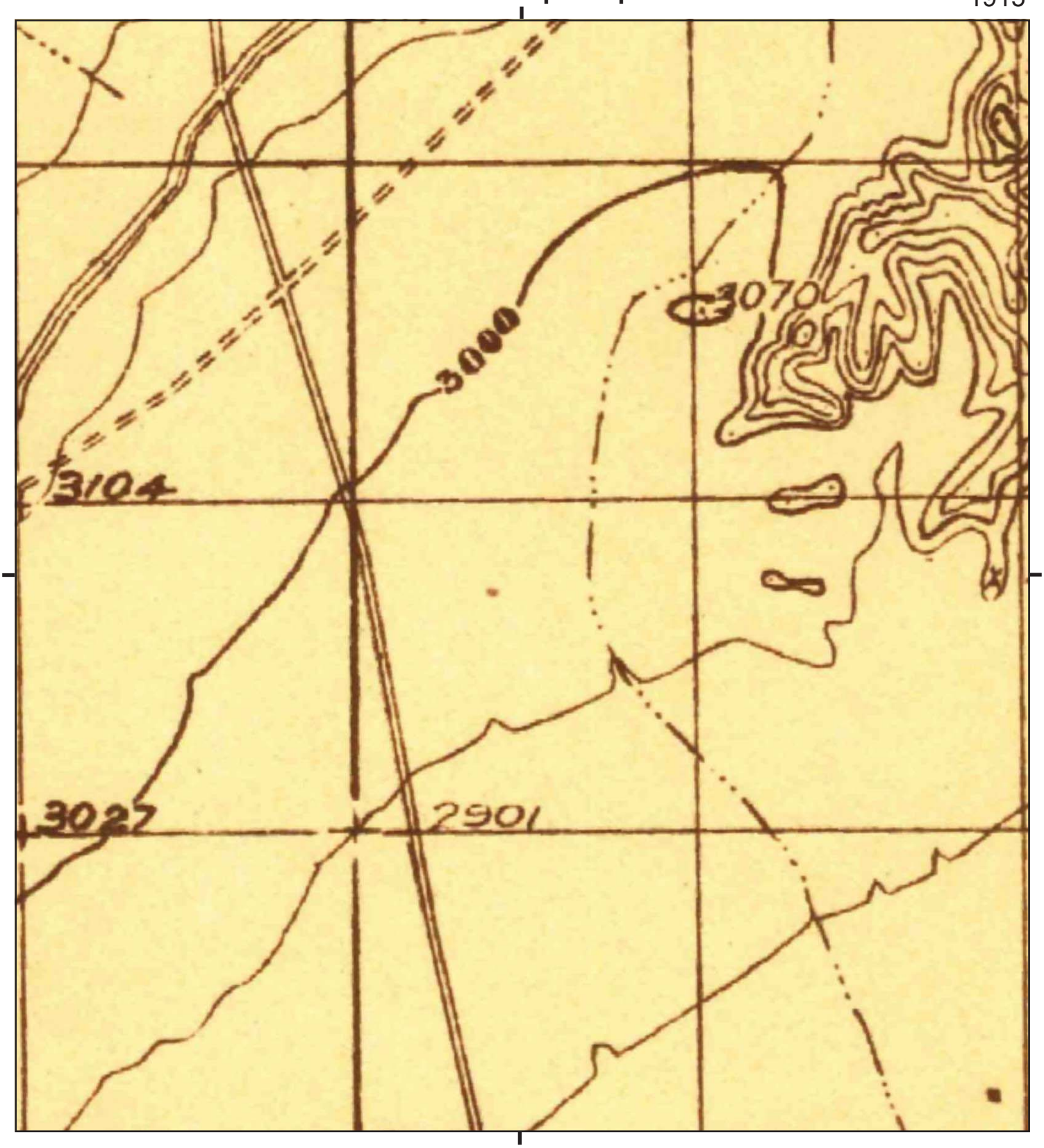
TP, Elizabeth Lake, 1917, 30-minute

SITE NAME: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

Historical Topo Map

1915



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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: Syracuse - Tours Site
ADDRESS: Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560
CLIENT: Insight Environmental Consultants, Inc.

N

EDR CITY DRECTORY ABSTRACT

Syracuse - Tours Site
Backus Rd & Tehachapi Willow Springs Rd
Rosamond, CA 93560

Inquiry Number: 4566463.5
March 17, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

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.

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
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services
1995	☐	☐	Cole Information Services
1992	☐	☐	Cole Information Services
1990	☐	☐	Haines Criss-Cross Directory
1985	☐	☐	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

Backus Rd & Tehachapi Willow Springs Rd
Rosamond, CA 93560

Year	CD Image	Source	
BACKUS RD			
2013	pg A1	Cole Information Services	
2008	-	Cole Information Services	Target and Adjoining not listed in Source
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1990	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source
TEHACHAPI WILLOW SPRINGS RD			
2013	pg A2	Cole Information Services	
2008	pg A3	Cole Information Services	
2003	pg A4	Cole Information Services	
1999	pg A5	Cole Information Services	
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1990	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

BACKUS RD 2013

5464 CHRISTOPHER WATTS
6350 ANDREA HAYNES

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 2013

3720	OCCUPANT UNKNOWN
4730	OCCUPANT UNKNOWN
4752	ELIZABETH AYALA
4822	EDWARD GOODWIN
4890	HAROLD BRAGG
5488	ROBIN REICHARD
5491	CATHY HOUSE
5792	CECILIA WILLEY
6503	OCCUPANT UNKNOWN
6963	JOSE MORALES
7500	OCCUPANT UNKNOWN
8884	DON MUMFORD
9428	JANE HUDDLESTON
11715	DARWIN MCNEIL

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 2008

4730	OCCUPANT UNKNOWN
4752	OCCUPANT UNKNOWN
4822	MARTIN GJELSVIK
4890	HAROLD BRAGG
5488	ALESSO FARMS
	ROBIN REICHARD
5491	GENE HOUSE
5792	CECILIA WILLEY
6963	JOSE MORALES
8884	DON MUMFORD
9428	JANE HUDDLESTON
11715	DARWIN MCNEIL

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 2003

6963 CALANDRI JOHN FARMS

Target Street	Cross Street	Source
✓	-	Cole Information Services

TEHACHAPI WILLOW SPRINGS RD 1999

4822	MARTIN GJELSVIK
4890	HAROLD BRAGG
5488	ROBIN REICHARD
5491	GENE HOUSE
5792	CECILIA WILLEY
6963	JOSE MORALES
8884	DON MUMFORD
9428	JANE HUDDLESTON
11715	DEBRA MCNEIL

EDR PROPERTY TAX MAP REPORT

EDR ENVIRONMENTAL LIENSEARCH

APPENDIX C: REGULATORY RECORDS DOCUMENTATION

Syracuse - Tours Site
Backus Rd/Tehachapi Willow Springs Rd
Rosamond, CA 93560

Inquiry Number: 4566463.2s
March 24, 2016

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

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

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	9
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-7
Physical Setting Source Map Findings	A-9
Physical Setting Source Records Searched	PSGR-1

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

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EXECUTIVE SUMMARY

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

TARGET PROPERTY INFORMATION

ADDRESS

BACKUS RD/TEHACHAPI WILLOW SPRINGS RD
ROSAMOND, CA 93560

COORDINATES

Latitude (North):	34.9473080 - 34˚ 56' 50.30''
Longitude (West):	118.3009140 - 118˚ 18' 3.29''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	381207.1
UTM Y (Meters):	3867775.0
Elevation:	2900 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5630781 WILLOW SPRINGS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120623
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
BACKUS RD/TEHACHAPI WILLOW SPRINGS RD
ROSAMOND, CA 93560

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

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

Federal CERCLIS NFRAP site list

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

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

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

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

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
SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

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

State and tribal voluntary cleanup sites

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

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

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

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

Local Lists of Registered Storage Tanks

SWEEPS UST	SWEEPS UST Listing
HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database

Local Land Records

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

Records of Emergency Release Reports

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

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
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

EXECUTIVE SUMMARY

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
FINDS	Facility Index System/Facility Registry System
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
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
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner	EDR Exclusive Historic Dry 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 not identified.

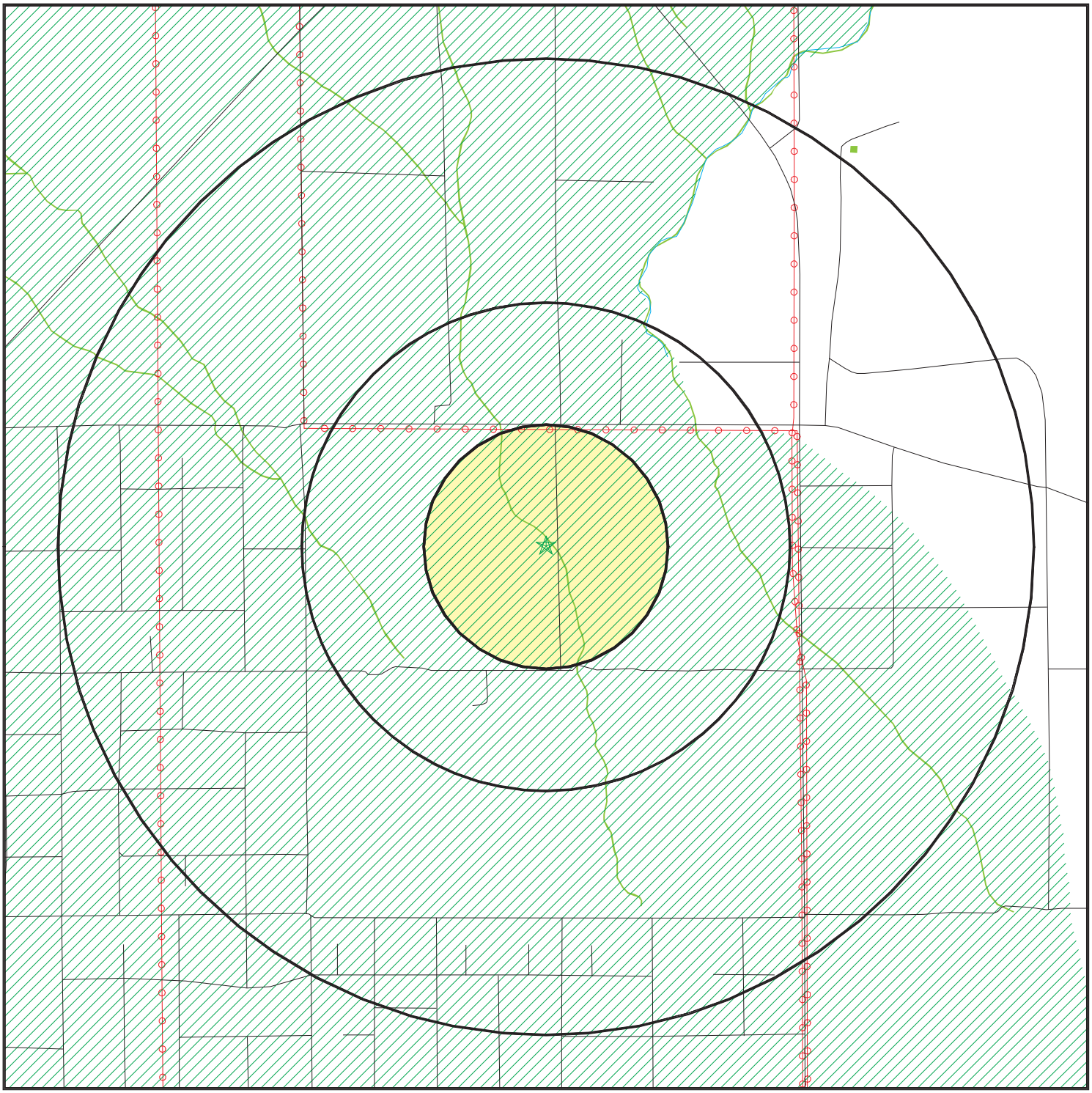
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
BLM-CACTUS GOLD MINES CO.	SEMS-ARCHIVE

OVERVIEW MAP - 4566463.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- 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: Syracuse - Tours Site ADDRESS: Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560 LAT/LONG: 34.947308 / 118.300914	CLIENT: Insight Environmental Consultants, Inc. CONTACT: Dolores Gough INQUIRY #: 4566463.2s DATE: March 24, 2016 5:30 pm

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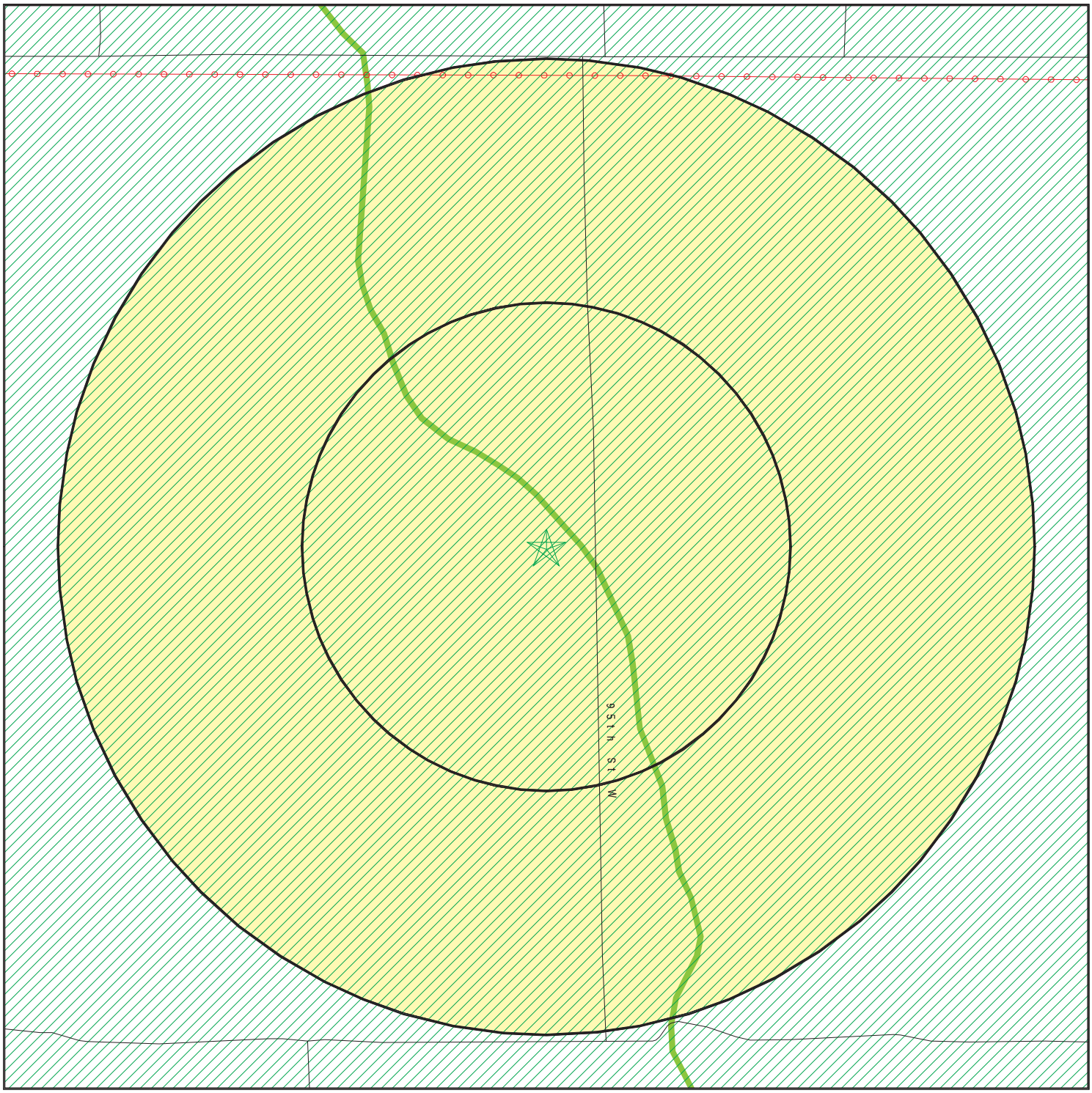
DETAIL MAP - 4566463.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

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: Syracuse - Tours Site ADDRESS: Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560 LAT/LONG: 34.947308 / 118.300914	CLIENT: Insight Environmental Consultants, Inc. CONTACT: Dolores Gough INQUIRY #: 4566463.2s DATE: March 24, 2016 5:32 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	TP		NR	NR	NR	NR	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-CESQG	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 CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	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
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0

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
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	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
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
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	TP		NR	NR	NR	NR	NR	0
MWMP	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
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MOJAVE	1003879733	BLM-CACTUS GOLD MINES CO.	STAR RTE 1-BACKUS RD & TEHACHA	93501	SEMS-ARCHIVE

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: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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: 10/30/2015	Source: EPA
Date Data Arrived at EDR: 11/07/2015	Telephone: N/A
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 01/26/2016
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/18/2016
	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: 03/26/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/08/2015	Telephone: 703-603-8704
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 01/06/2016
Number of Days to Update: 64	Next Scheduled EDR Contact: 04/18/2016
	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: 01/11/2016	Source: EPA
Date Data Arrived at EDR: 01/22/2016	Telephone: 800-424-9346
Date Made Active in Reports: 03/18/2016	Last EDR Contact: 02/19/2016
Number of Days to Update: 56	Next Scheduled EDR Contact: 06/06/2016
	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: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 06/06/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - 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). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

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: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
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: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/29/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

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

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 11/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 64

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/17/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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 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: Varies

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 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 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 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: 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: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

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: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

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: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases
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: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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: Quarterly

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: Semi-Annually

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: Varies

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: Semi-Annually

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: Semi-Annually

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: Semi-Annually

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: Annually

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: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

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: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

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: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/28/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/04/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2015
Date Data Arrived at EDR: 12/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
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: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 58

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/14/2016
Next Scheduled EDR Contact: 05/30/2016
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: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
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: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: No Update Planned

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: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
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: 09/30/2015
Date Data Arrived at EDR: 01/19/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 63

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
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

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: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

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: 11/25/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 16

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/13/2016
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

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: 12/17/2015
Date Data Arrived at EDR: 12/22/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
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: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/30/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

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: 12/16/2015
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 55

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing
The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing
The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/18/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

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: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
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: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
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: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
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: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/04/2016
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: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
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: 08/01/2015
Date Data Arrived at EDR: 08/26/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
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: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2016
Next Scheduled EDR Contact: 04/25/2016
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: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
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: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

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: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/26/2015
Date Data Arrived at EDR: 07/10/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 95

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
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: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/09/2016
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: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/07/2016
Next Scheduled EDR Contact: 04/18/2016
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: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

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: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
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: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
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: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
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: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
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: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2015
Date Data Arrived at EDR: 09/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 125

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/02/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
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: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

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: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/28/2015
Date Data Arrived at EDR: 12/29/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 23

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/29/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/10/2015
Date Data Arrived at EDR: 08/27/2015
Date Made Active in Reports: 10/01/2015
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/05/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 09/25/2015
Date Made Active in Reports: 11/05/2015
Number of Days to Update: 41

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
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: 01/26/2016
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 01/28/2016
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 59

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
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: 12/31/2014
Date Data Arrived at EDR: 10/14/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 58

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Annually

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

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
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: 01/11/2016
Date Data Arrived at EDR: 01/13/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 40

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Varies

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: 11/10/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 11/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 64

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/17/2016
Next Scheduled EDR Contact: 05/30/2016
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: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 03/01/2016
Number of Days to Update: 75

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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: 09/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
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: 07/23/2015
Date Data Arrived at EDR: 09/15/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 28

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
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 board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 06/16/2016
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
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: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/23/2016
Next Scheduled EDR Contact: 07/04/2016
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: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

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 Historic Gas 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 Historic Dry 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:

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: 01/11/2016
Date Data Arrived at EDR: 01/12/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 41

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/14/2016
Date Made Active in Reports: 03/01/2016
Number of Days to Update: 47

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 02/02/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 18

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/28/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2015
Date Data Arrived at EDR: 09/22/2015
Date Made Active in Reports: 10/14/2015
Number of Days to Update: 22

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/01/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 48

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/22/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/07/2016
Number of Days to Update: 31

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/30/2015
Date Data Arrived at EDR: 12/03/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 49

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

FRESNO COUNTY:

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: 01/05/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 45

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/04/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/02/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 48

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/25/2016
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 26

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/19/2015
Date Data Arrived at EDR: 06/18/2015
Date Made Active in Reports: 07/22/2015
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

KINGS COUNTY:

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: 11/19/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 18

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 27

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

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: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/19/2016
Date Data Arrived at EDR: 01/20/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 62

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/20/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/12/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 24

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 03/07/2016
Number of Days to Update: 84

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 10/05/2015
Date Data Arrived at EDR: 10/08/2015
Date Made Active in Reports: 10/15/2015
Number of Days to Update: 7

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 34

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 51

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 12/10/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 60

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/27/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/01/2015
Date Data Arrived at EDR: 11/17/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 65

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/03/2015
Date Data Arrived at EDR: 08/10/2015
Date Made Active in Reports: 09/11/2015
Number of Days to Update: 32

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/01/2015
Date Data Arrived at EDR: 11/11/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/10/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 12/11/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 41

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 60

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 60

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

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: 11/02/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

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: 12/14/2015
Date Data Arrived at EDR: 12/18/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 52

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

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: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/18/2015
Date Data Arrived at EDR: 12/22/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 48

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/21/2016
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/14/2015
Date Data Arrived at EDR: 10/15/2015
Date Made Active in Reports: 11/16/2015
Number of Days to Update: 32

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

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

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/17/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 59

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 18

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/14/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 39

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/05/2016
Date Data Arrived at EDR: 01/07/2016
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 32

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/23/2015
Next Scheduled EDR Contact: 04/11/2016
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 9

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/29/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 42

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

VENTURA COUNTY:

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: 12/28/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/30/2015
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/14/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

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: 12/28/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/30/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/17/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 46

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/18/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
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: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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 & Game
Telephone: 916-445-0411

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

SYRACUSE - TOURS SITE
BACKUS RD/TEHACHAPI WILLOW SPRINGS RD
ROSAMOND, CA 93560

TARGET PROPERTY COORDINATES

Latitude (North):	34.947308 - 34˚ 56’ 50.31’’
Longitude (West):	118.300914 - 118˚ 18’ 3.29’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	381207.1
UTM Y (Meters):	3867775.0
Elevation:	2900 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property 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 principal 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).

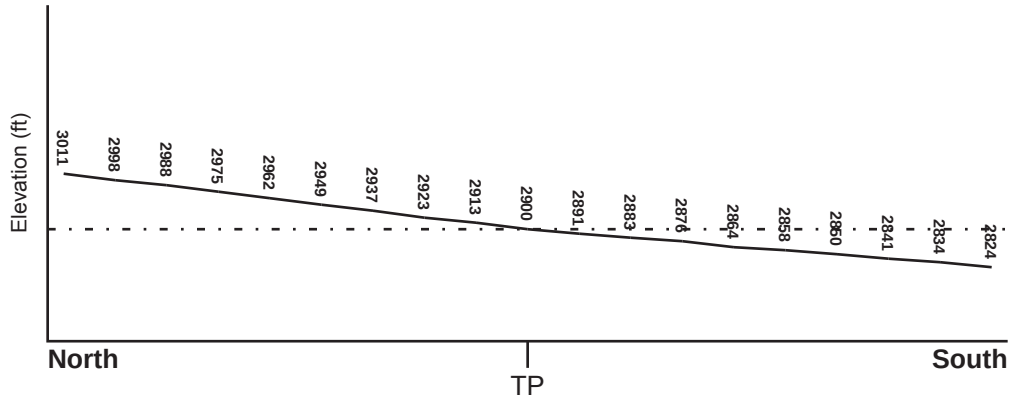
TOPOGRAPHIC INFORMATION

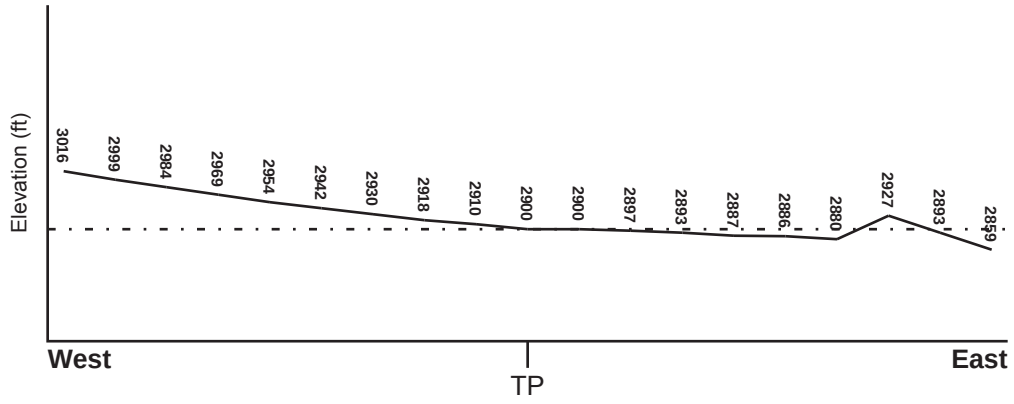
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 2900 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
KERN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06029C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
WILLOW SPRINGS	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

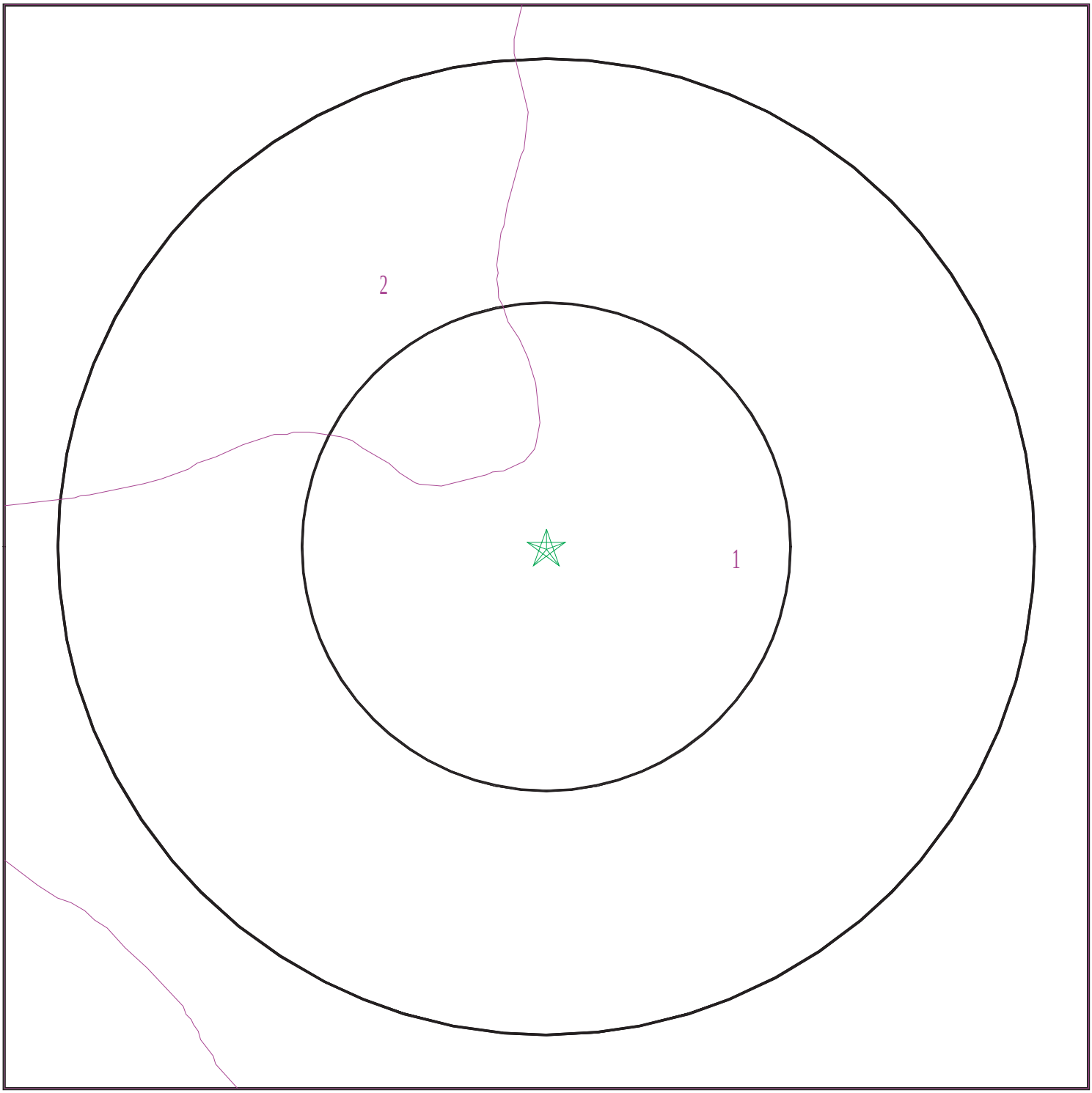
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4566463.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Syracuse - Tours Site	CLIENT:	Insight Environmental Consultants, Inc.
ADDRESS:	Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560	CONTACT:	Dolores Gough
		INQUIRY #:	4566463.2s
LAT/LONG:	34.947308 / 118.300914	DATE:	March 24, 2016 5:33 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: CAJON

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	20 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 2

Soil Component Name: CAJON

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	35 inches	59 inches		Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

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
A1	USGS40000158587	1/4 - 1/2 Mile SW
B3	USGS40000158682	1/2 - 1 Mile West

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

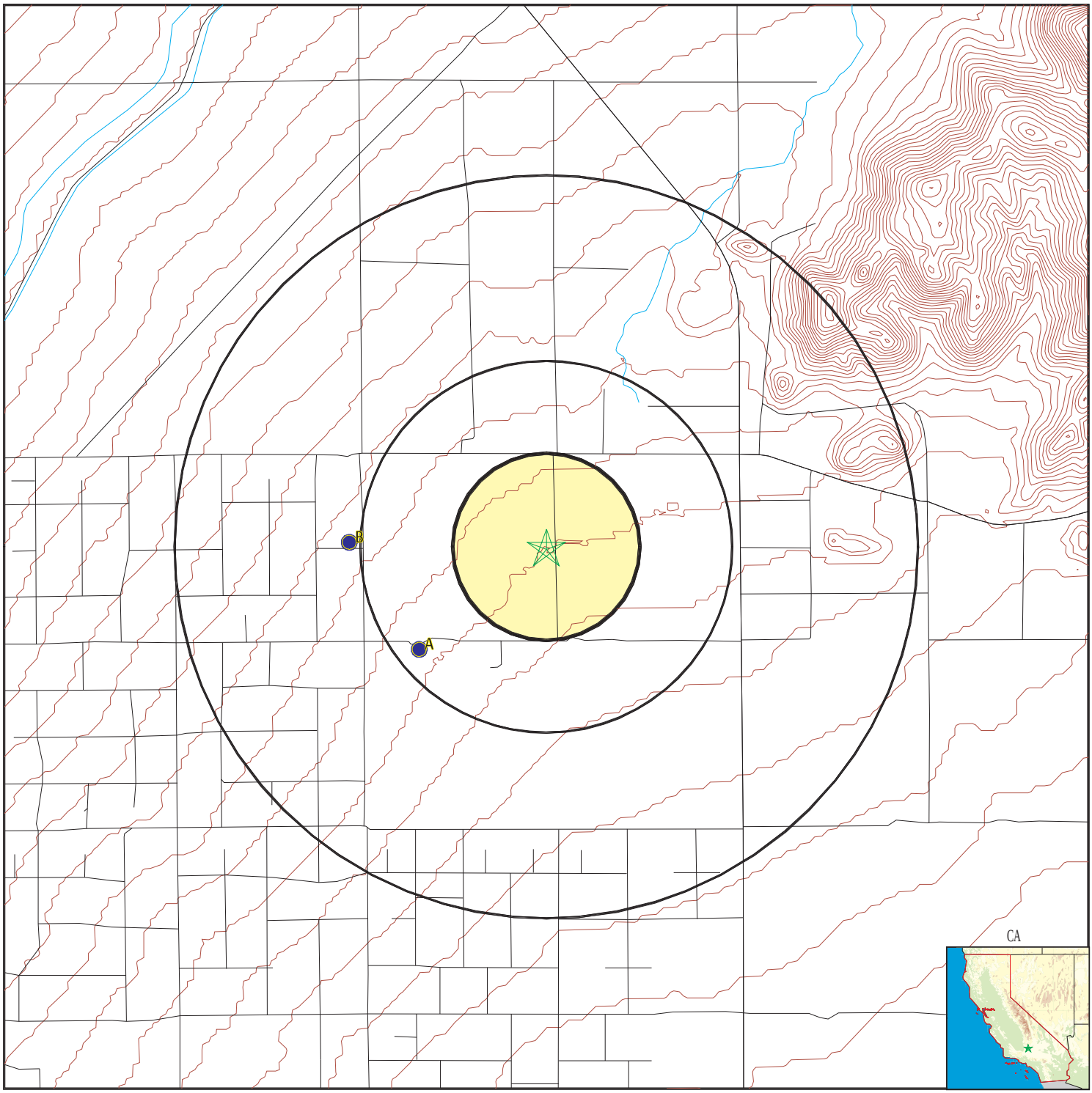
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	CADW60000033313	1/4 - 1/2 Mile SW
B4	CADW60000028401	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 4566463.2s



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

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME: Syracuse - Tours Site ADDRESS: Backus Rd/Tehachapi Willow Springs Rd Rosamond CA 93560 LAT/LONG: 34.947308 / 118.300914	CLIENT: Insight Environmental Consultants, Inc. CONTACT: Dolores Gough INQUIRY #: 4566463.2s DATE: March 24, 2016 5:33 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **SW** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000158587**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-345636118182001		
Monloc name:	010N013W19M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18030003	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.9433073
Longitude:	-118.3064679	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	2905.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1952	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	770
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 73

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1989-10-19	319.47		1989-03-23	317.89	
1988-03-28	317.33		1987-11-03	317.30	
1987-02-23	316.81		1986-10-22	317.20	
1986-03-25	317.14		1985-10-30	317.28	
1985-03-25	317.13		1984-10-30	317.20	
1984-03-05	317.23		1983-10-27	317.28	
1983-04-26	317.25		1982-10-06	317.32	
1982-02-18	317.27		1981-11-19	317.23	
1981-04-17	316.83		1980-10-15	316.97	
1980-04-16	317.18		1979-10-24	317.15	
1979-02-28	316.59		1978-10-17	316.56	
1978-03-27	316.80		1977-10-12	316.69	
1977-03-07	316.49		1976-11-04	316.33	
1976-02-12	316.25		1975-10-15	316.29	
1975-02-05	316.31		1974-10-22	315.67	
1974-02-15	316.01		1973-10-04	315.52	
1973-03-24	315.81		1972-10-11	316.08	
1972-03-14	316.53		1971-10-26	317.04	
1971-03-15	318.00		1970-10-20	318.25	
1970-03-16	319.14		1969-09-18	319.38	
1969-04-14	318.92		1968-10-31	319.13	
1968-04-02	318.38		1967-11-01	318.55	
1967-10-10	318.51		1967-03-22	317.65	
1966-10-18	318.08		1966-03-08	316.85	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1965-10-18	316.94		1965-03-15	315.35	
1964-10-08	315.71		1964-03-04	314.60	
1963-11-06	314.77		1963-03-13	313.92	
1962-11-07	313.80		1962-03-01	311.88	
1961-11-08	312.07		1961-02-27	310.00	
1960-11-10	309.66		1960-03-02	309.15	
1959-12-01	309.25		1959-03-09	306.61	
1958-11-04	307.32		1958-03-04	305.60	
1957-11-15	304.11		1957-03-05	303.97	
1956-09-26	304.12		1956-05-21	304.10	
1956-03-21	302.34		1955-03-01	299.12	
1954-11-29	299.20		1954-02-08	295.76	
1953-01-20	291.61				

A2
SW
1/4 - 1/2 Mile
Higher

CA WELLS **CADW60000033313**

Objectid:	33313
Latitude:	34.9433
Longitude:	-118.3074
Site code:	349433N1183074W001
State well numbe:	10N13W19M001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	15
County name:	Kern
Basin code:	’6-44’
Basin desc:	Antelope Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000033313

B3
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000158682**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-345651118183201		
Monloc name:	010N014W24A001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18030003	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.9474737
Longitude:	-118.3098014	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	2945.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 26

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-03-29	337.85		2003-03-24	338.11	
2002-03-26	338.32		2001-03-21	340.12	
2000-03-21	340.09		1999-03-18	341.06	
1998-03-18	343.51		1997-03-03	345.85	
1996-04-18	345.45		1995-04-20	344.59	
1994-04-11	343.52		1993-04-20	343.63	
1992-04-16	345.50		1991-03-22	346.50	
1990-03-15	343.62		1989-03-23	341.78	
1988-03-28	341.25		1987-03-11	341.32	
1986-03-25	341.47		1985-03-25	341.39	
1983-04-14	338.60		1982-02-18	338.59	
1981-04-17	338.55		1980-04-16	338.70	
1979-02-22	337.92		1978-12-05	346.35	

B4
West
1/2 - 1 Mile
Higher

CA WELLS **CADW60000028401**

Objectid:	28401
Latitude:	34.9475
Longitude:	-118.3107
Site code:	349475N1183107W001
State well numbe:	10N14W24A001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	15
County name:	Kern
Basin code:	’6-44’
Basin desc:	Antelope Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000028401

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, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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 & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
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.

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

5500 Ming Ave | Suite 140 | Bakersfield, CA 93309 | **P** (661) 282-2200 | **F** (661) 282-2204
trinityconsultants.com

Insight Environmental Consultants | Trinity Consultants

Project Number: 160505.0076

Current Property Owner Questionnaire

Insight Environmental Consultants, Inc. has been retained to complete a Phase I Environmental Site Assessment of the property listed below. Completion of this questionnaire is required of the Current Property Owner based on the American Standard for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-13 and by the Code of Federal Regulations (40 CFR 312) All "Appropriate Inquiry". The responses provided on this questionnaire are considered confidential. Please complete the questionnaire to the best of your knowledge and return the completed form by email (preferred), Fax or US Postal Service to:

Mr. Ronald W. Hunter
Insight Environmental Consultants, Inc.
5500 Ming Ave., Suite 140
Bakersfield, CA 93309
T: 661-282-2200 | F: 661-282-2204
Email: rhunter@insenv.com

Property Name:	**Trafalgar, APN: 346-022-03**
Property Address:	**N/2 Sec 19 T10N R13W SBM**

1. **Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject property?**

   ☒ No ☐ Yes _____

2. **Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject property?**

   ☒ No ☐ Yes _____

3. **Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?**

   ☒ No ☐ Yes _____

4. **Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?**

   ☒ No ☐ Yes _____

5. **Are you aware of any commonly known or reasonably ascertainable information about the property? For example: Do you know the past uses of the property?**

   ☒ No ☐ Yes _____

6. Do you know specific chemicals that are present or once were present at the property?

☒ No ☐ Yes _____

7. Do you know of spills or other chemical releases that have taken place at the property?

☒ No ☐ Yes _____

8. Do you know of environmental cleanups that have taken place at the property?

☒ No ☐ Yes _____

9. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence of contamination at the property?

☒ No ☐ Yes _____

10. Is the property or has the property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, waste treatment/storage/disposal or recycling facility?

☒ No ☐ Yes _____

11. Are you aware of any damaged or discarded automotive or industrial batteries, pesticides, paints or other chemicals at the subject property?

☒ No ☐ Yes _____

12. Are there currently any industrial drums or other bulk chemicals at the subject property?

☒ No ☐ Yes NOT AWARE OF

13. Are you aware of contaminated fill dirt at the subject property, i.e. fill dirt brought onto the property which came from a contaminated site or an unknown location?

☒ No ☐ Yes _____

14. Are there currently any pits, ponds or lagoons in connection with waste disposal or treatment at the subject property?

☒ No ☐ Yes NOT AWARE OF

15. Are there any current or previous registered or unregistered storage tanks (aboveground or underground) at the property?

☒ No ☐ Yes NOT AWARE OF

16. Are there any vent pipes, fill pipes or access ways protruding from the ground at the property?

☒ No ☐ Yes NOT AWARE OF

17. Is the subject property served by a private well/non-public water system or a private septic system?

☒ No ☐ Yes _____

18. Is any industrial wastewater (other than sanitary sewer) discharged from the subject property?

☒ No ☐ Yes _____

19. Are you aware of any flooring, drains or walls located within the subject property that are stained by substances other than water, or that are emitting foul odors at the subject property?

☒ No ☐ Yes _____

20. Are there any monitoring wells at the subject property?

☒ No ☐ Yes _____

21. Is there any transformer, capacitor, or any other hydraulic equipment that contains polychlorinated biphenyls (PCBs) or that contains unknown dielectric fluids on the subject property?

☒ No ☐ Yes _____

22. What year did you/or current owner purchase the subject property? MARCH 2006

Additional Comments: _____

Please provide the following documents, if available:

N/A

- ☐ Environmental site assessment reports
- ☐ Environmental compliance audit reports
- ☐ Geotechnical studies
- ☐ Reports regarding hydrogeological 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

Identity of Person Providing This Information:

Printed Name: CARLO BONDANELLI Signature: [signature]

Title/Relationship to Property: AGENT Date: MARCH 15, 2016

5500 Ming Ave | Suite 140 | Bakersfield, CA 93309 | P (661) 282-2200 | F (661) 282-2204
trinityconsultants.com

Insight Environmental Consultants | Trinity Consultants

USER QUESTIONNAIRE

Property: APN 346-022-03, N/2 Sec 19 T10N R13W SBM, California

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)?
__X_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)?
__X_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)?
__X_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 __X_YES If yes, please explain: Fair Market Price.

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*?

__X_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)?
__X_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
- X Risk assessments

Name (Print)	Elliott MacDougall
Signature	
Title	VP, Development
Date	3/17/16
Representing	WDG Capital Partners III, LP
Address	PO Box 31159 Santa Barbara, CA 93130
Phone Number	805-617-0309
Email Address	emacdougall@wdgcp.com

APPENDIX E: RESUME OF ENVIRONMENTAL PROFESSIONAL

Dolores Gough, P.E.

Senior Consultant — Bakersfield

AREAS OF SPECIALIZATION

- NPDES Permitting
- Waste and Wastewater Management
- SPCC Plan and SWPPP Development
- Phase I & II Environmental Assessments
- Soil & Groundwater Remediation
- Air Quality Permitting

EDUCATION

M.S., Environmental Engineering, University of So. California
B.S., Chemical Engineering, University of Santo Tomas

AFFILIATIONS

National and California Environmental Health Association

CERTIFICATIONS

Registered Professional Civil Engineer in CA
Registered Environmental Health Specialist in CA
Construction 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, storm water pollution prevention plans (SWPPP) for construction projects and industrial activities, spill prevention control and countermeasures plans (SPCC), technical reports for waste water discharges to land, and Phase I and II environmental assessments. She is also experienced in soil and water/wastewater investigation.

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 permit engineer for the local air district

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, 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 - 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.

NPDES Permitting - Conducted preliminary assessments of industrial operations to determine storm water permitting requirements. Developed Storm Water Pollution Prevention plans or Technical Reports. Prepared Reports of Waste Discharge in support of applications to reclaim waste water by applying it to land as part of Waste Discharge Requirements (WDR) permits.

EMPLOYMENT HISTORY

2014 – Present Trinity Consultants – Senior Consultant
2009 – Present Columbia Southern University, College of Safety & Emergency Services – Adjunct 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

Appendix H

Preliminary Geotechnical Report

ESA

PRELIMINARY GEOTECHNICAL EVALUATION
PROPOSED APOLLO SOLAR PROJECT
ROSAMOND AREA, KERN COUNTY, CALIFORNIA

BSK PROJECT G17-095-10B

PREPARED FOR:

QUAD KNOPF, INC.
P.O. BOX 3699
VISALIA, CA 93278

June 27, 2017

PRELIMINARY GEOTECHNICAL EVALUATION
PROPOSED APOLLO SOLAR PROJECT
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Bakersfield Project: G17-095-10B

June 27, 2017

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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 Planned Construction 1
1.2 Purpose and Scope Of Services 1
2.0 SITE CONDITIONS 1
2.1 Site Description and Surface Conditions 1
2.2 Site Observations 2
2.3 Site Topography 2
2.4 Site Surface Soils 2
2.5 Groundwater Conditions 3
2.6 Geologic Setting 3
3.0 GEOLOGIC/SEISMIC HAZARDS 3
3.1 Kern County General Plan Physical Constraints 3
3.2 Fault Rupture Hazard Zones In California 3
3.3 State Of California Seismic Hazard Zones (Liquefaction and Landslides) 4
3.4 Slope Stability and Potential For Slope Failure 4
3.5 Land Subsidence 4
3.6 Expansive Soils 5
3.7 Flood and Inundation Hazards 5
3.7.1 Flood Hazards 5
3.7.2 Inundation Hazards - Dams 5
3.8 Flooding Scour 5
4.0 SEISMIC HAZARD ASSESSMENT 5
4.1 Seismic Sources 5
4.1 Earthquake Ground Motion, 2016 California Building Code 6
4.1.1 Site Class 6
4.1.2 Seismic Design Criteria 6
4.1.3 Geometric Mean Peak Ground Acceleration 7
4.1.4 Seismic Design Category 8
5.0 REGULATORY SETTING 8
5.1 FEDERAL REGULATIONS 8
5.2 STATE REGULATIONS 9
5.3 LOCAL REGULATIONS 10
5.4 KERN COUNTY ENVIRONMENTAL CHECKLIST 12
5.5 CUMULATIVE IMPACTS 15
6.0 LIMITATIONS 15
7.0 REFERENCES 16

FIGURES

Figure 1: Vicinity Map
Figure 2: Site Area Map
Figure 3: Topographic Map
Figure 4: Soil Map
Figure 5: Area Hydrograph
Figure 6: Geologic Map
Figure 7: Kern County Physical Constraints
Figure 8: Regional Fault Map
Figure 9: FEMA Flood Map

TABLES

Table 1: Seismic Hazard Deaggregation
Table 2: Spectral Acceleration Parameters
Table 3: Geometric Mean Peak Ground Acceleration

APPENDICES

Appendix A:
Figure A-1: Photograph Location Map
Photo Plates 1 to 17
Appendix B: USDA Soil Properties

1.0 INTRODUCTION

This revised report presents the results of a preliminary geotechnical evaluation for the Proposed Apollo Project site (Site), in the Rosamond Area, Kern County, California. The project consists of three areas Sunbow (165 acres), Tours (109 acres) and Syracuse (164 acres). The Site is located along Backus Road northwest of Rosamond, in unincorporated Kern County, California as shown on the Site Vicinity Map, Figure 1.

BSK performed Site reconnaissance on June 6, 2017 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 AV Apollo Solar Project (proposed project), which includes the Sunbow, Syracuse, and Tours sites, would develop a photovoltaic (PV) solar facility and associated infrastructure necessary to generate a combined 60 megawatts (MW) of renewable electrical energy on approximately 493.5 acres of privately-owned land. The proposed project consists of: Syracuse Solar (Site 1), Tours Solar (Site 2) and Sunbow Solar (Site 3).

The project proponents propose that the project be built at the same time as a single, 60-MW facility or, alternatively, could be developed as three, independent 20-MW facilities on the approximately 160-acre Site 1, 160-acre Site 2 and the 173.5-acre Site 3. Depending upon market conditions, the sites may also be developed with 20 MW of advanced energy battery storage each. The proposed project would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on Sites 1 and 2 as shown on the Site Map, Figure 2.

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 Sections 18 and 19, Township 26 South, Range 39 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 near

Mojave, California, along Backus Road, between 90th Street West and 100th Street West (also known as Tehachapi Willow Springs Road), south of State Route (SR) 58 and west of SR 14.

2.2 Site Observations

BSK performed Site reconnaissance surveys on June 6, 2017 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. North-south oriented dry washes and gullies were observed at several locations. Evidence of surficial soil erosion was observed on the unpaved roadways near locations 11, 12, 13 and 15 (Figure A-1, Appendix A). There appears to be a water well and associated pump house and water tank near location 28.

2.3 Site Topography

As shown on Figure 3, the Site area slopes to the southeast with a slope gradient of approximately 2% (Vertical/Horizontal). Elevations range from approximately 3,072 feet (NAVD27 datum) near the northwest corner of Site perimeter to 2,867 feet (NAVD27 datum) near the southeast Site perimeter. There are several mapped northwest to southeast oriented intermittent streams crossing the Site. The intermittent streams originate in the hills northwest of the Site. Oak Creek, an intermittent stream is located just east of the Tours Area.

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:

Sunbow Area

- Cajon gravelly loamy sand, 0 to 9 percent slopes.

Syracuse Area

- Cajon gravelly loamy sand, 0 to 9 percent slopes,
- Cajon loamy sand, 0 to 5 percent slopes,
- Garlock loamy sand, 2 to 9 percent slopes.

Tours Area

- Cajon loamy sand, 0 to 5 percent slopes.

The soils mapped in the Site area have a predominant engineering classifications of SM (Silty Sand) and SP (Sand), and GM (Gravelly Sand) and would be considered non-plastic to low plasticity with low expansive potential. The Garlock series soil, located in the southern section of the Syracuse area, at depths of 12 inches to 24 inches, has a classification of SC that indicates a fraction of clay present. Soils with the SC 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 10N14W24A001S and 10N13W19M001S located approximately 300 feet west and 100 feet south of the Syracuse Area, respectively. The groundwater data indicates that during the 1950s the depth to groundwater was approximately 290 feet below the ground surface (bgs) and more recent data indicates that groundwater is greater than 330 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 Mojave 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 upland area to the northwest of the Site consists of Pleistocene alluvial fans that originated from erosion of the Tehachapi Mountains. The Middle Buttes are located east of the Site and consist of Miocene volcanic rocks. The Middle Buttes area, is currently and historically, an area of mining activity for gold and silver. 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 northeast portion of the site is in a Kern County designated flood hazard zone. Other physical constraint hazard zones are not located on the site or transmission line options.

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 Garlock Fault located approximately 7 miles northwest of the site.

As shown on Figure 8, the Willow Springs/Rosamond Fault, Cottonwood Fault and Tyler Horse Fault are located approximately 4 miles south, 7 miles southwest and 7 miles west 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 Garlock Fault located approximately 7 miles northwest of the Site. Other significant active faults include the San Andreas Fault located approximately 20 miles south of the Site and the White Wolf Fault located approximately 29 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 intermittent stream channels and arroyos during high intensity rainfall events located upstream.

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 not located in an area susceptible to significant subsidence due to petroleum or groundwater withdrawal. The Antelope Valley Groundwater Basin has reported ground subsidence due to groundwater withdrawal in the area south of Rosamond near Lancaster. The area of identified current and historical subsidence in the Antelope Valley Groundwater Basin is approximately 5 miles south of the Site (CDWR2). 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 project area. As stated in Section 2.4, expansive soils may be present in the in the southern section of the Syracuse area. 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 project Site is located in a designated 100 year flood zone.

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

The intermittent stream channels and arroyos may experience significant flow volumes and velocities during flooding events. Scour may occur on structures placed near channels undermining and 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 project areas. For liquefaction and seismic settlement, the modal magnitude (Mw) of 7.69 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)	Modal Magnitude (Mw)	Epsilon (Mean Values)
Sunbow Area	11.7	7.69	1.0
Syracuse	12.9	7.69	1.1
Tours	13.3	7.69	1.1

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**
SUNBOW			
MCE Mapped Spectral Acceleration (g)	S_S = 1.318	S_1 = 0.552	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} = 1.318	S_{M1} = 0.827	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.879	S_{D1} = 0.552	ASCE Equations 11.4.3-4
SYRACUSE			
MCE Mapped Spectral Acceleration (g)	S_S = 1.305	S_1 = 0.547	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} = 1.305	S_{M1} = 0.821	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.870	S_{D1} = 0.547	ASCE Equations 11.4.3-4
TOURS			
MCE Mapped Spectral Acceleration (g)	S_S = 1.294	S_1 = 0.542	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} = 1.294	S_{M1} = 0.814	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.862	S_{D1} = 0.542	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
SUNBOW		
Mapped Peak Ground Acceleration (g)	PGA = 0.504	USGS Mapped Value
Site Coefficients (Site Class D)	F_{PGA} = 1.000	ASCE Table 11.8-1
Geometric Mean PGA (g)	PGA_M = 0.504	ASCE Equations 11.8-1
SYRACUSE		
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

TABLE 3: GEOMETRIC MEAN PEAK GROUND ACCELERATION MAXIMUM CONSIDERED EARTHQUAKE		
Criteria	Value	Reference
TOURS		
Mapped Peak Ground Acceleration (g)	PGA = 0.496	USGS Mapped Value
Site Coefficients (Site Class D)	FPGA = 1.004	ASCE Table 11.8-1
Geometric Mean PGA (g)	PGAM = 0.498	ASCE Equations 11.8-1

For liquefaction analysis and seismic settlement calculations a PGA of 0.505g, 0.500g and 0.496g should be used in the Sunbow, Syracuse and Tours areas, respectively. 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 flows may occur in the intermittent stream channels and arroyos during high intensity rainfall events located upstream.

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 Site area soils 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 Syracuse. 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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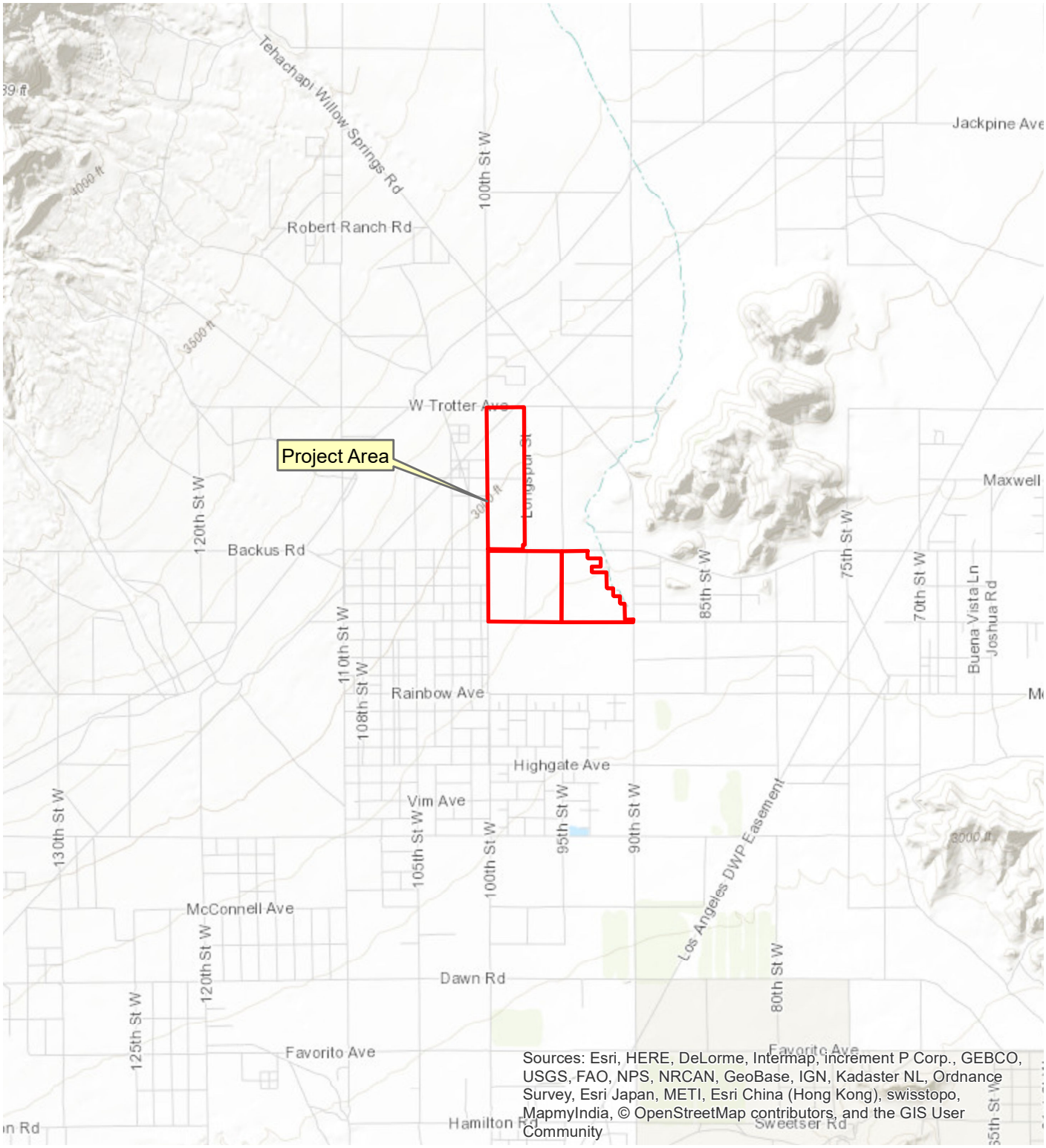
United States Geological Survey Topographic 15 minute quadrangles: Digital files from Cal-Atlas http://atlas.ca.gov



N
W E
S

0 0.5 1 2 Miles

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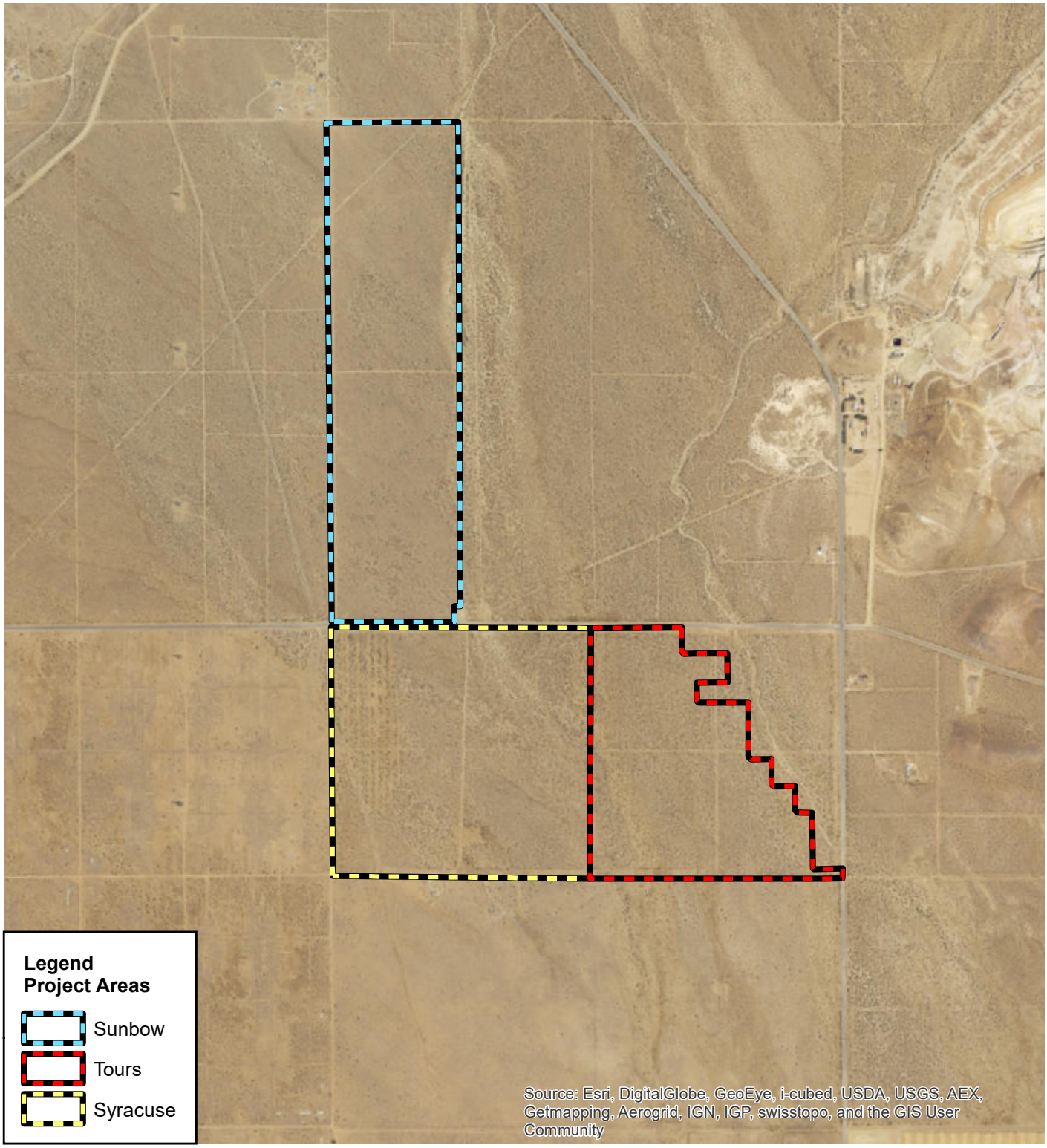
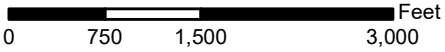
Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 1
Vicinity Map
BSK Project G1709510B





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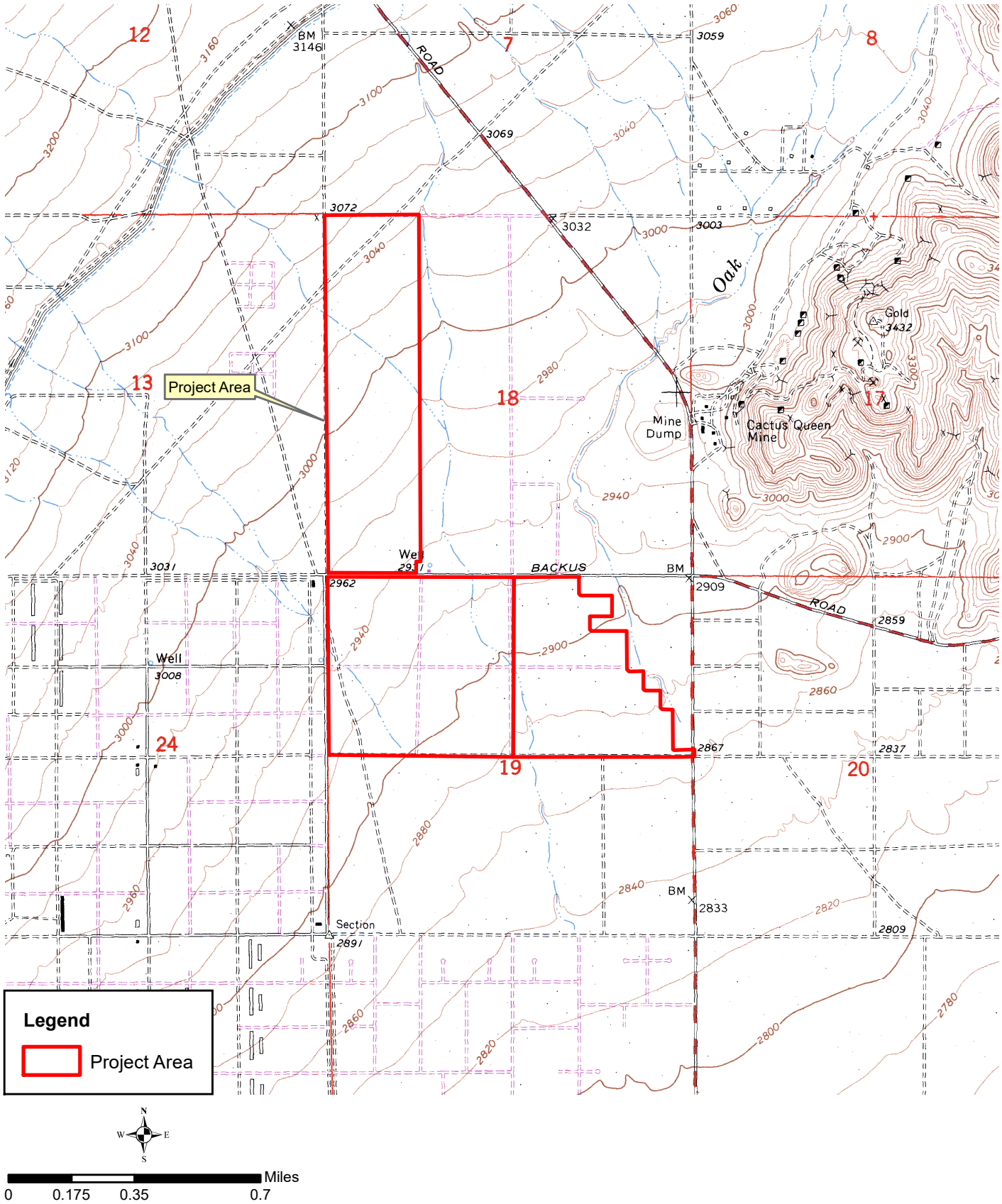
Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 2
Site Area Map
BSK Project G1709510B



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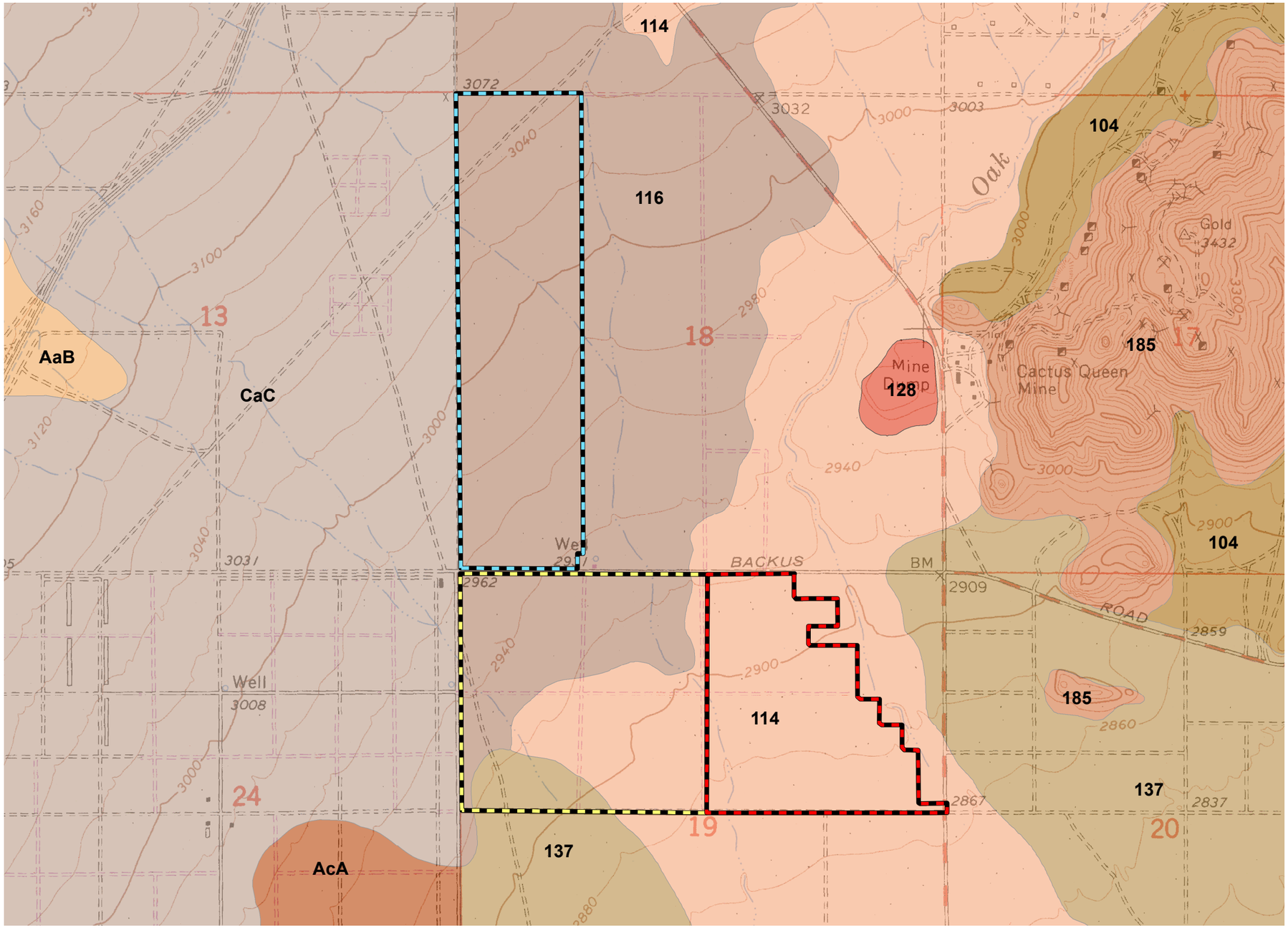
Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 3
Topographic Map
BSK Project G1709510B



Legend

Project Area

- Sunbow
- Tours
- Syracuse

Symbol | Unit Name

- 104 | Arizo gravelly loamy sand, 2 to 9 percent slopes
- 113 | Cajon sand, 5 to 15 percent slopes
- 114 | Cajon loamy sand, 0 to 5 percent slopes
- 116 | Cajon gravelly loamy sand, 0 to 9 percent slopes
- 137 | Garlock loamy sand, 2 to 9 percent slopes
- 171 | Rosamond clay loam
- 185 | Torriorthents-Rock outcrop complex, very steep
- 128 | Dumps, mine
- AaB | Adelanto loamy sand, 2 to 5 percent slopes
- AcA | Adelanto coarse sandy loam, 2 to 5 percent slopes
- CaC | Cajon loamy sand, 2 to 9 percent slopes

N W E S

0 600 1,200 2,400 Feet

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Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 4
Soil Map
BSK Project G1709510B

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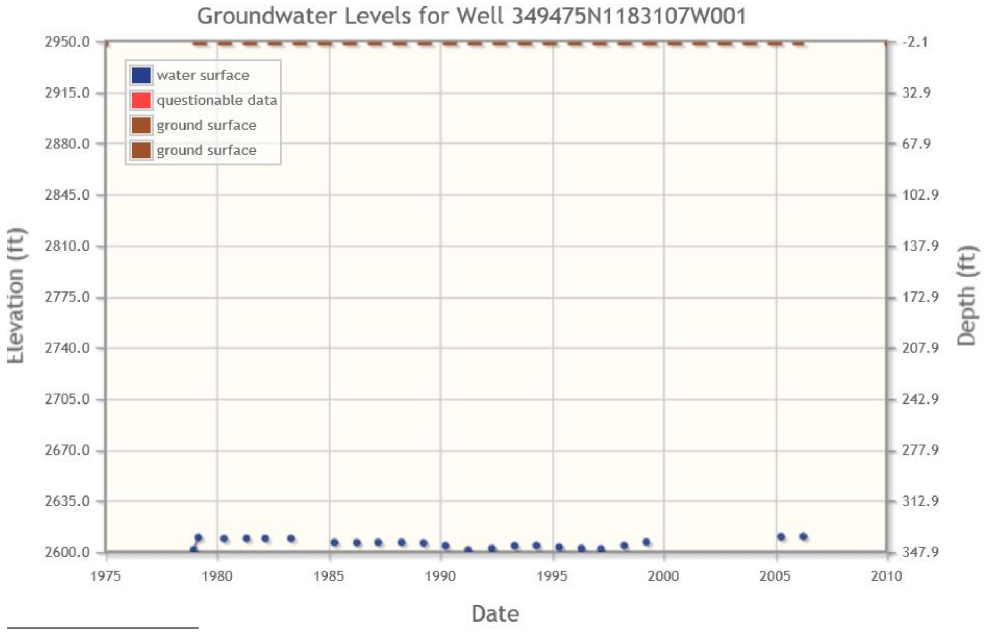
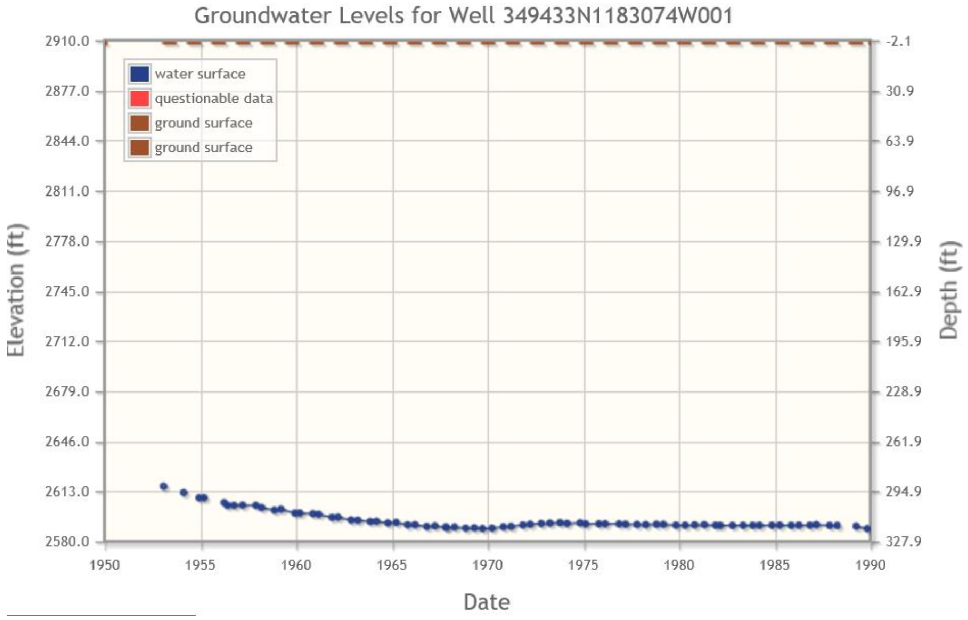


State Well Number: 10N14W24A001S
Latitude (NAD83): 34.947500
Longitude (NAD83): -118.3107
Groundwater Basin (code): Antelope Valley (6-044)
Reference Point Elevation (NAVD88 ft): 2947.890
Ground Surface Elevation (NAVD88 ft): 2947.890



State Well Number: 10N13W19M001S
Latitude (NAD83): 34.943300
Longitude (NAD83): -118.3074
Groundwater Basin (code): Antelope Valley (6-044)
Reference Point Elevation (NAVD88 ft): 2907.880
Ground Surface Elevation (NAVD88 ft): 2907.880

Map Date: 6/9/2017 Reference: http://www.water.ca.gov/waterdatalibrary/index.cfm

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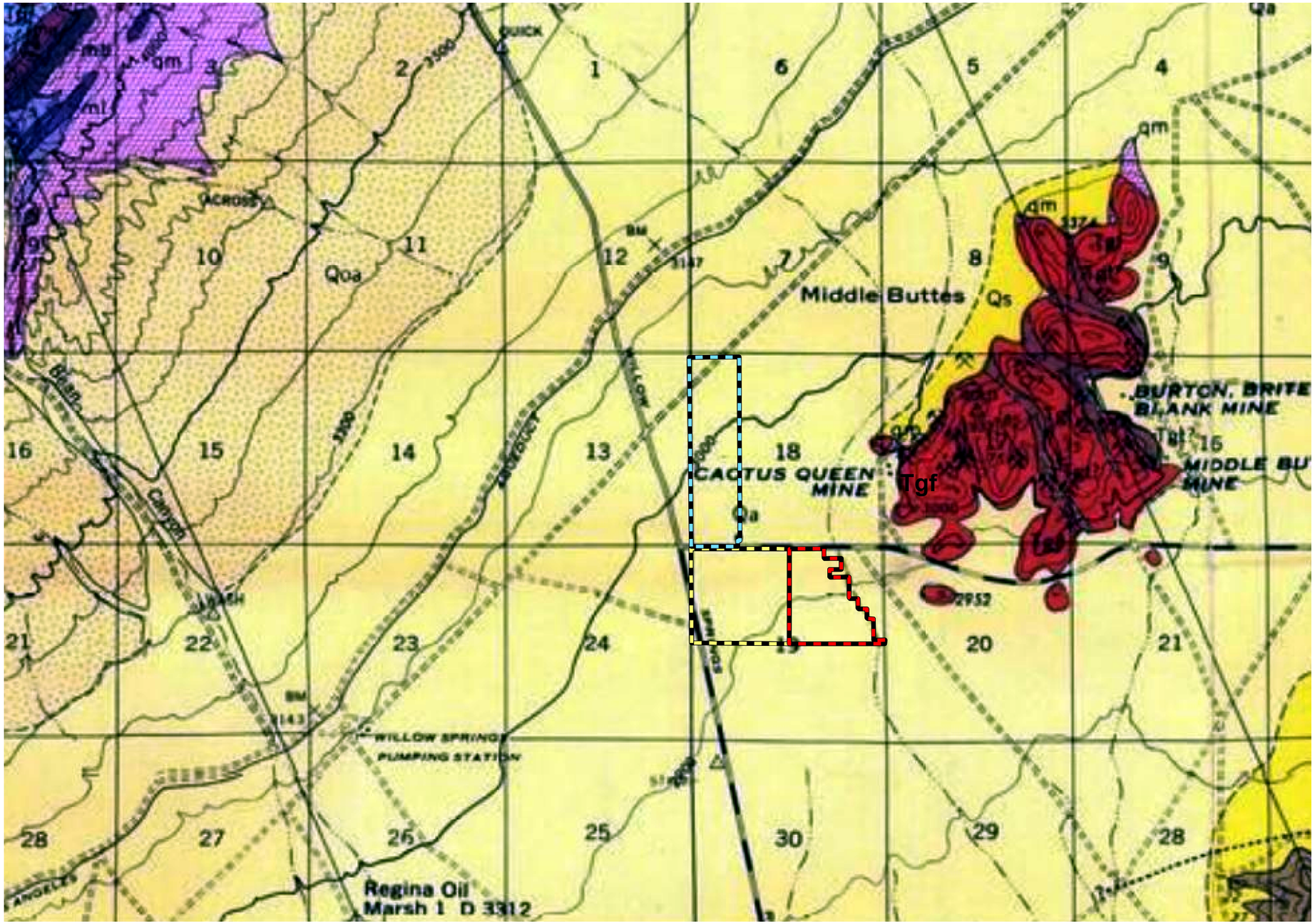
Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 5
Area Hydrographs
BSK Project G1709510B



Legend
Qs - Dune Sand
Qa - Alluvium
Qoa - Pleistocene Alluvium
Qoc - Pleistocene Alluvium, Clay/Silt
Tgf - Gem Hill Formation, Miocene Volcanic Rocks
qm - Quartz Monzonite
ms - Bear Canyon Formation, shist
ms - Bear Canyon Formation, limestone
gd - Quartz Dirorite
gr - Meoszoic Granite

Project Area

Sunbow
Tours
Syracuse

Document Path: T:\GIS\G1709510B - Apollo Solar\Figure 6-Geology.mxd

BSK ASSOCIATES

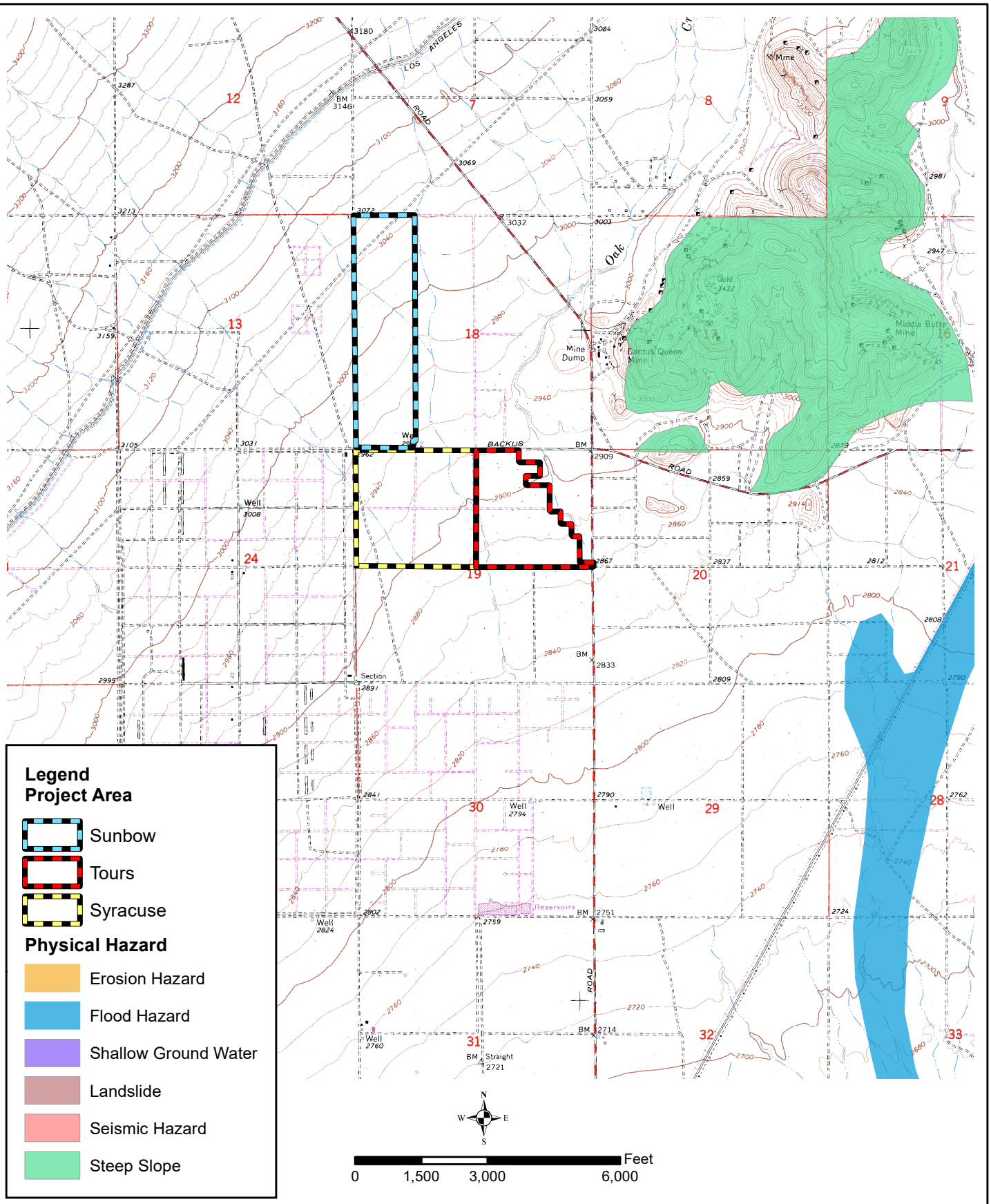
N W E S

0 1,500 3,000 6,000 Feet

Reference: Dibblee, T.W., 1963, Geology of the Willow Springs and Rosamond quadrangles, California: U.S. Geological Survey, Bulletin B-1089-C, scale 1:62,500

Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 6
Geologic Map
BSK Project G1709510B



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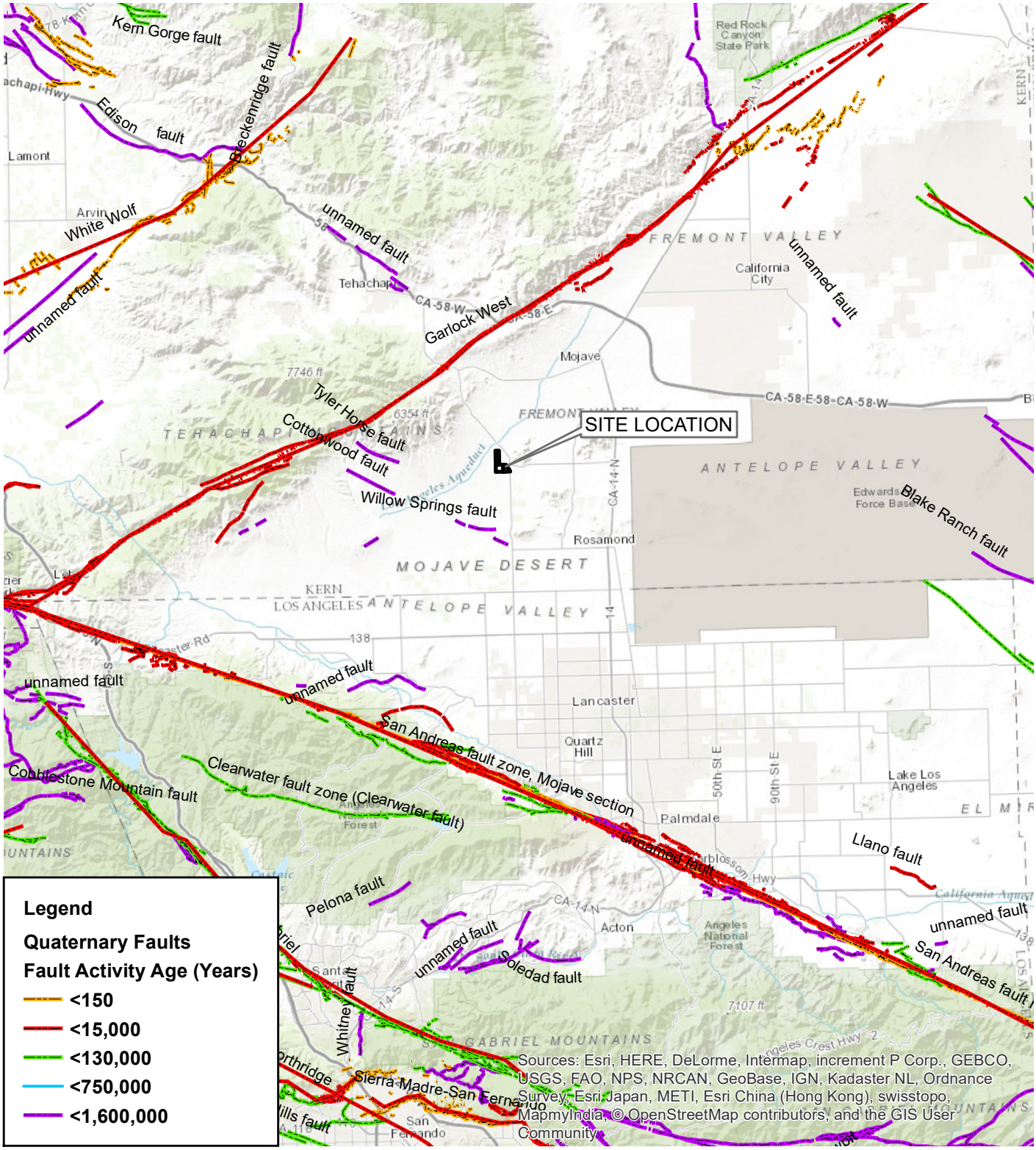
Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 7
Kern County Physical Constaints



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: 6/14/2017

Document Path: T:\GIS\G1709510B - Apollo Solar\Figure 8 faults.mxd

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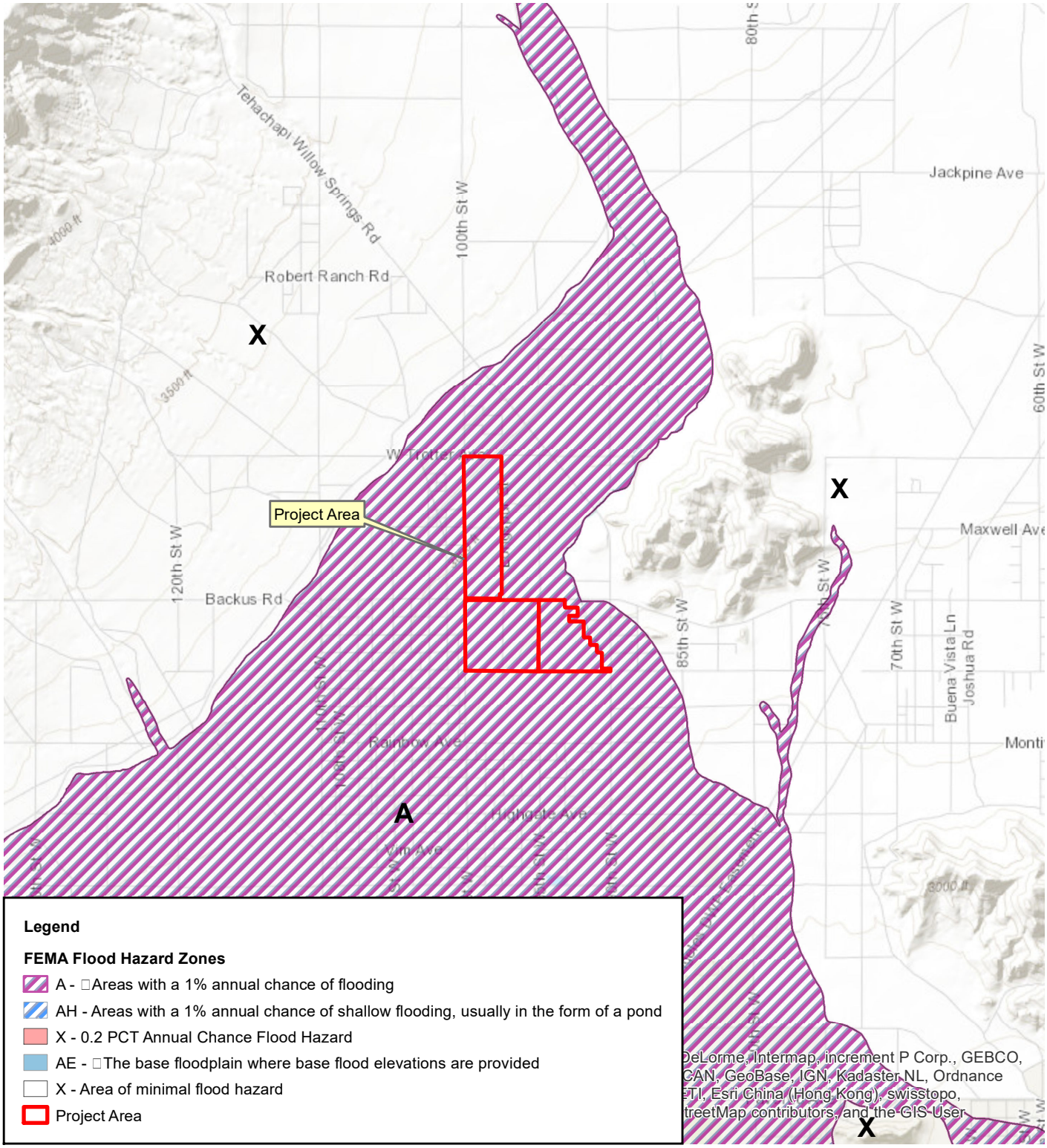
Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 8
Area Fault Map
BSK Project G1709510B



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N W E S

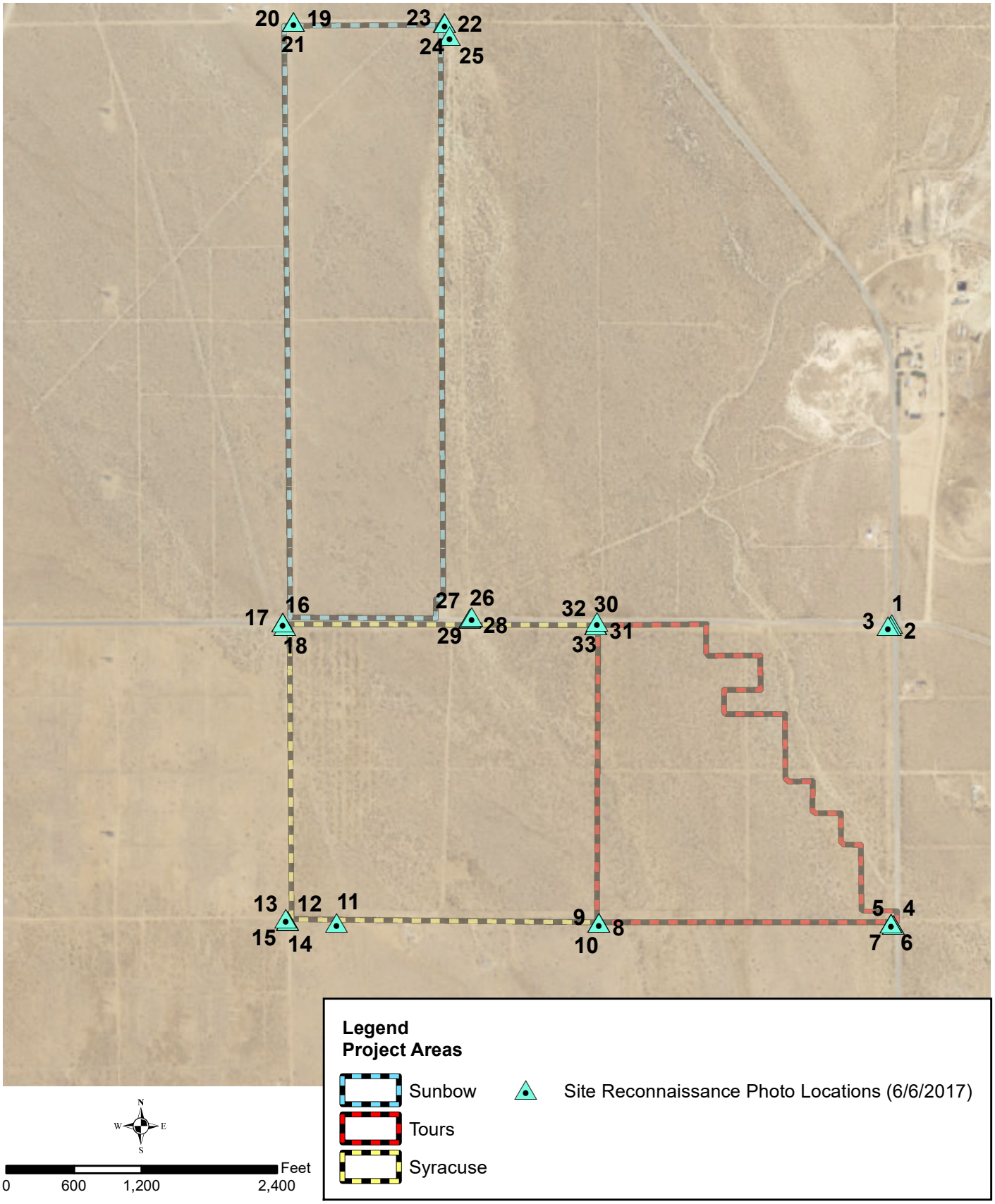
0 0.5 1 2 Miles

Source: FEMA Flood Hazard Layer 06029C, 3/29/2016

BSK ASSOCIATES

Preliminary Geotechnical Evaluation
Proposed Valentine Solar Project
Rosamond Area, Kern County, California

Figure 9
FEMA Flood Map
BSK Project G1709510B



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Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure A-1
Site Area Map
BSK Project G1709510B

Photo 1: Tours Solar Site Northeast Corner looking south.

Photo 2: Tours Solar Site Northeast Corner looking west.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 1
		PROJECT: G17-095-10B

Photo 3: Tours Solar Site Northeast Corner looking southwest.

Photo 4: Tours Solar Site Southeast Corner looking north.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 2
		PROJECT: G17-095-10B

Photo 5: Tours Solar Site Southeast Corner looking west.

Photo 6: Tours Solar Site Southeast Corner looking northwest.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017 Photo Plate 3 PROJECT: G17-095-10B

Photo 7: Tours Solar Site Southeast Corner looking at west road.

Photo 8: Tours Solar Site Southwest Corner/ Syracuse Solar Site Southeast Corner looking east.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 4
		PROJECT: G17-095-10B

Photo 9: Tours Solar Site Southwest Corner/ Syracuse Solar Site Southeast Corner looking north.

Photo 10: Tours Solar Site Southwest Corner/ Syracuse Solar Site Southeast Corner looking west.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 5
		PROJECT: G17-095-10B

Photo 11: Syracuse Solar Site Southwest Corner road erosion.

Photo 12: Syracuse Solar Site Southwest Corner looking north.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 6
		PROJECT: G17-095-10B

Photo 13: Syracuse Solar Site Southwest Corner looking east.

Photo 14: Syracuse Solar Site Southwest Corner looking northeast.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017 Photo Plate 7 PROJECT: G17-095-10B

Photo 15: Syracuse Solar Site Southwest Corner roadcut.

Photo 16: Syracuse Solar Site Northwest Corner/Sunbow Solar Site Southwest Corner looking north.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 8
		PROJECT: G17-095-10B

Photo 17: Syracuse Solar Site Northwest Corner/Sunbow Solar Site Southwest Corner looking east.

Photo 18: Syracuse Solar Site Northwest Corner/Sunbow Solar Site Southwest Corner looking south.

Photo 19: Sunbow Solar Site Northwest Corner looking east.

Photo 20: Sunbow Solar Site Northwest Corner looking south.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017 Photo Plate 10 PROJECT: G17-095-10B

Photo 21: Sunbow Solar Site Northwest Corner looking southeast.

Photo 22: Sunbow Solar Site Northeast Corner looking west.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017 Photo Plate 11 PROJECT: G17-095-10B

Photo 23: Sunbow Solar Site Northeast Corner looking south.

Photo 24: Sunbow Solar Site Northeast Corner looking southwest.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 12
		PROJECT: G17-095-10B

Photo 25: Sunbow Solar Site Southeast Corner looking north.

Photo 26: Sunbow Solar Site Southeast Corner looking west.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017 Photo Plate 13 PROJECT: G17-095-10B

Photo 27: Sunbow Solar Site Southeast Corner looking northwest.

Photo 28: Sunbow Solar Site Southeast Corner looking east.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 14
		PROJECT: G17-095-10B

Photo 29: Syracuse Solar Site Northeast Corner/Tours Solar Site Southeast Corner looking north.

Photo 30: Syracuse Solar Site Northeast Corner/Tours Solar Site Southeast Corner looking east.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 15
		PROJECT: G17-095-10B

Photo 31: Syracuse Solar Site Northeast Corner/Tours Solar Site Southeast Corner looking south.

Photo 32: Syracuse Solar Site Northeast Corner/Tours Solar Site Southeast Corner looking west.

Photo 33: Syracuse Solar Site Northeast Corner/Tours Solar Site Southeast Corner berm running east to west.

BSK ASSOCIATES	Site Photographs AV Apollo Solar Project Kern County, CA	Date Taken: 6/6/2017
		Photo Plate 17
		PROJECT: G17-095-10B

Map Unit Description (Brief, Tabular)

Kern County, California, Southeastern Part

[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]

114--Cajon loamy sand, 0 to 5 percent slopes

Composition

- Cajon and similar soils: 85 percent of the unit
- Arizo: 3 percent of the unit
- DeStazo: 3 percent of the unit
- Garlock: 3 percent of the unit
- Neuralia: 3 percent of the unit

Setting

Landform(s): alluvial fans, flood plains
Elevation: 400 to 3999 feet
Precipitation: 3 to 9 inches
Slope gradient: 0 to 5 percent
Air temperature: 63 to 70 ºF
Frost-free period: 200 to 300 days

Characteristics of Cajon and similar soils

Average total avail. water in top five feet (in.): 4.0
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: somewhat excessively 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: 3e
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Runoff class:
Potential frost action:

Saturated hydraulic conductivity class: High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 20	Loamy sand	1.2 to 2.0	7.4 to 8.4	0.0 to 2.0	0
H2 -- 20 to 60	Gravelly loamy sand	1.6 to 3.2	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Sandy

116--Cajon gravelly loamy sand, 0 to 9 percent slopes

Composition

- Cajon and similar soils: 85 percent of the unit
- Arizo: 10 percent of the unit
- Garlock: 5 percent of the unit

Setting

Landform(s): alluvial fans, flood plains
Elevation: 400 to 3999 feet
Precipitation: 3 to 9 inches
Slope gradient: 0 to 9 percent
Air temperature: 63 to 66 ºF
Frost-free period: 200 to 300 days

Characteristics of Cajon and similar soils

Average total avail. water in top five feet (in.): 3.4
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: excessively 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: 4s
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Runoff class:
Potential frost action:

Saturated hydraulic conductivity class: High

Representative soil profile:

Horizon -- Depth (inches)	Texture	Available water capacity (inches)	pH	Salinity (mmhos/cm)	SAR
H1 -- 0 to 36	Gravelly loamy sand	1.4 to 2.5	7.4 to 8.4	0.0 to 2.0	0
H2 -- 36 to 60	Gravelly sand	1.0 to 1.4	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Sandy

137--Garlock loamy sand, 2 to 9 percent slopes

Composition

- Garlock and similar soils: 85 percent of the unit
- Cajon: 5 percent of the unit
- Neuralia: 5 percent of the unit

Setting

Landform(s): alluvial fans, terraces
Elevation: 2500 to 3501 feet
Precipitation: 4 to 7 inches
Slope gradient: 2 to 9 percent
Air temperature: 63 to 64 ºF
Frost-free period: 200 to 250 days

Characteristics of Garlock and similar soils

Average total avail. water in top five feet (in.): 4.6
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): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Land capability class, irrigated: 3e
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Runoff class:
Potential frost action:

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	Loamy sand	0.7 to 0.8	7.4 to 8.4	0.0 to 2.0	0
H2 -- 12 to 24	Sandy clay loam	1.6 to 2.0	7.4 to 8.4	0.0 to 2.0	0
H3 -- 24 to 33	Sandy loam	0.6 to 1.1	7.4 to 8.4	0.0 to 2.0	0
H4 -- 33 to 51	Gravelly loamy sand	0.5 to 1.1	7.4 to 8.4	0.0 to 2.0	0
H5 -- 51 to 60	Very gravelly loamy sand	0.1 to 0.3	7.4 to 8.4	0.0 to 2.0	0

Ecological class(es): NRCS Rangeland Site - Sandy

Engineering Properties

Kern County, California, Southeastern Part

[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*	
114:												
Cajon	0-20	Loamy sand	SM	A-2	0	0	95-100	75-100	50-80	10-30	0	NP-5
	20-60	Gravelly loamy sand, gravelly sand, gravelly sandy loam	SM, SP-SM	A-1	0	0	60-85	50-75	25-50	5-20	0	NP
116:												
Cajon	0-36	Gravelly loamy sand	GM, SM	A-1	0	0	55-80	50-75	25-50	10-20	0	NP
	36-60	Gravelly fine sand, gravelly sand	SM, SP-SM	A-1, A-2	0	0	55-80	50-75	25-55	5-25	0	NP
137:												
Garlock	0-12	Loamy sand	SM, SP-SM	A-1, A-2	0	0	90-100	85-95	45-65	5-25	0	NP
	12-24	Gravelly sandy clay loam, sandy clay loam	SC	A-6	0	0	80-100	70-95	50-85	35-50	25-35	10-20
	24-33	Gravelly sandy loam, sandy loam	SM	A-2, A-4	0	0	80-100	70-95	40-75	25-40	15-25	NP-5
	33-51	Gravelly loamy sand, gravelly sand	SM, SP-SM	A-1	0	0	55-90	50-75	25-45	5-20	0	NP
	51-60	Very gravelly loamy sand, very gravelly sand	SM, SP, SP-SM	A-1	0	0-25	55-80	30-50	15-30	0-15	0	NP

Appendix I
Noise Memorandum

ESA

MEMO

Date: September 7, 2018 **Project No.:** 150447.06

To: John Wieland, Project Development Director

From: Jaymie Brauer, Principal Planner

Subject: Noise Memorandum for the AV Apollo Solar Project

This technical memorandum provides a quantitative analysis of the noise construction and operational impacts of developing the AV Apollo 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 combined 60 megawatts (MW) of renewable electrical energy and/or energy storage capacity on approximately 493.5 acres of privately-owned land (Figure 1). The proposed project consists of three sites: Syracuse Solar Site, Tours Solar Site, and Sunbow Solar Site. The project proponents propose that the project be built at the same time as a single, 60-MW facility or, alternatively, could be developed as three, independent 20-MW facilities on the approximately 160-acre Syracuse Site, 160-acre Tours Site, and the 173.5-acre Sunbow Site. Depending upon market conditions, the Syracuse, Tours and Sunbow sites may also include or be developed with 20-MW of advanced energy battery storage units. Electricity generated on the project site would be transmitted to a proposed Southern California Edison (SCE) switching station; from there, via interconnection, the electricity would be transmitted to an existing SCE 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on the Syracuse Site and Tours Site.

The Project would consist of approximately 258,000 crystalline-silicon modules or 490,000 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 third quarter of 2020. Although the Project may be built in separate phases, for analysis and discussion in this document, construction would

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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 300 individuals; however, the average workforce is expected to be 200 construction, supervisory, support, and 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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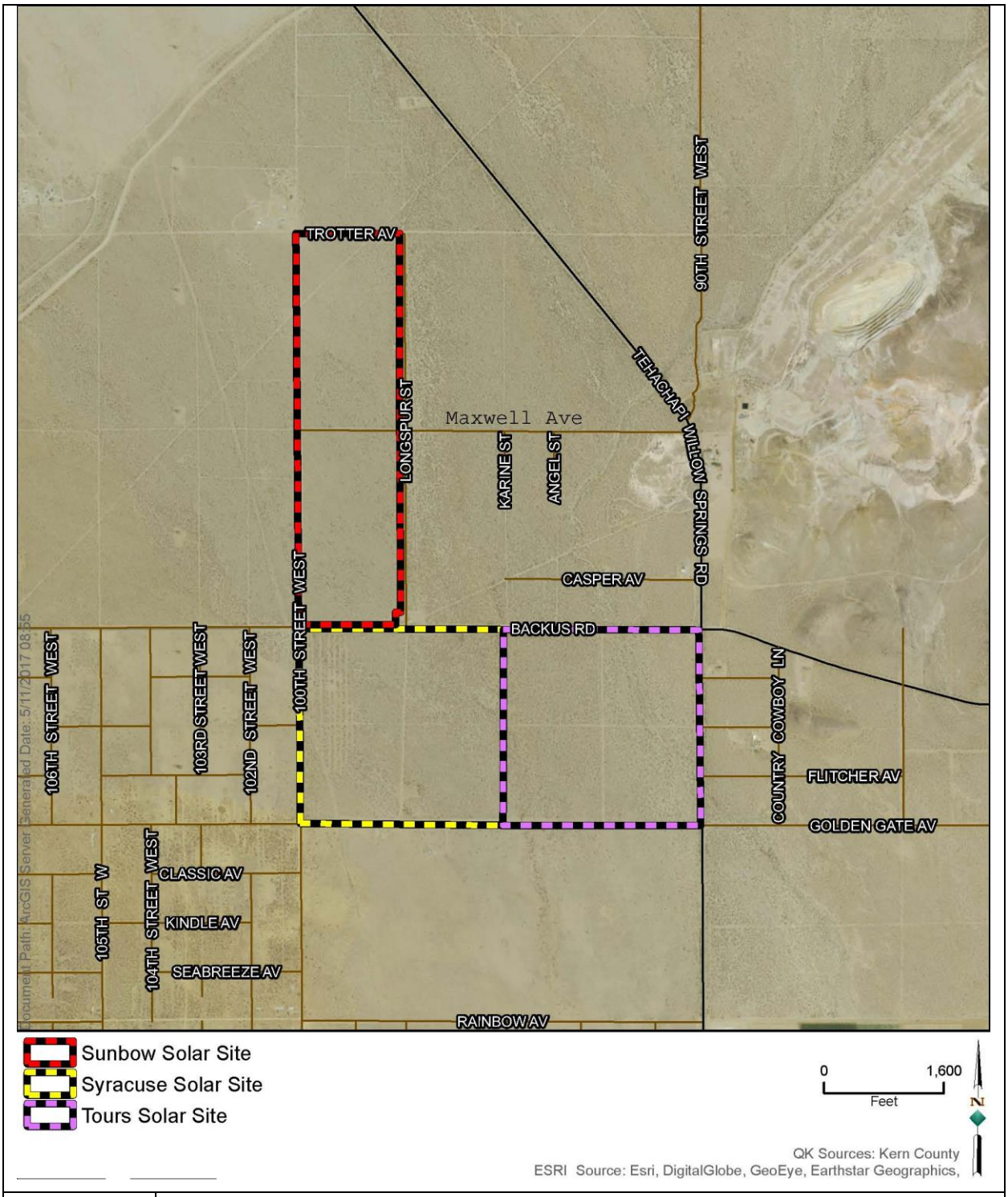

Figure 1
Project Site

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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 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.”

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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 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.

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Table 1
Sound Levels and Human Response

Example Noise Source	Sound Level (dBA)	Human Response
Jet Engine	140	Harmfully loud
Shotgun Firing Thunderclap	130 120	Pain threshold
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 Refrigerator Humming	50 40	Quiet
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
Scraper	85
Tractor/Loader/Backhoe	80
Trencher	85

Source: FHWA 2011.

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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.

Figure 2, below, provides the location of the nearest sensitive noise receptors within 1,000 feet of any Project boundary in each direction. The Project boundary was measured from the outermost extent of each APN associated with the Project site. The 1,000-foot project site 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

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shown in the figure, five (5) residences are located within the 1,000-foot project site buffer. Due to County required setbacks and natural topographic features, Project construction activity, emanating sound at 85 dBA, would not be located on the Project boundary. Most of the construction activity would occur at a minimum of 100-1000' from the Project boundary. Based on the proposed site plan, Table 4 shows the distance from construction activities, that would emit 85 dBA at 50ft noise levels, 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. The two residences to the east of the project site are within 1,000 feet of the project boundary; however, their proximity to construction related activity emitting 85 dBA at 50ft noise levels is greater than 1,000 feet. These residences were included in the analysis due to their net proximity to the project site.

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 (ft)	Anticipated Sound Level (dBA) at Residence[2]	Human Response
North	325	62.5-70.0	Comfortable to telephone use difficult
East	1,330/1,450	<55.0	Quiet
South	175	72.5	Telephone use difficult
West	350	62.5-70.0	Comfortable to telephone use difficult

[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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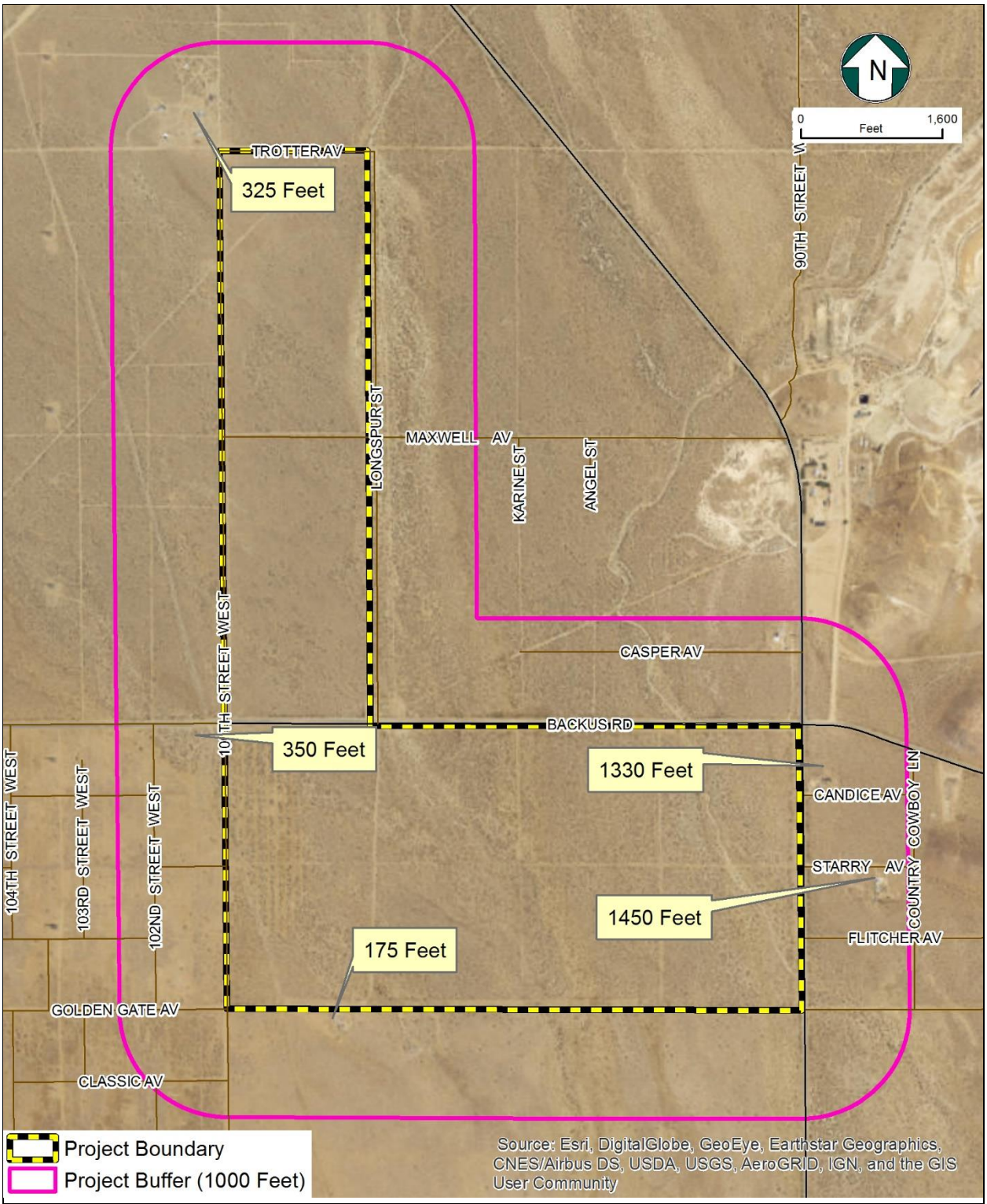

Figure 2
Sensitive Receptors

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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 project site 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 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

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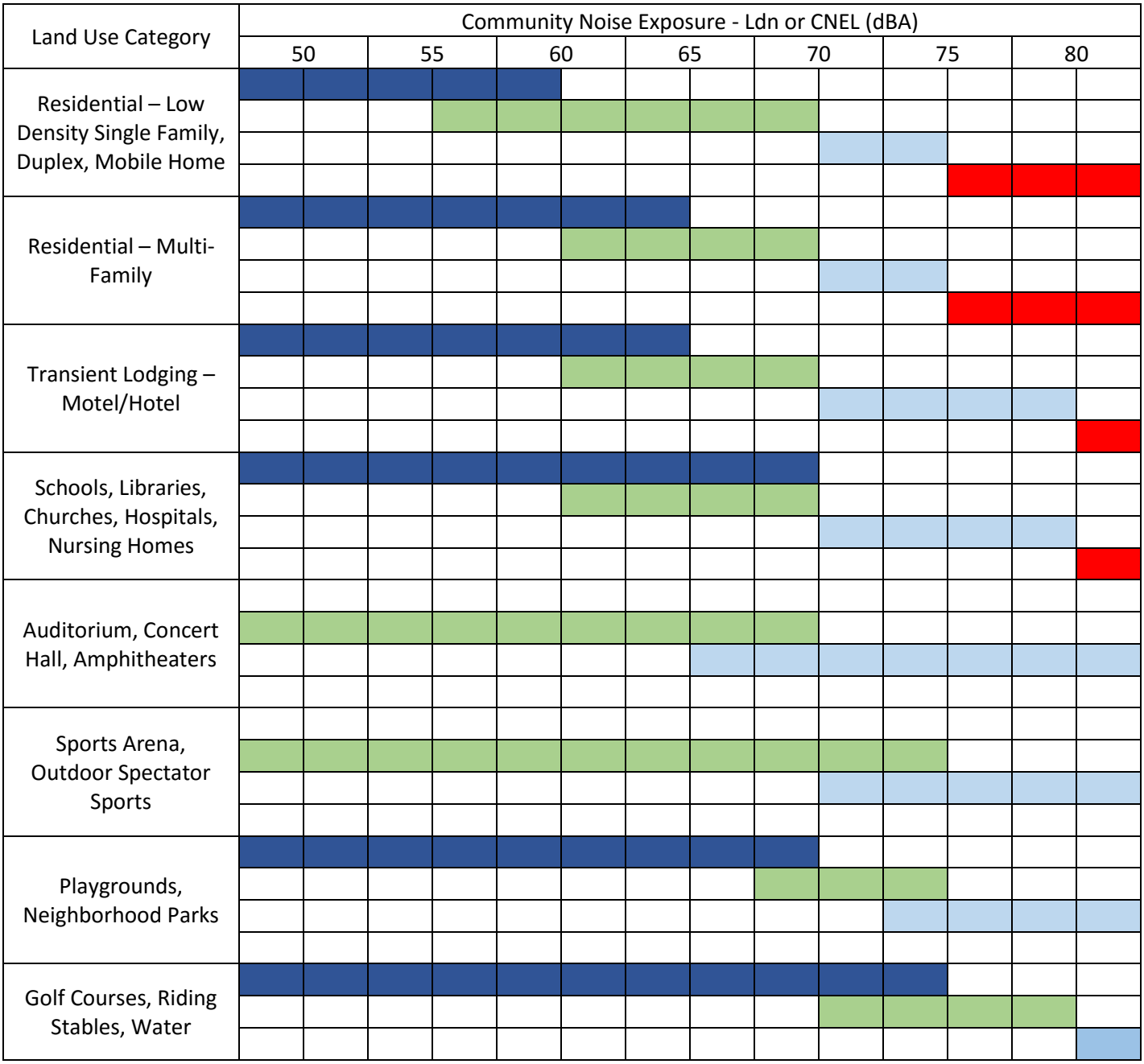
for controlling noise. The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in Table 5. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and 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



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Recreation, Cemeteries														
Office Buildings, Business, Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

	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.

Policy 3. Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.

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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.

c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

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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.

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

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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 five (5) residences within the 1,000-foot project site buffer are located 325 feet north, 1,330 and 1,450 feet east, 175 feet south, and 350 feet west 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 project site buffer. As stated above, the two residences to the east of the project site are within 1,000 feet of the project boundary; however, their proximity to construction related activity emitting 85 dBA at 50ft noise levels is greater than 1,000 feet. These residences were included in the analysis due to their net proximity to the project site. The closest residence to the project site is located to the south. The residence is estimated to be 89 feet from the project boundary; however, due to required County setback, the residence location to construction activity that could produce noise levels in excess of 65 dBA is estimated to be 175 feet. The proposed project would install fencing around the perimeter of the site; however, the installation of fencing is not expected to require heavy equipment capable of exceeding 65 dBA.

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.

Operation

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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 four closest residences within a 1,000-foot buffer are located to 325 feet north, 1330 feet east, 175 feet south, and 350 feet west 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 175 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:

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

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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 (175 feet) would be 0.08 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 89 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

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 measures Noise-1 through Noise-3, thereby reducing noise impacts to less than significant levels.

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Recommended Measures

Noise-2: 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).

Noise-3: Operational Noise Mitigation. Adequate noise shielding shall be provided to the project's on-site transformers and inverters such that the existing ambient noise level at the nearest off-site residential structure would not be exceeded by more than 5 dBA. The project proponent shall submit photographic evidence of this technology and clearly demonstrate on a site plan where adequate noise shielding will be located, if necessary.

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 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

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sensitive receptors, Recommended Measures Noise-1 through Noise-3 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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Kern County. 2012. Airport Land Use Compatibility Plan. November.

Kern County. 2009. General Plan. September.

Kim Dong-Soo and Jun-Sun Lee. 1999. Propagation and attenuation characteristics of various ground vibrations. Soil Dynamics and Earthquake Engineering 19 (2000) 115-126.

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Appendix J
Preliminary Hydrologic Study

ESA

HYDROLOGY STUDY

AV APOLLO SOLAR PROJECT

KERN COUNTY, CALIFORNIA

JUNE 2017

HYDROLOGY STUDY

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Project #150447.0

Table of Contents

SECTION 1 - Introduction *1*

1.1 - Project Description 1
1.2 - Project Location 1

SECTION 2 - Regulatory Setting *4*

2.1 - Federal 4
2.1.1 - Clean Water Act (33 USC 1251-1387) 4
2.1.2 - Federal Emergency Management Agency 5
2.1.3 - National Flood Insurance Program 5
2.2 - State of California 5
2.2.1 - Porter Cologne Act (California Water Code Section 13000 ET. Seq.) 5
2.2.2 - Permitting and Compliance for the Clean Water Act 5
2.2.3 - California Department of Fish and Game – Section 1602 7
2.2.4 - Public Resources Code Section 21060.1 7
2.3 - Review and Oversight 7

SECTION 3 - Environmental Setting *9*

3.1 - Climate 9
3.2 - Topography 9
3.3 - Land Use 11
3.4 - Site Specific Conditions 13
3.4.1 - Climatology 14
3.4.2 - Soil Conditions 14
3.5 - Hydrology 18

SECTION 4 - Conclusions *23*

4.1 - Mitigation Measures 23

SECTION 5 - References *25*

List of Figures

Figure 1-1 Regional Map 2
Figure 1-2 Project Site 3
Figure 3-1 Willow Springs United States Geological Survey (USGS) 10
Figure 3-2 Nearby Solar Sites 12
Figure 3-3 Project Site Soils Types 17

Figure 3-4 FEMA 100yr Flood Zone 19
Figure 3-5 National Wetland Inventory 20
Figure 3-6 Flood Zone Depths Determined from FLO-2D 21
Figure 3-7 Flood Zone Velocities Determined from FLO-2D 22

List of Tables

Table 1-1 AV Apollo Solar Project 1
Table 3-1 Rainfall Isohyets for Project Watershed 14
Table 3-2 Project Soil Types 15

LIST OF ACRONYMS AND ABBREVIATIONS

APN	Assessor's Parcel Number
BMP	Best Management Practices
CDFG	California Department of Fish and Game
CWA	Clean Water Act
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FIRM	Flood Insurance Rate Maps
MW	Megawatt
NWI	National Wetlands Inventory
NFIP	National Flood Insurance Program
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PV	Photovoltaic
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
Tc	Time of concentration
TMDL	Total Maximum Daily loads
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
WDID	Waste Discharge Identification
WRCC	Western Regional Climate Center

SECTION 1 - INTRODUCTION

1.1 - Project Description

The Project proponent proposes to construct and operate three stand-alone 20 megawatt (MW) photovoltaic solar facilities. The three facilities are named Syracuse Solar (Site 1), Tours Solar (Site 2), and Sunbow Solar (Site 3). Collectively, these three facilities are referred to as the AV Apollo Solar Project (Project). Part of Site 2 includes a permanent no development area. This no development area is included in the Project boundary, but is not part of the proposed development footprint. This report analyzes the hydrology within the Project boundary, including the no development area. The Project will be constructed on approximately 492-acres of land at the southwestern edge of Kern County, California.

Table 1-1
AV Apollo Solar Project

Site	Acreage	Land Use
Site 1	160	Native Creosote Bush Scrub Habitat
Site 2	160	Native Creosote Bush Scrub Habitat
Site 3	173	Native Creosote Bush Scrub Habitat

1.2 - Project Location

The Project site near the southwest corner of Kern County, California in the Mojave Desert, about 9 miles northwest of Rosamond and 9 miles southwest of Mojave. The Project site is situated 11 miles south of State Route 58 and 8 miles east of State Route14, just off the corner Backus Road and Tehachapi Willow Springs Road (**Error! Reference source not found.**2). To t he north and west of the Project site lies the Tehachapi Range of the Sierra Nevada Province, 20 miles to the south lies the Central Transverse Range. Edwards Air Force Base lies 24 miles to the east.

The Project site is located within the Willow Springs United States Geological Survey (USGS) 7.5-minute topographical quadrangle. Sites 1 and 2 are in the northern ½ of Section 19, Township 10 North, Range 13 West, San Bernardino Base and Meridian (SBB&M) and Site 3 is located in the western ½ of Section 18, Township 10 North, Range 13 West, SBB&M. Backus Road and Tehachapi Willow Springs Road provide access to all three locations of the Project site.

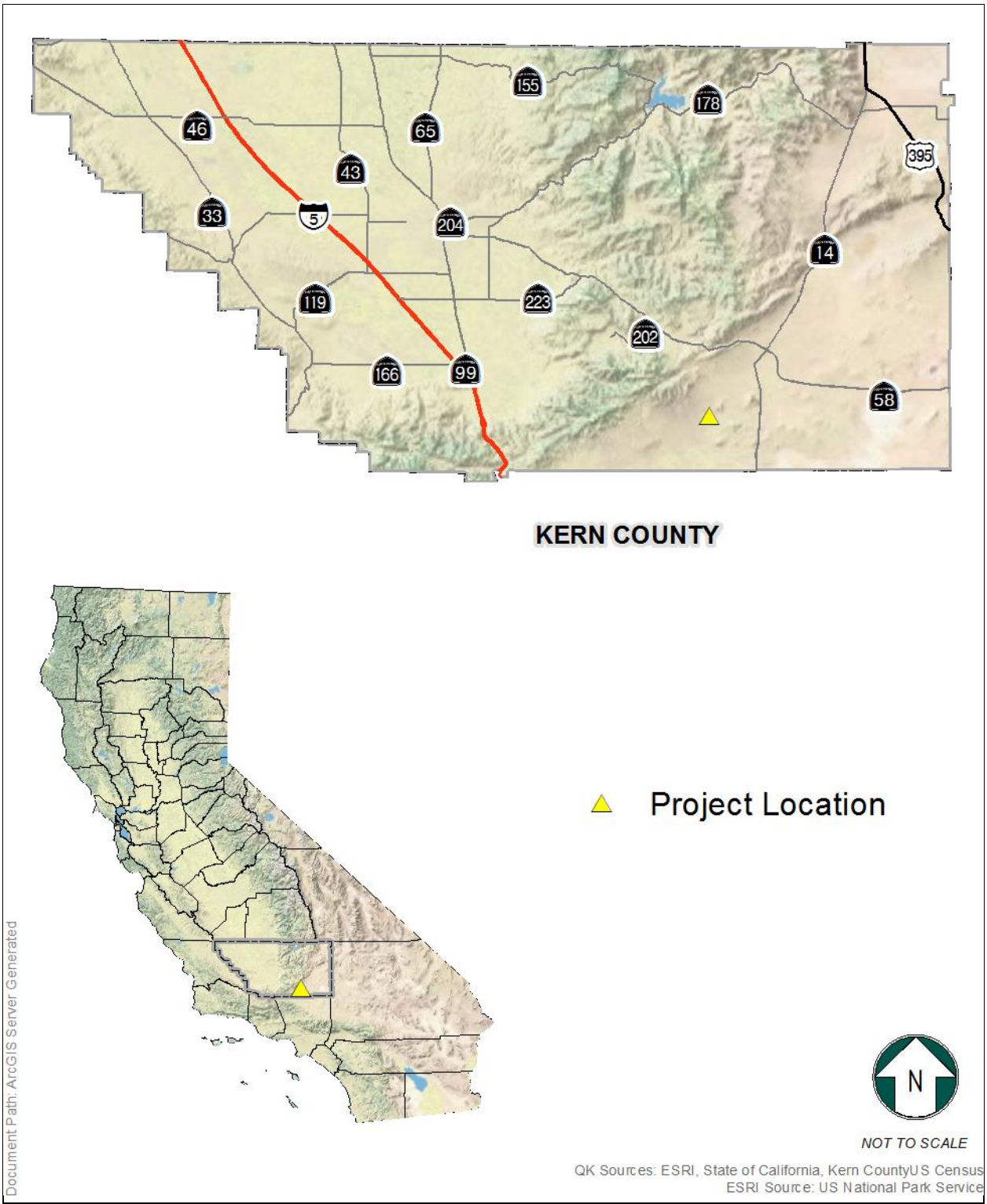

Figure 1-1
Regional Map

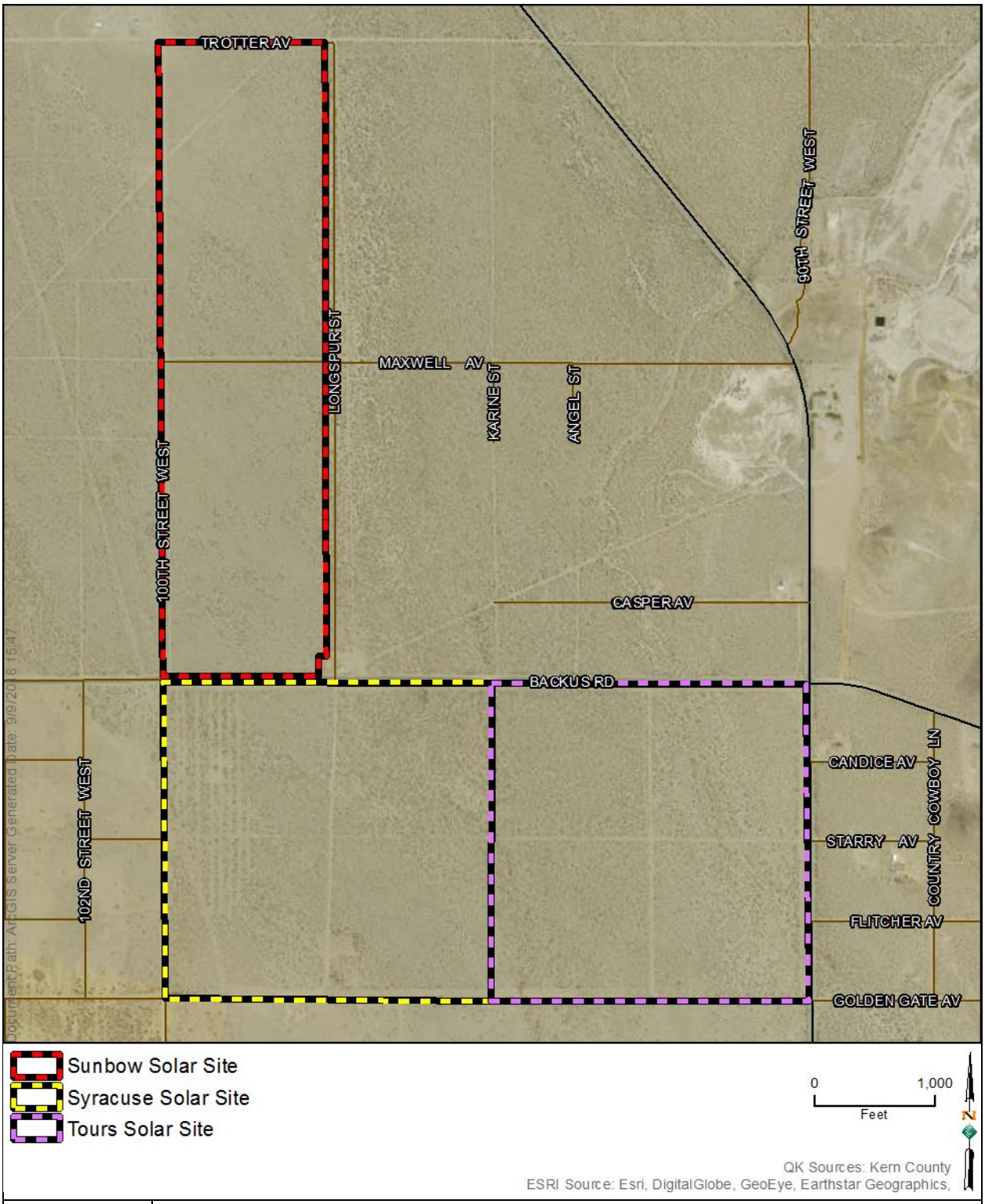

Figure 1-2
Project Site

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
- Topography
- Land Use
- Soils
- Hydrology

3.1 - Climate

The climate of the region is hot and dry, and shares many characteristics with the California Desert Province. The climate in Antelope Valley 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 115 degrees Fahrenheit (F). The largest metropolitan area in the vicinity with similar climate and elevation is Mojave. The Mojave Desert is not influenced by the ocean due to the Coast Range and is located in a broad rain shadow, leading to arid conditions year-round. Normally, approximately 90 percent of the precipitation in the Mojave Desert occurs between November to April. Most precipitation occurs in the winter months, but the Antelope Valley can experience rare, intense summer thunderstorms. The average annual precipitation in Mojave is approximately 5.8 inches (Western Regional Climate Center, 2017). High winds can occur, with peak wind velocities above 50 miles per hour not being uncommon and winds of 100 miles per hour occurring yearly.

3.2 - Topography

The Project site and surrounding land are relatively flat and exhibit little topographic variation with the exception of three intermittent drainage features traversing in a north/south orientation for the length of the Project site (Figure 3-1). The Project site gently slopes from the northwest to the southeast with an elevation of 3,072 feet above mean sea level (AMSL) in the northwest corner of Site 3 to 2,867 feet in the southeast corner of Site 1. Four miles to the north and west lie the foothills of the Tehachapi Mountains. An alluvial fan from those mountains extends to the east, but does not reach the Project site. The alluvial fan exhibits a gradual decrease in elevation (less than one percent slope). This locality is geographically defined by the intersection of the Garlock and San Andreas Faults and where the Tehachapi Mountains meet the Transverse Range.

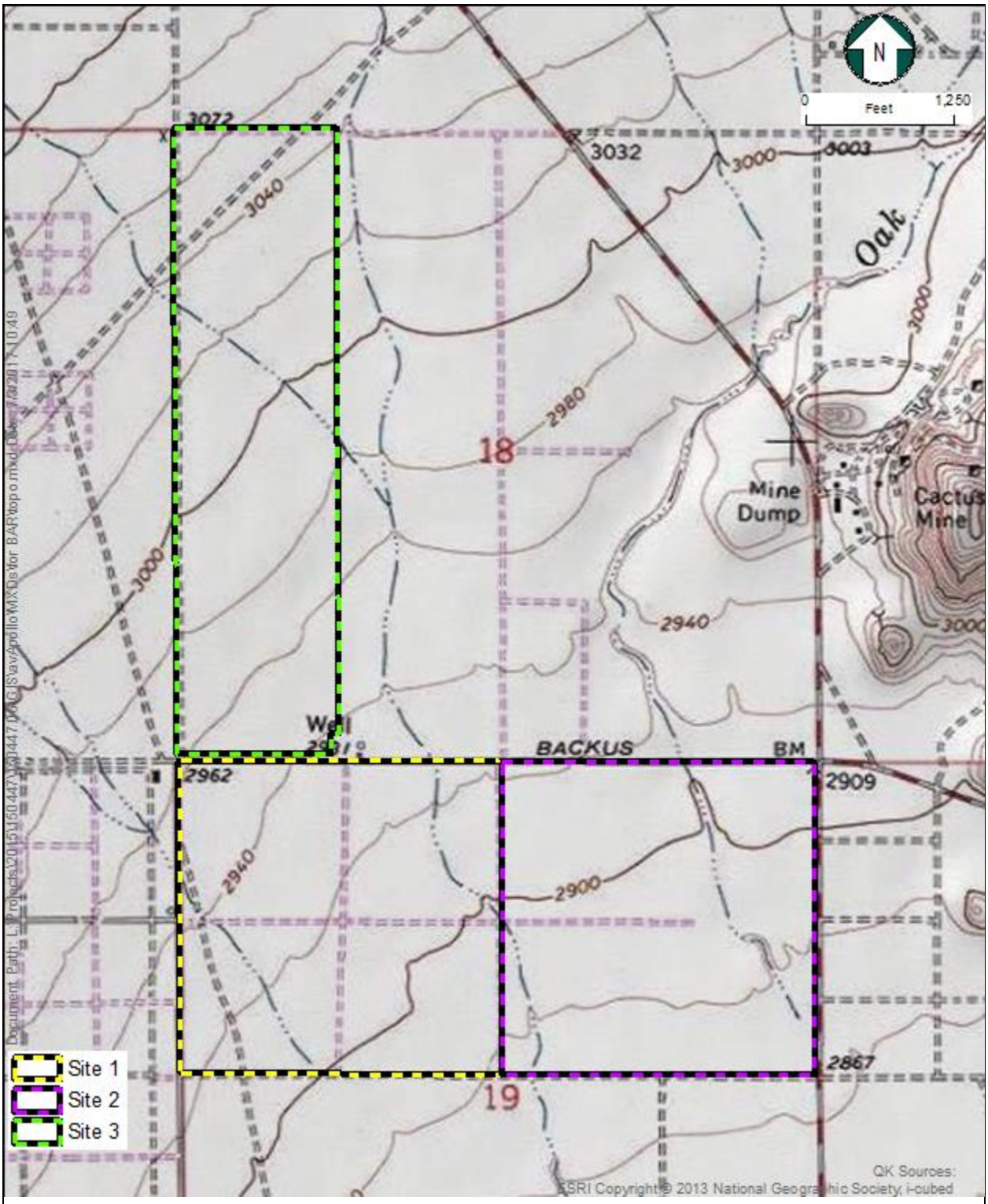

Figure 3-1
Willow Springs United States Geological Survey (USGS)
7.5-minute topographical quadrangle

3.3 - Land Use

The Project site consists mostly of native, undisturbed habitat, situated among a matrix of maintained and abandoned dirt roads. Surrounding lands also consist mostly of native habitat. Existing developments in the vicinity include renewable energy facilities and supporting infrastructures, rural access roads, scattered rural residences, and producing and non-producing water wells, cattle ranching facilities, and mining operations. Southern California Edison's Tehachapi Renewable Transmission Project (TRTP) transmission line runs near the Project. This transmission line connects SCE's Vincent Substation with SCE's Windhub Substation, which is located north of the Project site.

Nine operating solar facilities exist within a 10-mile radius of the Project (Figure 3-2). The nearest solar sites are Catalina Renewable Energy Project, which is located two miles to the southwest, and SEPV Solar, which is located approximately three miles north of the Project. A number of mining operations are located nearby, the nearest of which is Cactus Gold Mine, approximately 2,860-feet to the northeast of the Project. Several small, isolated residences are near the Project site, which are located on Backus Road and Tehachapi Willow Springs Road, and 100th Street West and Trotter Ave. Off-highway vehicle use is a common recreational activity in the region.

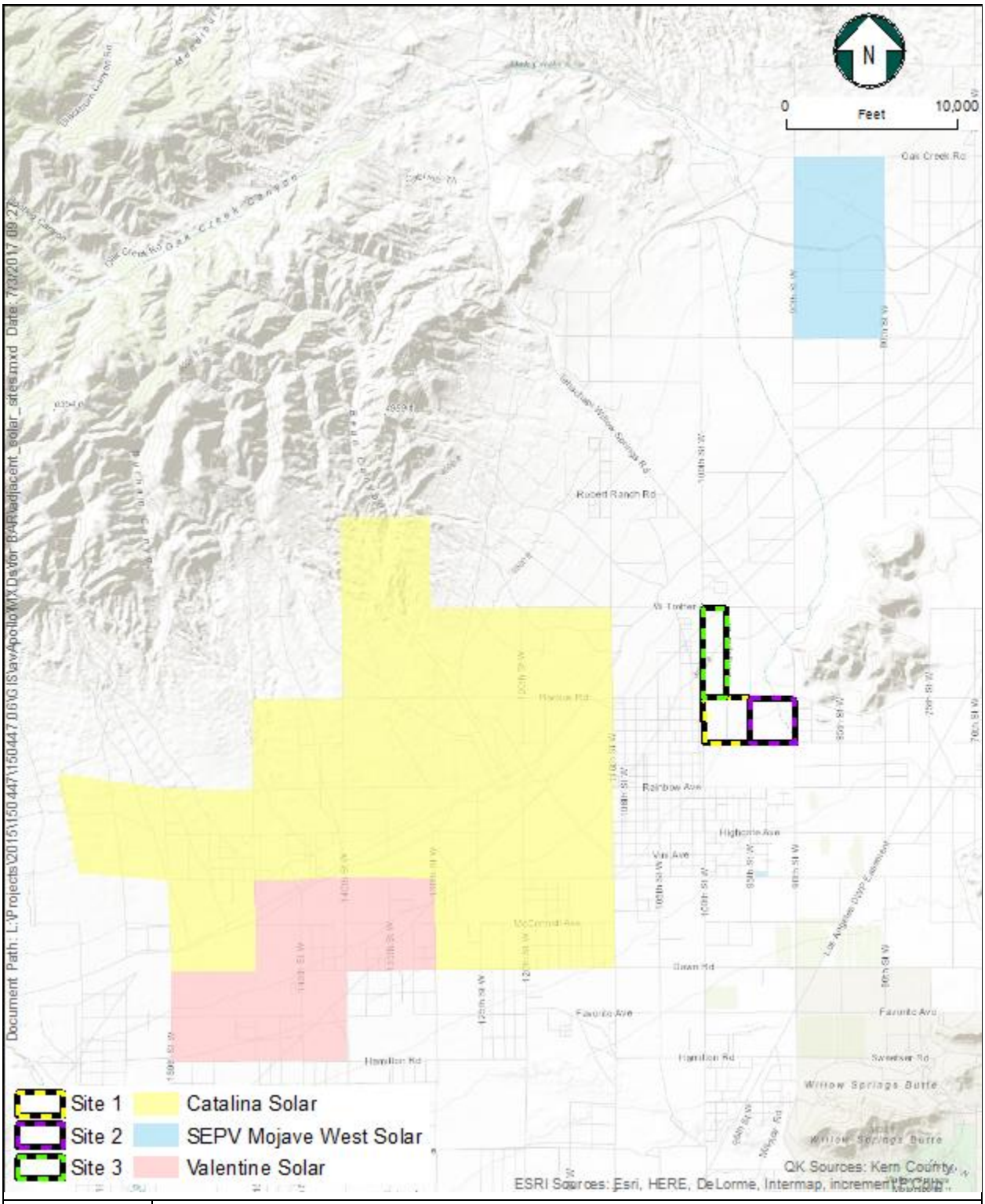

Figure 3-2
Nearby Solar Sites

3.4 - Site Specific Conditions

Site hydrology and climatology data were utilized to determine the characteristics of the watershed and thus estimate the quantity of runoff. FEMA data, previous hydrology reports, historical rainfall data, soils reports and maps, topographic maps, and climatologic data were reviewed to determine the characteristics of the watershed.

The 492-acre AV Apollo project is within the 100-year flood zone identified by FEMA as Zone A (Figure 3-4). FEMA has designated the "A" zone within a 100-year floodplain to have a 1 percent annual chance of shallow flooding.

The predominate soil types present in the project area have low to moderate runoff potential, a portion of Site 1 has a moderate runoff potential. A portion of Site 2 having a moderate runoff potential is within the no build area. It is expected that conditions present at the site, which have been formed by past storm events, will not be disturbed and will continue to convey storm flows after completion of the project. The project is not expected to significantly affect the flow patterns of any existing drainage courses or swales in the vicinity. The portion of site 2 where Oak Creek is located is within the no build area of the project. The selected technology leads to a design with minimal obstruction to the existing sheet flow pattern of storm runoff on the site. The proposed PV technology will require only minor grading.

There will be a slight increase in imperviousness of the soil on site due to minor grading and construction activities. The root mass of existing vegetation on site is proposed to be left in its existing condition to assist in erosion control and to maintain the existing soil characteristics (i.e., infiltration rates). Minor vegetation removal will take place at areas where the concrete pads for the trackers will be placed, in areas of high local slope, and in areas where gravel roads are to be constructed. Areas will also be graded to prepare a smooth surface for inverter foundation placement. The addition of the inverter foundations will create a very slight increase in area that can be considered impervious. However, these foundations are small and will be distributed throughout the site.

Pursuant to the Kern County Floodplain Management Ordinance Chapter 17.48.060.58, an obstruction means and includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation, or other material in, along, across, or projecting into any watercourse which may alter, impede, retard, or change the direction and/or velocity of the flow of water, or due to its location, its propensity to snare or collect debris carried by the flow of water or its likelihood of being carried downstream.

Given the nature of the project, the PV solar facility is expected to have minimal impacts on flood encroachments within a flood zone. The PV panel supports are assumed to be of a small diameter steel or aluminum members and are not anticipated to be a significant hindrance to flow. They were therefore not modeled. Access roads were not modeled as they are proposed to be elevated only 3-inches above existing grade. This minor change in elevation

and the relative narrow width of the roadway is too small a feature to be included in the model and all proposed roadways were omitted. Solar arrays are expected to be above the flood depths, and supported with steel columns that have a small cross-sectional area relative to the flood width. The flood encroachment analysis for the project site was conducted using an approximate method based on velocities and cross-sectional areas defining the creeks and stream.

3.4.1 - CLIMATOLOGY

Isohyets are precipitation contours that depict rainfall depths for various storm events. The rainfall totals for the 2-year and 100-year return periods of the regional watershed were estimated using NOAA Atlas 14 Point Precipitation Frequency Estimates. As the watershed for Oak Creek and the unnamed blue line channels two Isohyets were used to account for the valiances in rainfall from the mountains valleys to the desert floor. These totals are summarized in Table 3-1 below.

Table 3-1
Rainfall Isohyets for Project Watershed

Watershed	6-Hour Storm Duration		24-Hour Storm Duration	
	2-Year Return	100-Year Return	2-Year Return	100-Year Return
Mountain Valley	1.82	4.59	3.48	9.62
Desert Floor	0.887	2.24	1.60	4.52

Source: NOAA Atlas 14

3.4.2 - SOIL CONDITIONS

A Preliminary Geotechnical Engineering Investigation Report was prepared for this project (BSK Associates, 2017). This report provides the description of the geotechnical conditions at the project site, as well as other data presented herein. This prescribed input corresponds to the soil conservation map for hydrologic soils.

Based on the groundwater elevation data from the California Department of Water Resources (DWR), the historic high groundwater depth in the vicinity ranges from approximately 290 to greater than 330 feet bgs. The depth to groundwater is greater than 50 feet, therefore the potential for liquefaction, lateral spread or liquefaction induced ground collapse is very low.

A review of Department of Conservation soils, Natural Resources Conservation Service and USGS topography mapping illustrates the soils types of the Project area. The sites are predominately Cajon gravelly loamy sand, Cajon loamy sand, and Garlock loamy sand (Figure 3-3). The Cajon series is predominating throughout the Project site, the gravelly variety is found in the northwest half of Tours and is found throughout the Sunbow site, and the Garlock loamy variety in the south half of Syracuse.

Table 3-2
Project Soil Types

Soil Symbol	Soil Description	Hydraulic Group	Coverage
7	Cajon Gravelly Loamy Sand	A	50%
48	Garlock Loamy Sand	A	6%
71	Cajon Loamy Sand	C	44%

Source: SSURGO

Soil Type Descriptions

Cajon Soils: The Cajon series consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. Vegetation is mostly desert shrubs including creosotebush, saltbush, Mormon-tea, Joshua trees, some Indian ricegrass, annual grasses and forbs. Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans and river terraces. Slopes are 0 to 15 percent with elevations ranging from 200 to 4,300 feet. The climate is arid with hot dry summers and somewhat moist winters. Average annual precipitation is 2 to 9 inches, mostly in the form of winter rain. Mean January temperature is 43° to 48°F., mean July temperature is 82° to 84°F., mean annual temperature is 57° to 70°F. Frost-free season is 150 to 340 days. Cajon soils with sandy loam surface textures have moderately rapid over rapid permeability. Flooding is none to rare.

Garlock Soils: The Garlock series consists of very deep, well drained soils that formed from mixed alluvium. Vegetation is mainly creosotebush, bursage and other shrubs, filaree, buckwheat, desert needlegrass, Indian ricegrass and annual grasses. Garlock soils are on old stream terraces and alluvial fans in the Mojave Desert and have slopes of 2 to 9 percent with elevations ranging from 2,100 to 3,500 feet. The climate is aridic with hot, dry summers and mild, moist winters. The annual precipitation ranges from 3 to 8 inches, some as snow in the higher elevations, most falling in winter. The average January temperature is about 45°F. and the average July temperature is about 88°F. The mean annual temperature is about 62°F. The frost-free season is 200 to 340 days. Garlock Soils tend to be well drained; low to medium runoff; moderately slow over very rapid permeability.

Hydrologic Soils Groups

The hydrological soils groups area categorized by the Kern County Hydrology Manual (Kern County, 1992). Soil groups were classified based on the minimum infiltration rate, and are rated A, B, C, or D. The soil properties correlate saturation levels during a flood event. The flood plain model was compiled with each of these soil classifications and assigned an infiltration value to account for the initial saturation. This prescribed input corresponds to the soil conservation map for hydrologic soils. Based on the hydrological soils maps, the Soil Conservation Service describes the soils groups as follows:

Soils Group A are characterized by soils having high infiltration rates even when thoroughly wetted, consisting chiefly of deep, well to excessively drained sands or gravel. The soils have

high water transmission and low runoff potential. These soils, which are prevalent in the streambeds and on-site areas, are excellent for storm water retention basin use.

Soils Group B are characterized by having slow infiltration rates when thoroughly wetted, consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately coarse textures. These soils have a moderate rate of water transmission and are generally suitable for storm water retention basins on a case-by-case basis.

Soils Group C are characterized by having slow infiltration rates even when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water or soils with moderately fine to fine textures. These soils have a slow rate of water transmission.

Soils Group D are characterized by having very slow infiltration rates when thoroughly wetted, consisting chiefly of clay soils with high swelling potential, soils with a high permanent water table, soils with clay pan or clay layer at or near the surface, and shallow soils over nearly impervious materials. These soils have very slow water transmission and high storm runoff potential. Storm water retention basins are not recommended for Group D soils.

The solar site falls predominately within Soil Group A, with some areas in Soil Group C. Soil Group A characteristics generally are excellent for adequate percolation required for a stormwater retention basin.

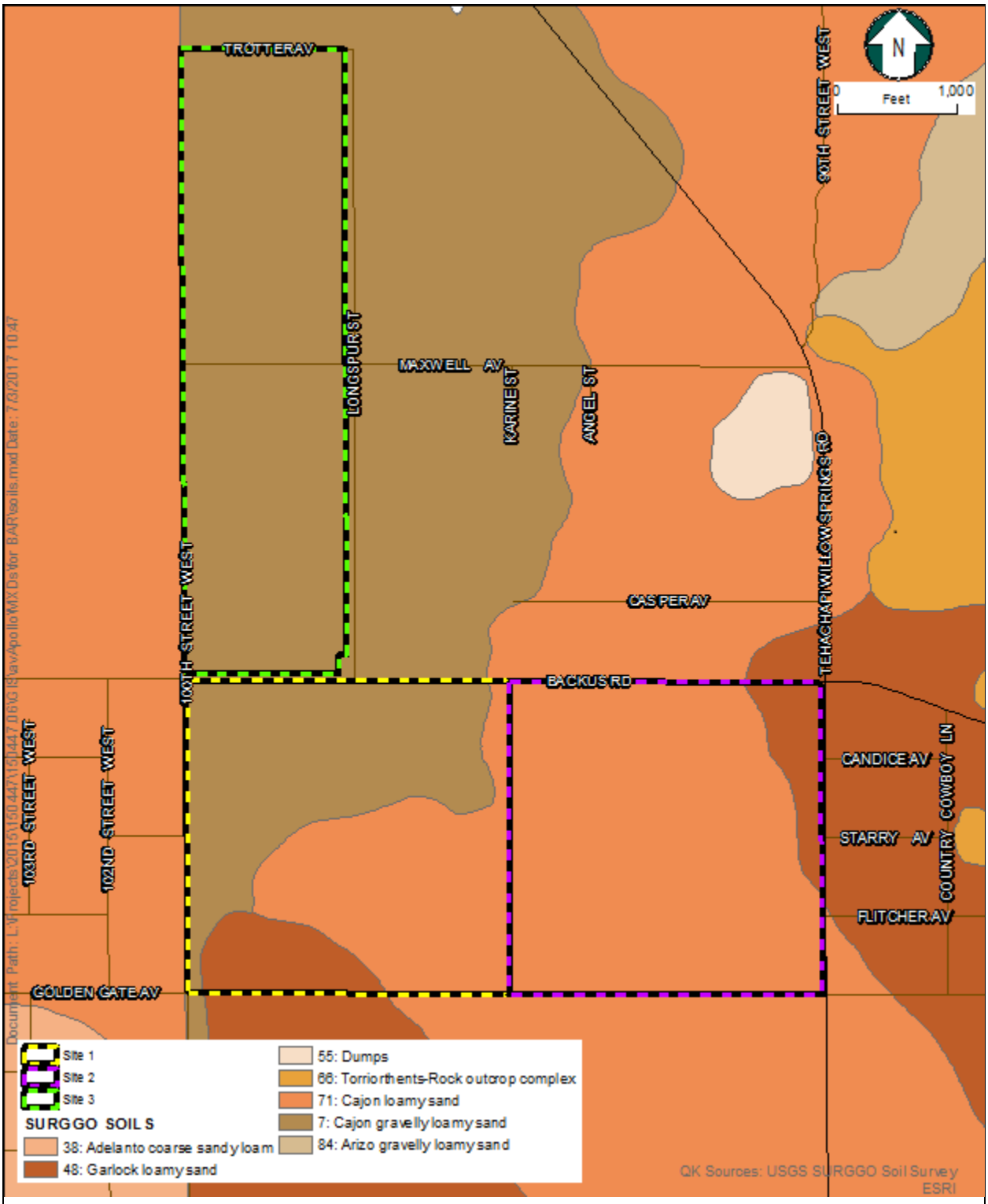

Figure 3-3
Project Site Soils Types

3.5 - Hydrology

A review of Federal Emergency Management Agency (FEMA) floodplain maps indicates that the Project is within the identified FEMA designated Zone "A," a 100-year floodplain (Figure 3-4). A number of ephemeral blue line streams run through or near the Project site (Figure 3-5). At Site 1, an unnamed blue line runs through the northeast corner. This is a continuation of the unnamed blueline stream running along the eastern edge of the Site 3. A second unnamed blueline stream runs across the southwest edge of Site 1. At Site 2, Oak Creek runs from the northern edge to the southeast corner, and another unnamed blueline stream runs across the southwest corner. At Site 3, an unnamed blue line runs through the middle of the boundary and along the eastern edge, which later crosses Site 1.

Rainwater that falls onto PV panels will drain freely to the ground. Panels will slope and rainwater will run off the lower edge. Based on the small volume of water falling from each panel, the height of the fall, and the soil conditions, it is not expected that erosion beyond a minimal level will occur. It is expected that water will fall from the PV panels and pond at a drip point before infiltrating or gradually migrating into the existing drainage patterns. Construction of the proposed facility will increase storm water runoff generated from the existing parcel without the implementation of Best Management Practices (BMPs). The County requires that any increase in runoff be retained on-site. As was previously mentioned, the PV panels will be placed above the existing ground, allowing infiltration to occur beneath each panel. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project and applicable permits will be obtained from the Lahontan Regional Water Quality Control Board (RWQCB).

Flood modeling for the project was conducted using Civil Design Unit Hydrograph Software in accordance with the proscribed method in the Kern Hydrology Manual. The unit hydrographs generated by Civil Design were input along with surface data from the United States Geological Survey into FLO-2D to model the flood depths and velocities at the project site.

Flood Zone Depths

Values depicted on Figure 3-6 (flow depth) do not include the 1 foot of freeboard required by the County. In areas where the model does not show flooding, the minimum clearance above grade will be required to be 1 foot. These values were determined using a FLO-2D model.

Flood depths for the majority of the three sites range from 0 to 1 foot. The areas greater than 1 foot follow the channel for Oak Creek as seen on Figure 3-6 it has been decided to leave this area undisturbed.

Flood Zone Velocities

Figure 3-7and Table 5, below, show the calculated velocities within the 100 year flood zone. Velocities with in the project area are anticipated to be 2 feet per second or less.

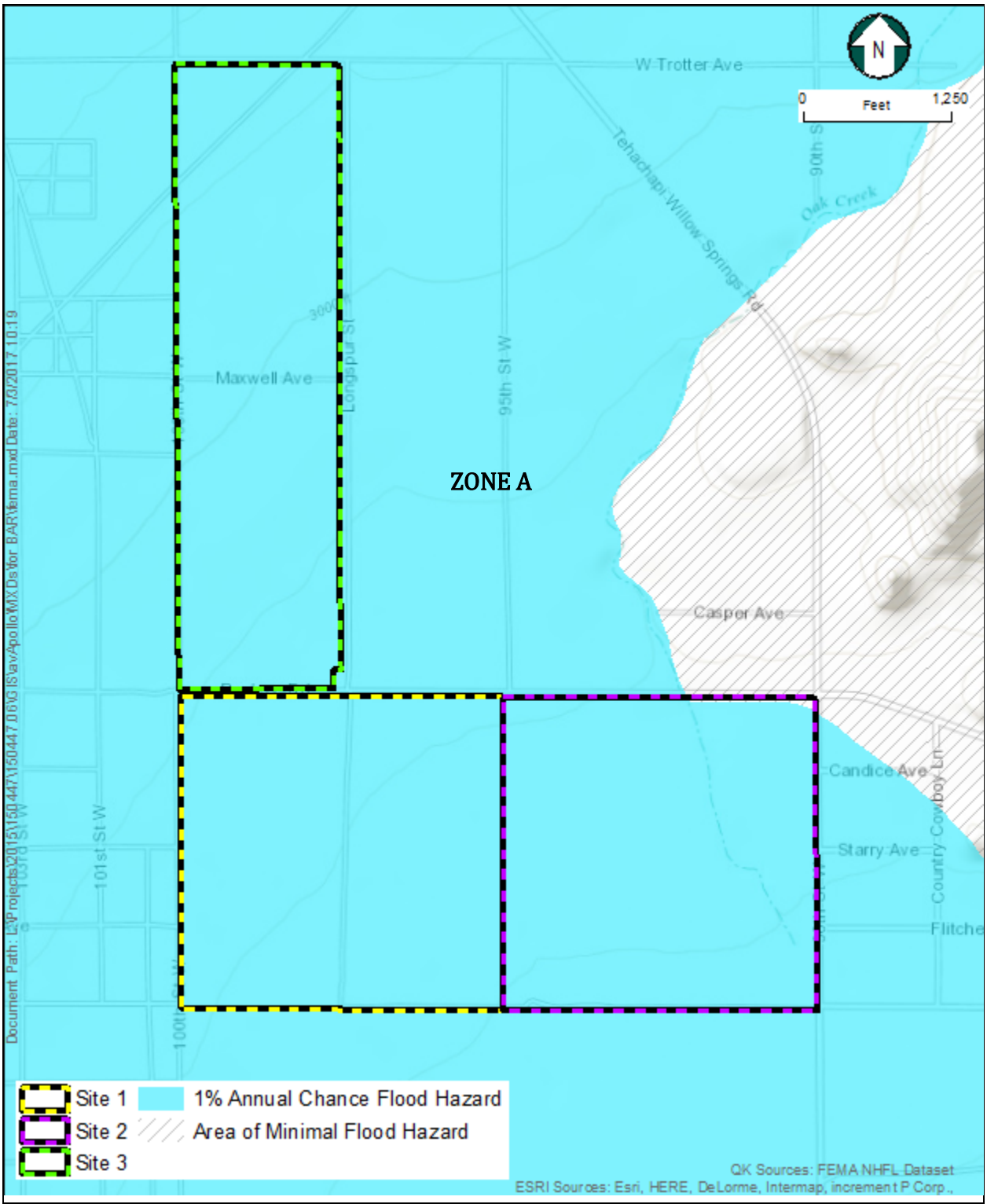

Figure 3-4
FEMA 100yr Flood Zone

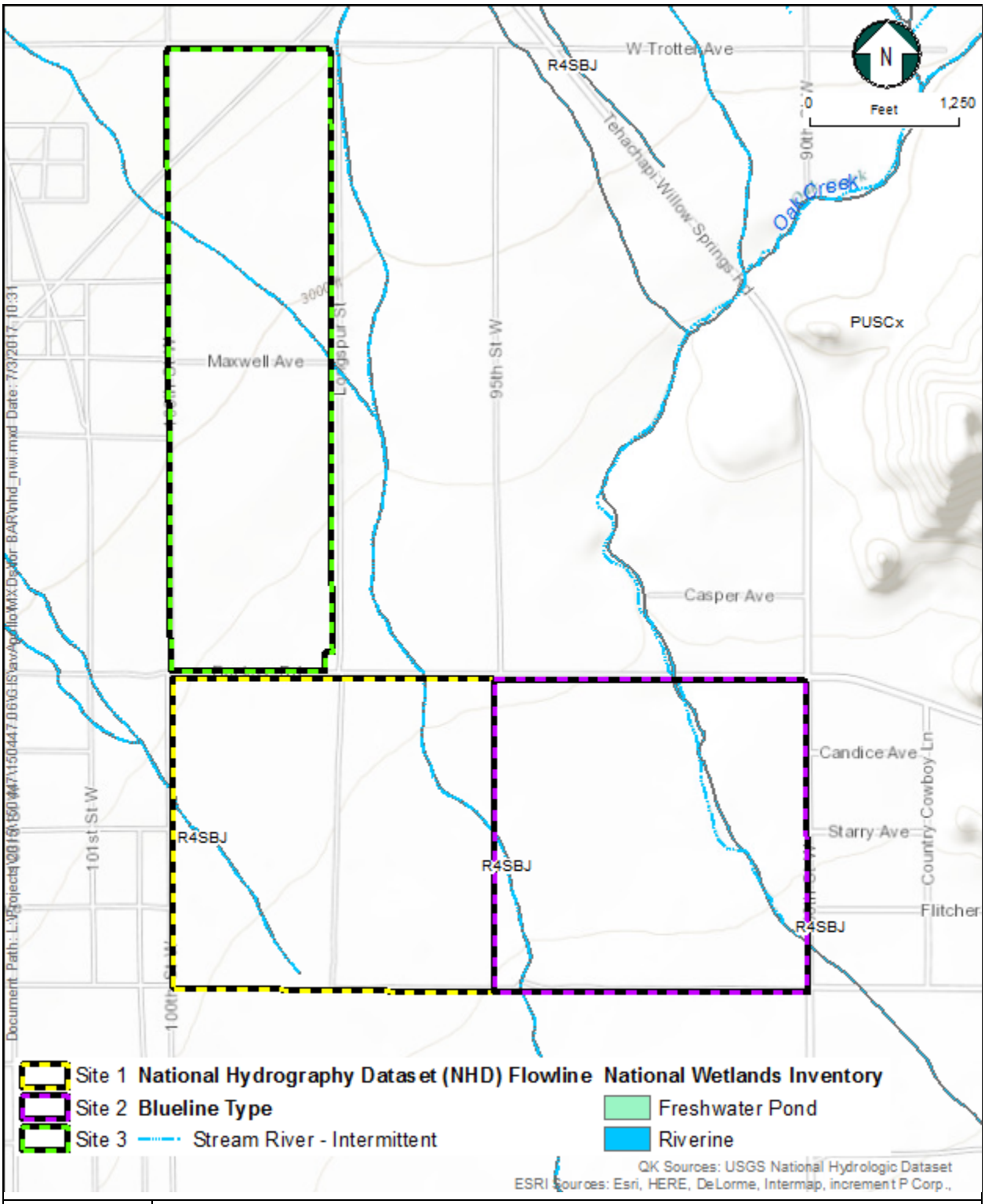

Figure 3-5
National Wetland Inventory

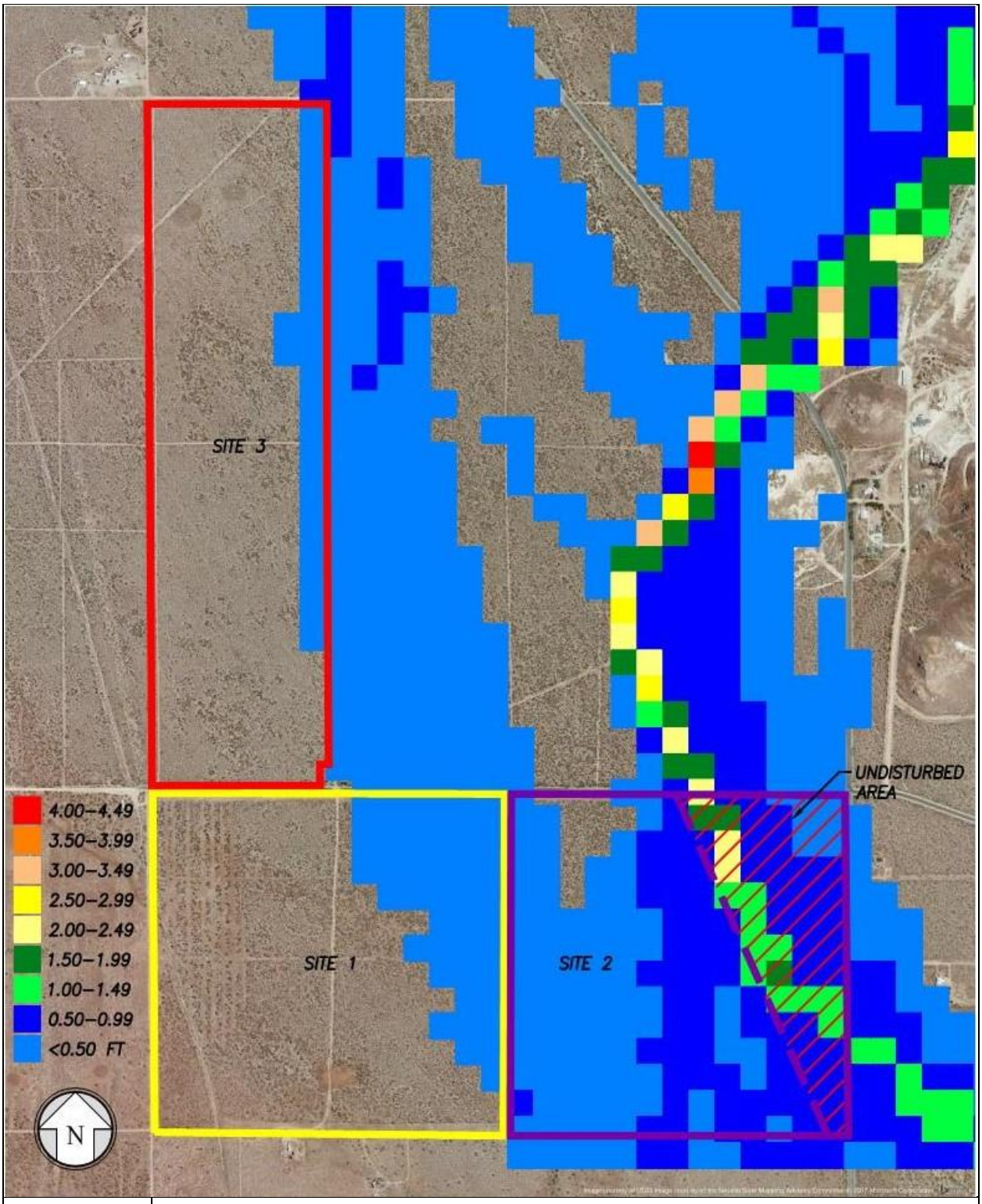

Figure 3-6
Flood Zone Depths Determined from FLO-2D

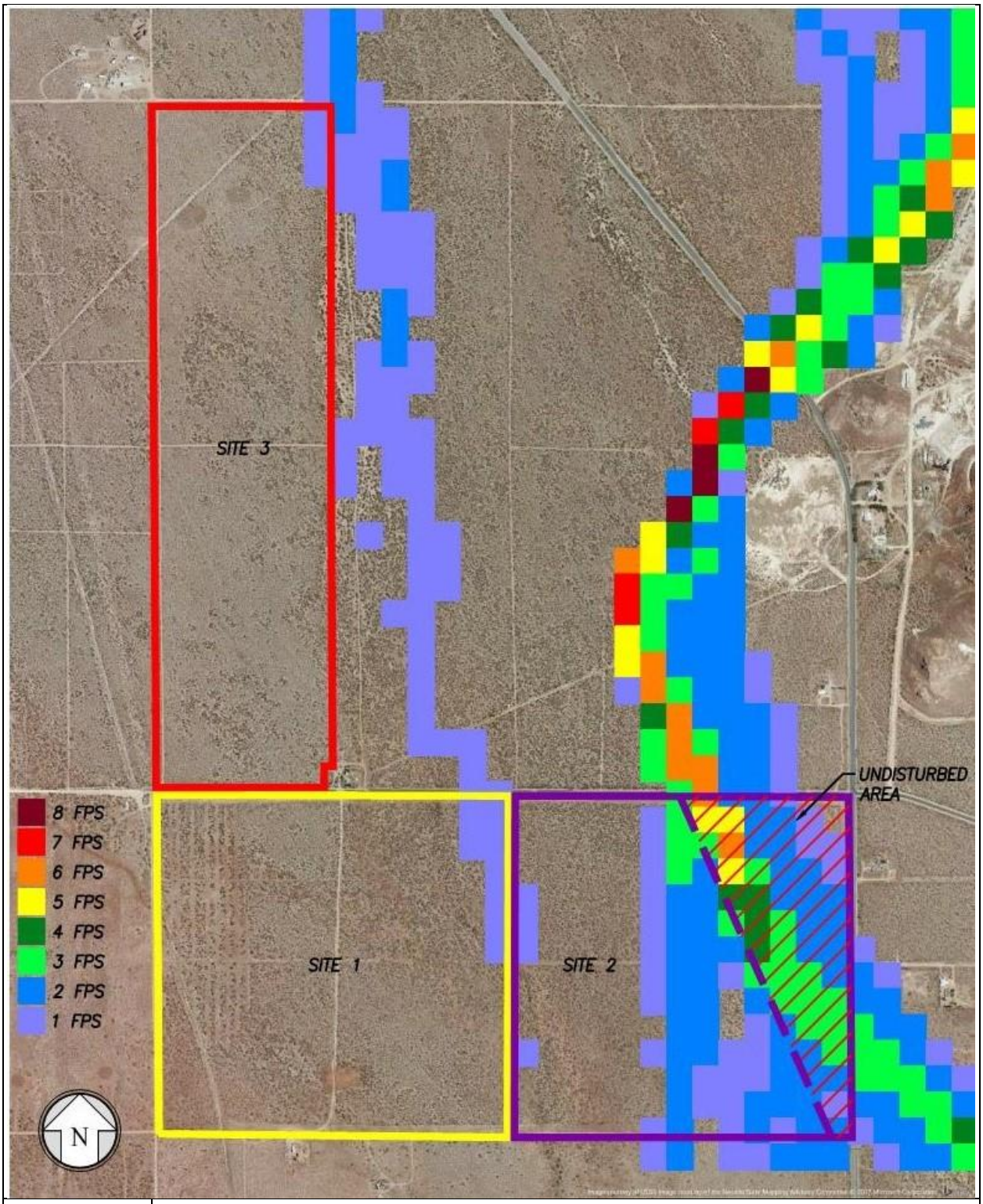

Figure 3-7
Flood Zone Velocities Determined from FLO-2D

SECTION 4 - CONCLUSIONS

The soils encountered in the AV Apollo project 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. Mitigation of the site improvements within the 100-year flood zone are expected to be addressed as required by the Kern County Floodplain Manager by either locating the solar facilities outside of the 100-year flood zone, or developing the minimum one foot of freeboard clearance between bottom of the solar panel and the calculated maximum flood height. The project is anticipated to have minor grading modifications to accommodate the solar arrays and supporting infrastructure, which will result in minimal flood encroachments. In areas where the improvements fall within the flood zone, the final design will limit obstructions in the floodplain with minimal impacts that are below the 1-foot flood encroachment allowance.

Flood depths ranged between 0.5 feet and 4.0 feet within the project limits. Calculated velocities within the project limits range between 1 feet-per-second (fps) and 8 fps. Due to the high flow rates along Oak Creek, and the potential for sediment to be conveyed in floodwaters, that can potentially pose a high risk to any electrical equipment placed along the flood zone the project site from Oak Creek to the east property line will not be developed. Flood hazard impacts of solar-related structures such as panels in areas with flood depths less than 2 feet can be minimized by maintaining a 1.0-foot clearance between the floodwater surface and the lower chord of the solar array. The supporting columns will be embedded to a sufficient depth to avoid scouring problems. It is also recommended that gravel access roads be depressed 3 to 6 inches below existing grade instead of above to help channel flood flows in their current general direction.

As previously discussed, implementation of the hydrology mitigation measures common to photovoltaic facilities in this region by the AV Apollo solar site would ensure that hydrological impacts would remain at less than significant levels.

4.1 - Mitigation Measures

HYD-1: *Prior to issuance of a grading permit, the project operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) and applicable permits shall be obtained from the Lahontan Regional Water Quality Control Board (RWQCB) for the project to the Kern County Planning and Community Development Department that specifies best management practices (BMPs) 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:*

a) Stockpiling and disposing of demolition debris, concrete, and soil properly;
b) Installation of a stabilized construction entrance/exit and stabilization of disturbed areas;

c) *Implementing erosion controls;*
d) *Properly managing construction materials;*
e) *Proper protections for fueling and maintenance of equipment and vehicles; and*
f) *Managing waste, aggressively controlling litter, and implementing sediment controls.*

With the implementation of Mitigation Measure **HYD-1**, no significant impact would result from the project to include the AV Apollo solar site. Prior to obtaining a grading permit, the site plan design and SWPPP 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 and approval of the final site plan design and SWPPP.

HYD-2: *Prior to issuance of a grading permit, the project operator shall prepare a flood plan analysis study completed to determine the Base Flood Elevation (BFE) for the project sites.*

HYD-3: *Prior to issuance of a grading permit, the project operator shall prepare a drainage plan that is designed to minimize runoff and surface water pollution and will include engineering recommendations to minimize the potential for impeding or redirecting 100-year flood flows. The final design of the solar arrays shall include one foot of freeboard clearance between the bottom of the solar panel and the calculated maximum flood depths. Site grading shall be designed to prevent increasing the existing 100-year water surface elevations more than one foot or as required by Kern County's Floodplain Ordinance. The drainage plan shall be prepared in accordance with the Kern County Grading Code, Kern County Hydrology Manual and policies related thereto and approved by the Kern County Engineering, Surveying and Permit Services Department.*

With implementation of Mitigation Measure **HYD-1, HYD-2 and HYD-3**, as well as BMP and the recommendation above, no significant impact would result from the project to include the AV Apollo solar site. Prior to obtaining a grading permit, the site plan will incorporate the drainage plan designed to minimize runoff as listed above.

SECTION 5 - REFERENCES

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BSK Associates. (2017). *Preliminary Geotechnical Evaluation Proposed Apollo Solar Project.* Bakersfield.

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Kern County. (2009, September 22). *Kern County General Plan.*

CivilDesign Unit Hydrograph Method, Kern County (2014)

FLO-2D (2009)

Appendix K
Traffic Impact Analysis

ESA

901 East Main Street | Visalia, CA 93292

June 9, 2017

John Wieland
Lendlease Energy Development LLC
1 North Wacker Drive, Suite 850
Chicago, IL 60606

Subject: AV Apollo Solar Project

Dear Mr. Wieland:

QK has completed the trip generation analysis for the AV Apollo Solar Project (project). This letter documents key assumptions and methodologies proposed for the project.

GENERAL PROJECT DESCRIPTION

The project is located in the eastern high desert region of unincorporated Kern County on approximately 492 acres of land. The site may be combined and constructed at the same time as a single, 60-megawatt (MW) facility, or alternatively, could be developed as three independent, 20-MW facilities on approximately 160 acres, respectively, depending upon market conditions. The project sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on the Syracuse & Tours project sites.

The project sites are located in the western extent of the Mojave Desert near Rosamond, California, along Backus Road, between 90th Street West and 100th Street West (also known as Tehachapi Willow Springs Road), south of State Route (SR) 58. The parcels are described as the West half of the West half of Section 18, Township 10 North, Range 13 West, San Bernardino Base and Meridian, and the North half of Section 19, Township 10 North, Range 13 West, San Bernardino Base and Meridian.

TRIP GENERATION

Trip generation estimates can be obtained from several sources, most notably the current Trip Generation, Institute of Transportation Engineers. However, descriptions for current land uses in Trip Generation are not comparable to the usage for the proposed solar project. Therefore, trip generation rates were provided based on information as contained in the Initial Study/Notice of Preparation for the AV Apollo Solar Project and as provided by the project applicant and/or consultant.

Construction

The construction activities for the project fall into three main categories: (1) site grading and earthwork; (2) solar array construction; and (3) electrical interconnection to transmission owner infrastructure. The entire process is estimated to take seven to ten months. Site grading and earthwork is anticipated to begin during the first quarter of 2019, with operations beginning in the fourth quarter of 2019. Construction would primarily occur during daylight hours, Monday through Friday. Additional hours and/or days may be necessary to facilitate the schedule.

The construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. The average workforce is expected to be approximately 200 construction, supervisory, support, and construction management personnel on-site during construction. The on-site workforce

has been conservatively estimated to peak at approximately 300 individuals for short periods of time, which is typically a few weeks. It is anticipated that the construction workforce would commute to the site each day from local communities. Construction staff not drawn from the local labor pool would stay in nearby hotels and nonetheless support the local economy.

For this analysis, we have applied a conservative occupancy rate of 2.0 to trips generated by construction personnel. Therefore, we have assumed a maximum of 150 trips are generated in both the a.m. and p.m. periods due to construction personnel. However, as is typical with construction activities, trips are anticipated to be distributed over longer a.m. and p.m. periods and will not necessarily coincide with the traditional commuting peak periods of 7:00 a.m. to 9:00 a.m. or 4:00 p.m. to 6:00 p.m. It is anticipated the trips will be spread over 4-hour periods, from 5:00 a.m. to 9:00 a.m. and 2:00 p.m. to 6:00 p.m., resulting in an average of approximately 38 trips in the a.m. and p.m. peak hours.

It is also anticipated there will be parts, materials and equipment delivered to the job site throughout construction, made by large heavy-haul transport trucks during the workdays. Similar projects have indicated 12 trucks are needed over the course of construction for a 1-megawatt facility. For a 60-megawatt facility, this corresponds to 720 total trucks needed. Spreading this out over the construction period and conservatively estimating truck deliveries twice per week, we calculate 12 additional trips for both a.m. and p.m. periods due to truck deliveries.

Operations and Maintenance (O&M)

The project would include an on-site O&M building to be unmanned and monitored remotely 24 hours per day, seven days a week.

The solar panel surfaces may be washed seasonally to increase the average optical transmittance of the flat panel surface. Panel washing is expected to take 10 days to complete per wash, up to four times per year or a total of 40 days per year to complete. Additional staff of two to five people would be required during panel washing and are expected to be hired from the local community. These two to five trips are considered negligible in terms of traffic impact. Ongoing maintenance and periodic repair are also anticipated to produce negligible results in terms of traffic impact.

TRAFFIC IMPACTS

Based on the above shown anticipated 50 trips – 38 construction staff and 12 truck deliveries – the project does not generate significant traffic during any peak hour, even during construction. Based on traffic data provided by Caltrans and Kern County and the Florida Department of Transportation *Level of Service Handbook*, State Route 14 and the adjacent local roadways of Backus Road and Tehachapi Willow Springs Road all operate with Levels of Service of A and B.

The addition of the 50 trips will not change these Level of Service classifications. In addition, the project is consistent with the current land use and does not warrant the completion of a detailed traffic impact study.

If you have any questions or need more information, please feel free to contact me at (559) 733-0440.

Sincerely,

Matt Hamilton, PE
Senior Associate Engineer

Appendix L

Water Demand Study, Will Serve Letters, and Water Supply Assessment

ESA

MEMO

Date: June 9, 2017

Project No.: 150447.06

To: John Wieland, Director of Development
LendLease Energy Development

From: Cathy Williams, PE, Senior Associate Engineer

Subject: AV Apollo Solar Project - Water Demand Memorandum

cc: File

REGISTERED PROFESSIONAL ENGINEER
CATHERINE SUE WILLIAMS
No. 75489
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

Catherine S. Williams

Introduction

This memorandum assesses possible construction and operational water demand impacts by the development of the AV Apollo Solar Project (Project), which includes:

- Syracuse Solar (Site 1): 160 acres;
- Tours Solar (Site 2): 160 acres; and
- Sunbow Solar (Site 3): 172 acres

Project Description

The Project is in the eastern high desert region of unincorporated Kern County on an approximately 492-acre site. The site may be combined and constructed at the same time as a single, 60 megawatt (MW) facility, or alternatively, could be developed as three independent, 20-MW facilities, each on approximately 160 acres, depending upon market conditions. The sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on Site 1 and Site 2. It is estimated that or 490,000 thin-film modules would be installed at the 492-acre site. Based on this estimate:

- Site 1 will have an estimated 163,000 panels;
- Site 2 will have an estimated 163,000 panels; and
- Site 3 will have an estimated 163,000 panels

A 300-day construction period is anticipated to develop the entire 492-acre site.

Construction Impacts

Water demand during the construction phase would be limited to: 1) the control of fugitive dust and 2) site preparation (e.g., concrete mixing) at the Project site. It is assumed that bottled water for construction worker consumption would not be provided, as well as temporary onsite sanitation facilities would not require water and therefore, are not included in this analysis.

According to industry averages and Project proponent estimates, dust control of the 60-MW facility on 492 acres would require approximately 40,000 gallons/day X 300 days. Site preparation would require 120,000 gallons/day X 300 days. As a result, dust control would require approximately 12,000,000 gallons (36.8

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acre-feet) and site preparation would require approximately 36,000,000 gallons (110.5 acre-feet). Therefore, the anticipated total water demand during construction is approximately 48,000,000 gallons (147.3 acre-feet).

Operational Impacts

For this analysis, it is assumed that the panels would be washed four times per year and that each panel would require 1 gallon of water per washing. Using these assumptions, the following formula was developed to determine total water demand per year during operations (per Site):

163,000 solar panels X 1 gallon/solar panel/washing X 4 washings/solar panel/year = 652,000 gallons/year, or 2.0 acre-feet/year per Site

Therefore, the anticipated total water demand per year during operations for all three sites combined would be approximately 1.96 million gallons, or 6 acre-feet.

Conclusion

Construction of the 492-acre site would require approximately 48,000,000 gallons (147.3 acre-feet) of water.

During operation, each site would use approximately 652,000 gallons/year (2.0 acre-feet/year) of water.

CW

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OFFICE: 661.510.8516
FAX: 661.294.8522
32016 N. CASTAIC RD.
CASTAIC, CA 91384

To whom it may concern:

AV Apollo Solar by Syracuse Solar, LLC, Tours Solar, LLC and Sunbow Solar by Sunbow Solar, LLC has contacted with RMR Water Trucks regarding the purchase of construction and operational water for a solar project anticipated to begin construction in the 1st quarter of 2019.

The AV Apollo Solar project has an estimated water demand of approximately 48,000,000 gallons (147.3 acre-feet) of water during construction activities.

During operations approximately 652,000 gallons/year, or 2.0 acre-feet/year per Site is anticipated. Total water demand per year during operations for all three sites combined would be approximately 1.96 million gallons, or 6 acre-feet for the next 35 years.

RMR Water Trucks has been providing construction and operations water to development projects in Kern County since 2009. The Company intends to provide water for the AV Apollo Solar Project from its water well located on Backus road at about 97th street west (APN 346-131-11). The well site shares a property line with one of the solar sites. 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 roughly 14 months.

If you have any questions, please feel free to contact me at 661 510 8516.

Thank you,

Deke Pike

President

WATER SUPPLY ASSESSMENT

KERN COUNTY

AV APOLLO SOLAR PROJECT

JUNE 2018

WATER SUPPLY ASSESSMENT

AV APOLLO SOLAR PROJECT

Prepared for:

Lend Lease (US) Energy Development, LLC
909 Lake Carolyn Parkway, Suite 260
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Contact Person: Trey Lopez, Assistant Development Manager
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August 2018

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Project #150447.06

Table of Contents

SECTION 1 - Introduction *1-1*

1.1 - Regulatory Requirement 1-1
1.2 - Project Description and Location 1-1
1.3 - Project Water Requirements and Setting 1-2

SECTION 2 - Water Resources/Water Supply *2-1*

2.1 - Proposed Water Supply 2-1
2.2 - The Antelope Valley Groundwater Cases Judgment and Adjudication 2-2
2.3 - The Groundwater Basin(s) 2-2
2.3.1 - The South Lahontan Hydrologic Region 2-3
2.3.2 - The Antelope Valley Groundwater Basin 2-3
2.3.4 - The Willow Springs Subbasin 2-6
2.4 - The Antelope Valley – East Kern Water Agency 2-6
2.5 - The Planning Documents 2-7

SECTION 3 - Water Supply Sufficiency *3-1*

3.1 - Physical Availability 3-1
3.2 - The 2015 AVEK Urban Water Master Plan – Water Years Adequacy Projections 3-2
3.3 - The Antelope Valley Groundwater Adjudication 3-4

SECTION 4 - Conclusions *4-1*

SECTION 5 - References *5-1*

Appendices

Appendix A – Chapter 643, Statutes of 2001 (Senate Bill 610)
Appendix B – Site-Adjacent Water Purveyor
Appendix C – Antelope Valley Groundwater Basin Adjudication
Appendix D – 2015 Urban Water Management Plan, Antelope Valley – East Kern Water Agency
Appendix E – AV Apollo Solar WSA – Consistency with DWR Guidelines

List of Figures

Figure 1-1 Project Site 1-3
Figure 1-2 Project Site Location 1-4
Figure 1-3 Project Location: South Lahontan Hydrologic Region 1-6
Figure 1-4 Project Location: Antelope Valley Groundwater Basin 1-7

Figure 1-5 Project Location Within the Willow Springs Subbasin 1-8
Figure 1-6 Project Location Within the Antelope Valley Adjudication Area 1-9
Figure 2-1 South Lahontan Groundwater Basin Prioritization 2-4
Figure 2-2 Subbasins, Antelope Valley Basin 2-5

List of Tables

Table 1-1 Project Site "Parcels" 1-2

SECTION 1 - INTRODUCTION

1.1 - Regulatory Requirement

Senate Bill 610 (Chapter 643, Statutes of 2001) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and land use decisions made by cities and counties. The statute requires detailed information regarding water availability to be provided to city and county decision-makers prior to approval of specified large development projects which are subject to CEQA (the California Environmental Quality Act) approval. These include solar projects as an industrial use. The statute also requires this detailed information to be included in the administrative record that serves as the evidentiary basis for an entitlement action by the city or county on such projects. The statute-required water supply assessment (WSA) must examine the availability and sufficiency of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the Project in addition to other existing and planned future uses of the identified water supply.

The State Department of Water Resources "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" (Guidebook) and the sample format presented in the Guidebook were used as guides in preparing this water supply assessment. Pertinent excerpts from the law stipulating requirements for water supply assessments precede Sections of this report. The full text of Chapter 643, Statutes of 2001 (SB 610) is included in Appendix A.

1.2 - Project Description and Location

The Project is a 493.5-acre solar panel facility to be developed by Sunbow Solar I LLC, Syracuse Solar LLC, and Tours Solar LLC. It proposes developing a combined total 60-megawatt (MW) facility producing renewable electrical energy; that the Project components be built as a single 60-MW facility or alternatively as three independent 20-MW facilities. Depending upon market conditions, each of the parcels may also include or be developed with 20-MW of advanced energy battery storage units. Electricity generated on the Project site will be transmitted to a proposed Southern California Edison (SCE) switching station; from there, via interconnection, the electricity would be transmitted to an existing SCE 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road.

As shown in Table 1-1 the proposed solar facility of three basic "parcels" will include approximately 258,000 crystalline-silicon modules or 490,000 thin-film modules arranged in a grid pattern. The solar modules will be installed on either fixed tilt racks or single axis tracking structures (or a combination thereof) mounted on vertical posts.

Table 1-1
Project Site "Parcels"

	APN #'s	Acres
Syracuse "Parcel"	346-022-03	160.00
Tours "Parcel"	346-022-03	160.00
Sunbow parcels	346-131-12	21.88
	346-131-13	21.88
	346-131-14	21.77
	346-131-15	21.76
	346-131-16	21.65
	346-131-17	21.65
	346-131-18	21.05
	346-131-19	21.84
Sunbow "Parcel" Total Acreage		173.48
Project Total Acreage		493.48

Corollary, supportive, facilities on the Project site will include transformers, switchgear, operations and maintenance buildings and telecommunication facilities. The Project is located in southeastern Kern County nine miles southwest of the unincorporated community of Mojave. It is approximately 9.5 miles south of State Route (SR) 51; SR 14 (Antelope Valley Freeway) is approximately 7.3 miles to the east. The site is bounded to the west by 100th Street West, to the north by Trotter Avenue and to the east by Tehachapi Willow Springs Road, within Sections 18 and 19 in Township 10 North, Range 13 West, San Bernardino Base and Meridian (SBBM).

Figure 1-1 depicts the Project site, its three Project "parcels", and site surroundings. Figure 1-2 shows the Project site location with respect to its geographic setting.

1.3 - Project Water Requirements and Setting

Water needed for construction will be trucked from a site-adjacent water purveyor and/or pumped from a potential onsite well, or wells. The construction process is estimated to take approximately 300 construction days, over the course of a 14-month period. Construction water demands are estimated to be approximately 147 acre-feet, which is equivalent to approximately 48,000,000 gallons (40,000 gallons/day x approximately 300 days = 12,000,000 gallons for dust control, and 120,000 gallons/day x 300 days = 36,000,000 gallons for site preparation and miscellaneous construction). Bottled drinking water will be provided for crews during construction activities.

Initial construction water usage will be in support of site preparation and grading activities. During earthwork for grading of access road foundations, equipment pads and project components, the principal use of water would be for compaction and dust control. Smaller quantities would be required for preparation of the concrete required for foundations and other minor uses. After the earthwork activities, water usage will be used for dust

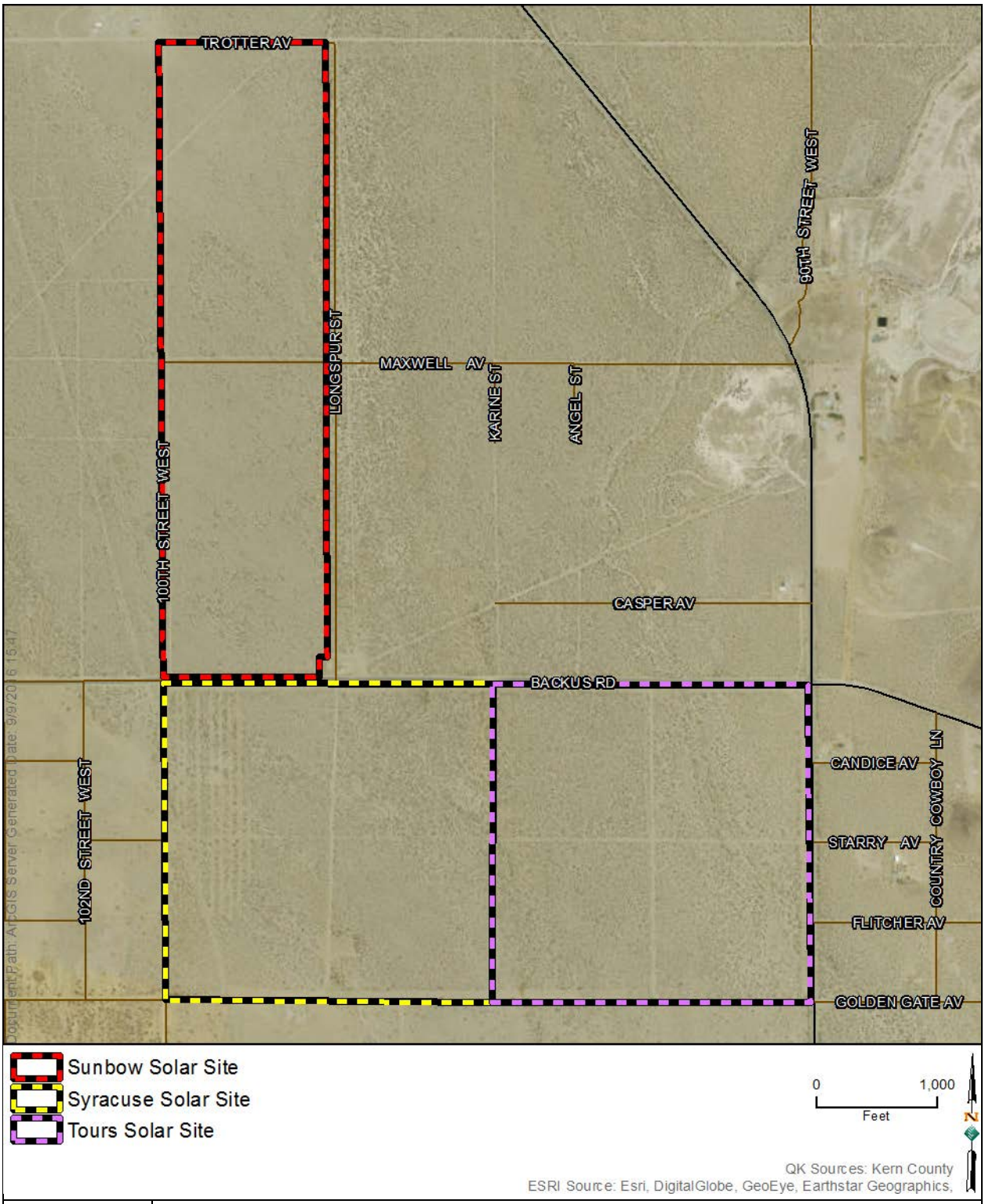

Figure 1-1
Project Site

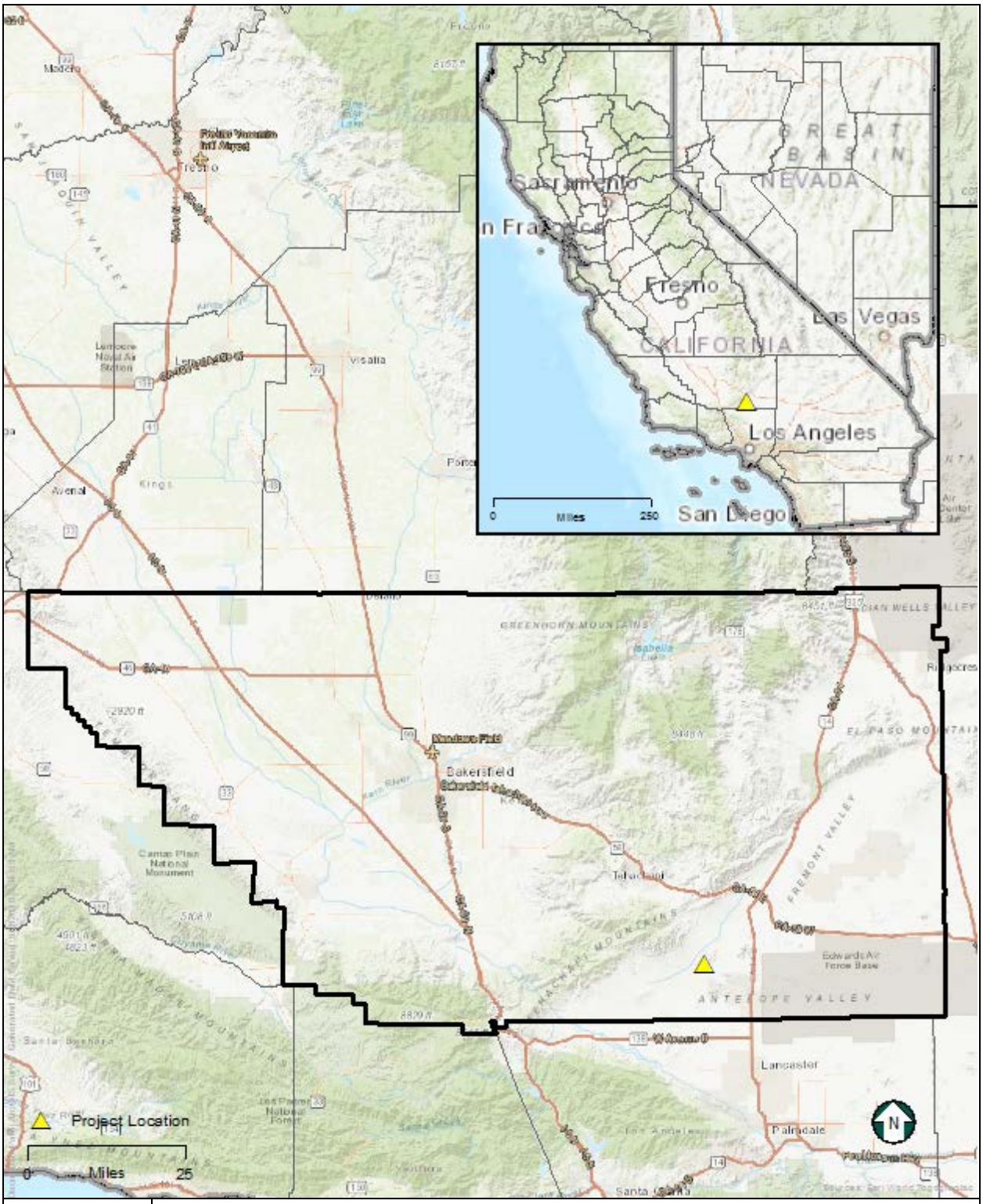

Figure 1-2
Project Site Location

suppression and normal construction water requirements that are associated with construction of the small maintenance buildings, internal access roads, revegetation and solar arrays.

The panel surfaces will be washed seasonally to increase average optical transmittance. Panel washing is expected to take 10 days per "parcel" per wash, up to four times per year or a total of 120 days per year to complete. Thus, long-term operational water demand is anticipated to be approximately 652,000 gallons/year (2.0 acre-feet/year) of water per site "parcel", 6.0-acre feet per year for the total Project. Water for panel washing will come from the site-adjacent water purveyor and/or an onsite well or wells. (The identity, location and capacity of the proposed site-adjacent, private, water purveyor is described in Appendix B).

Figures 1-3, 1-4 and 1-5 illustrate the location of the Project site within the South Lahontan Hydrologic Region, the Antelope Valley Groundwater Basin and the Willow Springs Subbasin, and the borders of these water resource areas.

Most critically, the Project location within the boundaries of the Antelope Valley Groundwater Adjudication Area is depicted on Figure 1-6.

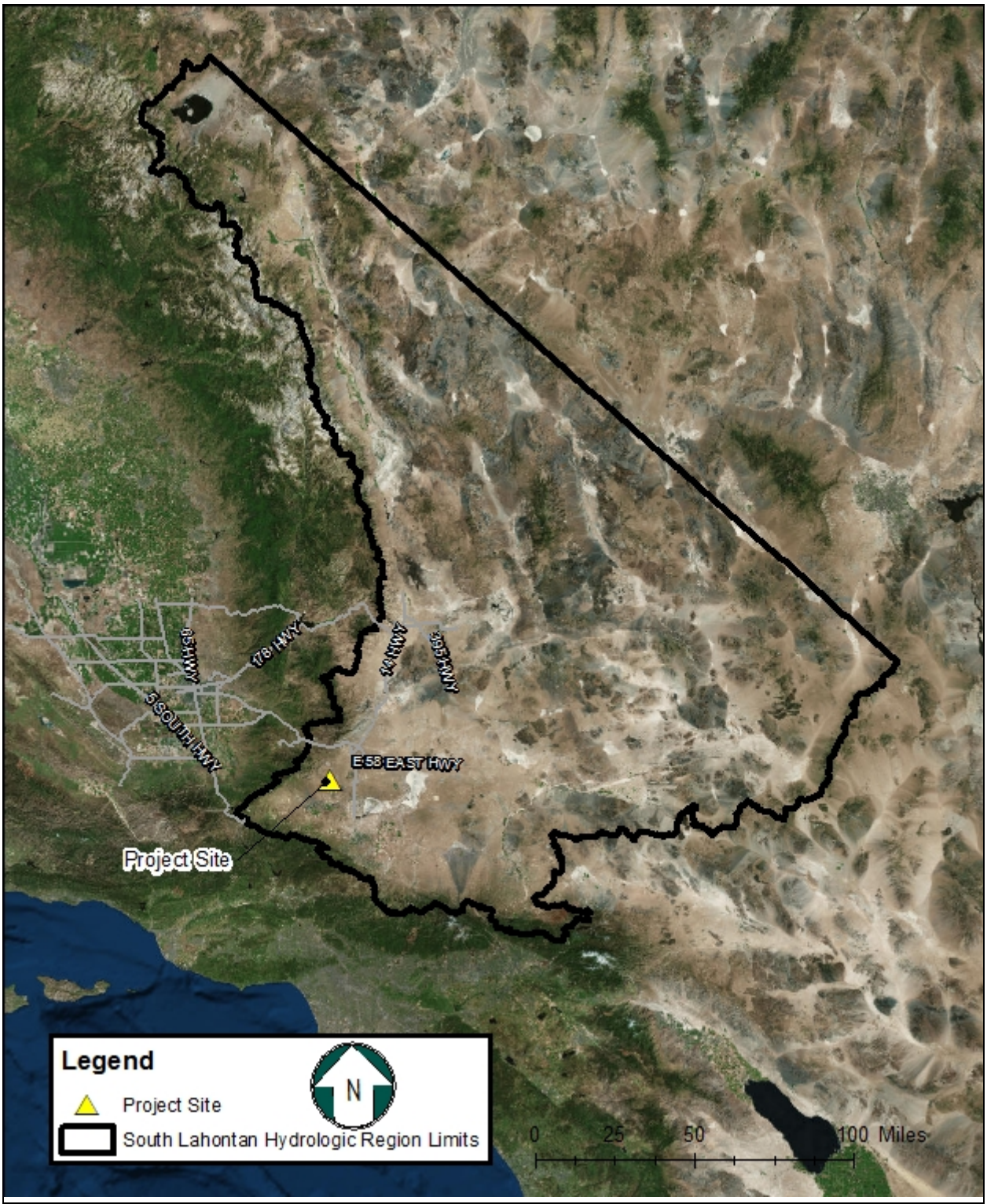

Figure 1-3
Project Location: South Lahontan Hydrologic Region

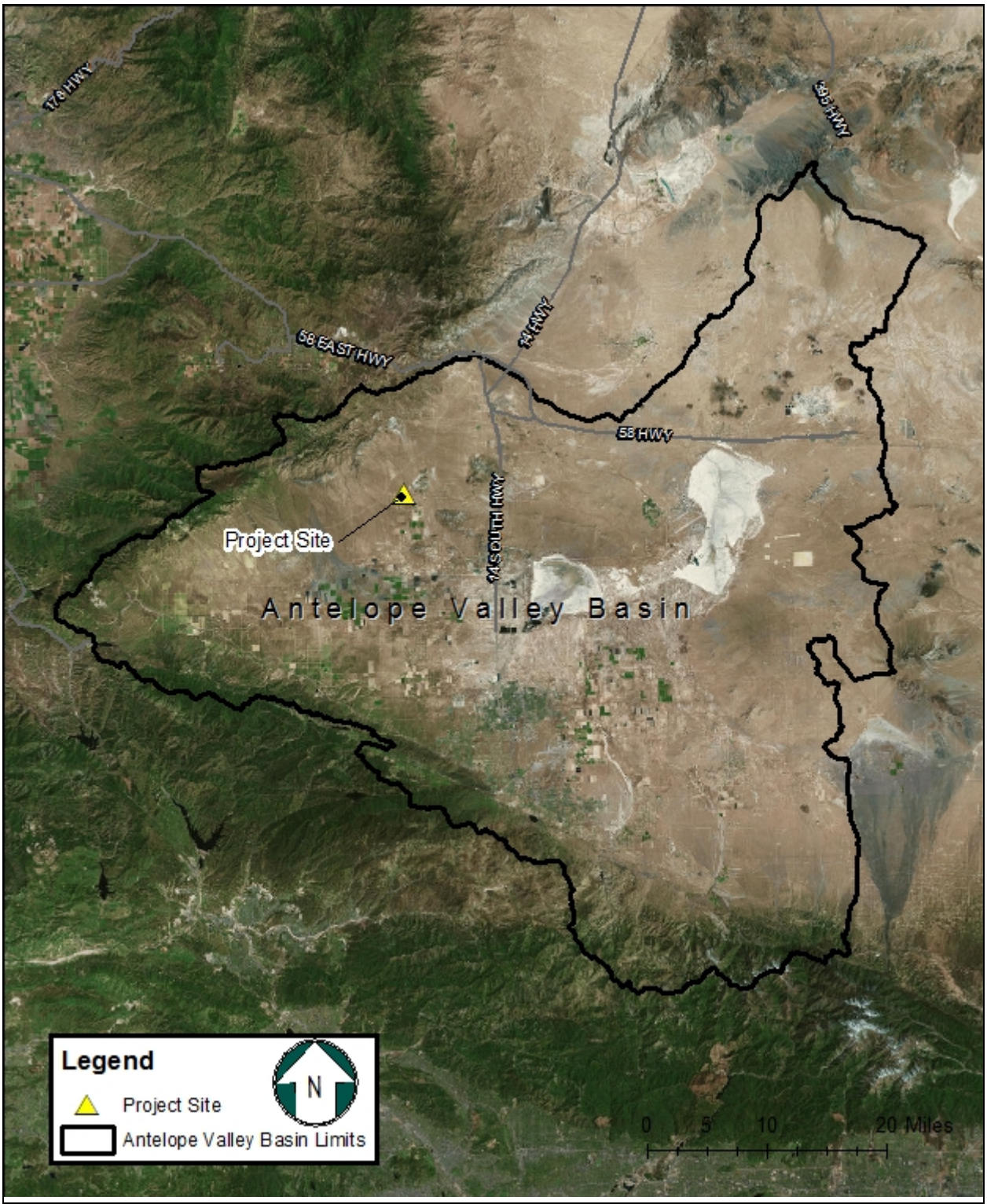

Figure 1-4
Project Location: Antelope Valley Groundwater Basin

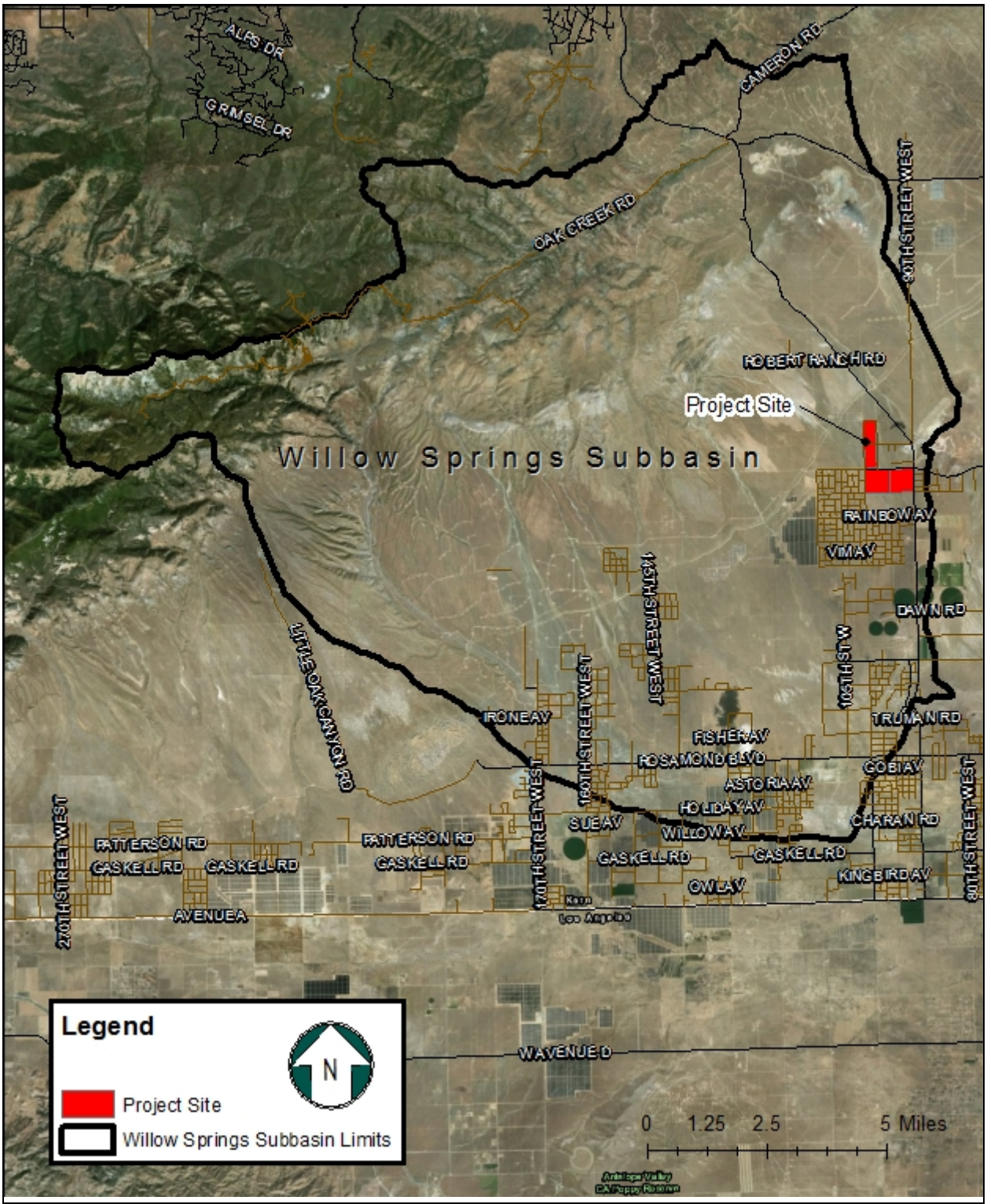

Figure 1-5
Project Location Within the Willow Springs Subbasin

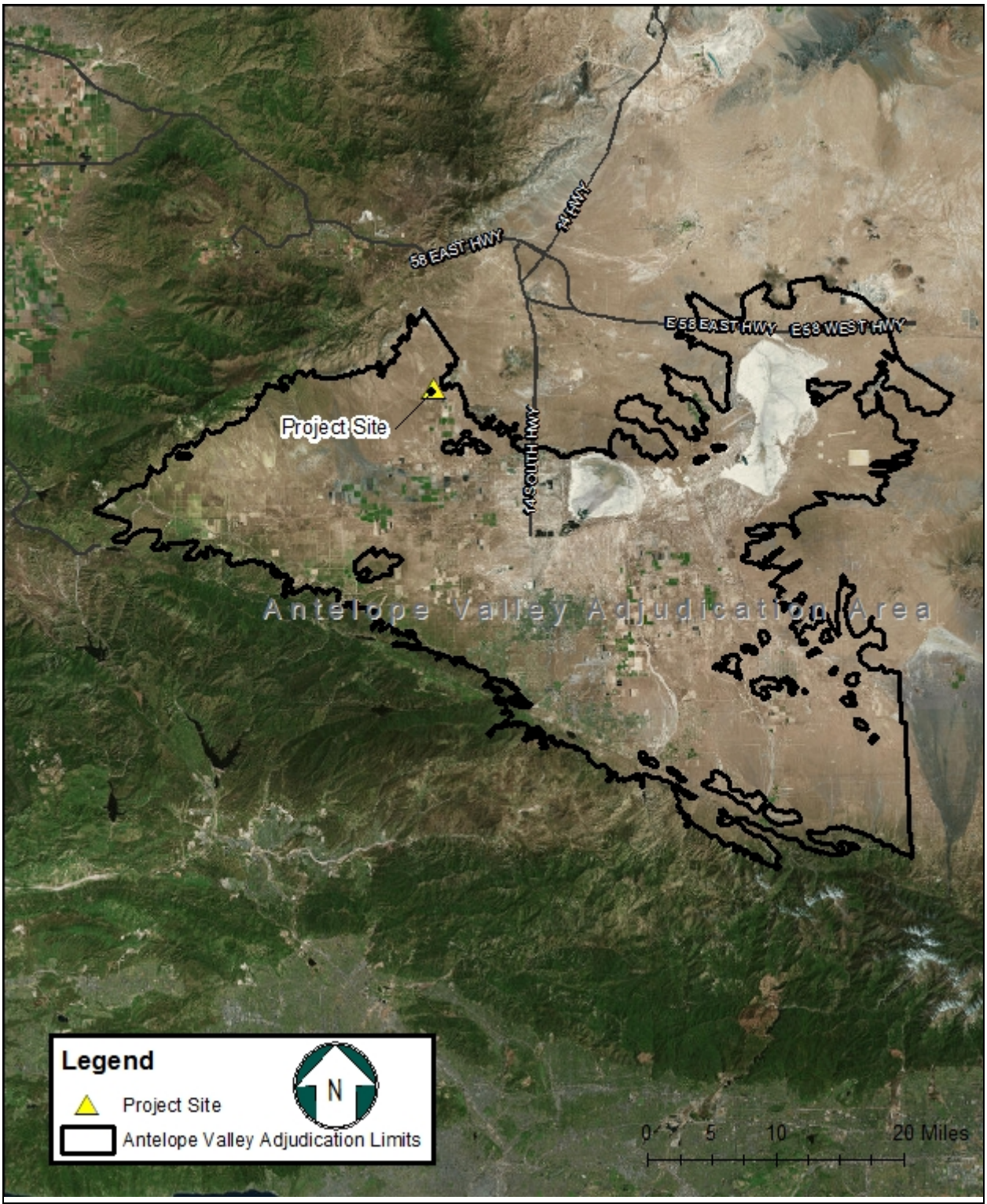

Figure 1-6
Project Location Within the Antelope Valley Adjudication Area

SECTION 2 - WATER RESOURCES/WATER SUPPLY

2.1 - Proposed Water Supply

Water Code Section 10910

(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

The Project site is currently not in agricultural production but is occupied by remnant native vegetation; there is no water usage on the site.

As described in Section 1, Project water supply is proposed to be from an adjacent water well (Appendix B) and/or by the drilling and usage of an onsite well or wells.

The site-adjacent well, owned by RMR Water Trucks, pumps at stated approximate 436 gallons per minute from a water depth of 330 feet below ground surface. The water table in the Project area has remained at approximately this depth since 1980. The well, originally drilled to supply water for a nearby mine, reportedly recently supplied approximately 5,000,000 gallons per month for the period from 1988 to 1995. From 2001 to 2009 water was provided to other consumers at approximately the same rate. Drawdown recovery during this period was approximately 2 minutes after cessation of pumping. A nearby second, smaller, well has been in operation since 1955 with a similar water table level (Appendix B).

There reportedly are no other wells in the immediate Project area. The installation and water production of a similar well or wells on the Project site appears to be physically feasible.

Project water supply by the site-adjacent well or by an onsite well and/or wells must be either statutorily exempt from or permitted by the Watermaster for the Antelope Valley Groundwater Adjudication Judgement (Appendix C).

2.2 - The Antelope Valley Groundwater Cases Judgment and Adjudication

Beginning with litigation in 1999, the Antelope Valley Groundwater Basin Adjudication was issued in 2015 by the Superior Court of the State of California County of Los Angeles – Central District, Judicial Council Coordination Proceeding No. 4408. As depicted on Figure 1-6, the Project site is within the adjudicated groundwater basin of approximately 1,390 square miles.

The Judgment confirmed that the Basin is in overdraft and promulgated regulations and procedures to govern groundwater usage in the Basin. It defined Classes of groundwater pumpers, two of which may include groundwater sources for this Project – a Non-Pumper Class and a Small Pumper Class. It defined a multi-party 'Water Master' to oversee continuing implementation of the Judgment (see pages 44-48 of Appendix C) and directed the appointment by the Watermaster of a Water Engineer, defining his duties (see pages 48-56 of Appendix C). The Watermaster and a Water Engineer are in place and are enforcing and implementing the Adjudication.

The Water Supply Assessment evaluates the physical availability of and adequate groundwater supply, in all "water years". It cannot, in view of the Adjudication, confirm whether the groundwater supply is statutorily exempt or will be authorized by the Watermaster as they consider the proposed supply.

Nevertheless, succeeding subsections of this Assessment describe the Project-relevant Hydrologic Region, Basin, and Subbasin, describe a Project-pertinent principal water agency (Antelope Valley – East Kern, AVEK) serving and regulating Basin water planning and surface water importation, and list planning documents regarding the Basin. Section 3 includes the latest (2015) AVEK projection of water availability (surface and ground) for the Basin for SB 610-standard water years.

2.3 - The Groundwater Basin(s)

Water Code Section 10910

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

> *(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board had adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has been projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition…*

2.3.1 - THE SOUTH LAHONTAN HYDROLOGIC REGION

The California Department of Water Resources, (DWR) has divided the State into 10 Hydrologic Regions. The Project site is located within the South Lahontan Hydrologic Region in a Basin (the Antelope Valley Basin) ranked as "low priority" in a statewide ranking of groundwater importance (see Figure 2-1, from the DWR April, 2015 Water Available for Replenishment Final Report. The Region encompasses approximately 1,500,000 acres (see Figure 1-3).

2.3.2 - THE ANTELOPE VALLEY GROUNDWATER BASIN

The Basin occupies approximately 1,010,000 acres within the South Lahontan Region (see Figure 1-4). It underlies an extensive alluvial valley in the western Mojave Desert. It has been subdivided by the DWR into 8 subunits based on differential ground flow patterns, recharge characteristics, and geographic location, as well as by controlling geologic structures (see Figure 2-2).

Groundwater in the Basin is used for both public water supply and irrigation. Public-supply wells in the basin are anywhere from 360 to 700 feet deep. Groundwater recharge is primarily runoff from surrounding mountains, as well as direct infiltration from irrigation, sewers, and septic systems (USGS, 2013).

The Basin has been the subject of several water management plans and of litigation during the past several decades. Such plans, involving both groundwater and surface water supplies for the Basin are discussed in Subsection 2.5 of this Assessment.

Urban Water Portfolio Actions

Method	Volume of Water Increase from 2010 to 2020
Recycled Water	0.01 MAF
Desalination	0 MAF
Water Conservation	0.01 MAF

Outflow and WAFR Estimates (MAF) by Planning Area

South Lahontan HR Groundwater Basin Prioritization Summary, June 2, 2014

Basin Ranking	Basin Count per Rank	Percent of Total for Hydrologic Region	
		GW Use	Overlying Population
High	2	41%	85%
Medium	3	14%	9%
Low	7	39%	5%
Very Low	65	7%	1%
Totals	**77**	**100%**	**100%**

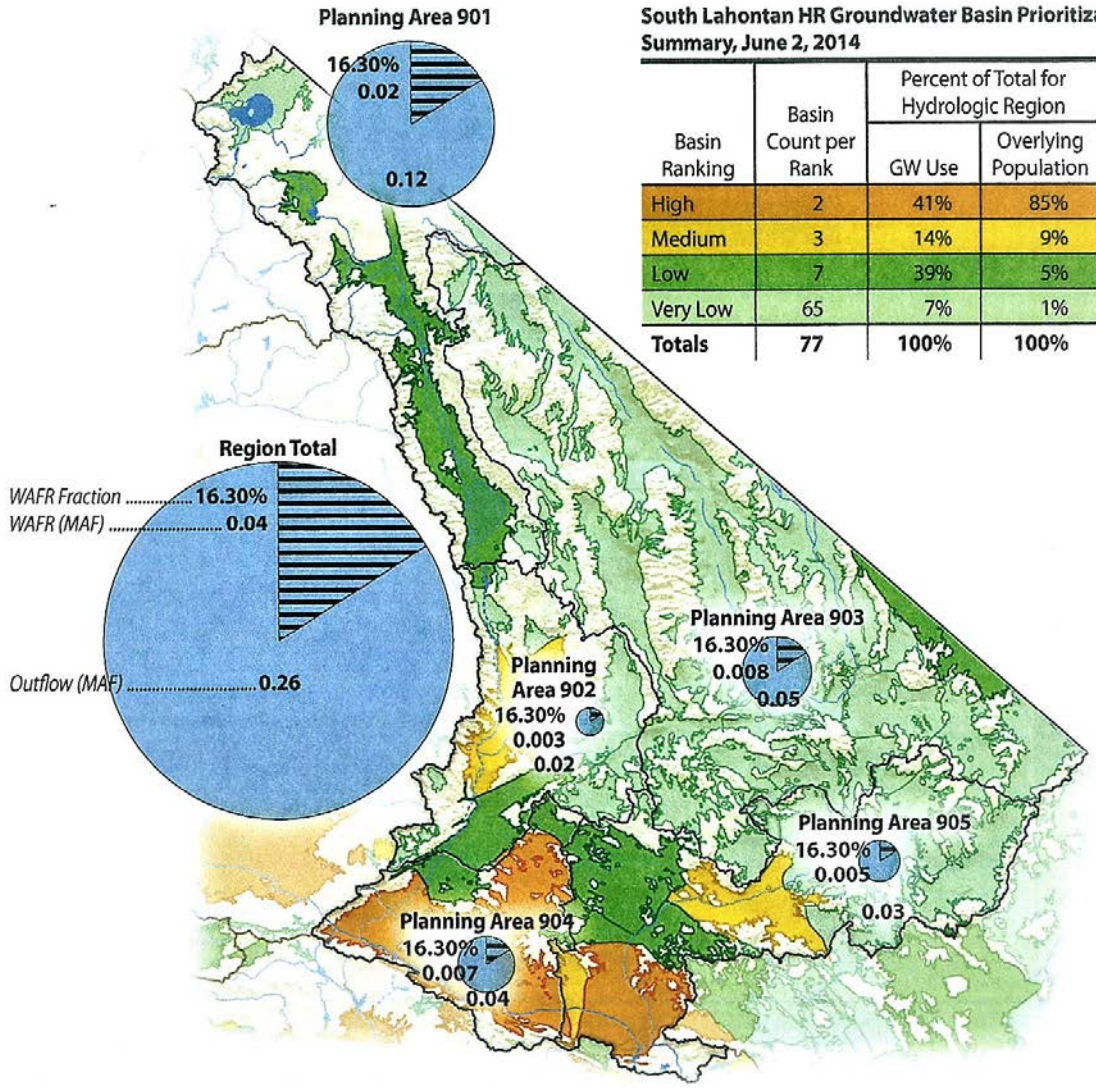

Figure 2-1
South Lahontan Groundwater Basin Prioritization

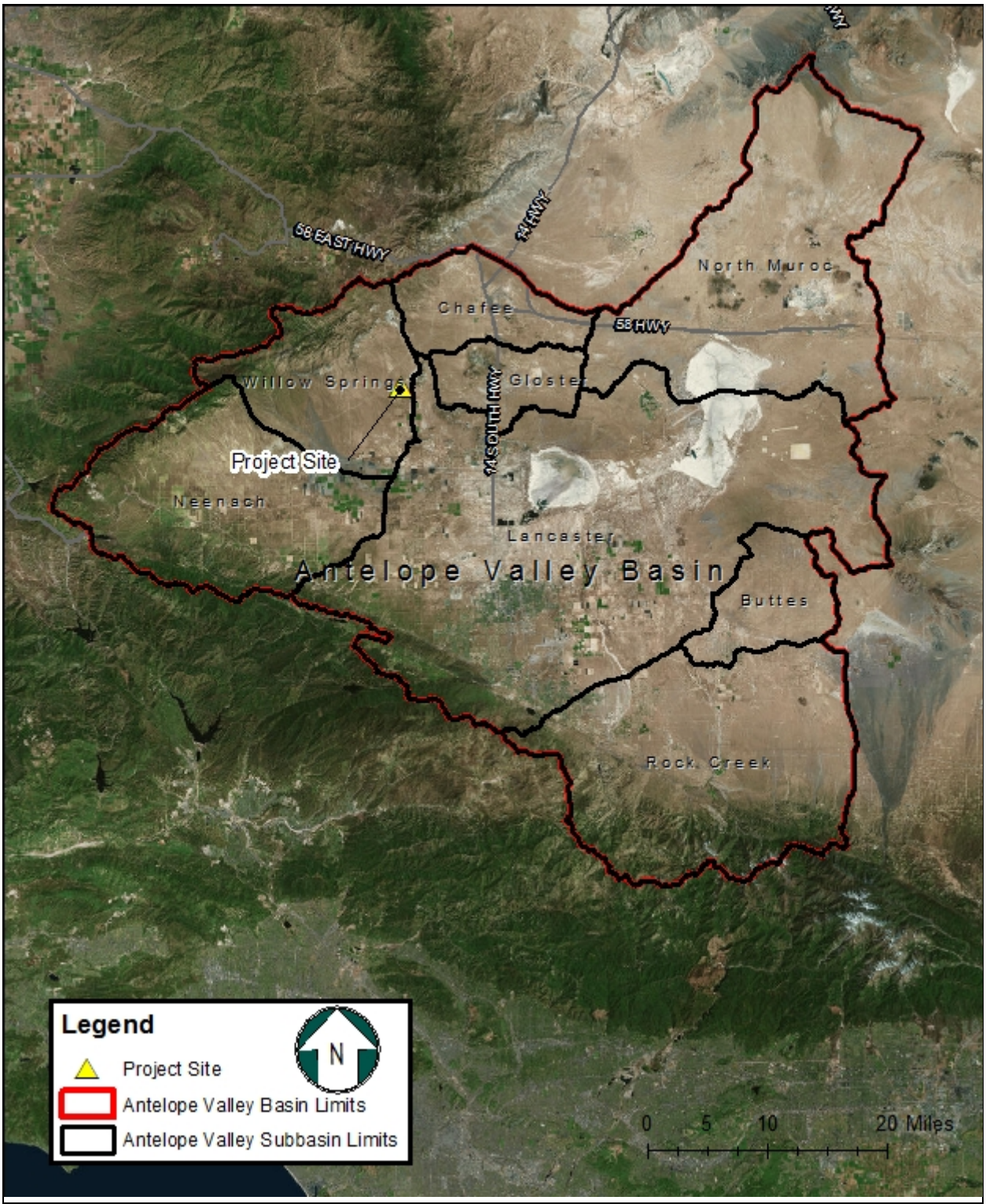

Figure 2-2
Subbasins, Antelope Valley Basin

2.3.4 - THE WILLOW SPRINGS SUBBASIN

The Willow Springs Subbasin of the Antelope Valley Basin is located as shown on Figures 1-2 and 1-3, and 1-4. The Subbasin and the location of the site therein, is depicted on Figure 1-5.

Subbasin water use is for agricultural and urban land uses. Recharge comes from intermittent streams of the surrounding mountain areas. Recharge from the Oak Creek drainage system moves generally south-eastward toward Soledad Mountain. Part of this water moves east along the north side of Soledad Mountain into the Chafee area, and part moves south along the west side of the mountain. Of the water that moves south along the west side of Soledad Mountain, most eventually moves east along the south edge of the mountain into the Gloster area and thence into the Chaffee area. Some of the water moves south and southwest into the Willow Springs area. Within the Willow Springs Subbasin, groundwater flows southeast. Depth to water ranges from 100 to more than 300 feet. Some of this water eventually discharges across the Rosamond fault into the Lancaster Subbasin, although this flow is considered negligible (USGS 2003).

There is significantly less data available regarding Willow Springs Subbasin groundwater, or surface water, resources than for the Antelope Valley Basin.

2.4 - The Antelope Valley – East Kern Water Agency

The Antelope Valley-East Kern Water Agency (AVEK) is the third largest State Water Project (SWP) Contractor in the State and, in cooperation with the other water wholesalers and retailers in the Region, has analyzed suitable locations and methods for SWP-water storage. Based on these studies and reports, groundwater basin banking has been deemed most appropriate and efficient. The Agency (AVEK) encompasses 2,300 square miles in the Mojave Desert area, northeast of Los Angeles, and includes over twenty municipal users as well as Edwards AFB, Palmdale Air Force (Plant 42) and U.S Borax. Because groundwater resources were severely overdrafted, AVEK contracted for a supplemental supply of municipal and industrial water (144,844 acre-feet) from the California State Water Project. Of the 144,844-acre-foot annual entitlement, the municipal and industrial, and agricultural water customers are currently only using about 75,000-acre feet per year, thus buttressing the water-year adequacy projections which it has made in the 2015 Urban Water Management Plan which are referenced in Section 3 of this water supply assessment.

AVEK delivers State Water Project (SWP) water used by customers in lieu of or in addition to local groundwater resources. It does not have production groundwater wells but may include groundwater pumping as a water supply in the future. Delivery of SWP water is dependent upon multiple factors such as climatic variations and other uses; therefore, AVEK has established the use of supply enhancement programs such as groundwater banking in the Antelope Valley Groundwater Basin and conjunctive water use.

2.5 - The Planning Documents

The following documents were essential to the development of this report:

- Antelope Valley-East Kern Water Agency's 2015 UWMP: This report satisfies the requirements of the California Urban Water Planning Act (ACT), which states that any urban water supplier with 3,000 or more service connections, or supplying 3,000 or more acre-feet of water per year must develop an Urban Water Management Plan (Plan). The Plan is to describe and evaluate water deliveries and uses, water supply resources, efficient water uses, demand management measures and water service contingency planning. A Plan must be redeveloped every five years.[1]
- Department of Water Resources Bulletin 118
- USGS Water Resources Investigations Report 03-4016
- USGS Scientific Investigations Report 2014-5166

[1] SB610

SECTION 3 - WATER SUPPLY SUFFICIENCY

Water Code Section 10910, Section 4.5

…(c)(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single, dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

Water Code Section 10910, Section 4.5

(f) If a water supply for a proposed project includes groundwater the following additional information shall be included in the water assessment…

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records…

The sufficiency of the Project water supply is analyzed on three bases: the physical availability of the Project area aquifer, and wells drilled therein, to provide groundwater in the amounts required for Project construction and operation; the legally-required estimates (in the 2015 Antelope Valley East Kern Water Agency (AVEK), Urban Water Master Plan of normal water years, single dry water year and multiple dry water years, water supply and demand-related water availability; the availability of groundwater for the Project in compliance with the implementation of the Antelope Valley Groundwater Basin Adjudication.

3.1 - Physical Availability

The available information regarding the physical availability of groundwater at and adjacent to the Project site (Section 2.1 and Appendix B) verifies that the groundwater aquifer and the well pumping history thereof are sufficient for both Project construction and Project

operation. Antelope Valley Basin groundwater adjudication and the surface water impact programs of AVEK, warrant a conclusion that the existing physical availability of groundwater at the Project site will remain in effect for the Project. The groundwater studies referenced in Section 2.5 which served as a basis for Basin groundwater adjudication have been addressed by the AVEK surface water importation program, and by adjudication-based groundwater usage restraints to effect overall physical water resource availability to the extent that AVEK has even been able to export surface water rights during multiple-dry years (see Section 3.2).

3.2 - The 2015 AVEK Urban Water Master Plan – Water Years Adequacy Projections

The following Tables excerpted from the Master Plan, and critical accompanying explanation text and footnote excerpts, illustrate the total imported State Water Project and groundwater resources available to the District, and the projected usage demand on such supplies. The following text extract (pages 6-3 and 6-4) is explanatory of the derivation of and basis for the Tables (as are the Table footnotes):

Prior to 1972, groundwater provided more than 90 percent of the total water supply in the Antelope Valley area. Since 1972, it is estimated that between 50 to 90 percent of the area's water supplies are from groundwater. Groundwater pumping peaked in the 1950s and then declined as greater pumping lifts and increasing energy costs made the use of groundwater in the area less economical for agricultural uses. According to USGS Water Resources Investigation Report 03-4016 (Simulation of Ground-Water Flow and Land Subsidence in the Antelope Valley Ground-Water Basin, California), groundwater levels declined more than 200 feet in some parts of the basin resulting in increased pumping lifts, reduced well efficiency, and land subsidence of more than 6 feet in some areas. The aquifers consist of gravel, sand, silt, and clay alluvial deposits, and clay and silty clay lacustrine deposits.

According to the Judgment, AVEK has an overlying pre-rampdown production right of 4,000 acre-feet per year and an overlying production right of 3,550 acre-feet per year at the end of the seven year production rampdown period, which begins January 1, 2016. In addition to the overlying production right, AVEK has the right to produce an amount of imported water return flows in any year equal to the applicable percentage (34% for agricultural imported water use and 39% for municipal and industrial imported water use) multiplied by the average amount of imported water used by AVEK within the Basin, and outside the Basin but within the watershed of the Basin (as approved by the Watermaster), in the preceding five year period. AVEK also has the rights to all imported water return flows from water imported through AVEK and not allocated to other parties identified in the Judgment. Carryovers of unused production rights and imported water return flows are allowed for a period of up to 10 years (or longer if a Storage Agreement is entered into with the Watermaster). The Watermaster appointed as a part of the Judgment consists of a five member board composed of one representative each from AVEK and LACWWD 40, one other Public Water Supplier representative, and two landowner representatives.

AVEK customers indicated in Table 4-2 also having overlying groundwater production rights per the Judgment have a total pre-rampdown production right of 38,000 acre-feet per year.

The final overlying production right of these customers will be 19,300 acre-feet per year, indicating a reduced groundwater production right of 18,700 acre-feet after the end of the seven year rampdown period.

The Judgment does not limit or modify the operation of AVEK's preexisting banking projects or the performance of its preexisting exchange agreements. AVEK operates its groundwater banking programs to help increase the reliability of the Antelope Valley region's water supplies. Excess water available from the State Water Project (SWP) is stored during wet periods and recovered for delivery to customers during dry and high demand periods or during a disruption in deliveries from the SWP. The maximum recharge volume for the Westside Water Bank is estimated to be approximately 36,000 AF per year. The maximum recovery volume is proposed to be about 36,000 AF per year. A ten percent loss factor is applied to groundwater recharged for the Westside Water Bank to account for evapotranspiration and other losses during recharge and conveyance as well as typical metering accuracy.

The referenced Tables are:

Table 7-2 Wholesale: Normal Year Supply and Demand Comparison

Description	2020	2025	2030	2035
Supply totals (From Table 6-9)	89,010	89,010	89,010	89,010
Demand totals (From Table 4-3)	83,670	85,620	85,920	86,250
Difference	5,340	3,390	3,090	2,760

Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison

Description	2020	2025	2030	2035
Supply totals (From Tables 7-1a and 7-1b)	46,750	46,750	46,750	46,750
Demand totals (From Table 4-3)	83,670	85,620	85,920	86,250
Difference	(36,920)	(38,870)	(39,170)	(39,500)

Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison

Description		2020	2025	2030	2035
First year	Supply totals[1]	56,950	56,950	56,950	56,950
	Demand totals[2]	83,670	85,620	85,920	86,205
	Difference[3]	(26,720)	(28,670)	(28,970)	(29,300)
Second year	Supply totals[1]	62,750	62,750	62,750	62,750
	Demand totals[2]	83,670	85,620	85,920	86,250
	Difference[3]	(20,920)	(22,870)	(23,170)	(23,500)
Third year	Supply totals[1]	74,350	74,350	74,350	74,350
	Demand totals[2]	83,670	85,620	85,920	86,250
	Difference[3]	(9,320)	(11,270)	(11,570)	(11,900)

Notes:
From Tables 7-1a and 7-1b
From Table 4-3
AVEK provides a supplemental water supply to retail agencies. It is anticipated that the difference will be made up by increased groundwater pumping (recovery of banked supplies or return flows), use of recycled water, and/or reductions in demand by the retail agencies.

Tables 7-3 and 7-4 show a comparison of AVEK's projected water supplies and demand over the next twenty years for a single dry year water supply scenario and multiple dry year water supply scenarios respectively. Water supplies projections are taken from Tables 7-1a and 7-1b. Water demand projections are from Table 4-3. Under these scenarios, water supply shortages are indicated.

The water supply shortage is based on current usage patterns by the retail water purveyors and agricultural users. It does not take in to account other potential water sources available to the purveyors (such as groundwater pumping, recovery from groundwater banking programs, or the use of recycled water) or reductions in demand due to water conservation efforts.

Although the usage of these Tables, and their accompanying explanatory texts is of lesser value than if only groundwater water sources were estimated, as is customary for Projects relying upon urban groundwater supplies, the Tables and accompanying text indicate that the responsible water agency for the Project area has taken, and must take under the adjudication, the appropriate steps to assure that the total water supply for the service area will be adequate. In reiteration of the steps being taken, and to be implemented, through adjudication-direction and Water Master Plan implementation, and directly by AVEK:

- The AVEK surface water supply buttresses the Adjudication in enabling assurance of Project groundwater supply adequacy. It's surface water rights have, even during multiple dry years, permitted sale of excess surface water to other agencies.

- The adjudication requires significant rampdown of groundwater production by AVEK customers.

- Unused production rights and imported water return flows are allowed to be carried over (for dry-year/multiple-dry-year usage). AVEK conducts a groundwater banking program which permits implementation of these rights and flows.

The Project's total 'average' water usage over SB 610's required projection period (twenty years) is (147 acre-feet/20 years + 6 acre feet x 20 years) 13.35 acre-feet per year. Such usage would constitute [(13.35/35,365/ x 100)], 0.0378% of total Antelope Basin water usage each year, a less than significant amount.

3.3 - The Antelope Valley Groundwater Adjudication

Any use of groundwater on the Project site, which includes multiple individual parcels, will need to be compliant with the Adjudication Judgement, and must be so determined by the Watermaster as required by the Judgement Watermaster. If Project water requirements are greater than the amount of water allocated to the parcels comprising the Project site, per the Adjudication Judgment Watermaster, the Project applicant may enter into an agreement with the Watermaster for the purchase of supplemental water, and/or trade of water rights with other pumpers within the adjudication area. Similarly, the proposed site-adjacent

water supply must be confirmed or approved by the Watermaster as most the transfer of water from that site to the Project site.

It may be presumed, based on informal telephonic contact with the Watermaster staffs, that onsite water production or water acquisition in lieu of such production is likely to be approved. Similarly, the offsite water purveyor's stated water production from the proposed supply well may be presumed to be able to provide to the Watermaster adequate documentation of such production, as well as to successfully apply for transfer of water to the Project site. Nevertheless, it is beyond the scope of this Water Supply Assessment to project or predict the Watermaster's decisions in this regard.

SECTION 4 - CONCLUSIONS

This Water Supply Assessment has provided the data and analysis essential to verify that a sufficient Project water supply is physically available (Section 3.1), and that the Project water supply is, in accord with SB 610's normal year/dry year/multiple dry year requirements, sufficient (Section 3.2). It cannot evidence, pending Project proponent/water purveyor compliance with the Antelope Basin Adjudication Order requirements.

It is recommended that the County of Kern conclude that the proposed water supplies for the Project be found sufficient to meet the projected Project water demand, subject to filing with the County documentation from the Antelope Valley Adjudication Watermaster that such supplies are either exempt from or permitted under the Adjudication.

SECTION 5 - REFERENCES

AVEK (Antelope Valley – East Kern Water Agency), 2014. Resolution No. R-14-11, Antelope Valley-East

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Antelope Valley – East Kern (AVEK) Water Agency, "2015 Urban Water Management Plan"

APPENDIX A

CHAPTER 643, STATUTES OF 2001 (SENATE BILL 610)

Appendix A

Chapter 643, Statutes of 2001 (Senate Bill 610)

Chapter 643, Statutes of 2001 (Senate Bill 610)

An act to amend Section 21151.9 of the Public Resources Code, and to amend Sections 10631, 10656, 10910, 10911, 10912, and 10915 of, to repeal Section 10913 of, and to add and repeal Section 10657 of, the Water Code, relating to water. Approved by Governor October 9, 2001. Filed with Secretary of State October 9, 2001.

The people of the State of California do enact as follows:

SECTION 1. (a) The Legislature finds and declares all of the following:
(1) The length and severity of droughts in California cannot be predicted with any accuracy.

(2) There are various factors that affect the ability to ensure that adequate water supplies are available to meet all of California's water demands, now and in the future.

(3) Because of these factors, it is not possible to guarantee a permanent water supply for all water users in California in the amounts requested.

(4) Therefore, it is critical that California's water agencies carefully assess the reliability of their water supply and delivery systems.

(5) Furthermore, California's overall water delivery system has become less reliable over the last 20 years because demand for water has continued to grow while new supplies have not been developed in amounts sufficient to meet the increased demand.

(6) There are a variety of measures for developing new water supplies including water reclamation, water conservation, conjunctive use, water transfers, seawater desalination, and surface water and groundwater storage.

(7) With increasing frequency, California's water agencies are required to impose water rationing on their residential and business customers during this state's frequent and severe periods of drought.

(8) The identification and development of water supplies needed during multiple-year droughts is vital to California's business climate, as well as to the health of the agricultural industry, environment, rural communities, and residents who continue to face the possibility of severe water cutbacks during water shortage periods.

(9) A recent study indicates that the water supply and land use planning linkage, established by Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code, has not been implemented in a manner that ensures the appropriate level of communication between water agencies and planning agencies, and this act is intended to remedy that deficiency in communication.

(b) It is the intent of the Legislature to strengthen the process pursuant to which local agencies determine the adequacy of existing and planned future water supplies to meet existing and planned future demands on those water supplies.

SEC. 2. Section 21151.9 of the Public Resources Code is amended to read:
21151.9. Whenever a city or county determines that a project, as defined in Section 10912 of the Water Code, is subject to this division, it shall comply with Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code.

SEC. 3. Section 10631 of the Water Code is amended to read:
10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be

based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.
(2) A single dry water year.
(3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.
(B) Multifamily.
(C) Commercial
(D) Industrial.
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(I) Agricultural.

(2) The water use projections shall be in the same five-year increments as described in subdivision (a). (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.
(B) Residential plumbing retrofit.
(C) System water audits, leak detection, and repair.
(D) Metering with commodity rates for all new connections and retrofit of existing connections.
(E) Large landscape conservation programs and incentives.
(F) High-efficiency washing machine rebate programs.
(G) Public information programs.
(H) School education programs.
(I) Conservation programs for commercial, industrial, and institutional accounts.
(J) Wholesale agency programs.
(K) Conservation pricing.
(L) Water conservation coordinator.
(M) Water waste prohibition.
(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of such savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase

in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the ''Memorandum of Understanding Regarding Urban Water Conservation in California,'' dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

SEC. 3.5. Section 10631 of the Water Code is amended to read:
10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.
(B) Multifamily.
(C) Commercial.
(D) Industrial
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(I) Agricultural.

(2) The water use projections shall be in the same five-year increments as described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.
(B) Residential plumbing retrofit.
(C) System water audits, leak detection, and repair.
(D) Metering with commodity rates for all new connections and retrofit of existing connections.
(E) Large landscape conservation programs and incentives.
(F) High-efficiency washing machine rebate programs.
(G) Public information programs.
(H) School education programs.
(I) Conservation programs for commercial, industrial, and institutional accounts.
(J) Wholesale agency programs.
(K) Conservation pricing.
(L) Water conservation coordinator.
(M) Water waste prohibition.
(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).
SEC. 4. Section 10656 of the Water Code is amended to read:
10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

SEC. 4.3. Section 10657 is added to the Water Code, to read:
10657. (a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.

(b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

SEC. 4.5. Section 10910 of the Water Code is amended to read:
10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment was prepared.

SEC. 5. Section 10911 of the Water Code is amended to read:
10911. (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

SEC. 6. Section 10912 of the Water Code is amended to read:
10912. For the purposes of this part, the following terms have the following meanings:

(a) ''Project'' means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then ''project'' means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

(c) ''Public water system'' means a system for the provision of piped water to the public for human consumption that has 3000 or more service connections. A public water system includes all of the following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system which is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

SEC. 7. Section 10913 of the Water Code is repealed.

SEC. 8. Section 10915 of the Water Code is amended to read:
10915. The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

SEC. 9.
Section 3.5 of this bill incorporates amendments to Section 10631 of the Water Code proposed by both this bill and AB 901. It shall only become operative if (1) both bills are enacted and become effective on or before January 1, 2002, (2) each bill amends Section 10631 of the Water Code, and (3) this bill is enacted after AB 901, in which case Section 3 of this bill shall not become operative.

SEC. 10.
No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

APPENDIX B

SITE-ADJACENT WATER PURVEYOR

OFFICE: 661.510.8516
FAX: 661.294.8522
32016 N. CASTAIC RD.
CASTAIC, CA 91384

To whom it may concern:

AV Apollo Solar by Syracuse Solar, LLC, Tours Solar, LLC and Sunbow Solar by Sunbow Solar, LLC has contacted with RMR Water Trucks regarding the purchase of construction and operational water for a solar project anticipated to begin construction in the 1st quarter of 2019.

The AV Apollo Solar project has an estimated water demand of approximately 48,000,000 gallons (147.3 acre-feet) of water during construction activities.

During operations approximately 652,000 gallons/year, or 2.0 acre-feet/year per Site is anticipated. Total water demand per year during operations for all three sites combined would be approximately 1.96 million gallons, or 6 acre-feet for the next 35 years.

RMR Water Trucks has been providing construction and operations water to development projects in Kern County since 2009. The Company intends to provide water for the AV Apollo Solar Project from its water well located on Backus road at about 97th street west (APN 346-131-11). The well site shares a property line with one of the solar sites. 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 roughly 14 months.

If you have any questions, please feel free to contact me at 661 510 8516.

Thank you,

Deke Pike

President

Telephone conversating notes, 4/27/28, 10:45 a.m.

Deke Pike, owner, RMR Water Trucks

Did not know well numbers, but has two wells – a small, older well, and the larger well from which he proposes to supply water to the Apollo Solar Project – at the locations described in the BSK/DWR water level records.

Although not metered, supplied 5,000,000 gallons per month to a (recent) Edison Company project in the vicinity. With Edison Company assistance, well production was 400 to 420 gallons per minute (estimated). Drawdown at that rate was approximately 40 feet.

States that he has water rights for the well(s); further, that he believes that with a record of such rights and production in excess of 1 million gallons per month he is exempt from adjudication controls (to be verified).

BSK ASSOCIATES

PRELIMINARY GEOTECHNICAL EVALUATION
PROPOSED APOLLO SOLAR PROJECT
ROSAMOND AREA, KERN COUNTY, CALIFORNIA

BSK PROJECT G17-095-10B

PREPARED FOR:

QUAD KNOPF, INC.
P.O. BOX 3699
VISALIA, CA 93278

June 27, 2017

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 10N14W24A001S and 10N13W19M001S located approximately 300 feet west and 100 feet south of the Syracuse Area, respectively. The groundwater data indicates that during the 1950s the depth to groundwater was approximately 290 feet below the ground surface (bgs) and more recent data indicates that groundwater is greater than 330 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 Mojave 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 upland area to the northwest of the Site consists of Pleistocene alluvial fans that originated from erosion of the Tehachapi Mountains. The Middle Buttes are located east of the Site and consist of Miocene volcanic rocks. The Middle Buttes area, is currently and historically, an area of mining activity for gold and silver. 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

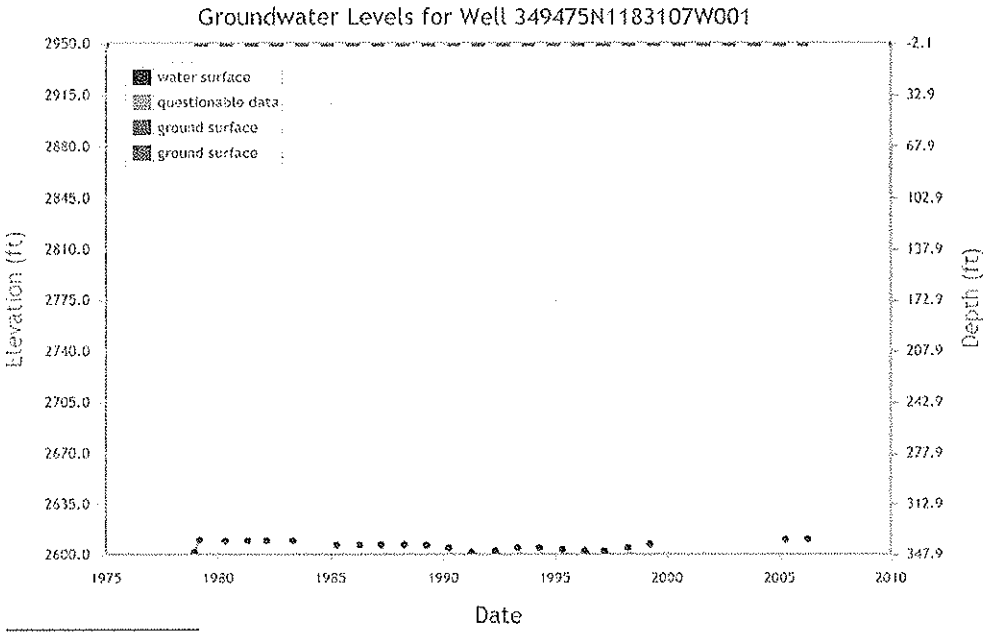
The types of geologic and seismic hazards assessed include surface ground fault rupture, liquefaction, seismically-induced settlement, slope failure, flood hazards and inundation hazards.

3.1 Kern County General Plan Physical Constraints

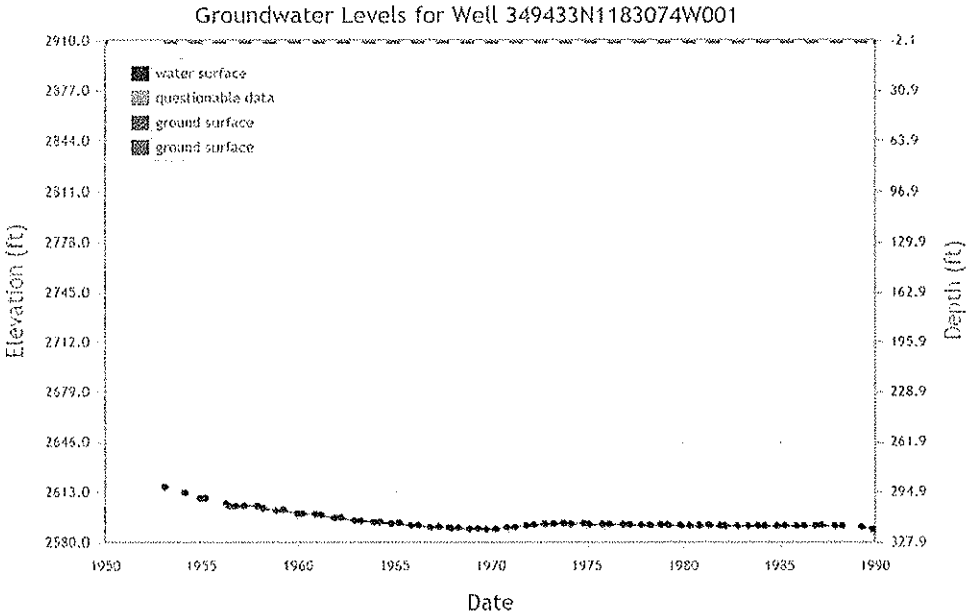
As shown on Figure 7, the northeast portion of the site is in a Kern County designated flood hazard zone. Other physical constraint hazard zones are not located on the site or transmission line options.

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



State Well Number: 10N14W24A001S
Latitude (NAD83): 34.947500
Longitude (NAD83): -118.3107
Groundwater Basin (code): Antelope Valley (6-044)
Reference Point Elevation (NAVD88 ft): 2947.890
Ground Surface Elevation (NAVD88 ft): 2947.890



State Well Number: 10N13W19M001S
Latitude (NAD83): 34.943300
Longitude (NAD83): -118.3074
Groundwater Basin (code): Antelope Valley (6-044)
Reference Point Elevation (NAVD88 ft): 2907.880
Ground Surface Elevation (NAVD88 ft): 2907.880

Map Date: 6/9/2017 Reference: http://www.water.ca.gov/waterdatalibrary/index.cfm

Document Path: T:\GIS\G1709510B - Apollo Solar\Figure 5 Hydro.mxd

BSK ASSOCIATES

Preliminary Geotechnical Evaluation
Proposed Apollo Solar Project
Rosamond Area, Kern County, California

Figure 5
Area Hydrographs
BSK Project G1709510B

APPENDIX C

ANTELOPE VALLEY GROUNDWATER BASIN ADJUDICATION

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

ANTELOPE VALLEY GROUNDWATER CASES	JUDICIAL COUNCIL COORDINATION PROCEEDING NO. 4408
This Pleading Relates to Included Action: REBECCA LEE WILLIS, on behalf of herself and all others similarly situated, Plaintiff, vs. LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40; CITY OF LANCASTER; CITY OF PALMDALE; PALMDALE WATER DISTRICT; LITTLEROCK CREEK IRRIGATION DISTRICT; PALM RANCH IRRIGATION DISTRICT; QUARTZ HILL WATER DISTRICT; ANTELOPE VALLEY WATER CO.; ROSAMOND COMMUNITY SERVICE DISTRICT; PHELAN PINON HILL COMMUNITY SERVICE DISTRICT; and DOES 1 through 1,000; Defendants.	CASE NO. BC 364553 **~~[PROPOSED]~~ AMENDED FINAL JUDGMENT APPROVING WILLIS CLASS ACTION SETTLEMENT** Date: Time: Dept: Judge: Hon. Jack Komar Coordination Trial Judge

This matter has come before the Court on the Motion of Plaintiff Rebecca Lee Willis (Willis) for Final Approval of the Proposed Class Action Settlement between and among Rebecca Lee Willis and the Willis Class, on the one hand; and Los Angeles County Waterworks District No. 40, City of Palmdale Water District, Littlerock Creek Irrigation District, Palm Ranch Irrigation District, Quartz Hill Water District, California Water Service Company,

Rosamond Community Service District, Phelan Pinon Hills Community Services District, Desert Lake Community Services District, and North Edwards Water District (collectively, the "Settling Defendants"), on the other hand.

By Order dated November 18, 2010, this Court granted Plaintiff's Motion for Preliminary Approval of the Proposed Settlement of this action and directed the sending of Notice to the Willis Class. After considering all arguments and submissions for and against final approval of the proposed settlement, and being fully advised of the premises, **IT IS HEREBY ORDERED, ADJUDGED AND DECREED AS FOLLOWS, PURSUANT TO SECTIONS 382 AND 664.6 OF THE CODE OF CIVIL PROCEDURE.**

1. For over 10 years, a number of actions have been pending in the Los Angeles County Superior Court and other California courts seeking an adjudication of the various parties' respective rights to the groundwater underlying the Antelope Valley Groundwater Basin (the "Basin").

2. A number of cases raising such issues were coordinated by a July 11, 2005 order of Judicial Council and assigned to the Honorable Jack Komar of the Superior Court for the County of Santa Clara (the "Court").

3. The Court held an initial phase of the trial on October 3006 with respect to the boundaries of the Basin and issued an Order on November 3, 2006 defining the Basin for purposes of the litigation.

4. The Willis Class Action was filed on or about January 11, 2007 to contest certain public entities' claims that those entities had obtained prescriptive rights to a portion of the Basin's groundwater. The Willis case was subsequently coordinated with the Coordinated Cases.

5. By Order dated September 11, 2007, the Court certified the Willis Class. As amended by Orders dated May 22, 2008 and September 2, 2008, the Willis Class is defined as follows:

"All private (i.e., non-governmental) persons and entities that own real property within the Basin, as adjudicated, that are not presently pumping water on their property and have not done so at any prior time ("the Class"). The Class includes the successors-in-interest by way of purchase, gift, inheritance, or otherwise of such landowners.

The Class excludes the defendants herein, any person, firm, trust, corporation, or other entity with which any defendant has a controlling interest or which is related to or affiliated with any of the defendants, and the representatives, heirs, affiliates, successors-in-interest or assigns of any such excluded party. The Class also excludes all persons to the extent their properties are connected and receive service from a municipal water system, public utility, or mutual water company. The Class shall [further] exclude Kern County Assessor's' office, unless the owners of such properties declare under penalty of perjury that they do not pump and have never pumped water on those properties."

6. Notice of the Pendency of this action was sent to the Willis Class in or about January 1, 2009 and the opt-out period (as extended) expired on August 30, 2009. Certain persons who opted out were subsequently permitted to rejoin the Class.

7. The persons listed on Exhibit 1 hereto validly excluded themselves from the Class in accordance with this Court's prior Orders (and have not re-joined the Class) and are not bound by the Settlement or this Judgment.

8. Counsel for the Willis Class engaged in settlement discussions with Defendants' counsel during mid 2009. On September 2, 2009, counsel participated in mediation session before the Honorable Ronald Robie. That mediation resulted in an agreement in principle among counsel for the Settling Parties to settle the litigation between and among their respective clients, subject to appropriate approvals.

9. By Order dated October 28, 2009, the Court stated its intent to consolidate the various Actions that were coordinated as part of JCCP No. 4408, including the Willis action. On February 19, 2010, the Court entered an Order Transferring and Consolidating [the Coordinated] Actions for All Purposes. As provided in the Consolidation Order, this Final Judgment shall not be construed to prejudice the rights of any of the Non-Settling Parties in the Consolidated Actions nor shall it prejudice the claims and defenses that the Settling Parties may assert with respect to such Non-Settling Parties.

10. By Order dated November 18, 2010, this Court granted preliminary approval to

the proposed settlement of this action and directed that Notice of the Proposed Settlement be sent to the Class.

11. Notice of the Proposed Settlement has been sent to the Willis Class by first class mail in accordance with the Court's Preliminary Approval Order. Such Notice fully and accurately informed the Class of all material terms of the proposed settlement and the opportunity to object to or comment on the Settlement. The Notice was given in an adequate and sufficient manner, constituted the best notice practicable under the circumstances, and satisfied due process.

12. The Settling Parties and each class member have irrevocably submitted to the jurisdiction of this Court for any suit, action, proceeding or dispute arising out of the Settlement Agreement.

13. It is in the best interest of the parties and the Class Members and consistent with principles of judicial economy that any dispute between any class member (including any dispute as to whether any person is a class member) and any Settling Defendant which is in any way related to the applicability or scope of the Settlement Agreement or the Final Judgment should be presented to this Court for resolution.

14. The Stipulation of Settlement submitted by the Settling Parties is hereby finally approved as fair, reasonable, and in the best interests of the Class, and the parties are directed to consummate the Settlement in accordance with its terms.

15. The Complaint in the Willis Action shall be deemed dismissed with prejudice as soon as the Final Judgment becomes effective under the terms of the Settlement Stipulation.

16. For purposes of this Final Judgment, "Released Parties" means Plaintiff Rebecca Lee Willis and the Willis Class, as well as Defendants Los Angeles County Waterworks District No. 40; The City of Palmdale; Palmdale Water District; Littlerock Creek Irrigation District; Palm Ranch Irrigation District; Quartz Hill Water District; California Water Service Company; Rosamond Community Services District; Phelan Pinon Hills Community Services District; Desert Lake Community Services District; and North Edwards Water District.

17. The Court hereby orders that the Released Parties are released and forever

discharged from the Released Claims as more specifically provided in the Stipulation of Settlement.

18. The Class members and their heirs, executors, administrators, successors, and assigns are hereby permanently barred and enjoined from instituting, commencing, prosecuting, or continuing to prosecute, either directly or indirectly, any Released Claim against any of the Released Parties in any form, other than claims to enforce the terms of the Settlement. Each Class member may hereafter discover facts other than or different from those which he or she knows or believes to be true with respect to the Released Claims. Nevertheless, each member of the Class (except those who timely opted out) waive and fully, finally and forever settle and release, upon the Settlement Agreement becoming final, any known or unknown, suspected or unsuspected, contingent or noncontingent Released Claim, whether or not concealed or hidden, without regard to the subsequent discovery or existence of such different or additional facts.

19. The Settling Defendants and their heirs, executors, administrators, successors, and assigns are hereby permanently barred and enjoined from instituting, commencing, prosecuting, or continuing to prosecute, either directly or indirectly, any Released Claim against any of the Class Members in any forum, other than claims to enforce the terms of the Settlement. Each Settling Defendant may hereafter discover facts other than or different from those which he or she knows or believes to be true with respect to the Released Claims. Nevertheless, each Settling Defendant waives and fully, finally and forever settles and releases, upon the Settlement Agreement becoming final, any known or unknown, suspected or unsuspected, contingent or noncontingent Released Claim, whether or not concealed or hidden, without regard to the subsequent discovery or existence of such different or additional facts.

20. Without affecting the finality of this Judgment, the Court hereby reserves and retains jurisdiction over this Settlement, including the administration and consummation of the Settlement, as well as any action or proceeding brought to enforce the Settlement. In addition, without affecting the finality of this Judgment, the Court retains jurisdiction over the Parties for purposes of incorporating and merging this Judgment into a physical solution or other Judgment that may ultimately be entered in the Consolidated Actions. The Settling Parties are hereby

deemed to have submitted irrevocably to the exclusive jurisdiction of this Court for any suit, action, proceeding or dispute arising out of or relating to this Judgment or the Settlement.

21. The Court after considering the pleadings on file herein, and the arguments of counsel, awards the Willis Class attorneys fees in the amount of $1,839,494, an incentive award for Ms. Rebecca Willis in the amount of $10,000, costs in the amount of $65,057.68, and supplemental attorneys fees in the amount of $160,622.50. Judgment in the amount of $2,075,174.18 is hereby entered for the Willis Class against Los Angeles County Waterworks District No. 40, City of Palmdale, Palmdale Water District, Littlerock Creek Irrigation District, Palm Ranch Irrigation District, Quartz Hill Water District, California Water Service Company, Rosamond Community Service District, Phelan Pinon Hills Community Services District, Desert Lake Community Services District, and North Edwards Water District.

Dated: 9-22-2011

Judge of the Superior Court
Honorable Jack Komar

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Attorneys for Defendant

(ADDITIONAL COUNSEL ARE LISTED ON SIGNATURE PAGES)

Superior Court of the State of California

County of Los Angeles

ANTELOPE VALLEY GROUNDWATER CASES This Pleading Relates to Included Action: REBECCA LEE WILLIS, on behalf of herself and all others similarly situated, Plaintiff, v. LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40; CITY OF LANCASTER; CITY OF LOS ANGELES; CITY OF PALMDALE; PALMDALE WATER DISTRICT; LITTLEROCK CREEK IRRIGATION DISTRICT; PALM RANCH IRRIGATION DISTRICT; PALM RANCH IRRIGATION DISTRICT; QUARTZ HILL WATER DISTRICT; ANTELOPE VALLEY WATER CO.; ROSAMOND COMMUNITY SERVICES DISTRICT; and DOES 1 through 1,000; Defendants.	JUDICIAL COUNCIL COORDINATION PROCEEDING NO. 4408 Case No. BC 364553 **WILLIS CLASS STIPULATION OF SETTLEMENT**

LAW OFFICES OF
BEST BEST & KRIEGER LLP
3750 UNIVERSITY AVENUE, SUITE 400
P.O. BOX 1028
RIVERSIDE, CA 92502

This Stipulation of Settlement (the "Stipulation" or "Agreement") is entered into this 13th day of July 2010 by and between California Water Service Company, City of Palmdale, Littlerock Creek Irrigation District, Los Angeles Waterworks District No. 40 ("District 40"), Palmdale Water District, Palm Ranch Irrigation District, Phelan Pinon Hills Community Services District, Quartz Hill Water District, and Rosamond Community Services District, Desert Lake Community Services District and North Edwards Water District (collectively, "Settling Defendants"), on the one hand, and Rebecca Lee Willis and the Willis Class (as more fully defined below), which consists of certain persons who own property(ies) that overly the Antelope Valley Groundwater Basin (the "Basin") on which they do not and have not pumped groundwater, on the other hand. Settling Defendants, Rebecca Lee Willis, and the Willis Class are collectively referred to as the "Settling Parties," or individually a "Settling Party." This Stipulation and the Exhibits hereto set forth the terms of a settlement (the "Settlement") between and among the Settling Parties compromising and dismissing the claims and defenses they have asserted in the above-captioned action. The Settlement is subject to approval by the Superior Court of California for Los Angeles County; in the event such approval is denied, cannot be obtained, or is reversed on appeal, this Stipulation shall have no further force or effect, and the Settling Parties shall be returned to their respective positions in the litigation prior to execution of this Stipulation.

I. THE SETTLING PARTIES

A. The Settling Plaintiffs are Rebecca Lee Willis and the members of the Willis Class, as defined in paragraph II, D below.

B. The Settling Defendants are as follows:

1. California Water Service Company is a California corporation which extracts groundwater from the Basin to serve customers within the Basin.

2. The City of Palmdale is a municipal corporation in the County of Los Angeles which receives water from the Basin.

3. Littlerock Creek Irrigation District is a public agency which produces groundwater from the Basin to serve customers within the Basin.

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4. Los Angeles County Waterworks District No. 40 ("District 40") is a public agency governed by the Los Angeles County Board of Supervisors. District 40 has been lawfully organized to perform various functions, including producing water from the Basin, which it provides to more than 65,000 residential and commercial customers in the Basin.

5. Palmdale Water District is an irrigation district organized and operating under Division 11 of the California Water Code, which produces groundwater from the Basin to serve customers within the Basin.

6. Palm Ranch Irrigation District is a public agency which produces groundwater from the Basin to serve customers within the Basin.

7. Rosamond Community Services District is a public agency which produces water from the Basin which it provides to customers within the Basin.

8. Quartz Hill Water District is a county water district organized and operating under Division 12 of the California Water Code. It produces water from the Basin.

9. Phelan Pinon Hills Community Services District is a public water supplier which produces water from the Basin.

10. Desert Lake Community Services District is a public agency which produces groundwater from the Basin.

11. North Edwards Water district is a public agency which produces groundwater from the Basin.

II. RECITALS

A. On or about November 29, 2004, District 40 commenced a civil action against Overlying Owners (more specifically defined in III. M) in the Basin, which is now pending in the Superior Court for Los Angeles County, seeking, inter alia, an adjudication of their respective rights to produce groundwater from the Basin. On or about July 11, 2005, that case was coordinated with several quiet title actions that had been brought by Basin landowners, which also sought a declaration of the parties' rights to produce and use the Basin's groundwater. Antelope Valley Groundwater Cases, No. 1-05-CV049053 (JCCP 4408) (hereinafter the "Coordinated Actions"). The Coordinated Actions are pending before the Honorable Jack Komar.

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B. On or about October 10, 2006, the Court held an initial phase of trial with respect to the boundaries of the Basin. The Court issued an Order on November 3, 2006, defining the Basin for purposes of this litigation.

C. On or about January 11, 2007 Plaintiff, Rebecca Lee Willis ("Willis"), filed a class action complaint in the Superior Court of the State of California for Los Angeles County (No. BC 364553) (the "Willis Action") in which she alleged that certain Public Water Suppliers had wrongfully claimed prescriptive rights to the Basin's groundwater. Willis sought, inter alia, a declaration that the Settling Defendants had not obtained prescriptive rights as to her or Willis Class Members (more specifically defined in III.X). On or about April 10, 2007, the Willis Action was coordinated as part of the Coordinated Actions.

D. By Order dated September 11, 2007 (as amended by Orders dated May 22, 2008 and September 2, 2008), the Court certified Willis as the representative of a Class of certain Overlying Owners (more specifically defined in if III.M. below) pursuant to Section 382 of the California Code of Civil Procedure and Division 7, Chapter 6 of the Rules of Court.

E. In early January 2009, Notice of the Pendency of the Willis Action was sent by first class mail to all Willis Class Members (more specifically defined in III.X below) who could be identified with reasonable effort and a summary notice was published. The deadline for putative Willis Class Members to exclude themselves (as extended) expired on August 30, 2009. The Court has made various orders allowing certain parties to rejoin the Willis Class.

F. The Settling Parties have actively discussed potential settlement for much of this year. On or about September 2, 2009, the Settling Parties engaged in mediation before the Honorable Ronald Robie during the course of which counsel for most of the parties reached an agreement in principle to settle the Willis Action, subject to the negotiation of a final settlement agreement, client approvals, and approval by the Court.

G. On or about February 19, 2010, the Court entered an Order Transferring and Consolidating Actions for All Purposes (hereinafter the "Consolidated Actions").

H. Over the course of the last three years, the Settling Plaintiffs' counsel have conducted a thorough investigation of the facts and law relating to the matters at issue in the

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Consolidated Actions and have evaluated the merits of all Settling Parties' contentions and the impact this Settlement will have on the Willis Class Members. After evaluating the foregoing, the Settling Plaintiffs and counsel are satisfied that the terms and conditions of this Stipulation are fair, reasonable, and adequate, and that the Settlement is in the best interest of the Willis Class Members.

I. The Settling Defendants contend that they have prescriptive rights to substantially more than 15% of the Basin's Native Safe Yield. The Settling Plaintiffs contend that the Settling Defendants have no such prescriptive rights as to them. This Settlement reflects a compromise between the Settling Parties and shall not (1) be construed as an admission or concession by any Settling Party of the truth of any allegation or the validity of any claim or defense asserted in any of the pleadings, (2) be construed to prejudice the rights, claims, or defenses of any persons who are not Settling Parties, or (3) be construed to prejudice the rights, claims, or defenses (whether asserted or potential) of any Settling Party vis-à-vis any non-settling party.

J. The United States owns property within the Basin as to which it claims a Federal Reserved Right to produce groundwater.

III. DEFINITIONS

The following terms used in this Stipulation shall have the meanings set forth below:

A. "Assessments" means any monetary or other levy or charge imposed as part of a Physical Solution.

B. "Basin" means the Antelope Valley Groundwater Basin as defined in the Court's Order of November 3, 2006.

C. "Consolidated Actions" means all actions that have been or subsequently were coordinated as part of Judicial Council Coordination Proceeding No. 4408 and all actions that have been or subsequently were consolidated pursuant to the Court's Order from February 19, 2010.

D. "Correlative Rights" means the principle of California law, articulated in Katz v. Walkinshaw (1903) 141 Cal. 116 and subsequent cases, that Overlying Owners may make reasonable and beneficial use of the water in a Basin and that, if the supply of water is insufficient

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for all reasonable and beneficial needs, each Overlying Owner is entitled to a fair and just proportion of the water available to the Overlying Owners.

E. "Court" means the Honorable Jack Komar, sitting by designation as a Judge of the Superior Court of Los Angeles County or such other Judge as may be designated by the Judicial Conference to hear JCCP No. 4408.

F. "Effective Date" means the date on which the Court's Judgment granting final approval to the Settlement becomes final and not subject to further appeal.

G. "Federal Reserved Right" is the principle originally articulated in Winters v. United States (1908) 207 U.S. 564 and more recently in *Cappaert v. United States* (1976) 426 U.S. 128, which holds that when the Federal Government reserves land from the public domain, it impliedly reserves sufficient water to serve the purposes for which the lands were reserved, and the quantity of reserved water is limited to the amount necessary to fulfill the purposes of the reserved land. The United States contends that the Federal Reserved Right entitles the United States to a prior and paramount right to a portion of the Native Safe Yield.

H. "Federally Adjusted Native Safe Yield" for any given year means the Basin's Native Safe Yield less the actual annual production of the United States' during the prior year pursuant to its Federal Reserved Right.

I. "Final Judgment" means a final judgment to be entered by the Court in the above matter, which approves the terms and provisions of this Stipulation, and is substantially in the form attached hereto as Exhibit A.

J. "Imported Water" means water that enters the Basin and that originates outside the Basin that is not part of the Basin's Native Safe Yield, and that, absent human intervention, would not recharge or be used in the Basin. Imported Water does not include water purchased by the Watermaster with Replacement Assessments or bottled water.

K. "Native Safe Yield" means the amount of pumping, which under a given set of land use and other prevailing cultural conditions, generates Return Flows that, when combined with naturally occurring groundwater recharge to the Basin, results in no long-term depletion of

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Basin groundwater storage. Pumping of the Settling Parties' share of Native Safe Yield is not subject to any Replacement Assessment.

L. "Overlying Right" means the appurtenant right of an Overlying Owner to use groundwater from the Native Safe Yield for overlying reasonable and beneficial use.

M. "Overlying Owners" means owners of land overlying the Basin who hold an Overlying Right.

N. "Physical Solution" means a mechanism that comprehensively resolves the competing claims to the Basin's water and provides for the management of the Basin. The Settling Parties anticipate that this Settlement will later be incorporated into a Physical Solution.

O. "Preliminary Approval Order" means the Court's Order granting preliminary approval to the Settlement set forth herein, directing the manner in which notice of the Settlement shall be provided to the Willis Class, and scheduling a final Hearing for the Court to consider whether to approve the Settlement. The Settling Parties will submit a proposed Preliminary Approval Order in the form appended as Exhibit B hereto.

P. "Recycled Water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource..

Q. "Replacement Assessment" means the charge imposed on any Settling Party by the Watermaster for producing more water than it is entitled to produce from the Basin under the terms of this Settlement or pursuant to such further orders as the Court may enter in the Coordinated Actions.

R. "Replacement Water" means water purchased by the Watermaster to offset production in excess of a Settling Party's share of Total Safe Yield.

S. "Return Flows" means the amount of water that is put to reasonable and beneficial agricultural, municipal or other use and thereafter returns to the Basin and is part of the Basin's Total Safe Yield.

T. "Settlement" means this Stipulation, including the Exhibits appended hereto.

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U. "Total Safe Yield" means the amount of pumping, which under a given set of land use and other prevailing cultural conditions generates Return Flows that, when combined with naturally occurring groundwater recharge to the Basin and Return Flows derived from Imported Water, results in no long-term depletion of Basin groundwater storage.

V. "Transition Period" means the period of time provided for in the Physical Solution during which the parties' right to produce water from the Native Safe Yield free from Replacement Assessment will decrease to amounts that total no more than that party's share of Native Safe Yield.

W. "Watermaster" means the person or entity appointed by the Court to monitor and manage the Basin's groundwater, subject to oversight by the Court.

X. "Willis Class" or "Willis Class Members" means the Willis Class as defined in the Court's Order of September 11, 2007, as amended by the Court's Orders of May 22, 2008, and September 2, 2008, but shall exclude all persons who timely excluded themselves from the Willis Class and have not rejoined the Willis Class. The Willis Class consists of the following:

> "All private (i.e., non-governmental) persons and entities that own real property within the Basin, as adjudicated, that are not presently pumping water on their property and have not done so at any prior time ("the Class"). The Class includes the successors-in-interest by way of purchase, gift, inheritance, or otherwise of such landowners.
>
> The Class excludes the defendants herein, any person, firm, trust, corporation, or other entity in which any defendant has a controlling interest or which is related to or affiliated with any of the defendants, and the representatives, heirs, affiliates, successors-in-interest or assigns of any such excluded party. The Class also excludes all persons to the extent their properties are connected and receive service from a municipal water system, public utility, or mutual water company. The Class shall [further] exclude all property(ies) that are listed as `improved' by the Los Angeles County or Kern County Assesor's' office, unless the owners of such properties declare under penalty of perjury that they do not pump and have never pumped water on those properties."

IV. SETTLEMENT TERMS

In consideration of the covenants and agreements set forth herein, and of the releases and dismissals described below, the Settling Parties agree to settle and compromise the claims that have been asserted or that could have been asserted between and among the Willis Class and the

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Settling Defendants, subject to Court approval, on the following terms and conditions:

A. Native Safe Yield.

Settling Defendants and the United States contend that the best estimate of the Basin's Native Safe Yield is 82,300 acre-feet per year. The Willis Class agrees not to challenge or otherwise contest the Native Safe Yield proposed by the Settling Defendants as long as it is at least 82,300 acre-feet per year. The Settling Parties understand and agree that, in the absence of stipulation by all parties in the Coordinated Actions, the Court will decide the Basin's Native Safe Yield following trial, and the Settling Parties agree to be bound by the Court's determination in that regard even if some or all of them do not participate in such a trial.

B. Total Safe Yield.

The Settling Defendants contend that the best estimate of the Basin's Total Safe Yield is 110,500 acre-feet per year. The Willis Class agrees not to challenge or otherwise contest that estimate. The Settling Parties understand and agree that, in the absence of stipulation by all parties in the Coordinated Actions, the Court will decide the Basin's Total Safe Yield following trial, and the Settling Parties agree to be bound by the Court's determination in that regard even if some or all of them do not participate in such a trial.

C. Federal Reserved Right.

The United States contends that it is entitled to a Federal Reserved Right. The Settling Parties agree that the Federal Government has a Federal Reserved Right to use a portion of the Native Safe Yield. The Settling Parties agree that the Court will decide the amount of the Federal Reserved Right and they agree to be bound by the Court's determination.

D. Allocation Of Federally Adjusted Native Safe Yield.

The Settling Parties agree to be bound by the Court's determination of the amounts of the Basin's Native Safe Yield and the United States' Federal Reserved Right. The Basin's Federally Adjusted Native Safe Yield shall be the Basin's Native Safe Yield less the prior year's production of water by the United States (not to exceed the Federal Reserved Right). The Settling Parties agree that the Settling Defendants and the Willis Class Members each have rights to produce groundwater from the Basin's Federally Adjusted Native Safe Yield.

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1. Settling Defendants' Water Rights

Settling Defendants have asserted in the Coordinated Actions that they have obtained prescriptive rights to the Basin's Native Safe Yield. This Stipulation shall neither be construed to recognize prescriptive rights nor to limit the Settling Defendants' prescriptive claims vis-a-vis the Basin or any non-settling parties, but rather as an agreement to fairly allocate the Settling Parties' respective rights to use the Basin's water. The Settling Parties agree that the Settling Defendants collectively have the right to produce up to 15% of the Basin's Federally Adjusted Native Safe Yield free of any Replacement Assessment. The Willis Class will not take any positions or enter into any agreements that are inconsistent with the exercise of the Settling Defendants' rights.

2. Willis Class Members' Pumping Rights

The Settling Parties agree that the Willis Class Members have an Overlying Right to a correlative share of 85% of the Federally Adjusted Native Safe Yield for reasonable and beneficial uses on their overlying land free of any Replacement Assessment. The Settling Defendants will not take any positions or enter into any agreements that are inconsistent with the exercise of the Willis Class Members' Overlying Right to produce and use their correlative share of 85% of the Basin's Federally Adjusted Native Safe Yield.

a. Safe Harbor.

The Willis Class Members acknowledge that the Settling Defendants may at trial prove prescriptive rights against all groundwater pumping in the Basin during a prior prescriptive period. If the Settling Defendants do prove prescriptive rights, Settling Defendants shall not exercise their prescriptive rights to diminish the Willis Class Members' Overlying Right below a correlative share of 85% of the Basin's Federally Adjusted Native Safe Yield. If the Settling Defendants fail to prove any prescriptive rights, this Agreement shall not diminish at all the rights of Willis Class Members to make reasonable and beneficial use of a correlative share of the Basin's Federally Adjusted Native Safe Yield. In no event shall this Agreement require the Willis Class Members to give to the Settling Defendants more than 15% of any rights to use the Basin's groundwater that they may obtain by way of settlement or judgment. If there is a subsequent Court decision whereby the Court determines that the Willis Class Members do not

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have Overlying Rights, this Agreement shall not require Settling Defendants to give the Willis Class Members any right to pump from the Native Safe Yield.

3. Correlative Rights Of Overlying Landowners

The Willis Class Members recognize that other Overlying Owners may have the right to pump correlatively with them 85% of the Federally Adjusted Native Safe Yield of the Basin for reasonable and beneficial uses on their overlying land.

4. Return Flows From Imported Water

a. The Settling Parties acknowledge and agree that they all have the right to recapture Return Flows from Imported Water that they put to reasonable and beneficial use in the Basin, consistent with California law. The Settling Parties will not be subject to any Replacement Assessment for their production of an amount equal to the Return Flows from Imported Water that they put to reasonable and beneficial use in the Basin.

b. Settling Defendants believe that the best estimates of Return Flows from Imported Water are (a) 25% of the water used for agricultural purposes and (b) 28% of the water used for municipal and industrial purposes. Settling Defendants further believe that the best estimate of total annual Return Flows from Imported Water is 28,200 acre-feet of which 25,100 acre-feet is from municipal and industrial use and 3,100 acre-feet is from agricultural use. The Willis Class agrees not to contest those estimates, and all Settling Parties agree to be bound by any findings that may later be made by the Court with respect thereto.

V. MANAGEMENT OF THE BASIN

A. General

The Settling Parties agree that the Basin has limited water resources and that they should use their best efforts to conserve and maximize reasonable and beneficial use. The Settling Parties further agree that there is a need to create a groundwater management plan to ensure that pumping from the Basin does not exceed the Basin's Total Safe Yield and that the Court should appoint a Watermaster to oversee the management of the Basin's water resources.

B. Physical Solution

The Settling Parties expect and intend that this Stipulation will become part of a Physical

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Solution entered by the Court to manage the Basin and that the Court will retain jurisdiction in the Coordinated Actions. The Settling Parties agree to be part of such a Physical Solution to the extent it is consistent with the terms of this Stipulation and to be subject to Court-administered rules and regulations consistent with California and Federal law and the terms of this Stipulation. The Settling Parties agree that the Physical Solution may require installation of a meter on any groundwater pump by a Willis Class Member before a Willis Class Member may produce groundwater. The responsibility for the cost of such meters will be determined by the Court.

C. Transition Period.

The Settling Parties agree that net groundwater production from the Basin needs to be reduced over a period of time from current levels to no more than the Basin's Total Safe Yield. This can be accomplished by reducing pumping and/or purchasing Replacement Water. The Settling Parties agree that the Transition Period should begin at the date of entry of Final Judgment in the Coordinated Actions and should last seven years. During the first two years of the Transition Period no effort will be made to curtail groundwater pumping and no Replacement Assessments will be made. By the end of the seventh year of the Transition Period, groundwater pumping from the Basin without Replacement Assessment for Replacement Water will not exceed the Native Safe Yield.

D. Replacement Water.

The Settling Parties recognize the right of any Settling Party to produce groundwater from the Basin above their share of the Native Safe Yield, subject to the Physical Solution and to any Replacement Assessment. The Settling Parties agree to provide or purchase Imported Water for all groundwater pumping that exceeds a Settling Party's share of the Federally Adjusted Native Safe Yield. The Settling Parties agree that any Settling Party who produces more than its annual share of the Federally Adjusted Native Safe Yield in any year will be responsible to provide Replacement Water or pay a Replacement Assessment to the Watermaster so that the Watermaster can purchase Imported Water to recharge the Basin.

E. Water Storage

The Settling Parties agree that water storage in the Basin offers significant benefits and

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should be encouraged. The Settling Parties further recognize that there is a limit on the Basin's available storage space and that the storage of water for uses within the Basin should have priority over storage for use outside the Basin. Subject to those general principles, the Settling Parties agree that water storage should be permitted and encouraged and agree to support appropriate provisions in the Physical Solution.

F. Recycled Water

The Settling Parties agree that it is important to encourage the treatment and use of Recycled Water. The Willis Class agrees not to challenge or otherwise contest Settling Defendants' claims to Return Flows from Recycled Water that was reclaimed by the Sanitation Districts of Los Angeles County.

VI. PROCEDURES FOR CLASS NOTICE AND HEARING ON MOTIONS FOR PRELIMINARY AND FINAL APPROVAL OF STIPULATION

A. Preliminary Approval Motion and Settlement Notice.

Settling Plaintiffs shall file a motion for preliminary approval ("Preliminary Approval Motion") of the terms of the Settlement as soon as practicable following execution of this Stipulation by all Settling Parties. The Preliminary Approval Motion will seek entry of an Order Preliminarily Approving Class Action Settlement. The Preliminary Approval Motion shall include a proposed form of notice describing this Stipulation (the "Settlement Notice") to be disseminated to the Willis Class as well as a description of the procedures to be used in disseminating the Settlement Notice. The Settlement Notice shall be disseminated to all Willis Class Members by or under the supervision of counsel for District 40, with the expenses to be borne by District 40. The Settling Parties will attempt to agree upon the language for the Settlement Notice, but agree to be bound by the Court's determination in the event they have any disputes or disagreements in that regard. The Settling Parties agree to use their best efforts to have the Preliminary Approval Motion heard as promptly as is practical.

B. Final Approval Hearing.

The Settlement Notice will advise Willis Class Members of the date and time set for a Hearing on the Settling Plaintiffs' Motion for Final Approval of the Stipulation, including

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advising them of their rights to submit statements in support of or opposition to the Stipulation. The Final Approval Motion shall request that this Court find that the Stipulation and Proposed Final Judgment are fair, reasonable, and adequate to the Willis Class and shall seek entry of a Final Judgment substantially in the form attached hereto as Exhibit A.

VII. RELEASES AND DISMISSALS

A. Release By Settling Plaintiffs

1. In addition to the effect of any Final Judgment entered in accordance with this Stipulation, upon this Stipulation becoming final as set out in Section VIII, Paragraph G of this Stipulation, and in consideration for the settlement consideration set forth above, and for other valuable consideration, the Settling Plaintiffs shall completely release, acquit and forever discharge the Settling Defendants from any and all claims, demands, actions, suits, causes of action, whether class, individual, or otherwise in nature that Settling Plaintiffs, or each of them, ever had, now has, or hereafter can, shall, or may have on account of or in any way arising out of, any and all known or unknown, foreseen or unforeseen, suspected or unsuspected injuries, damages, and the consequences thereof in any way arising out of or relating in any way to the matters at issue in the Willis Action ("Released Claims"). Each Settling Plaintiff may hereafter discover facts other than or different from those which he, she, or it knows or believes to be true with respect to the claims which are the subject matter of this Stipulation, but each Settling Plaintiff hereby expressly waives and fully, finally, and forever, settles and releases, upon this Stipulation becoming final, any known or unknown, suspected or unsuspected, contingent or non-contingent claim with respect to the subject matter of the Stipulation, whether or not concealed or hidden, without regard to the subsequent discovery or existence of such different or additional facts. As provided in the Release set forth above, the Settling Plaintiffs, including any of Settling Plaintiffs' representatives, successors, agents, affiliates, employees, supervisors, officers, directors, or shareholders, agree to waive and release all rights and benefits which they might otherwise have pursuant to Section 1542 of the California Civil Code with regard to the release of such unknown, unanticipated or misunderstood claims, causes of action, liabilities, indebtedness and obligations.

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2. The Release set forth in Paragraph VII.A, above, does not include claims by any of the Settling Plaintiffs other than the claims set forth therein. In particular, the Settling Parties recognize that many persons own more than one parcel of land within the Basin. The foregoing Release only binds Willis Class Members and only with respect to those properties within the Basin on which they have not pumped water.

B. Release By Settling Defendants

In addition to the effect of any Final Judgment entered in accordance with this Stipulation, upon this Stipulation becoming final as set out in Paragraph VIII.G of this Stipulation, and in consideration of the settlement consideration set forth above, and for other valuable consideration, the Settling Defendants completely release, acquit and forever discharge Settling Plaintiffs and the Willis Class Members from any and all claims, demands, actions, suits, causes of action, whether class, individual, or otherwise in nature that Settling Defendants, or any of them, ever had, now has, or hereafter can, shall, or may have arising from or relating in any way to the matters at issue in the Willis Action ("Released Claims"). Each Settling Defendant may hereafter discover facts other than or different from those which he, she, or it knows or believes to be true with respect to the claims which are the subject matter of this Stipulation, but each Settling Defendant hereby waives any right to relief from the provisions of this Stipulation in such event, and fully, finally, and forever, settles and releases, upon this Stipulation becoming final, any known or unknown, suspected or unsuspected, contingent or non-contingent claim with respect to the subject matter of the Stipulation, whether or not concealed or hidden, and without regard to the subsequent discovery or existence of such different or additional facts.

1. As provided in the Release set forth in Paragraph VII.B, above, the Settling Defendants, including any of Settling Defendants' representatives, successors, agents, affiliates, employees, supervisors, officers, directors, or shareholders, agree to waive and release all rights and benefits which they might otherwise have pursuant to Section 1542 of the California Civil Code with regard to the release of such unknown, unanticipated or misunderstood claims, causes of action, liabilities, indebtedness and obligations.

VIII. MISCELLANEOUS PROVISIONS

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A. No Concession By Any Settling Party

It is understood and agreed that this Stipulation represents the compromise of disputed positions with respect to the relevant facts and law. This Stipulation shall not be deemed a concession by any Settling Party as to any fact or the validity or invalidity of any claim or defense.

B. Best Efforts and Mutual Cooperation.

Settling Plaintiffs and Settling Defendants shall use their best efforts to effectuate this Stipulation and its purpose, and secure the prompt, complete, and final dismissal with prejudice of the Willis Action. The Settling Parties agree to take any and all reasonable steps that may be necessary in that regard, as long as those steps do not require any material deviations from the terms of this Stipulation or impose material new obligations beyond those contemplated by this Stipulation.

The Settling Parties recognize that not all parties to the Coordinated Actions have entered into this Stipulation and that a trial may be necessary as against non-settling parties. The Settling Parties agree to cooperate and coordinate their efforts in any such trial or hearing so as to obtain entry of judgment consistent with the terms of this Stipulation; this provision, however, will not require Willis Class counsel to participate in any such trial or render any efforts absent written agreement of Settling Defendants to compensate them for such efforts. Nor shall this Stipulation preclude Settling Plaintiffs from participating in any further proceedings that may affect their rights.

C. Adjustments Of Settling Parties' Estimates

In the event that the Court enters findings of fact that vary from the estimated amounts that the Settling Parties have agreed to for purposes of this Stipulation (including the length of the Transition Period described in Paragraph V.C.), the Court's findings will be determinative and will supplant the amounts set forth in this Stipulation. For example, if the Court should determine following trial that the Basin's Total Safe Yield is, in fact, 120,000 acre-feet per year (or some other amount), the Court's findings will control.

D. Fees And Costs Of Settling Plaintiff's Counsel

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The Settling Parties understand that Willis Class counsel intend to seek an award of their fees and costs from the Court. Any such awards will be determined by the Court unless agreed to by the Settling Parties. Settling Defendants will likely oppose the motion for fees and costs. If Willis Class Counsel obtain an award of fees, Settling Defendants agree to exercise their best efforts to pay any fee award within a reasonable period of time or as required pursuant to Court order. Willis Class Counsel agree that they will not seek any attorneys' fees and/or costs from Settling Defendants for any efforts Willis Class Counsel undertake after the Court's entry of Final Judgment approving the Settlement, except with respect to the following: (a) any reasonable and appropriate efforts by Willis Class Counsel to enforce the terms of this Stipulation against Settling Defendants in the event Settling Defendants fail to comply with a provision of this Stipulation; (b) any reasonable and appropriate efforts by Willis Class Counsel to defend against any new or additional claims or causes of action asserted by Settling Defendants against the Willis Class in pleadings or motions filed in the Consolidated Actions; (c) any reasonable and appropriate efforts by Willis Class Counsel that are undertaken in response to a written Court order stating that, pursuant to this provision, Class counsel may seek additional fees for specified efforts from Settling Defendants pursuant to Code of Civil Procedure section 1021.5; (d) any reasonable and appropriate efforts by Willis Class Counsel that are undertaken in response to a written request by Settling Defendants executed by counsel for all Settling Defendants that Class Counsel participate in future aspects of the Consolidated Actions (e.g., the negotiation of a Physical Solution); or (e) any reasonable and appropriate efforts that Willis Class Counsel render to defend a fee award in their favor in the event the Settling Defendants appeal such a fee award and the Court of Appeal affirms the fee award in the amount of 75 percent or more of the fees awarded by the Superior Court. Willis Class Counsel remain free to seek an award of fees from other parties to the litigation.

E. Retention Of Jurisdiction

The Superior Court of the State of California for Los Angeles County shall retain jurisdiction over the implementation, enforcement, and performance of this Stipulation, and shall have exclusive jurisdiction over any suit, action, proceeding, or dispute arising out of or relating

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to this Stipulation or the applicability of this Stipulation.

F. Choice Of Law

This Stipulation shall be governed and construed by the substantive laws of the State of California.

G. Finality

a. This Stipulation shall be effective on the Effective Date, which shall occur when the Court has entered a Final Judgment approving this Stipulation and one of the following events occurs; (i) if an appeal is taken, the date of final affirmance of the Final Judgment, or if petition for review is granted by California Supreme Court or writ of certiorari is granted by United States Supreme Court, the date of final affirmance of the Final Judgment following review pursuant to such grant; or (ii) the date of final dismissal of any appeal from Final Judgment or the final dismissal of any proceedings on petition to review the Final Judgment; or (iii) if no appeal is filed, the expiration date of the time for filing or noticing of any appeal from the Final Judgment, i.e., sixty (60) days after notice of entry of the Final Judgment.

b. In the event that the Court refuses to approve this Stipulation, or any material part hereof, or if such approval is materially modified or set aside on appeal, or if the Final Judgment is not entered in accordance with this Stipulation, appellate review is sought, and on such review, such Final Judgment is not affirmed as to all material parts, then any of the Settling Parties to the Stipulation have the option to rescind this Stipulation in its entirety. Written notice of the exercise of any such right to rescind shall be made according to the terms of this Paragraph VIII.L below within thirty (30) days of the triggering event.

H. Integrated Agreement

This Stipulation constitutes the entire, complete and integrated agreement among the Settling Parties, and supersedes all prior or contemporaneous undertakings of the Settling Parties in connection herewith. This Stipulation may not be modified or amended except in writing executed by the Settling Parties and approved by the Court. It shall be construed and interpreted to effectuate the intent of the Settling Parties which is to provide, through this Stipulation, for a complete resolution of the relevant claims between the Settling Parties on the terms provided in

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RIVERSIDE, CA 92502

this Stipulation. Notwithstanding the foregoing, the Settling Parties intend and agree that this Stipulation will later be incorporated into a Physical Solution, as defined above, which is consistent with the terms of this Stipulation.

I. Waiver

The waiver by any Settling Party of its rights under any provision of this Stipulation or of any breach of this Stipulation shall not be deemed a waiver of any other provision or subsequent breach of this Stipulation.

J. Intended Beneficiaries

This Stipulation shall be binding upon, and inure to the benefit of, the heirs, successors and assigns of the Settling Plaintiffs and Settling Defendants. Without limiting the generality of the foregoing, this Stipulation shall bind each and every subsequent property owner who acquires property in the Basin from a Willis Class Member as well as persons who subsequently acquire such properties.

K. Interpretation and Construction

The terms of this Stipulation have been arrived at by negotiation and mutual agreement, with consideration of and participation by all Settling Parties and with the advice of counsel. Neither Settling Plaintiffs nor Settling Defendants shall be considered to be the drafter of this Stipulation or any of its provisions for the purpose of any statute, case law, or rule of interpretation or construction that would or might cause any provision to be construed against the drafter of this Stipulation (including but not limited to Civil Code Section 1654). The descriptive headings of any paragraphs or sections of this Stipulation are inserted for convenience only and do not constitute a part of this Stipulation.

L. Notices

Where this Stipulation requires either party to provide notice or any other communication or document to the other, such notice shall be in writing, and such notice, communication, or document shall be provided by personal delivery, facsimile transmission, overnight delivery, or letter sent by United States mail with delivery confirmation. Notice may be provided to the Settling Parties through their counsel of record at the following addresses:

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RIVERSIDE, CA 92502

California Water Service Company:	Attn: President California Water Service Company 1720 North First Street San Jose, California 95112
with a copy to:	John Tootle California Water Service Company 2632 West 237th Street Torrance, California 90505
City of Palmdale:	Attn: City Manager 38300 Sierra Highway Palmdale, California 93550
with a copy to:	James Markman Richards, Watson & Gerson 355 South Grand Avenue, 40th Floor Los Angeles, California 90071
Littlerock Creek Irrigation District:	Attn: General Manager 35141 87th Street East Littlerock, California 93543
with a copy to:	Wayne Lemieux Lemieux & O'Neill 2393 Townsgate Rd., Suite 201 Westlake Village, California 91361
Los Angeles County Waterworks District No. 40:	Attn: Director 260 East Avenue K-8 Lancaster, California 93535
with a copy to:	Michael Moore Los Angeles county Counsel Office 648 Kenneth Hahn Hall of Administration 500 West Temple Street Los Angeles, California 90012
with a copy to:	Eric L. Garner

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	Best Best & Krieger LLP 3750 University Avenue P.O.B 1028 Riverside, California 92502
Palmdale Water District:	Attn: General Manager 2029 E. Avenue Q Palmdale, California 93550
with a copy to:	Thomas Bunn III Lagerlof, Senecal, Gosney & Kruse, LLP 301 North Lake Avenue, 10th floor Pasadena, California 91101-4108
Palm Ranch Irrigation District:	Attn: General Manger 4871 West Avenue M. (Colombia Way) Quartz Hill, California 93536
with copy to:	Wayne Lemieux Lemieux & O'Neill 2393 Townsgate Rd., Suite 201 Westlake Village, California 91361
Quartz Hill Water District:	Attn: General Manager 42141 N. 50th Street West Quartz Hill, California 93536
with copy to:	Bradley Weeks Charlton Weeks LLP 107 West Avenue M-14, Suite A Palmdale, California 93551
Phelan Pinon Hills Community Services District:	Attn: General Manager 4037 Phelan Road, Suite C-1 Phelan, California 92371
with copy to:	Francis Logan Law Office of Susan Trager 19712 MacArthur Blvd. #120 Irvine, California 92612
Rosamond Community Services District:	Attn: General Manager

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BEST BEST & KRIEGER LLP
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	3179 35th Street W Rosamond California 93560
with a copy to:	Eric L. Garner Best Best & Krieger LLP 3750 University Avenue P.O.Box 1028 Riverside, California 92502
Willis Class:	Rebecca Lee Willis
With a copy to:	Ralph Kalfayan Krause Kalfayan Benink & Slavens LLP 625 Broadway, Ste. 635 San Diego, CA 92101

or to such other address as any Settling Party shall, from time to time, specify in the manner provided herein.

M. No Admissions

Neither this Stipulation, nor any act performed or document executed pursuant to or in furtherance of this Stipulation is or may be deemed to be or may be used as an admission of, or evidence of, (i) the validity of any claim or defense; or (ii) the appropriateness or inappropriateness of any Willis Class Member or other representational capacity, whether contemporaneously with this Stipulation or at any time in the future.

N. Execution

This Stipulation may be executed in counterparts by Settling Plaintiffs and Settling Defendants, and a facsimile signature shall be deemed an original signature for purposes of executing this Stipulation. Each of the undersigned persons represents that he or she is fully authorized to enter into the terms and conditions of and to execute this Stipulation by the party for which he or she has signed the Stipulation.

IN WITNESS HEREOF, the undersigned being duly authorized, have executed this Stipulation on the dates shown below.

Rebecca Lee Willis

Approved as to form by: Ralph Kalfayan

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By: Rebecca Lee Willis

By: Ralph Kalfayan

California Water Service

Approved as to form by: John Tootle

By: _____

By: _____

City of Palmdale

Approved as to form by: James Markman

By: _____

By: _____

Littlerock Creek Irrigation District

Approved as to form by: Wayne Lemieux

By: _____

By: _____

Los Angeles County Waterworks District No. 40

Approved as to form by:
Andrea Sheridan Ordin, County Counsel

By: Gloria Molina
Chair, Board of Supervisors

By: _____
Warren R. Wellen, Principal Deputy County Counsel

Approved as to form by: Eric L. Garner

By: _____

Attest:
Sachi A. Hamai,
Executive Officer-Clerk Of the Board of Supervisors

By: LaChelle Smitherman
DEPUTY

Palmdale Water District

Approved as to form by: Tom Bunn

By: _____

By: _____

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77381

By: _____

By: _____

California Water Service

Approved as to form by: John Tootle

By: _____

By: _____

City of Palmdale

Approved as to form by: James Markman

By: James T. Markman

By: James T. Markman

Littlerock Creek Irrigation District

Approved as to form by: Wayne Lemieux

By: _____

By: _____

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By: _____
Chair, Board of Supervisors

By: _____
Warren R. Wellen, Principal Deputy County Counsel

Approved as to form by: Eric L. Garner

By: _____

Attest:
Sachi A. Hamai,
Executive Officer-Clerk Of the Board of Supervisors

By: _____

Palmdale Water District

Approved as to form by: Tom Bunn

By: _____

By: _____

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Warren R. Wellen, Principal Deputy County Counsel

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Attest:
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Executive Officer-Clerk Of the Board of Supervisors

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Palmdale Water District

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Chair, Board of Supervisors

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Warren R. Wellen, Principal Deputy County Counsel

Approved as to form by: Eric L. Garner

By: _____

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DEPUTY

Palmdale Water District

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By: _____

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Palm Ranch Irrigation District

By: _____

Approved as to form by: Wayne Lemieux

By: _____

Phelan Pinon Hills Community Services District

By: _____

Approved as to form by: Francis Logan

By: _____

Quartz Hill Water District

By: _____

Approved as to form by: Brad Weeks

By: _____

Rosamond Community Services Districts

By: _____

Approved as to form by: Eric L. Garner

By: _____

Desert Lake Community Services District

By: _____

Approved as to form by: Wayne Lemieux

By: _____

North Edwards Water District

By: _____

Approved as to form by: Wayne Lemieux

By: _____

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Palm Ranch Irrigation District

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By: _____

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Rosamond Community Services Districts

By: _____

Approved as to form by: Eric L. Garner

By: _____

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Palm Ranch Irrigation District

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By: _____

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Approved as to form by: Francis Logan

By: _____

Quartz Hill Water District

By: _____

Approved as to form by: Brad Weeks

By: _____

Rosamond Community Services Districts

By: _____

Approved as to form by: Eric L. Garner

By: _____

Desert Lake Community Services District

By: Sallie U. Kostopoulos

Approved as to form by: Wayne Lemieux

By: Wayne Lemieux

North Edwards Water District

By: _____

Approved as to form by: Wayne Lemieux

By: Wayne Lemieux

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Palm Ranch Irrigation District

By: _____

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Phelan Pinon Hills Community Services District

By: _____

Approved as to form by: Francis Logan

By: _____

Quartz Hill Water District

By: _____

Approved as to form by: Brad Weeks

By: _____

Rosamond Community Services Districts

By: _____

Approved as to form by: Eric L. Garner

By: _____

Desert Lake Community Services District

By: _____

Approved as to form by: Wayne Lemieux

By: _____

North Edwards Water District

By: Dallis N. Kostopoulos

Approved as to form by: Wayne Lemieux

By: Wayne Lemieux

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APPENDIX D

2015 URBAN WATER MANAGEMENT PLAN, ANTELOPE VALLEY – EAST KERN WATER AGENCY

ANTELOPE VALLEY-EAST KERN WATER AGENCY

2015 Urban Water Management Plan

FINAL DRAFT

JUNE 2016

Table of Contents

Section 1 : Introduction 1-1

1.1 Background and Purpose 1-1

Section 2 Plan Preparation 2-1

2.1 Plan and Agency Identification 2-1

2.2 Coordination 2-2

Section 3 : System Description 3-1

3.1 General Description 3-1

3.2 Service Area Climate 3-2

3.3 Service Area Population 3-3

Section 4 : System Water Use 4-1

4.1 Water Use 4-1

4.2 Distribution System Water Losses 4-5

4.3 Climate Change 4-6

Section 5 : Baselines and Targets 5-1

Section 6 : System Supplies 6-1

6.1 Purchased or Imported Water 6-1

6.2 Groundwater 6-2

6.3 Surface Water 6-4

6.4 Stormwater 6-4

6.5 Wastewater and Recycled Water 6-5

6.6 Desalinated Water Opportunities 6-5

6.7 Exchanges and Transfers 6-5

6.8 Future Water Projects 6-6

6.9 Summary of Existing and Planned Sources of Water 6-7

Section 7 : Water Supply Reliability Assessment 7-1

7.1 Constraints on Water Sources 7-1

7.2 Reliability by Type of Year 7-1

7.3 Supply and Demand Year 7-4

7.4 Regional Water Supply Reliability 7-6

Section 8 : Water Shortage Contingency Planning 8-1

8.1 Stages of Action 8-1

8.2 Consumption Reduction Measures 8-1

8.3 Determining Water Shortage Reductions 8-2
8.4 Revenue and Expenditure Impacts 8-2
8.5 Resolution or Ordinance 8-2
8.6 Catastrophic Supply Interruption 8-2
8.7 Minimum Supply Next Three Years 8-4
Section 9 : Demand Management Measures 9-1
9.1 Metering 9-2
9.2 Public Education and Outreach 9-2
9.3 Water Conservation Program Coordination and Staffing Support 9-2
9.4 Other Demand Management Measures 9-2
9.5 Asset Management 9-2
9.6 Wholesale Supplier Assistance Programs 9-3
9.7 Voluntary Reporting of Energy Intensity 9-3
Section 10 : Plan Adoption, Submittal and Implementation 10-1
10.1 Public Notice 10-1
10.2 Plan Adoption, Submittal, and Implementation 10-1

Tables

2-2 Plan Identification 2-1
2-3 Agency Identification 2-1
2-4 Wholesale: Water Supplier Information Exchange 2-3
3-0 Climate 3-3
3-1 Wholesale: Population – Current and Projected 3-4
4-1 Wholesale: Demands for Potable and Raw Water – Actual 4-2
4-2 Wholesale: Demands for Potable and Raw Water – Projected 4-4
4-3 Wholesale: Total Water Demands 4-5
4-4 Wholesale: 12 Month Water Loss Audit Reporting 4-5
4-5 Prioritized Regional Vulnerability Issues 4-6
6-1 Wholesale: Groundwater Volume Pumped 6-4
6-7 Wholesale: Expected Future Water Supply Projects or Programs 6-7
6-8 Wholesale: Water Supplies – Actual 6-8
6-9 Wholesale: Water Supplies – Projected 6-8
7-1a Wholesale: Basis of Water Year Data - SWP 7-3
7-1b Wholesale: Basis of Water Year Data - Groundwater 7-4
7-2 Wholesale: Normal Year Supply and Demand Comparison 7-5
7-3 Wholesale: Single Dry Year Supply and Demand Comparison 7-5

7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison 7-6
8-1 Wholesale: Stages of WSCP 8-1
8-4 Wholesale: Minimum Supply Next Three Years 8-4
9-1 Summary of DMMs/BMPs Required for Wholesale Suppliers..... 9-1

Figures

1 2015 Agency Boundary Map
2 Antelope Valley Groundwater Adjudication Jurisdictional Boundary

Appendices

A Notices and Notification List
B Resolution Adopting 2015 UWMP Update
C Regional Planning Documents
D AWWA Water Audit Reporting Worksheet
E AVEK 2015 Five Year Strategic Plan
F Table C.7. Antelope Valley-East Kern WA: 2015 DCR ELT
G Antelope Valley Groundwater Adjudication Judgment
H AVEK Water Shortage Contingency Ordinance
I Voluntary Reporting of Energy Intensity

List of Acronyms and Abbreviations

AB	Assembly Bill
Act	Urban Water Management Planning Act
AF	Acre-feet
AFD	Acre-feet per day
AVEK	Antelope Valley-East Kern Water Agency
Agency	Antelope Valley-East Kern Water Agency
AVWCC	Antelope Valley Water Conservation Coalition
Basin	Antelope Valley Groundwater Basin
BDCP	Bay Delta Conservation Plan/California Water Fix
BMP(s)	Best management practice(s)
California City	City of California City
CBDA	California Bay-Delta Authority
CCWA	Central Coast Water Authority
CEQA	California Environmental Quality Act
CII	Commercial, industrial, and institutional
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CWC	California Water Code
CWS	California Water Service Company
CWSRF	Clean Water State Revolving Fund
DAWN	Domestic Agricultural Water Network
DCR	2015 DWR State Water Project Delivery Capability Report
Department	California Department of Water Resources
DIRWM	Division of Integrated Regional Water Management
DMM(s)	Demand management measure(s)
DOF	California Department of Finance
DOST	DWR online submittal tool
DWR	California Department of Water Resources
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
ELT	Early Long Term Scenario from DCR
GHG	Greenhouse gas
GPCD	Gallons per capita per day
IRWM	Integrated Regional Water Management
IRWMP(s)	Integrated Regional Water Management Plan(s)
Judgment	Stipulated Judgment for Antelope Valley Groundwater Cases
KCWA	Kern County Water Agency
LACWWD	Los Angeles County Waterworks District
Lancaster	City of Lancaster
LCID	Littlerock Creek Irrigation District
M&I	Municipal and Industrial
MG	Million gallons
MGD	Million gallons per day
MOU	Memorandum of Understanding
MPUD	Mojave Public Utility District
Palmdale	City of Palmdale
Plan (or UWMP)	Urban Water Management Plan
SB	Senate Bill
SCVWD	Santa Clara Valley Water District
SNIP	South North Intertie Pipeline and Pump Station/Turnout Project

State Water Board	State Water Resources Control Board
SWP	State Water Project
TDS	Total Dissolved Solids
USC	Urban Stakeholders Committee
USBR-MP	United States Bureau of Reclamation – Mid-Pacific Region
USGS	United States Geological Survey
UWMP (or Plan)	Urban Water Management Plan

Section 1: Introduction

1.1 Background and Purpose

The California Urban Water Planning Act (Act) requires urban water suppliers that have 3,000 or more service connections or supply 3,000 or more acre-feet (AF) of water per year to develop an Urban Water Management Plan (UWMP or Plan), which is submitted to the California Department of Water Resources (DWR) every five years. The Plan is required to describe and evaluate water deliveries and uses, water supply sources, efficient water uses, demand management measures and water shortage contingency planning.

AVEK has prepared its 2015 UWMP Update in accordance with the DWR "2015 Urban Water Management Plans Guidebook for Urban Water Suppliers" (Guidebook) for a wholesale supplier. The format of the Plan generally follows the recommended organization in Chapter 1.4 of the Guidebook and incorporates the applicable standardized tables for wholesale agencies as numbered and shown in the Guidebook. Some of the tables in the Guidebook are not applicable to the Agency's Plan and are not included as noted in the Plan. This 2015 UWMP is an update to AVEK's 2010 UWMP.

Section 2 Plan Preparation

2.1 Plan and Agency Identification

AVEK has prepared an Individual UWMP as a wholesale agency. Information in the UWMP is presented in Calendar Year format and water quantities are presented in Acre Feet (AF). See **Tables 2-2 and 2-3**.

Table 2-2: Plan Identification		
Select Only One	**Type of Plan**	
☑	**Individual UWMP**	
	☐	Water Supplier is also a member of a RUWMP
	☐	Water Supplier is also a member of a Regional Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
NOTES:		

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☑	Agency is a wholesaler
☐	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
Units of Measure Used in UWMP	
Unit	AF
NOTES:	

2.2 Coordination

Law

> *Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable (10620(d)(2)).*
>
> *Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan (10642).*
>
> *Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(j)).*

AVEK provides a supplemental imported water supply from the State Water Project (SWP) to retail water suppliers in the Antelope Valley region. This is a secondary water source for these suppliers and is used by these entities in lieu of or in addition to pumped groundwater. **Table 2-4** lists the water suppliers that were informed of AVEK's water supply projections as a part of the UWMP development process.

In addition to the water suppliers listed in **Table 2-4**, the following agencies were provided with a notice that an update to the Agency's UWMP was being prepared and a notice of the public hearing on the Plan:

- City of California City
- City of Lancaster
- City of Palmdale
- County of Kern
- County of Los Angeles
- County of Ventura
- Littlerock Creek Irrigation District.
- Palmdale Water District

Further information on coordination of the plan and public involvement is included in **Section 10: Plan Adoption, Submittal and Implementation**. Copies of notices and the notification list are included in **Appendix A**.

AVEK participated in the preparation of the Antelope Valley Integrated Regional Water Management Plan (**See Appendix C**) that contains region wide water usage and population projections, shared objectives for long-term water management, and proposed projects to help meet these objectives. The 2013 Update of the Antelope Valley IRWMP has been used for reference in completion of AVEK's UWMP. Los Angeles County Department of Regional Planning completed an update of the Antelope Valley Area Plan in June 2015. The Antelope Valley Area Plan has also been used for reference in completion of this UWMP.

Table 2-4 Wholesale: Water Supplier Information Exchange
Supplier has informed the following water suppliers of water supplies available in accordance with CWC 10631.
Water Supplier Name
Antelope Valley Country Club
Boron CSD
California Water Service Company
City of California City
Desert Lake CSD
Desert Sage Apartments
Edgemont Acres MWC
Edwards AFB
El Dorado MWC
Granite Construction (Shell Exploration)
Lake Elizabeth MWC
Landale MWC
Los Angeles County Waterworks Districts
Mojave Public Utility District
Palm Ranch Irrigation District
Quartz Hill Water District
Rancho Vista Development
Rio Tinto Minerals (US Borax)
Rosamond Community Services District
Shadow Acres MWC
Sunnyside Farms MWC
Tejon Ranch Co.
Westside Park MWC
White Fence Farms MWC
White Fence Farms MWC #3
NOTES: Copies of notices and notification lists are included in Appendix A.

Section 3: System Description

3.1 General Description

Law

Describe the service area of the supplier (10631(a)).

The Antelope Valley is located in the western part of the Mojave Desert approximately 50 miles northeast of Los Angeles, California. The Antelope Valley-East Kern Water Agency (AVEK) encompasses nearly 2,400 square miles in northern Los Angeles and eastern Kern Counties as well as a small portion of Ventura County. AVEK has played a major role in the Valley's water system since it was granted a charter by the State Legislature in 1959. It succeeded the AV-Feather River Association, which was formed in 1953 to encourage importation of water from the Feather River in northern California. The Agency boundary as of 2015 is shown in **Figure 1.**

In 1962, the AVEK Board of Directors signed a water supply contract with the DWR for delivery of imported water supplies from the SWP to supplement Antelope Valley groundwater supplies. AVEK has the third largest allotment of the 29 SWP contractors, following Metropolitan Water District and the Kern County Water Agency.

Financed by a $71 million bond issue, AVEK constructed the Domestic Agricultural Water Network (DAWN), which consists of four water treatment plants with clear water storage and more than 100 miles of pipelines. Four 8-million gallon (MG) water storage reservoirs near Mojave and one 3 MG reservoir at Vincent Hill complete the DAWN facilities.

AVEK developed groundwater banking programs to help increase the reliability of the Antelope Valley region's water supplies by storing excess water available from the State Water Project (SWP) during wet periods and recovering it for delivery to customers during dry and high demand periods or during a disruption in deliveries from the SWP.

The Water Supply Stabilization Project No. 2 (Westside Water Bank) started operations in 2010, and currently includes approximately 400 acres of groundwater recharge basins and 9 groundwater recovery wells. Up to twenty new wells may be constructed as a part of the Westside Water Bank project. Five irrigation wells existing on the property at the time of development may also be used in the program. AVEK meters the deliveries and recovery for the program and will not recover more than 90% of the amount recharged to account for evapotranspiration and other losses during recharge and conveyance as well as typical metering accuracy.

AVEK added the Eastside Water Banking and Blending Project which started operations in 2016. Three 2-acre recharge basins and three groundwater wells have been constructed as a part of the project. The project allows for recharge of raw water which is later recovered and blended for delivery to the Eastside Water Treatment Plant.

The South North Intertie Pipeline and Pump Station/Turnout Project (SNIP) was constructed in 2011 to connect the existing Rosamond Water Treatment Plant and the Quartz Hill Water Treatment Plant by utilizing the ability to move water through the Los Angeles County Water Works District's (LACWWD) pipelines. The SNIP Turnout is capable of moving water to and from the LACWWD at the rate of about 28 million gallons per day (MGD). The SNIP pipeline also provides flexibility in the method of return of water banked in the Westside Water Bank (direct delivery or transfer).

In 2012 AVEK entered into an agreement with Palmdale Water District for the exchange of up to 4 MGD of treated water in return for surface water to serve the Acton Water Treatment Plant's service area customers. This project improves the reliability of AVEK's water supply as it allows AVEK to serve customers potable water meeting current water quality standards even in times when the Acton Water Treatment Plant is not in operation.

Other facility improvements to allow for better distribution of water since the DAWN Project Improvements include the Parallel South Feeder and the addition of 9 MG of storage at the Quartz Hill Water Treatment Plant. The Agency's major facilities are also shown on **Figure 1**.

The Quartz Hill Water Treatment Plant is capable of producing 90 MGD (270 acre-feet/day (AFD)) of treated aqueduct water. The Eastside Water Treatment Plant is capable of producing 10 MGD (30 AFD). The Rosamond Water Treatment plant can produce 14 MGD (42 AFD), and the Acton Water Treatment Plant can produce 4 MGD (12 AFD) of treated water.

The bulk of AVEK's imported water is treated and distributed to customers throughout its service area. See **Table 2-4** for a current list of water purveyors that AVEK serves. AVEK also provides delivery of untreated water from the Aqueduct to local farmers and ranchers.

Other agencies in the Antelope Valley area with SWP allocations include Palmdale Water District and Littlerock Creek Irrigation District. More information about AVEK and the Antelope Valley area can be found in the Antelope Valley Area Plan and the Antelope Valley IRWMP in **Appendix C**.

3.2 Service Area Climate

Law

Describe the climate of the supplier (10631(a)).

The climate of the area encompassed by AVEK is primarily that of a desert. Vegetation is typical of the western Mojave Desert and includes creosote and desert shrubs. Certain portions of the valley contain large stands of Joshua Trees. Summer temperatures can reach 112°F while winter temperatures can drop to about 10°F. Typical annual rainfall is 7 to 8 inches. The perimeter of the Antelope Valley includes low brush covered hills transitioning into the Tehachapi Mountains to the west and the San Gabriel Mountains to the south. Surface water drainage channels and courses are only active during times of runoff due to precipitation. The water tables are well below the levels needed to sustain year round flowing streams. The area is known for its daily winds, primarily from the west. **Table 3-0** presents the average rates of evapo-transpiration (Eto), temperature, and precipitation of the service area.

Table 3-0: Climate													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Monthly Eto[(a)]	2.36	3.10	4.93	6.43	8.37	9.23	9.66	8.76	6.33	4.48	2.85	2.02	68.52
Avg Rainfall (inches)[(b)]	1.46	1.53	1.24	0.48	0.14	0.03	0.05	0.15	0.19	0.33	0.67	1.36	7.62
Average Max Temperature (Fahrenheit)[(b)]	58.5	62.1	67.4	74.0	81.9	90.2	97.6	96.9	91.4	80.2	67.3	58.7	77.2
Average Min Temperature (Fahrenheit)[(b)]	32.4	35.6	39.2	44.0	51.0	58.0	65.3	63.9	57.6	48.1	38.1	32.7	47.2

Sources:
[(a)] Average Monthly Evapotranspiration (Eto) per Western Regional Climate Center, Palmdale Station (046624) for the years 1903-2012.
[(b)] CIMIS Station No. 197 – Palmdale since April 2005.

3.3 Service Area Population

Law

> *(Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . . (10631(a)).*
>
> *. . . (population projections) shall be in five-year increments to 20 years or as far as data is available (10631(a)).*
>
> *Describe . . . other demographic factors affecting the supplier's water management planning (10631(a)).*

AVEK provides service to incorporated and unincorporated areas of the Antelope Valley. The population within the AVEK service area in 2015 was estimated based on information in the Antelope Valley IRWMP, which is also used as a source for the population in the Antelope Valley Area Plan. Changes from the projections in the IRWMP are as follows:

- 50% of the population values were used for the City of Palmdale (Palmdale) since approximately 50% of Palmdale is within the service area of AVEK.
- Population for the City of California City (California City) has been added since California City was not included in the IRWMP planning area. The 2015 population was taken from California Department of Finance (DOF) estimates (E-5 City/County Population and Housing Estimates, 1/1/2015). Future projections were based on the rates identified in the IRWMP (1.7% annual increase through 2020, 1% annual increase from 2020 through 2035).
- Population projections for years not included in the IRWMP (2015, 2025, and 2030) were estimated by interpolation.

By the year 2035 the population within the AVEK service area is projected to be approximately 460,700 as shown in **Table 3-1.**

Table 3-1 Wholesale: Population - Current and Projected					
Population Served	2015	2020	2025	2030	2035
	359,500	389,900	413,400	437,000	460,700

NOTES:
Values based on data from the Antelope Valley IRWMP. Changes from the projections in the IRWMP are as follows:

- 50% of the population values were used for the City of Palmdale since approximately 50% of that City is within the service area of AVEK.
- Population for the City of California City has been added since this City was not included in the IRWMP planning area. The 2015 population was taken from DOF estimates (E-5 City/County Population and Housing Estimates, 1/1/2015). Future projections were based on the rates identified in the IRWMP (1.7% annual increase through 2020, 1% annual increase from 2020 through 2035).
- Population projections for years not included in the IRWMP (2015, 2025, and 2030) were estimated by interpolation.

Section 4: System Water Use

4.1 Water Use

Law

> *Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and (2)).*
>
> *The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).*

AVEK makes water deliveries of treated water to retail water suppliers and raw water for agricultural irrigation. All connections are metered. Water delivery data for 2015 is summarized in **Table 4-1**. Since 2015 was an extremely dry year, no deliveries were made for groundwater recharge. The values in **Table 4-1** do not represent total water demands for the AVEK service area in 2015. AVEK provides a supplemental water source to the Antelope Valley region. Additional water demands were met through groundwater pumping by the retail water agencies and private entities.

Due to critically dry hydrologic conditions, AVEK entered into exchange agreements for delivery of a portion of its 2015 SWP allocation to agencies with an urgent need for additional water supplies. The terms of the agreements are briefly summarized below:

- **2015 Santa Clara Valley Water District Exchange (SCVWD):** Up to 15,000 AF of AVEK's SWP allocation can be delivered to SCVWD in 2015 in a 1:1 exchange with return of water to AVEK by 2025.
- **Santa Barbara County Flood Control and Water Conservation District Exchange (for the Central Coast Water Authority (CCWA)):** Up to 10,000 AF of AVEK's SWP allocation can be delivered to CCWA in 2015 in a 1:1 exchange with return of water to AVEK by 2025.

The actual exchange deliveries for 2015 for each program are shown in **Table 4-1**.

Table 4-1 Wholesale: Demands for Potable and Raw Water – Actual			
Use Type	2015 Actual		
	Additional Description	Level of Treatment When Delivered	Volume
Sales to other agencies	Boron CSD	Drinking Water	159
Sales to other agencies	City of California City	Drinking Water	643
Sales to other agencies	Desert Lake CSD	Drinking Water	93
Sales to other agencies	Desert Sage Apartments	Drinking Water	7
Sales to other agencies	Edgemont Acres MWC	Drinking Water	131
Sales to other agencies	Edwards AFB	Drinking Water	1259
Sales to other agencies	Granite Construction (Shell Exploration)	Drinking Water	0
Sales to other agencies	Mojave Public Utility District	Drinking Water	2
Sales to other agencies	Rio Tinto Minerals (US Borax)	Drinking Water	1128
Sales to other agencies	Rosamond CSD	Drinking Water	1
Sales to other agencies	Antelope Valley Country Club	Drinking Water	105
Sales to other agencies	California Water Service Co	Drinking Water	109
Sales to other agencies	El Dorado MWC	Drinking Water	1
Sales to other agencies	Landale MWC	Drinking Water	32
Sales to other agencies	Los Angeles County WWD	Drinking Water	20983
Sales to other agencies	Palm Ranch ID	Drinking Water	4
Sales to other agencies	Quartz Hill WD	Drinking Water	2608
Sales to other agencies	Shadow Acres MWC	Drinking Water	140
Sales to other agencies	Sunnyside Farms MWC	Drinking Water	56
Sales to other agencies	Westside Park MWC	Drinking Water	0
Sales to other agencies	White Fence Farms MWC	Drinking Water	153
Sales to other agencies	White Fence Farms MWC #3	Drinking Water	284
Sales to other agencies	Lake Elizabeth MWC	Raw Water	146
Sales to other agencies	Tejon Ranch Co.	Raw Water	0
Sales to other agencies	Rancho Vista Development	Raw Water	422
Sales to other agencies	Caliifornia Parks and Recreation	Raw Water	9
Agricultural irrigation	Treated water agricultural customers	Drinking Water	173
Agricultural irrigation	Untreated water agricultural customers	Raw Water	128
Transfers to other agencies	Santa Clara Valley Water District	Raw Water	7500
Transfers to other agencies	Santa Barbara County FC&WCD[1]	Raw Water	9600
Groundwater recharge	Water Banking Facilities	Raw Water	0
Losses		Raw Water	1589
TOTAL			**47,464**

NOTES:
1. AVEK's exchange with the CCWA (as assignee of the water supply contract between the Santa Barbara FC&WCD and the DWR).

AVEK makes no deliveries of water for saline intrusion barriers. Calculation of water losses has been made according to Appendix L of the Guidebook as summarized in **Section 4.2**. The deliveries to the various urban water use sectors will be reported by the retail water suppliers.

Values for future water projections are taken from the IRWMP (see **Appendix C**) for the Boron CSD, Edwards AFB, Rosamond CSD, LACWWD, and the Quartz Hill WD. The future water demand projections for the LACWWD are from the Draft LACWWD No. 40, Antelope Valley's 2015 Urban Water Management Plan.

For other retail water suppliers, projections for future water use are based on a 25% reduction in the projected demands for 2015 from the Agency's 2010 UWMP and projected growth rates from the IRWMP. The reduction in projected demands for 2015 is due to the Governor's Executive Order mandating a 25% reduction in potable water demands from 2013 demands. It is anticipated that many of the water conservation measures enacted within the service area (see **Section 9.2**) will result in permanent reductions in demand for potable water within AVEK's service area.

Table 4-2 includes projections of AVEK's water uses for the years 2020 through 2035 in five year increments. Projections for deliveries of water for groundwater recharge or exchanges are not included in **Table 4-2** since these are not considered to be demands for the determination of water supply reliability. The projected impacts of these programs on water supply reliability will be covered in **Section 6: System Supplies**. Projections of low income housing water use needs for single-family and multifamily residential housing will be addressed by the retail water suppliers.

Agricultural water deliveries are anticipated to have minimal growth in the next twenty years with a possible decrease in the following years. The water deliveries projections in **Table 4-2** show a slight increase in agricultural irrigation quantities through 2035. It is projected that in the long-term more agricultural land will convert to urban uses. System losses are estimated to average 4% of total demands.

Table 4-3 summarizes AVEK's water demands from **Tables 4-1 and 4-2**. As noted previously, AVEK provides a supplemental imported water supply to the region which is used by these entities in lieu of or in addition to pumped groundwater.

Table 4-2 Wholesale: Demands for Potable and Raw Water - Projected					
Use Type	Additional Description	Projected Water Use			
		2020	2025	2030	2035
Sales to other agencies	Boron CSD[1]	400	1,000	1,000	1,000
Sales to other agencies	City of California City	1,070	1,120	1,180	1,240
Sales to other agencies	Desert Lake CSD	160	170	180	190
Sales to other agencies	Desert Sage Apartments	10	10	10	10
Sales to other agencies	Edgemont Acres MWC	200	210	220	230
Sales to other agencies	Edwards AFB[1]	1,000	1,000	1,000	1,000
Sales to other agencies	Granite Construction (Shell Exploration)	20	20	20	20
Sales to other agencies	Mojave Public Utility District	90	90	90	90
Sales to other agencies	Rio Tinto Minerals (US Borax)	1,350	1,350	1,350	1,350
Sales to other agencies	Rosamond CSD[1]	4,000	5,000	5,000	5,000
Sales to other agencies	Antelope Valley Country Club	230	240	250	260
Sales to other agencies	California Water Service Co	350	370	390	410
Sales to other agencies	El Dorado MWC	350	370	390	410
Sales to other agencies	Landale MWC	30	30	30	30
Sales to other agencies	Los Angeles County WWD[2]	61,000	61,000	61,000	61,000
Sales to other agencies	Palm Ranch ID	820	860	900	950
Sales to other agencies	Quartz Hill WD[1]	3,000	3,000	3,000	3,000
Sales to other agencies	Shadow Acres MWC	330	350	370	390
Sales to other agencies	Sunnyside Farms MWC	230	240	250	260
Sales to other agencies	Westside Park MWC	20	20	20	20
Sales to other agencies	White Fence Farms MWC	330	350	370	390
Sales to other agencies	White Fence Farms MWC #3	300	320	340	360
Sales to other agencies	Lake Elizabeth MWC	390	410	430	450
Sales to other agencies	Tejon Ranch Co.	4,000	4,000	4,000	4,000
Sales to other agencies	Rancho Vista Development	460	480	500	530
Agricultural irrigation	Raw water	140	150	160	170
Agricultural irrigation	Potable water	170	170	170	170
Losses	See Note 4	3,220	3,290	3,300	3,320
TOTAL		**83,670**	**85,620**	**85,920**	**86,250**

NOTES:

1. Projections from Antelope Valley IRWMP (see Appendix C).
2. Projections from the Draft LACWWD No. 40, Antelope Valley's 2015 Urban Water Management Plan .
3. Projections for other retail water suppliers based on a 25% reduction from 2015 projections in the 2010 UWMP (due to conservation reduction measures implemented in 2015) and growth rates from the IRWMP.
4. Losses estimated at 4% of total demands.

Table 4-3 Wholesale: Total Water Demands					
Demand Type	2015	2020	2025	2030	2035
Potable and Raw Water *From Tables 4-1 and 4-2*	47,464	83,670	85,620	85,920	86,250
Recycled Water Demand *From Table 6-4*	0	0	0	0	0
TOTAL WATER DEMAND	**47,464**	**83,670**	**85,620**	**85,920**	**86,250**
NOTES:					

4.2 Distribution System Water Losses

Law

Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:. . . (J) Distribution system water loss. (10631(e)(1) and (2)).

For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association (10631(e)(3)).

AVEK audits its system losses monthly as a part of its normal billing procedures. Pipelines are driven regularly as a part of water sample runs during which personnel will note leaks if observed. The Agency's average long-term system loss is 4%. The average system loss for 2011-2015 is approximately 5%.

Table 4-4 includes the results of AVEK's water system audit for 2015. The audit was completed using AWWA's Water Audit Software. A copy of the Water Audit Reporting Worksheet is included in **Appendix D**.

Table 4-4 Wholesale: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date	Volume of Water Loss
01/2015	1,210
NOTES: Calculated using AWWA Water Audit Software (see Appendix D).	

4.3 Climate Change

A Climate Change Vulnerability Assessment was completed as a part of the Antelope Valley IRWMP and climate change considerations were incorporated into the various chapters of that plan (See **Appendix C**). Climate change adaptation and mitigation was included as a part of prioritization of projects in the IRWMP. The prioritized Regional Vulnerability Issues from the IRWMP are presented in **Table 4-5**. Discussion of the potential climate change impacts to SWP supplies is included in **Section 6.1**.

Table 4-5 Prioritized Regional Vulnerability Issues

Priority	Category and Vulnerability Issue
High	• Water Demand/Supply: Limited ability to meet summer demand and decrease in seasonal reliability • Flooding: Increases in flash flooding (with particular attention paid to the balance of flood control with habitat and lakebed needs which EAFB depends on) • Water Supply: Lack of groundwater storage to buffer drought • Water Supply: Decrease in imported supply • Water Supply: Invasive species can reduce supply available • Ecosystem and Habitat: Increased impacts to water dependent species and decrease in environmental flows • Water quality: Increased constituent concentrations
Medium	• Water Supply: Decrease in local surface supply • Water Quality: Increased erosion and sedimentation • Water Supply: Sensitivity due to higher drought potential • Ecosystem and Habitat: Decrease in available necessary habitat
Low	• Water Demand: Industrial demand would increase • Water Demand: Crop demand would increase per acre • Water Demand: Habitat demand would be impacted • Flooding: Increases in inland flooding
NOTES: From Antelope Valley IRWMP	

AVEK developed a 2015 Five-Year Strategic Plan to provide a blueprint for activities to respond to challenges such as water supply fluctuations due to Climate Change (see **Appendix E**). The goals identified in the Strategic Plan include:

- **Goal 1: Groundwater Basin Stewardship** – AVEK will provide leadership and collaborate to protect and sustain the regional groundwater basin.
- **Goal 2: Water Reliability** – AVEK will provide a level of regional water reliability that supports customers' water needs.
- **Goal 3: Water Quality** - AVEK will produce high quality water that anticipates and surpasses state and federal regulations.

- **Goal 4: Financial Integrity** – AVEK will manage its financial resources in a responsible, effective and transparent fashion.

- **Goal 5: Capital and Human Resources Stewardship** – AVEK will be efficient and thoughtful stewards of our human and capital resource assets.

- **Goal 6: Communications** – AVEK will inform, engage and respond to the community it serves as it achieves reliable, high quality, and sustainable water services.

Section 5: Baselines and Targets

This section is not required for AVEK as a wholesale water supplier. Measures, programs, and policies that AVEK has adopted to help the retail water suppliers within its service area to achieve their SB X7-7 water use reduction targets are discussed in **Section 9**.

Section 6: System Supplies

6.1 Purchased or Imported Water

AVEK sells imported water from the DWR California Aqueduct as part of the SWP. Currently, AVEK has an allocation for purchasing up to 144,844 acre-feet of water per year (Table A) from the SWP. In order to maximize the use of its SWP supplies, AVEK has developed the Westside Water Bank within its service area and has entered into various exchange programs with other SWP contractors.

Through the Westside Water Bank facilities, AVEK can take delivery of SWP supplies in excess of its customers' demands for use as groundwater recharge (recharge capacity currently estimated to be approximately 36,000 acre-feet per year) for future recovery in dry years. AVEK is also able to purchase additional SWP supplies from the DWR (such as Article 21 and turnback pool water) when available. Deliveries to AVEK of imported SWP water for 2015 are included in **Table 6-8** in **Section 6.9**.

Projections for future deliveries of SWP water are estimated based on DWR's 2015 update of the State Water Project Delivery Capability Report (DCR), a biennial report to assist SWP contractors and local planners in assessing the near and long-term availability of supplies from the SWP. In the 2015 update, DWR provides SWP supply estimates for SWP contractors to use in their planning efforts, including for use in their 2015 UWMPs. The 2015 DCR includes DWR's estimates of SWP water supply availability under both current and future conditions.

DWR's estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and Central Valley Project systems. Key assumptions and inputs to the model include the facilities included in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and projected contractor demands for SWP water. For example, the 2015 DCR uses the following assumptions to model current conditions: existing facilities, hydrologic inflows to the model based on 82 years of historical inflows (1922 through 2003), current regulatory and operational constraints, and contractor demands at maximum Table A amounts.

To evaluate SWP supply availability under future conditions, the 2015 DCR included four model studies. The first of the future-conditions studies, the Early Long Term (ELT) scenario, used all of the same model assumptions for current conditions, but reflected changes expected to occur from climate change, specifically, a 2025 emission level and a 15 cm sea level rise. The other three future-conditions include varying model assumptions related to the Bay Delta Conservation Plan/California Water Fix ("BDCP"), such as changes to facilities and/or regulatory and operational constraints.

In spring 2015, DWR announced that BDCP would move from a Section 10 permit to a Section 7 permit process under the Federal Endangered Species Act. As a practical matter, this split the project into two distinct parts known as Cal WaterFix (Alternative 4A), the conveyance portion, and Cal EcoRestore, the restoration portion. Cal WaterFix is Alternative 4A in the recirculated environmental document, and the preferred alternative. Alternative 4A is different than any of the future scenarios modeled by DWR in the DCR. While there is widespread support for the BDCP/Cal WaterFix project, it would be speculative at this time to assume they will move forward. While there is significant support for BDCP, plans are currently in flux- environmental review is ongoing and is not anticipated to be final until at least 2016, and several regulatory and legal requirements must be met prior to construction.

This UWMP uses the ELT scenario analyzed in DWR's 2015 DCR as deemed to be the most conservative and appropriate study to use for long term planning estimates of future SWP supply availability. The ELT scenario is based on existing facilities, current operations, and regulatory constraints, with hydrology adjusted for the expected effects of climate change. This scenario is consistent with the studies DWR has

used in its previous SWP Delivery Reliability Reports for supply availability under future conditions. Table C.7 from the 2015 DCR shows the results of the ELT scenario for AVEK's Table A supply and has been included as **Appendix F**.

The average annual percentage of Table A allocation as shown in Table C.7 of the 2015 DCR is 59%. This results in an average allocation of about 85,460 acre-feet per year for AVEK. Projections of future SWP deliveries are included in **Table 6-9** in **Section 6.9**.

The SWP Contracts entered into in the 1960s had initial 75-year terms, which will begin to expire in 2035. While the SWP Contracts provide for continued water service to the contractors beyond the initial term, efforts are currently underway to extend the SWP Contracts to improve financing for the SWP. It is anticipated that the term of the SWP Contracts will be extended to December 31, 2085. The Contracts and associated amendments are scheduled to be finalized during 2017.

6.2 Groundwater

Law

> *If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the Plan:*
>
> *A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management (10631(b)(1)).*
>
> *A description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b)(2)).*
>
> *For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board (10631(b)(2)).*
>
> *A description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b)(2)).*
>
> *For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).*
>
> *A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(3)).*

AVEK's groundwater wells are located within the Antelope Valley Groundwater Basin. The Antelope Valley Groundwater Basin (Basin) is a large, topographically closed, alluvial basin with an estimated total storage capacity of about 68 to 70 million acre-feet according to DWR's most recent Bulletin 118 (2004). It consists of two primary aquifers: the upper unconfined aquifer which is the main source of groundwater for the area and a lower aquifer that is considered to be confined.

Prior to 1972, groundwater provided more than 90 percent of the total water supply in the Antelope Valley area. Since 1972, it is estimated that between 50 to 90 percent of the area's water supplies are from groundwater. Groundwater pumping peaked in the 1950's and then declined as greater pumping lifts and increasing energy costs made the use of groundwater in the area less economical for agricultural uses. According to USGS Water Resources Investigation Report 03-4016 (Simulation of Ground-Water Flow and Land Subsidence in the Antelope Valley Ground-Water Basin, California), groundwater levels declined more than 200 feet in some parts of the basin resulting in increased pumping lifts, reduced well efficiency, and land subsidence of more than 6 feet in some areas. The aquifers consist of gravel, sand, silt, and clay alluvial deposits, and clay and silty clay lacustrine deposits.

Groundwater quality in the upper aquifer is generally suitable for domestic, agricultural, and industrial use. Total Dissolved Solids (TDS) concentrations are in the range of 200 to 800 milligrams per liter (mg/L). The deep aquifer typically has higher TDS concentrations. Hardness levels range from 50 to 200 mg/l. High fluoride, boron, nitrates, hexavalent chromium, and arsenic are found in some areas of the basin.

The Antelope Valley IRWMP was designed to serve as the Groundwater Management Plan for the Antelope Valley Basin and includes all the relevant components related to Groundwater Management Plans in the Water Code (Part 2.75, Section 10753), as well as the components recommended in DWR's Bulletin 118 (2004). The IRWMP intends to provide a clear vision and direction for the sustainable management of water resources in the Antelope Valley Region through the year 2035. More information on the Antelope Valley groundwater basin and the associated groundwater management activities can be found in the Antelope Valley IRWMP in **Appendix C**. The IRWMP notes that nothing in that document will supersede or interfere with the pending adjudication of the basin, which has been completed as described below.

A Stipulated Judgment (Judgment) was approved in December 2015 for the Antelope Valley Groundwater Adjudication and is included as **Appendix G**. The Antelope Valley Groundwater Adjudication case was began in 1999 when Diamond Farming Co. sued the cities of Lancaster and Palmdale, the Palmdale Water District, Antelope Valley Water Company, Palm Ranch Irrigation District, Quartz Hill Water District, Rosamond Community Services District and Mojave Public Utilities District. In 2001, Bolthouse Farms sued all the water providers named in the 1999 complaint, and added Littlerock Creek Irrigation District and L.A. County Waterworks Districts 37 and 40. In 2006 AVEK filed for declaratory and injunctive relief to protect its overlying rights and the rights to pump the supplemental yield from imported state water. The jurisdictional boundary of the adjudication in relation to AVEK's boundary is shown on **Figure 2**.

According to the Judgment, AVEK has an overlying pre-rampdown production right of 4,000 acre-feet per year and an overlying production right of 3,550 acre-feet per year at the end of the seven year production rampdown period, which begins January 1, 2016. In addition to the overlying production right, AVEK has the right to produce an amount of imported water return flows in any year equal to the applicable percentage (34% for agricultural imported water use and 39% for municipal and industrial imported water use) multiplied by the average amount of imported water used by AVEK within the Basin, and outside the Basin but within the watershed of the Basin (as approved by the Watermaster), in the preceding five year period. AVEK also has the rights to all imported water return flows from water imported through AVEK and not allocated to other parties identified in the Judgment. Carryover of unused production rights and imported water return flows are allowed for a period of up to 10 years (or longer if a Storage Agreement is entered into with the Watermaster). The Watermaster appointed as a part of the Judgment consists of a five member board composed of one representative each from AVEK and LACWWD 40, one other Public Water Supplier representative, and two landowner representatives.

AVEK customers indicated in Table 4-2 also having overlying groundwater production rights per the Judgment have a total pre-rampdown production right of 38,000 acre-feet per year. The final overlying production right of these customers will be 19,300 acre-feet per year, indicating a reduced groundwater production right of 18,700 acre-feet after the end of the seven year rampdown period.

The Judgment does not limit or modify the operation of AVEK's preexisting banking projects or the performance of its preexisting exchange agreements. AVEK operates its groundwater banking programs to help increase the reliability of the Antelope Valley region's water supplies. Excess water available from the State Water Project (SWP) is stored during wet periods and recovered for delivery to customers during dry and high demand periods or during a disruption in deliveries from the SWP. The maximum recharge volume for the Westside Water Bank is estimated to be approximately 36,000 AF per year. The maximum recovery volume is proposed to be about 36,000 AF per year. A ten percent loss factor is applied to groundwater recharged for the Westside Water Bank to account for evapotranspiration and other losses during recharge and conveyance as well as typical metering accuracy.

The Agency also has groundwater recovery capacity from wells located at the Eastside Water Bank (5,700 acre-feet/year total estimated capacity). Additionally, AVEK constructed 3 potable groundwater wells in 2015 along Avenue H between 70th and 80th St. West (Bench Ranch Well Field) with a total capacity of about 3,700 acre-feet/year. These wells convey water to AVEK's LACWWD turnout at the intersection of 80th St. West and Avenue H. The location of AVEK's conjunctive use facilities (recharge areas and well fields) are also shown on **Figure 2**.

Table 6-1 summarizes AVEK's groundwater pumping from 2011 through 2015. AVEK began pumping groundwater during 2014. Prior to 2014, AVEK did not utilize groundwater as a source of supply and did not have production groundwater wells.

Table 6-1 Wholesale: Groundwater Volume Pumped						
Groundwater Type	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	**Antelope Valley Basin**	0	0	0	16,780	17,066
TOTAL		**0**	**0**	**0**	**16,780**	**17,066**
NOTES: AVEK was not subject to the groundwater basin adjudication pumping restrictions prior to 2016.						

There are other groundwater basins, outside of the adjudicated Antelope Valley Basin, that are within the AVEK service area. Other groundwater basins listed in California's Groundwater Bulletin 118 include the Fremont Valley and the Acton Valley basins. These basins are utilized as a source of water supply for water agencies and overlying landowners. AVEK anticipates that it will participate as a member of the Groundwater Sustainability Agencies that are formed as a part of the Sustainable Groundwater Management Act process for these basins.

6.3 Surface Water

AVEK does not have sources of surface supply other than imported SWP supplies.

6.4 Stormwater

AVEK does not intentionally divert stormwater for beneficial use.

6.5 Wastewater and Recycled Water

Law

> *The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area. (16033)*

AVEK does not provide supplemental treatment to recycled water and does not distribute recycled water. The Agency has no plans to provide recycled water as a part of its deliveries. As a result, Tables 6-3, 6-4 and 6-5 have not been completed and are not included. Agencies within AVEK do collect, treat, and distribute recycled water, and the use of recycled water is expected to increase. Information on recycled water use in AVEK can be found in the Antelope Valley IRWMP in **Appendix C**. Listed below are the agencies included in the IRWMP as operating recycled water systems:

- Los Angeles County Sanitation Districts,
- Rosamond Community Services District, and
- Edwards Air Force Base.

6.6 Desalinated Water Opportunities

Law

> *Describe the opportunities for development of desalinated water, including but not limited to ocean water, brackish water, and groundwater, as a long-term supply. (10631(h))*

AVEK has no plans for the development of desalinated water supplies within the planning horizon of this UWMP. AVEK receives imported SWP supplies and recovers previously banked groundwater. Desalination of brackish groundwater would add costs to AVEK without increasing its supplies.

6.7 Exchanges and Transfers

Law

> *Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. (10631(d))*

Terms of the Agency's existing exchange programs are summarized below:

- **2015 Santa Clara Valley Water District Exchange (SCVWD):** Up to 15,000 AF of AVEK's SWP allocation can be delivered to SCVWD in 2015 in a 1:1 exchange with return of water to AVEK by 2025. A total of 7,500 AF were delivered to the SCVWD in 2015.
- **Santa Barbara County Flood Control and Water Conservation District Exchange (for the Central Coast Water Authority (CCWA)):** Up to 10,000 AF of AVEK's SWP allocation can be delivered to CCWA in 2015 in a 1:1 exchange with return of water to AVEK by 2025. A total of 9,600 AF were delivered to the CCWA in 2015.
- **Littlerock Creek Irrigation District (LCID) Exchange:** LCID's available allocation is delivered to AVEK in a 1:1 exchange with return of water to LCID by 2025. This balance exchange has been considered annually since 2007 and during dry water years on the SWP. Delivery for 2015 is 460 AF

(20% of LCID's Table A allocation of 2,300 AF per year). The total amount delivered to AVEK to date is 5,635 AF.

- **Palmdale Water District (PWD) Treatment:** Up to 4,300 AF of AVEK's SWP allocation can be delivered to PWD's Water Treatment Plant in 2015. Water will serve LACWWD customers within AVEK's Acton service area.

AVEK is developing a long-term exchange/storage program to further maximize the use of its SWP supplies and provide funding for purchase of additional water supplies. Other exchange programs are anticipated to be developed in the future to further secure the Agency's water supplies. Potential exchange deliveries have not been included in AVEK's projections of future water supplies.

6.8 Future Water Projects

Law

> *(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(g)).*

Following is a description of potential projects that AVEK is considering to implement in order to increase its available water supplies. The projects have been summarized in **Table 6-7**.

- *Westside Water Bank Expansion* – Construction of a new turnout to the California Aqueduct and a parallel pipeline to the West Feeder to increase the groundwater recharge capacity of the Westside Water Bank.

- *Westside Water Bank Interconnecting Pipeline and Pump Station* – Construction of a pump station and completion of the SNIP Pipeline which would allow the Agency to use stored water in the Westside Water Bank for customers in the majority of the Agency's service area.

- *Enterprise Bank* - Development of a new groundwater recharge and recovery facility. Construction would include recharge basins and pipelines, groundwater recovery wells, well collection system, and transmission and pumping facilities to deliver water from the bank to the Aqueduct for delivery to the Agency's banking partners.

- *Southern Antelope Valley Intertie (SF/EF Intertie and Pump Station)* – Construction of an interconnecting pipeline and pump station between the Agency's East Feeder and South Feeder Systems that will allow the Agency to transfer water supplies from one end of the service area to the other in both directions allowing the Agency the ability to use stored water from their water banks for delivery to customers within any region of the service area.

- *North Feeder Pump Station* – Construction of an in line pump station in the North Feeder Pipeline. This pump station will be necessary once the water demands of the North Feeder exceed the gravity flow capabilities.

Table 6-7 Wholesale: Expected Future Water Supply Projects or Programs					
Name of Future Projects or Programs	Joint Project with other agencies?		Planned Implementation Year	Planned for Use in Year Type.	Expected Increase in Water Supply to Agency
	Yes or No	*If Yes, Agency Name*			
Westside Water Bank Expansion	*No*		2017	Dry years	40,000[1]
Westside Water Bank Interconnecting Pipeline and Pump Station	*No*		2017	All years	N/A[2]
Enterprise Bank	*Yes*	Various	2020	Dry years	83,300[3]
Southern Antelope Valley Intertie	*No*		2027	All years	N/A[2]
North Feeder Pump Station	*No*		2027	All years	N/A[2]

NOTES:

1. Assumes 1/3 of total banking capacity of 120,000 AF is available for recovery in dry years.
2. Project allows for more flexibility in operations, but does not result in an increase in water supplies.
3. First phase includes a groundwater banking capacity of 250,000 AF. Dry year recovery is estimated to be 1/3 of bank capacity. Ultimate capacity of the Enterprise Bank is proposed to be up to 1,000,000 AF.

6.9 Summary of Existing and Planned Sources of Water

Law

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) (10631(b)).

(Provide) a detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(4)).

The Agency's existing and planned sources of water are summarized in **Tables 6-8 and 6-9**. The projections in **Table 6-9** are based on a normal type water year.

Table 6-8 Wholesale: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume	Water Quality	Total Right or Safe Yield *(optional)*
Purchased or Imported Water	AVEK SWP Supply	29,938	Raw Water	
Groundwater	Groundwater Pumping	17,066	Raw Water	
Transfers	LCID Exchange	460	Raw Water	
Total		**47,464**		
NOTES:				

Table 6-9 Wholesale: Water Supplies — Projected					
Water Supply	Additional Detail on Water Supply	Projected Water Supply			
		2020	2025	2030	2035
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Purchased or Imported Water	*SWP Allocation at 59% of Table A*	85,460	85,460	85,460	85,460
Groundwater	*See Note 2*	3,550	3,550	3,550	3,550
Total		89,010	89,010	89,010	89,010

NOTES:
1. Values in this table are for assumed normal type water years.
2. AVEK's annual overlying production right of 3,550 AF.

Section 7: Water Supply Reliability Assessment

7.1 Constraints on Water Sources

Law

> *For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (10631(c)(2)).*

> *The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).*

The Agency's water sources are imported SWP supplies and groundwater as discussed in Section 6. The reliability of these supplies is discussed in the following subsections.

7.2 Reliability by Type of Year

Law

> *Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).*

An ongoing planning effort to increase long-term supply reliability for both the SWP and CVP is taking place through the BDCP process. The co-equal goals of the BDCP are to improve water supply reliability and restore the Delta ecosystem. The BDCP is being prepared through a collaboration of state, federal, and local water agencies, state and federal fish agencies, environmental organizations, and other interested parties. Several "isolated conveyance system" alternatives are being considered in the plan that would divert water from the north Delta to the south Delta where water is pumped into the south-of-Delta stretches of the SWP and CVP. The new conveyance facilities would allow for greater flexibility in balancing the needs of the estuary with the reliability of water supplies. The plan would also provide other benefits, such as reducing the risk of long outages from Delta levee failures.

The BDCP has been in development since 2006 and is currently undergoing extensive environmental review. The Draft BDCP and its associated Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) were released for public review in December 2013. In response to public comments, the BDCP was reevaluated, and in April 2015 the lead agencies announced a modified alternative which effectively split the project into two parts: the conveyance portion (known as Cal WaterFix), and the restoration portion (known as EcoRestore). The Cal WaterFix alternative is evaluated in a partially recirculated draft environmental document (Recirculated Draft EIR/Supplemental Draft EIS) that was released for public review in July 2015. That environmental document is anticipated to be finalized during 2016.

While there is widespread support for the BCDP/Cal WaterFix project, plans are currently in flux and environmental review is ongoing. Additionally, several regulatory and legal requirements must be met prior to any construction. Because of this uncertainty, any improvements in SWP reliability or other benefits that could result from this proposed project are not included in this Plan.

For reliability of the Agency's SWP supplies, the average water delivery forecast of 59% of Table A amounts for the ELT scenario from the 2015 SWP Delivery Capacity Report (DCR) was used for the average water year (see Table C.7 in **Appendix F**). More discussion on the DCR is included in **Section 6.1**. Selection of the single dry water year and multiple dry water years is described below.

The extremely dry sequence from the beginning of January 2013 through the end of 2014 was one of the driest two-year periods in the historical record. Water year 2013 was a year with two hydrologic extremes. October through December 2012 was one of the wettest fall periods on record, but was followed by the driest consecutive 12 months on record. Accordingly, the 2013 State Water Project (SWP) supply allocation was a low 35% of SWP Table A amounts. The 2013 hydrology ended up being even drier than DWR's conservative hydrologic forecast, so the SWP began 2014 with reservoir storage lower than targeted levels and less stored water available for 2014 supplies. Compounding this low storage situation, 2014 also was an extremely dry year, with runoff for water year 2014 the fourth driest on record. Due to extraordinarily dry conditions in 2013 and 2014, the 2014 SWP water supply allocation was a historically low 5% of Table A amounts.

The dry hydrologic conditions that led to the low 2014 SWP water supply allocation were extremely unusual, and to date have not been included in the SWP delivery estimates presented in DWR's 2015 Delivery Capability Report. It is anticipated that the hydrologic record used in the DWR model will be extended to include the period through 2014 during the next update of the model, which is expected to be completed prior to issuance of the next update to the biennial SWP Delivery Capability Report. For the reasons stated above, this UWMP uses a conservative assumption that a 5% allocation of SWP Table A amounts represents the "worst case" scenario and will be used for the single dry water year condition. The multiple dry year period of 1990 through 1992 was selected based on the ELT forecasted SWP allocations of 12%, 16%, and 24% of AVEK's Table A amounts (the "worst case" three year period from that scenario as shown in Table C.7 in **Appendix F**).

The average year SWP water supply for AVEK, based on the results of the DWR's 2015 DCR ELT scenario, is estimated to be 59% of its Table A allocation, or 85,500 acre-feet/year. The estimated SWP water year supplies, and percentage of the average year supplies, for the single dry year and multiple dry years scenarios are summarized in **Table 7-1a**.

Table 7-1a Wholesale: Basis of Water Year Data - SWP			
Year Type	Base Year	Available supplies if year type repeats[1]	
		Volume Available	% of Average Supply
Average Year[2]	Average	85,500	100%
Single-Dry Year[3]	2014	7,200	8%
Multiple-Dry Years 1st Year[4]	1990	17,400	20%
Multiple-Dry Years 2nd Year[4]	1991	23,200	27%
Multiple-Dry Years 3rd Year[4]	1992	34,800	41%

NOTES:
1. Estimates for AVEK's SWP Table A supplies.
2. AVEK's average SWP based on AVEK Table A allocation of 59% from ELT scenario in 2015 SWP Delivery Capacity Report. See Table C.7 in Appendix F.
3. Worst case single dry year based on AVEK Table A allocation of 5% (actual 2014, not from ELT scenario).
4. Multiple dry years based on AVEK Table A allocations of 12%, 16%, and 24% from ELT scenario. See Table C.7 in Appendix F.

The Agency's available groundwater supplies are governed by the groundwater adjudication for the Antelope Valley Basin and by the amount of groundwater stored in its groundwater bank accounts. Estimates of the available groundwater supplies for the various year types are summarized in **Table 7-1b**. Groundwater supplies for normal years are assumed to be AVEK's overlying groundwater production right of 3,550 AF/year. Groundwater supplies for dry years are assumed to include AVEK's overlying groundwater production right of 3,550 AF/year with recovery from groundwater bank accounts estimated to be 36,000 AF/year.

Because of the adjudication, it is anticipated that the groundwater basin will be stabilized and its allocated groundwater supplies will be available to the Agency in every year. Groundwater quality issues may result in the need for treatment facilities or drilling of additional wells. This is not anticipated to result in a reduction in the quantity of groundwater available to the Agency.

Table 7-1b Wholesale: Basis of Water Year Data - Groundwater			
Year Type	Base Year	Available supplies if year type repeats[1]	
		Volume Available	% of Average Supply
Average Year[2]	Average	3,550	100%
Single-Dry Year[3]	2014	39,550	
Multiple-Dry Years 1st Year[3]	1990	39,550	
Multiple-Dry Years 2nd Year[3]	1991	39,550	
Multiple-Dry Years 3rd Year[3]	1992	39,550	

NOTES:
1. Multiple versions of Table 7-1 have been prepared. This version includes values for AVEK's groundwater supplies.
2. AVEK's annual overlying production right of 3,550 AF/year
3. Current estimated groundwater banking recovery capacity of 36,000 AF/year plus AVEK's annual overlying production right of 3,550 AF/year.

7.3 Supply and Demand Year

Law

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional or local agency population projections within the service area of the urban water supplier (10632(c)).

AVEK's projected water supplies and demands over the next twenty years for a normal type water year are summarized in **Table 7-2**. Water supply projections are taken from **Table 6-9** and water demand projections are from **Table 4-3**. Comparison of the probable normal year water supplies and demands indicates that sufficient supplies will be available to meet demands through 2035 under normal water year conditions.

Table 7-2 Wholesale: Normal Year Supply and Demand Comparison				
Description	2020	2025	2030	2035
Supply totals *(From Table 6-9)*	89,010	89,010	89,010	89,010
Demand totals *(From Table 4-3)*	83,670	85,620	85,920	86,250
Difference	5,340	3,390	3,090	2,760
NOTES:				

Tables 7-3 and 7-4 show a comparison of AVEK's projected water supplies and demands over the next twenty years for a single dry year water supply scenario and multiple dry year water supply scenarios respectively. Water supplies projections are taken from **Table 7-1a and 7-1b**. Water demand projections are from **Table 4-3**. Under these scenarios, water supply shortages are indicated.

The water supply shortage is based on current usage patterns by the retail water purveyors and agricultural users. It does not take in to account other potential water sources available to the purveyors (such as groundwater pumping, recovery from groundwater banking programs, or the use of recycled water) or reductions in demand due to water conservation efforts.

AVEK will notify its customers of the potential water supply shortages in dry years and assist with public outreach and water conservation measures on a regional basis. If necessary, the retail water purveyors may implement water rationing or other programs and policies in order to address water shortages within their service areas. Regional water reliability is further discussed in **Section 7.4**.

Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison				
Description	2020	2025	2030	2035
Supply totals *(From Tables 7-1a and 7-1b)*	46,750	46,750	46,750	46,750
Demand totals *(From Table 4-3)*	83,670	85,620	85,920	86,250
Difference	(36,920)	(38,870)	(39,170)	(39,500)
NOTES: AVEK provides a supplemental water supply to retail agencies. It is anticipated that the difference will be made up by increased groundwater pumping (recovery of banked supplies or return flows), use of recycled water, and/or reductions in demand by the retail agencies.				

Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison					
Description		2020	2025	2030	2035
First year	Supply totals[1]	56,950	56,950	56,950	56,950
	Demand totals[2]	83,670	85,620	85,920	86,250
	Difference[3]	(26,720)	(28,670)	(28,970)	(29,300)
Second year	Supply totals[1]	62,750	62,750	62,750	62,750
	Demand totals[2]	83,670	85,620	85,920	86,250
	Difference[3]	(20,920)	(22,870)	(23,170)	(23,500)
Third year	Supply totals[1]	74,350	74,350	74,350	74,350
	Demand totals[2]	83,670	85,620	85,920	86,250
	Difference[3]	(9,320)	(11,270)	(11,570)	(11,900)

NOTES:
1. From Tables 7-1a and 7-1b
2. From Table 4-3
3. AVEK provides a supplemental water supply to retail agencies. It is anticipated that the difference will be made up by increased groundwater pumping (recovery of banked supplies or return flows), use of recycled water, and/or reductions in demand by the retail agencies.

7.4 Regional Water Supply Reliability

Law

> *An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).*

AVEK's water banking, storage, and exchange programs have been developed to maximize the use of its SWP Table A water supplies for the benefit of the Antelope Valley region. These programs have been described in other sections of the Plan.

AVEK is committed to maintaining the reliability of the region's water supplies and will continue to explore options to maximize available water supplies for the benefit of the region. Regional water reliability is an important part of its 2015 Five-Year Strategic Plan. The first two goals from the Strategic Plan and the strategies for their implementation are presented below. AVEK's full Strategic Plan is included in **Appendix E**.

- **Goal 1: Groundwater Basin Stewardship –** AVEK will provide leadership and collaborate to protect and sustain the regional groundwater basin.

- Strategy 1 – Participate in the adjudication
- Strategy 2 – Enhance understanding of area hydrogeology
- Strategy 3 – Develop groundwater bank resources to meet established water reliability goals
- Strategy 4 – Provide the resources to accommodate expanded groundwater basin activities
- Strategy 5 – Actively monitor groundwater basin conditions

- **Goal 2: Water Reliability –** AVEK will provide a level of regional water reliability that supports customers' water needs.
  - Strategy 1 – Develop a long-term imported water supply goal
  - Strategy 2: Conduct appropriate regional planning to ensure AVEK's water demands and supplies are balanced
  - Develop and implement conservation programs
  - Develop a policy position on the California Water Fix ("Twin Tunnels")
  - Improve AVEK's ability to continue operations during emergencies
  - Operate AVEK treatment facilities to consistently meet the requirements of our customers

AVEK will review its Strategic Plan annually as a prelude to the budget process and adapt it as conditions change.

Section 8: Water Shortage Contingency Planning

8.1 Stages of Action

Law

> *The plans shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:*
>
> *Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50% reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10631(a)(1))*

In the event of water supply shortages, the Agency will make water delivery reductions per the Agency law for allocations. Reference is made to **Appendix H**, which includes Ordinance O-07-2, AVEK Water Shortage Contingency Plan. The stages of action from AVEK's Water Shortage Contingency Plan are summarized in **Table 8-1**. Actions to be taken as a result of a catastrophic water supply shortage are discussed in **Section 8.6.**

AVEK will be reviewing its water shortage contingency plan as a part of the implementation of the Strategic Plan goal for Water Reliability. Water banking and drought contingency goals for single year and multiple-year water shortages will be determined as a part of the strategy to develop a long term imported water supply goal.

Table 8-1 Wholesale: Stages of WSCP

Stage	Complete One or Both	
	Percent Supply Reduction[1]	Water Supply Condition
1	*1%*	*Reduction in SWP Allocation Below Current Demand*
2	*50%*	*Reduction in SWP Allocation Below Current Demand*
[1] One stage in the WSCP must address a water shortage of 50%.		
NOTES: See Appendix H for AVEK's Water Shortage Contingency Plan.		

8.2 Consumption Reduction Measures

Law

> *Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply (10632(a)(5)).*

AVEK has adopted a number of consumption reduction measures to help retail water suppliers reduce water usage. These are described in **Section 9: Demand Management Measures**.

8.3 Determining Water Shortage Reductions

Law

> *A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis 10632(a)(9).*

AVEK deliveries are entirely metered. The meter readings will be used to monitor the actual reductions in deliveries to AVEK's customers in accordance with the water shortage contingency plan.

8.4 Revenue and Expenditure Impacts

Law

> *An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(7)).*

Revenues collected by the Agency are currently used to fund operation and maintenance of the existing facilities and fund new capital improvements. In dry years, the Agency will estimate a projected range of water sales versus shortage stage to quantify the impact the shortage stage may have on projected revenues and expenses.

Revenue reductions and an increase in expenses may occur during implementation of the water shortage contingency plan. The magnitude of the revenue reduction and expenditure increase will be dependent on the severity of the shortage. In some cases, AVEK may be able to absorb the revenue shortfall/expenditure increase by reallocating existing funds, such as delaying some capital projects. For more severe events, the Agency may enact a rate adjustment to its customers.

8.5 Resolution or Ordinance

Law

> *A draft water shortage contingency resolution or ordinance (10632(8)).*

The Agency's water shortage contingency ordinance (Ordinance O-07-2) is included in **Appendix H**.

8.6 Catastrophic Supply Interruption

Law

> *Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (10632(a)(3)).*

AVEK maintains emergency contingency plans for activities required in the event there is an interruption in the SWP water supply or there is a major mechanical or electrical failure in one of the water treatment plants.

The emergency activities that are undertaken by AVEK depend upon the severity of the problem and how quickly the problem can be remedied.

Response to a catastrophic event will always include contact and coordination with AVEK's customers. If the shortage can be resolved within the available water storage time frame, only a few of the larger customers need to be notified of the temporary decrease in water supply. If there will be a stoppage in the raw water deliveries to the various water treatment plants, all customers (M&I and agriculture) will be notified of the stoppage and how soon water deliveries may be resumed.

Possible catastrophes affecting water supply may include:

- Widespread Power Outage
- Local Earthquake
- Agency Treatment Plant Shutdown due to vital component failure
- Aqueduct Failure due to earthquake or other circumstances
- Delta Levee Failure

In the event of power loss, AVEK has permanent emergency power generation equipment that automatically starts to maintain water treatment operations. In the event of an earthquake, AVEK personnel will survey and assess damage and respond accordingly with shutdowns and repairs. Damaged Agency treatment plant components, whether mechanical or electrical, may be able to be circumvented due to the duplication of pumping and operations systems or the availability of manual override controls.

If raw water deliveries to water treatment plants are temporarily stopped, treated water from other plants may be able to be rerouted to the affected areas via interconnecting pipeline systems. Recovery of previously banked groundwater can be used to supply water in the event of SWP outages. The magnitude of reduced water deliveries and length of time before resumption of full water availability will determine the extent of customer (M&I and agriculture) notification and activities required by AVEK staff. In the event of a long-term outage of SWP supplies, AVEK will coordinate with the retail water agencies to develop and implement appropriate regional water conservation measures.

Failure of the Aqueduct or Delta levees could result in significant outages and potential interruption in SWP service to AVEK for six months or longer. The DWR has estimated that in the event of a major earthquake in or near the Delta, regular water supply deliveries from the SWP could be interrupted for up to three years, posing a substantial risk to the California business economy. Accordingly, a post-event strategy has been developed which would provide necessary water supply protections. The plan has been coordinated through DWR, the Army Corps of Engineers (Corps), Bureau of Reclamation, California Office of Emergency Services (Cal OES), the Metropolitan Water District of Southern California, and the State Water Contractors. Full implementation of the plan would enable resumption of at least partial deliveries from the SWP in less than six months.

DWR has developed the Delta Flood Emergency Management Plan to provide strategies for a response to Delta levee failures, which addresses a range of failures up to and including earthquake-induced multiple island failures during dry conditions when the volume of flooded islands and salt water intrusion are large. Under such severe conditions, the plan includes a strategy to establish an emergency freshwater pathway from the central Delta along Middle River and Victoria Canal to the export pumps in the south Delta. The plan includes the pre-positioning of emergency construction materials at existing and new stockpiles and warehouse sites in the Delta, and development of tactical modeling tools (DWR Emergency Response Tool) to predict levee repair logistics, water quality conditions, and timelines of levee repair and suitable water quality to restore exports. The Delta Flood Emergency Management Plan has been extensively coordinated with state, federal and local emergency response agencies. DWR, in conjunction with local agencies, the Corps and Cal OES, regularly conduct simulated and field exercises to test and revise the plan under real time conditions.

DWR and the Corps provide vital Delta region response to flood and earthquake emergencies, complementary to an overall Cal OES structure. Cal OES is preparing its Northern California Catastrophic

Flood Response Plan that incorporates the DWR Delta Flood Emergency Management Plan. These agencies utilize a unified command structure and response and recovery framework. DWR and the Corps, through a Draft Delta Emergency Operations Integration Plan (April 2015), would integrate personnel and resources during emergency operations.

The DWR Delta Levees Subvention Program has prioritized, funded, and implemented levee improvements along the emergency freshwater pathway and other water supply corridors in the central and south Delta region. These efforts have been complementary to the DWR Delta Flood Emergency Management Plan, which along with use of pre-positioned emergency flood fight materials in the Delta, relies on pathway and other levees providing reasonable seismic performance to facilitate restoration of the freshwater pathway after a severe earthquake. Together, these two DWR programs have been successful in implementing a coordinated strategy of emergency preparedness for the benefit of SWP and CVP export systems.

Significant improvements to the central and south Delta levee systems along Old and Middle Rivers began in 2010 and are continuing to the present time at Holland Island, Bacon Island, Upper and Lower Jones Tracts, Palm Tract and Orwood Tract. This complements substantially improved levees at Mandeville and McDonald Islands and portions of Victoria and Union Islands. Together, levee improvements along the pathway and Old River levees consisting of crest raising, crest widening, landside slope fill and toe berms, meet the needs of local reclamation districts and substantially improve seismic stability to reduce levee slumping and create a more robust flood-fighting platform.

8.7 Minimum Supply Next Three Years

Law

> *An estimate of the minimum water supply available during each of the next three water years based on the driest three year historic sequence for the agency's water supply (10632(a)(2)).*

Table 8-4 summarizes the minimum water supply that would be reasonable available during the next three years based on the driest three year historic sequence as estimated in **Table 7-1a**. Groundwater recovery quantities during this period are estimated to include the Agency's overlying production right during the rampdown period (transitioning from 4,000 AF/year to 3,550 AF/year over the next seven years) as well as groundwater recovery from banking operations. The Agency's groundwater storage account at the end of 2015 totals 34,100 AF (37,900 AF gross recharge less the 10% leave behind amount). Banked water recovery for each of the next three years is assumed to be one third of that amount.

Table 8-4 Wholesale: Minimum Supply Next Three Years

Water Supply Description	2016	2017	2018
SWP Table A[1]	17,400	23,400	34,800
Overlying Groundwater Production Right[2]	4,000	3,936	3,871
Banked Water Recovery[3]	11,367	11,367	11,367
Total Available Water Supply	**32,767**	**38,503**	**50,038**

NOTES:
1. Driest historic three-year sequence from Table 7-1a.
2. AVEK's Overlying Production Right during rampdown period. Does not include AVEK's right to recovery of imported water return flows.
3. One-third of AVEK's groundwater storage account at the end of 2015 (34,100 AF).

Section 9: Demand Management Measures

Law

Provide a description of the (wholesale) water supplier's water demand management measures. This description will include all of the following (10631(f)):

The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures: (ii) metering. (iv) public education and outreach. (vi) water conservation program coordination and staffing support. (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented (10631(1)(B)).

(Provide) a narrative description of that addresses the nature and extent of each water demand management measure implemented over the past five years (10631(1)(A)).

For an urban wholesale water supplier, as defined in Section 10608.12, (provide) a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs (10631(2)).

AVEK has implemented the Demand Management Measures (DMMs) required for wholesale agencies as a part of its ongoing operations and to maintain compliance with its grant funding requirements through Proposition 84. A summary of the required wholesale agency DMMs from the 2010 UWMPs, the California Urban Water Conservation Council's (CUWCC) 2010 Flex Track Best Management Practices (BMPs), and the location where these are covered in this UWMP are shown in **Table 9-1**.

Table 9-1: Summary of DMMs/BMPs Required for Wholesale Suppliers

CUWCC 2010 Flex Track BMPs	2010 UWMP DMMs	Location in 2015 UWMP
1. Utility Operations Programs		
1.11	DMM L Conservation Coordinator	Section 9.3
1.13	DMM J Wholesale Agency Assistance Programs	Section 9.2
1.20	DMM C System Water Audits, Leak Detection/Repair	Section 9.5
---	DMM D Metering with Commodity Rates	Section 9.1
2. Educational Programs		
2.10	DMM G Public Information	Section 9.2
2.20	DMM H School Education	Section 9.2

9.1 Metering

AVEK charges all water purveyor customers based on metered readings and established rate schedules. All current and new connections including temporary connections are required to be metered and billed per volume of use. AVEK has never operated unmetered connections. Existing meters are checked on a regular basis for leakage and accuracy.

9.2 Public Education and Outreach

AVEK's public education and outreach measures over the past five years include the following:

- AVEK was the lead agency in the formation of the Antelope Valley Water Conservation Coalition (AVWCC). The AVWCC includes water districts, cities, builders, landscapers, designers, legislators, and other interested parties. It has regular meetings to discuss water conservation in the Antelope Valley area and provides periodic public education messaging regarding water conservation issues.

- AVEK was the lead agency and principal funding source for the development and ongoing maintenance of the website AVSavesWater.com which provides information on water conservation, water smart landscaping, resources, and rebate opportunities.

- AVEK sponsored Water Conservation Grant Programs in 2014 and 2015 supporting customer conservation projects with a focus on turf buy-back programs. A total of $430,000 was made available to the Grant Programs in fiscal years 2014 and 2015.

- AVEK was the lead agency and principal funding source for the AVSWCA Water Conservation/SMART Landscaping Expos in 2014 and 2015.

9.3 Water Conservation Program Coordination and Staffing Support

AVEK has designated a Water Conservation Program Coordinator and has established a Water Conservation Committee of its Board of Directors which meets regularly to plan water conservation efforts.

9.4 Other Demand Management Measures

AVEK's demand management measures are discussed in Sections 9.1 through 9.3.

9.5 Asset Management

AVEK maintains its facilities according to the Operations and Maintenance Manuals for its various facilities and equipment, and conducts periodic inspections to assess the conditions of facilities and recommend needed repairs or improvements. AVEK audits system losses monthly as a part of its normal billing procedures. Pipelines are driven regularly as part of water sample runs during which personnel will note leaks if observed. The Agency repairs leaks promptly on average about twice per year. The Agency's average long-term system loss is about 4%. The average system loss for 2011-2015 is approximately 5%. These loss rates are considered to be within the margin of error and normal.

AVEK understands the importance of maintaining its capital facilities and has included the development of a formal asset management plan under the Capital and Human Resources Stewardship Goal of its 2015 Five-Year Strategic Plan as shown below:

- **Goal 5: Capital and Human Resources Stewardship** – AVEK will be efficient and thoughtful stewards of our human and capital resource assets.
    - Strategy 2 – Maintain capital facilities to ensure optimum facility life:
        - Objective 1 - Develop an Asset Management Plan
        - Objective 2 - Maintain facilities operational support

9.6 Wholesale Supplier Assistance Programs

AVEK's Wholesale Supplier Assistance Programs are described in **Section 9.2 Public Education and Outreach**.

9.7 Voluntary Reporting of Energy Intensity

AVEK's estimated energy intensity for 2015 was calculated to be approximately 503 kWh/AF based on the Total Utility Approach (Table O-1B from the DWR Guidebook). Total energy use was taken from Southern California Edison billings for all AVEK water pumping accounts (groundwater wells and booster pump stations) and total water volume was determined from AVEK meter readings. A copy of AVEK's Table O-1B is included in **Appendix I**.

Section 10: Plan Adoption, Submittal and Implementation

10.1 Public Notice

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621(b)).

Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area (10642).

The efforts AVEK has taken to involve appropriate agencies and the general public in the planning process are summarized below. Copies of notices and the notification list are included in **Appendix A**.

For the 2015 Plan update, the public hearing was held on June 14, 2016. Accordingly, notice was provided as follows:

- Notice to Cities and Counties on March 2, 2016 (at least 60 days prior to hearing),
- Letter to Cities, Counties, Retail Water Agencies, and Interested Parties on May 4, 2016 (see **Appendix A**) regarding draft and public hearing,
- Letter to Retail Water Agencies and Interested Parties on May 13, 2016 (see **Appendix A**) regarding May 24, 2016 Public Information Meeting,
- Notice in local newspaper on May 31, 2016 and June 7, 2016 (per Gov. Code 6066 – 2 weeks in advance of hearing),
- Posted Draft 2015 UWMP at Agency Office on May 4, 2016 (at least 2 weeks prior to hearing), and
- Drafts of the plan were provided to the entities that requested such drafts.

10.2 Plan Adoption, Submittal, and Implementation

Law

After the hearing, the plan shall be adopted as prepared or as modified after the hearing (10642).

An urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016 (10621(d)).

The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan (10635(b)).

An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption (10644(a)(1).

Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours. (10645).

The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640) (10621(c)).

Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption (10644(a)(1)).

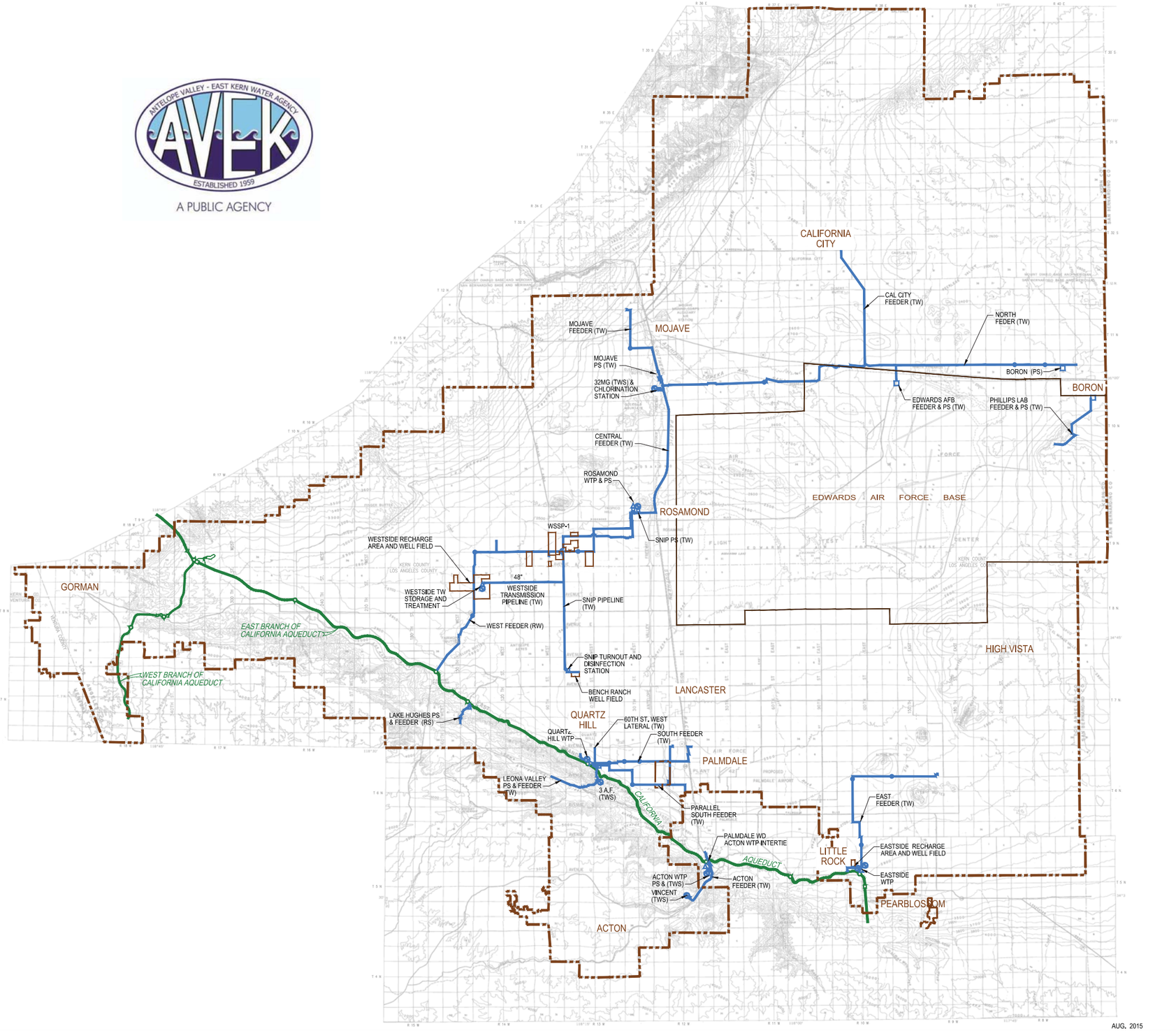
The 2015 UWMP update plan was adopted by the Agency at the Regular Meeting of the Board of Directors on June 14, 2016. A public hearing on the update of the Urban Water Management Plan was held on June 14, 2016. The intent of the Public Hearing was to gather input from the public that is served by AVEK as well as other interested entities. Written and verbal comments received at the public hearing have been incorporated into the Plan as appropriate. A copy of the resolution adopting the 2015 UWMP update is included in **Appendix B**.

The Plan will be submitted to the California Department of Water Resources, the California State Library, and the Cities and Counties no later than July 1, 2016 which is within 30 days of adoption by the Agency on June 14, 2016.

Commencing no later than July 1, 2016, the Agency will have a copy of the 2015 UWMP available for public review at the AVEK Office (see address below) during normal business hours.

Antelope Valley-East Kern Water Agency
6500 W. Avenue N
Palmdale, CA 93551

The 2015 UWMP will also be posted on the Agency's website at www.avek.org.



ANTELOPE VALLEY - EAST KERN WATER AGENCY
AVEK
ESTABLISHED 1959
A PUBLIC AGENCY

0 1 2 3 4 5 6
SCALE IN MILES

LEGEND

- TURNOUT FROM CALIFORNIA AQUEDUCT
- WATER TREATMENT PLANT (WTP)
- PUMP STATION (PS)
- RAW WATER STORAGE (RWS)
  TREATED WATER STORAGE (TWS)
- ANTELOPE VALLEY-EAST KERN WATER AGENCY BOUNDARY
- PROJECT PIPELINES

ANTELOPE VALLEY-EAST KERN WATER AGENCY

AVEK BOUNDARY AND FACILITIES MAP

FIGURE 1

AUG. 2015

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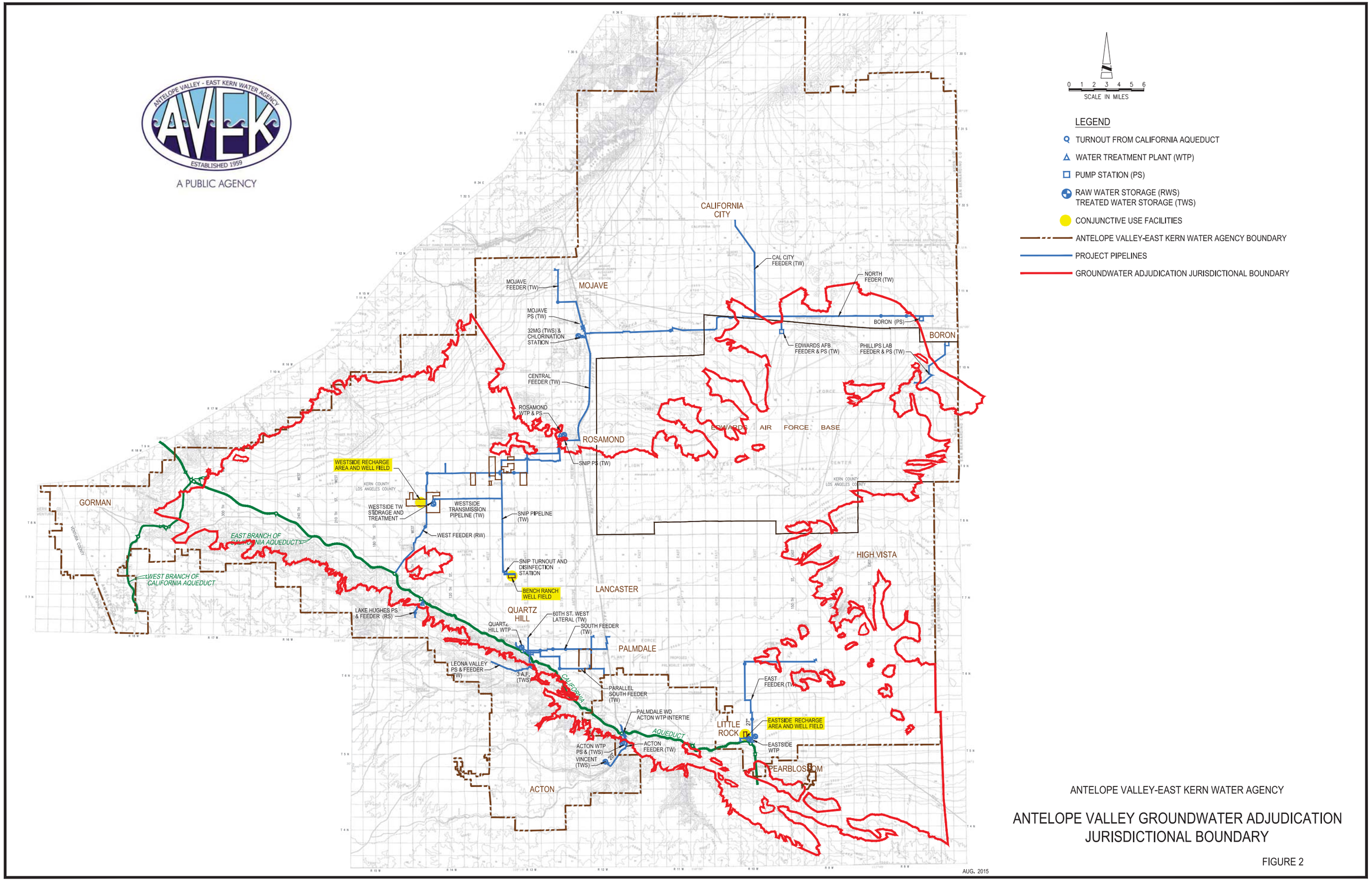

ANTELOPE VALLEY-EAST KERN WATER AGENCY

ANTELOPE VALLEY GROUNDWATER ADJUDICATION JURISDICTIONAL BOUNDARY

FIGURE 2

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APPENDIX E

AV APOLLO SOLAR WSA – CONSISTENCY WITH DWR GUIDELINES

AV Apollo Solar WSA – Consistency with DWR Guidelines

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
Section 1 (page 2). Does SB 610 or SB221 apply to the proposed project?	Is the project subject to SB 610? Is the project subject to CEQA (Water Code §10910(a)? If yes, continue.	WSA Section 1.1. Yes, the project is subject to SB610 and CEQA.
	Is it a "Project" as defined by Water Code §10912(a) or (b)? If yes, to comply with SB 610 go to Section 2.0, page 4.	WSA Section 1.1. Yes, the Project is considered to meet the definition of "project" per Water Code §10912(a) or (b).
	Is the project subject to SB 221? Does the tentative map include a "subdivision" as defined by Government Code §66473.7(a)(1)? If no, stop.	No, the Project does not include a "subdivision", SB 221 does not apply to the Project, and no further action relevant to SB 221 is required.
Section 2.0 (page 4). Who will prepare the SB 610 analysis?	Is there a public water system ("water supplier") for the project (Water Code §10910(b)? If no, go to Section 3.0, page 6.	WSA Section 2.1.3. No, the project site is not connected to a public water system.
Section 3.0 (page 6). Has an assessment already been prepared that includes this project?	Has this project already been the subject of an assessment (Water Code §10910(h)? If no, go to Section 4.0, page 8.	No, the Project has not been the subject of an assessment.
Section 4.0 (page 8). Is there a current Urban Water Management Plan?	Is there an adopted urban water management Plan (Water Code §10910(c)? If yes, continue. If yes, the information from the UWMP related to the proposed water demand for the project may also be used for carrying out Section 5.0, Steps 1 and 2, Section 7; proceed to Section 5, page 10 of the Guidelines.	WSA Section 3.2. Yes, there is an adopted UWMP in the Project area. Information contained in the UWMP was used in the preparation of the WSA and cited accordingly.
	Is the project water demand for the project accounted for in the most recent UWMP (Water Code §10910(c)(2)? If no, go to Section 5.0, page 10.	No
Section 5.0 (page 10). What information should be included in an assessment?	Step One (page 13). Documenting wholesale water supplies.	The Project is not a retail water supplier and would not include the use of wholesale water supplies.
	Step Two (page 17). Documenting Supply if Groundwater is a Source.	The Antelope Valley Groundwater Basin is a proposed water supply. WSA Sections 1.3 and 2.3.

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
	Specify if a groundwater management plan or any other specific authorization for groundwater management for the basin has been adopted and how it affects the water supplier's use of the basin.	WSA Section 3.3 Multiple groundwater management plans are currently in place for the Antelope Valley Groundwater Basin, including a recently-approved Adjudication Judgement that is currently being implemented with AVEK acting as Watermaster.
	Description and analysis of the amount and location of groundwater pumped by the water supplier for the past five years. Include information on proposed pumping locations and quantities. The description and analysis is to be based on information that is reasonably available, including, but not limited to, historic use records from DWR.	Site-specific historic records are not available. WSA Section 1.3 provides a description of the Project's water requirements.
	Analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the water supplier.	WSA Section 3.2. The quantity of water available in the Antelope Valley Groundwater Basin is sufficient for the Project.
	Step 3 (page 21). Documenting project demand (Project Demand Analysis).	WSA Section 1.3. Construction of the Project will require 147 acre feet operation, 6 acre feet per year.
	Step 4 (page 26). Documenting dry year(s) supply.	WSA Section 3.2. Addresses water supply availability including during dry years.
	Step 5 (page 31). Documenting dry year(s) demand.	WSA Section 3.2 addresses annual demands, including dry years and multiple dry years conditions including during dry year scenarios.
Section 6.0 (page 33). Is the projected water supply sufficient or insufficient for the proposed project		WSA Section 4.0 summarizes how the identified water supply/supplies are considered sufficient for the Project.
Section 7.0 (page 35). If the projected supply is determined to be insufficient.	Does the assessment conclude that supply is "sufficient"? If no, continue.	WSA Section 4.0 concludes that sufficient water supplies are available for the Project subject to adjudication approvals.

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
Section 8.0 (page 38). Final SB 610 assessment actions by lead agencies.	The lead agency shall review the WSA and must decide whether additional water supply information is needed for its consideration of the proposed project. The lead agency "shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses."	The WSA for the Project must be approved prior to or in concurrence with the EIR.
	The description of the groundwater basin may be excerpted from the groundwater management plan, from DWR Bulleting 118, California's Ground Water, or from some other document that has been published and that discusses the basin boundaries, type of rock that constitutes the aquifer, variability of the aquifer material, and total groundwater in storage (average specific yield times the volume of the aquifer).	WSA Section 2.3.2 provides a description of the groundwater basin characteristics using all available resources, including DWR Bulletin 118.
	In an adjudicated basin the amount of water the urban supplier has the legal right to pump should be enumerated in the court decision.	WSA Section 4.0. The Antelope Valley Groundwater Basin is recently adjudicated and the court-appointed Watermaster has been appointed. The Project Applicant or contractor must receive Watermaster approvals to ensure that Project-related water uses occur in compliance with the Adjudication Judgement.
	The Department of Water Resources has projected estimates of overdraft, or "water shortage", based on projected amounts of water supply and demand (basin management) are projected by the Watermaster agency (AVEK) in WSA Section 3.2, the hydrologic region level in	WSA Section 3.2 Basin groundwater resources are discussed in WSA Section 3.2. The Antelope Valley-Groundwater Basin has, following Adjudication, been evaluated by AVEK.

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
	Bulletin 160, California Water Plan Update. Estimates at the basin or subbasin level will be projected for some basins in Bulletin 118. If the basin has not been evaluated by DWR, data that indicate groundwater level trends over a period of time should be collected and evaluated.	
	If the evaluation indicates an overdraft due to existing groundwater extraction, or projected increases in groundwater extraction, describe actions and/or program designed to eliminate the long term overdraft condition.	WSA Section 3.2. The referenced and Appendicized AVEK (Watermaster) 2015 Urban Water Master Plan describes in detail the subject actions and programs.

Appendix M1

Energy Memorandum

ESA

MEMO

Date: July 26, 2019 **Project No.:** 150447.06

To: Trey Lopez, Assistant Development Manager
LendLease Energy Development

From: Jaymie Brauer, Principal Planner

Subject: AV Apollo Solar Project - Energy Consumption Technical Memorandum

cc: File

Introduction

This memorandum assesses possible construction and operational energy demand impacts by the development of the AV Apollo Solar Project (Project), which includes:

- Syracuse Solar (Site 1): 160 acres;
- Tours Solar (Site 2): 160 acres; and
- Sunbow Solar (Site 3): 173.5 acres

Project Description

The Project is in the eastern high desert region of unincorporated Kern County on an approximately 493.5-acre site. The site may be combined and constructed at the same time as a single, 60-MW facility, or alternatively, could be developed as three independent, 20-MW facilities on the approximately 160-acre, Syracuse site, 160-arce Tours site and the 173.5-acre Sunbow site, depending upon market conditions. The sites would interconnect to an existing Southern California Edison (SCE) 66-kilovolt (kV) electrical distribution line that runs parallel to Backus Road and located on Site 1 and Site 2. Power generated by the proposed Project would be transferred directly to SCE's Antelope-Cal Cement-Rosamond 66-kV line. It is estimated that approximately 258,000 crystalline modules, or 490,000 thin-film modules would be installed at the 493.5-acre site.

A 300-day construction period is anticipated to develop the entire 492-acre site.

Fuel Consumption Standards of Significance

The 2019 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?

While no quantitative thresholds related to energy are included the Guidelines states as follows:

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www.qkinc.com

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, 2017) 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, 120 miles to the Project site and would require approximately 1,385 trips. Using a typical fuel efficiency of 5.85 miles per gallon, the delivery of the solar panels is expected to require approximately 57,000 gallons of diesel (Geotab, 2017). Total fuel used by construction owrkers is expected to be approximately 14,055 gallons (ESA, 2019). 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 78,000 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 135,000 gallons of diesel fuel (Appendix A, Tables 1-3). 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

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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 8,511 miles traveled per year. According to calculations in CalEEMod and construction equipment data provided by the Project applicant, the water trucks would require approximately 1,500 gallons of diesel per year; no electricity will be used during panel cleaning activities. General maintenance trucks would add 473.4 total miles traveled per year, which would require approximately 20 gallons of gasoline year. Finally, employee light auto/light truck trips would add another 790 miles traveled per year and approximately 33 gallons of gasoline per year. In total, the operation phase of the proposed Project is anticipated to require approximately 1,500 gallons of diesel and approximately 53 gallons of gasoline on an annual basis (Appendix A, Tables 4-7). 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

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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.

(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.

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Approximately 47,915 $MTCO_2e$ 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 47,861.19 MTCO2e annually (without decommissioning emissions) and 47,814.86 MTCO2e annually (with decommissioning emissions). Over the lifetime of the project, the total displaced emissions would be approximately 1,437,450 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 135,000 gallons of diesel, while the operation phase would result in a yearly consumption of approximately 1,500 gallons of diesel and 53 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)**
1,385	240	5.85	56820.51

Table 2: Site Construction and Installation Fuel Consumption Estimate

Phase Name	Offroad Equipment Type	total hours	Amount	Usage Hours	Horse Pow er	Load Factor	HP-Hour	Fuel Consumption (gal)	Total per phase per day	days	total gallons per phase
Panel Assembly	Bore/Drill Rigs	24	3	8.00	291	0.74	5168.16	264.609792			
Panel Assembly	Cement and Mortar Mixers	24	3	8.00	300	0.20	1440	73.728			
Panel Assembly	Cranes	24	3	8.00	250	0.29	1740	89.088	427.42579	132	56420.205
Grading	Excavators	24	3	8.00	168	0.38	1532.16	78.446592			
Grading	Graders	24	3	8.00	174	0.41	1712.16	87.662592			
Grading	Off-Highw ay Trucks	12	3	4.00	189	0.38	861.84	44.126208			
Grading	Rubber Tired Dozers	24	3	8.00	357	0.40	3427.2	175.47264			
Grading	Scrapers	24	6	4.00	313	0.48	3605.76	184.614912			
Grading	Tractors/Loaders/ Backhoes	24	6	4.00	108	0.37	959.04	49.102848	619.42579	22	13627.367
Gravel Road	Craw ler Tractors	24	3	8.00	147	0.42	1481.76	75.866112	75.86611	22	1669.0544
Trenching and Electrical	Craw ler Tractors	24	3	8.00	147	0.43	1517.04	77.672448			
Trenching and Electrical	Excavators	24	3	8.00	168	0.40	1612.8	82.57536			
Trenching and Electrical	Off-Highw ay Trucks	12	3	4.00	189	0.38	861.84	44.126208			
Trenching and Electrical	Rough Terrain Forklifts	24	3	8.00	93	0.37	825.84	42.283008	246.65702	22	5426.4545
HP-Hour = Load Factor x Total Hours x Horsepow er				Fuel Consumption = HP-Hour x .0512						**Total**	77143.08

Table 3: Total Construction Phase Fuel Consumption Estimate

Solar Panel Delivery (gal)	Site Construction and Installation (gal)	**Total Diesel Consumption (gal)**
56820.51	77,143.08	133963.59

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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	400	12	4,800	**8,511**	5.86	**1452.39**
On-site Truck Travel	40	84.3	3,374			
On-site Truck Travel	4	84.3	337			

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	48	9.3	446	**473.4**	24.5	**19.32**
On-site Travel	48	0.57	27.4			

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	80	9.3	744	**790.0**	24.5	**32.24**
On-site Travel	80	0.57	46.0			

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)**
1452.39	**1452.39**	19.32	32.24	**51.56**

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MEMO

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Appendix M2
Energy Calculations

ESA

Phase	worker trip number	total worker trips	worker trip length	Total Length	Factor	Gallons of Gas
Panel Assemly	200	26400	16.8	443,520	0.6	12,994
Grading	60	1320	16.8	22,176	0.6	650
Gravel Road	8	176	16.8	2,957	0.6	87
Trenching and Electrical	30	660	16.8	11,088	0.6	325
						14,055

Miles per Gallon	20.48

Table 4.6-2: Project Construction Energy Usage

Source	Annual Gasoline Fuel Use (gal)	Annual Diesel Fuel Use (gal)
Kern County (2018)a	454,498,680	308,064,466
Construction:		
Haul Trucks (delivery of solar panels)	—	57,000
Heavy-Duty Construction Equipment	—	78,000
On-Road Vehicles	14,055	—
% of County	0.003%	0.044%

Table 4.6-3: Project Operational Electricity Usage

Source	Annual Gasoline Fuel Use (gal)	Annual Diesel Fuel Use (gal)
Kern County (2018)	454,498,680	308,064,466
Operations:		
Water Truck Trips	—	1,500
Maintenance Trips	20	—
Worker Trips	33	—
% of County	0.00001%	0.0005%

Appendix N

San Joaquin Valley Air Pollution Control District and South Coast Air Quality Management District *Sierra Club v. County of Fresno* Amicus Curiae Briefs

ESA

Appendix

San Joaquin Valley Air Pollution Control District and South Coast Air Quality Management District *Sierra Club v. County of Fresno* Amicus Curiae Briefs

SUPREME COURT COPY

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

SUPREME COURT
FILED

APR 13 2015

Frank A. McGuire Clerk

Deputy

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

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[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

---

[6] CEQA does not require speculation. *See, e.g.*, *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

Rule 8.520 Disclosure

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

CONCLUSION

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015

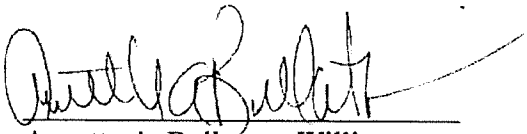

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TABLE OF CONTENTS

APPLICATION.....1

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District.....1

2. How the Proposed Amicus Curiae Brief Will Assist the Court 5

CONCLUSION.....6

I. INTRODUCTION 1

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.....3

A, Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.....4

B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants 11

III. CONCLUSION.....15

CERTIFICATE OF WORD COUNT.....17

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San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan, Appendix B pp. B-6, B-9, available at: http://www.valleyair.org/Air_Quality_ Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April% 202007.pdf (visited March 12, 2015).....9

I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

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[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf
(visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041 1.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club, supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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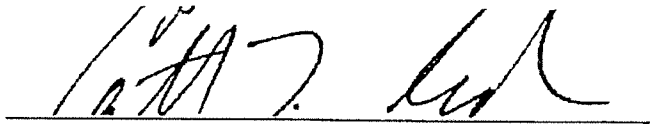
[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing'."* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015



Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CERTIFICATE OF WORD COUNT

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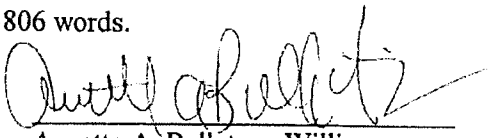

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Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO

On all parties to this action at the following addresses and in the following manner:

PLEASE SEE ATTACHED SERVICE LIST

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

SERVICE LIST

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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S219783

IN THE SUPREME COURT OF C ALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,

Plaintiffs and Appellants,

v.

COUNTY OF FRESNO,

Defendant and Respondent,

and,

FRIANT RANCH, L.P.,

Real Party in Interest and Respondent.

SUPREME COURT
FILED

APR 13 2015

Frank A. McGuire Clerk

Deputy

After a Published Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726
Honorable Rosendo A. Pena, Jr.

APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*

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TABLE OF CONTENTS

APPLICATION FOR LEAVE TO FILE *amicus curiae* brief..... App-1

HOW THIS BRIEF WILL ASSIST THE COURT App-1

STATEMENT OF INTEREST OF *AMICUS CURIAE*..... App-3

CERTIFICATION REGARDING AUTHORSHIP & FUNDING App-4

BRIEF OF AMICUS CURIAE..... 1

SUMMARY OF ARGUMENT 1

ARGUMENT 2

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK. 2

A. Air Quality Regulatory Background 2

B. The SCAQMD's Role Under CEQA..... 6

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS..... 8

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW..... 16

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document 16

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law..... 23

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS..... 26

CONCLUSION 29

TABLE OF AUTHORITIES

State Cases

Association of Irritated Residents v. County of Madera (2003)
107 Cal App.4th 1383 ..... 1, 9

Bakersfield Citizens for Local Control v. City of Bakersfield (2004)
124 Cal.App.4th 1184 ..... 9, 22

Berkeley Keep Jets Over the Bay v. Board of Port Commissioners
(2007) 91 Cal.App.4th 1344 ..... 21, 28

Center for Biological Diversity v. County of San Bernardino (2010)
185 Cal.App.4th 866. 20

Citizens of Goleta Valley v. Bd. of Supervisors (1990)
52 Cal.3d 553 8-9

County of Amador v. El Dorado County Water Agency (1999)
76 Cal.App.4th 931 23

Crocker National Bank v. City and County of San Francisco (1989)
49 Cal.3d 881 18

Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire Protection (2008) 43 Cal.4th 936 21

Fall River Wild Trout Foundation v. County of Shasta, (1999)
70 Cal.App.4th 482 ..... 27, 28

Gray v. County of Madera (2008)
167 Cal.App.4th 1099 25

Laurel Heights Improvement Assn. v. Regents of the Univ of Cal. ("*Laurel Heights I*")
(1988) 47 Cal.3d 376 ..... 1, 8, 19, 20, 21, 22

Natural Res. Def. Council v SCAQMD,
Los Angeles Superior Court No. BS110792 12

Neighbors for Smart Rail v. Exposition Metro Line (2013)
57 Cal.4th 439 ..... 15, 20

State Cases (cont'd)

Orange County Air Pollution Control District v. Public Util. Com.
(1971) 4 Cal.3d 945 27

Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors
(2001) 87 Cal.App.4th 99 19

Schenck v. County of Sonoma (2011)
198 Cal.App.4th 949 ..... 26, 27

Sierra Club v. County of Fresno (2014)
226 Cal.App.4th 704 (superseded by grant of review)
172 Cal.Rptr.3d 271 ..... 9, 23

Sierra Club v. State Bd. Of Forestry (1994)
7 Cal.4th 1215 28

Uphold Our Heritage v. Town of Woodside (2007)
147 Cal.App.4th 587 20

Vineyard Area Citizens for Responsible Growth, Inc.
v. City of Rancho Cordova (2007)
40 Cal.4th 412 ..... 1, 17, 19, 24, 25, 26

Western Oil & Gas Assn. v. Monterey Bay Unified APCD (1989)
49 Cal.3d 408 5

California Statutes

Health & Saf. Code § 39666 5
Health & Saf. Code § 40000 3
Health & Saf. Code § 40001 3
Health & Saf. Code § 40410 3
Health & Saf. Code §§ 40460, et seq 4
Health & Saf. Code § 41508 5
Health & Saf. Code §§ 42300, et seq 5
Health & Saf. Code § 44320 5
Health & Saf. Code § 44322 5
Health & Saf. Code § 44360 5
Pub. Resources Code § 20180.3 27
Pub. Resources Code § 21061 19
Pub. Resources Code § 21061.1 16

California Statutes (cont'd)

Pub. Resources Code § 21080 6
Pub. Resources Code § 21080.5 6
Pub. Resources Code § 21083.1 26
Pub. Resources Code § 21100 27
Pub. Resources Code § 21104 ..... 6, 7 26
Pub. Resources Code §§ 21150-21154 7
Pub. Resources Code § 21151.8 25
Pub. Resources Code § 21153 ..... 6, 7, 26

California Regulations

Cal. Code Regs., tit. 14, §§ 15000, et seq. ("CEQA Guidelines")

CEQA Guidelines § 15050 6
CEQA Guidelines § 15051 ..... 1, 6
CEQA Guidelines § 15073 6
CEQA Guidelines § 15086 6
CEQA Guidelines § 15088.5 28
CEQA Guidelines § 15096 6
CEQA Guidelines § 15126.2 25
CEQA Guidelines § 15131 26
CEQA Guidelines § 15144 ..... 19, 24
CEQA Guidelines § 15151 ..... 9, 18, 19
CEQA Guidelines § 15204 ..... 1, 9, 21
CEQA Guidelines § 15251 6
CEQA Guidelines § 15366 7
CEQA Guidelines § 15381 6

Cal. Code Regs., tit. 17, § 60104 3

Federal Statutes

42 U.S.C. § 7401; CAA § 101 4
42 U.S.C. § 7408; CAA § 108 3
42 U.S.C. § 7409; CAA § 109 4
42 U.S.C. § 7410; CAA § 110 ..... 4, 5
42 U.S.C. § 7412; CAA § 112 5
42 U.S.C. § 7502; CAA § 172 ..... 5, 13
42 U.S.C. § 7503; CAA § 173 ..... 5, 13
42 U.S.C. § 7511a; CAA § 182 13
42 U.S.C. § 7521; CAA § 202 4
42 U.S.C. § 7543; CAA § 209 4
42 U.S.C. § 7547; CAA § 213 4

Rules

SCAQMD Rule 1303 7
SCAQMD Rule 1401 ..... 5, 8, 9

Other

Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) (Appendix G, "Environmental Checklist Form." 24

CARB, *Health Impacts Analysis: PM Premature Death Relationship* 14

CARB, *Health Impacts Analysis: PM Mortality Relationship* 16

CARB, Resolution 98-35, Aug. 27, 1998 8

SCAQMD, *Air Quality Analysis Handbook* 13

SCAQMD, *Final 2012 AQMP (Feb. 2013)* 3, 11

SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011)* 14-15

SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System,* 12

SCAQMD Governing Board Agenda, April 3, 2015, Agenda Item 16, Attachment A 7

SCAQMD, Health Risk Assessment Summary form 10

SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588)* 10

U.S. EPA, Ground Level Ozone 11

U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2 11

U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, ... 11

U.S. EPA, National Ambient Air Quality Standards (NAAQS) 4

U.S. EPA, Particulate Matter (PM) 4

TO THE HONORABLE CHIEF JUSTICE AND JUSTICES OF THE SUPREME COURT:

APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 8.520(f) of the California Rules of Court, the South Coast Air Quality Management District (SCAQMD) respectfully requests leave to file the attached *amicus curiae* brief. Because SCAQMD's position differs from that of either party, we request leave to submit this amicus brief in support of neither party.

HOW THIS BRIEF WILL ASSIST THE COURT

SCAQMD's proposed amicus brief takes a position on two of the issues in this case. In both instances, its position differs from that of either party. The issues are:

1) Does the California Environmental Quality Act (CEQA) require an environmental impact report (EIR) to correlate a project's air pollution emissions with specific levels of health impacts?
2) What is the proper standard of review for determining whether an EIR provides sufficient information on the health impacts caused by a project's emission of air pollutants?

This brief will assist the Court by discussing the practical realities of correlating identified air quality impacts with specific health outcomes. In short, CEQA requires agencies to provide detailed information about a project's air quality impacts that is sufficient for the public and decisionmakers to adequately evaluate the project and meaningfully understand its impacts. However, the level of analysis is governed by a rule of reason; CEQA only requires agencies to conduct analysis if it is reasonably feasible to do so.

With regard to health-related air quality impacts, an analysis that correlates a project's air pollution emissions with specific levels of health impacts will be feasible in some cases but not others. Whether it is feasible depends on a variety of factors, including the nature of the project and the nature of the analysis under consideration. The feasibility of analysis may also change over time as air districts and others develop new tools for measuring projects' air quality related health impacts. Because SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, it is uniquely situated to express an opinion on the extent to which the Court should hold that CEQA requires lead agencies to correlate air quality impacts with specific health outcomes.

SCAQMD can also offer a unique perspective on the question of the appropriate standard of review. SCAQMD submits that the proper standard of review for determining whether an EIR is sufficient as an informational document is more nuanced than argued by either party. In our view, this is a mixed question of fact and law. It includes determining whether additional analysis is feasible, which is primarily a factual question that should be reviewed under the substantial evidence standard. However, it also involves determining whether the omission of a particular analysis renders an EIR insufficient to serve CEQA's purpose as a meaningful, informational document. If a lead agency has not determined that a requested analysis is infeasible, it is the court's role to determine whether the EIR nevertheless meets CEQA's purposes, and courts should not defer to the lead agency's conclusions regarding the legal sufficiency of an EIR's analysis. The ultimate question of whether an EIR's analysis is "sufficient" to serve CEQA's informational purposes is predominately a question of law that courts should review de novo.

This brief will explain the rationale for these arguments and may assist the Court in reaching a conclusion that accords proper respect to a lead agency's factual conclusions while maintaining judicial authority over the ultimate question of what level of analysis CEQA requires.

STATEMENT OF INTEREST OF *AMICUS CURIAE*

The SCAQMD is the regional agency primarily responsible for air pollution control in the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of the Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410; Cal. Code Regs., tit. 17, § 60104.) The SCAQMD participates in the CEQA process in several ways. Sometimes it acts as a lead agency that prepares CEQA documents for projects. Other times it acts as a responsible agency when it has permit authority over some part of a project that is undergoing CEQA review by a different lead agency. Finally, SCAQMD also acts as a commenting agency for CEQA documents that it receives because it is a public agency with jurisdiction by law over natural resources affected by the project.

In all of these capacities, SCAQMD will be affected by the decision in this case. SCAQMD sometimes submits comments requesting that a lead agency perform an additional type of air quality or health impacts analysis. On the other hand, SCAQMD sometimes determines that a particular type of health impact analysis is not feasible or would not produce reliable and informative results. Thus, SCAQMD will be affected by the Court's resolution of the extent to which CEQA requires EIRs to correlate emissions and health impacts, and its resolution of the proper standard of review.

CERTIFICATION REGARDING AUTHORSHIP AND FUNDING

No party or counsel in the pending case authored the proposed amicus curiae brief in whole or in part, or made any monetary contribution intended to fund the preparation or submission of the brief. No person or entity other than the proposed *Amicus Curiae* made any monetary contribution intended to fund the preparation or submission of the brief.

Respectfully submitted,

DATED: April 3, 2015

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BRIEF OF AMICUS CURIAE

SUMMARY OF ARGUMENT

The South Coast Air Quality Management District (SCAQMD) submits that this Court should not try to establish a hard-and-fast rule concerning whether lead agencies are required to correlate emissions of air pollutants with specific health consequences in their environmental impact reports (EIR). The level of detail required in EIRs is governed by a few, core CEQA (California Environmental Quality Act) principles. As this Court has stated, "[a]n EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Assn. v. Regents of the Univ of Cal.* (1988) 47 Cal.3d 376, 405 ["*Laurel Heights 1*"]) Accordingly, "an agency must use its best efforts to find out and disclose all that it reasonably can." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (quoting CEQA Guidelines § 15144)[1].). However, "[a]nalysis of environmental effects need not be exhaustive, but will be judged in light of what is reasonably feasible." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390; CEQA Guidelines §§ 15151, 15204(a).)

With regard to analysis of air quality related health impacts, EIRs must generally quantify a project's pollutant emissions, but in some cases it is not feasible to correlate these emissions to specific, quantifiable health impacts (e.g., premature mortality; hospital admissions). In such cases, a general description of the adverse health impacts resulting from the pollutants at issue may be sufficient. In other cases, due to the magnitude

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[1] The CEQA Guidelines are found at Cal. Code Regs., tit. 14 §§ 15000, *et seq*.

or nature of the pollution emissions, as well as the specificity of the project involved, it may be feasible to quantify health impacts. Or there may be a less exacting, but still meaningful analysis of health impacts that can feasibly be performed. In these instances, agencies should disclose those impacts.

SCAQMD also submits that whether or not an EIR complies with CEQA's informational mandates by providing sufficient, feasible analysis is a mixed question of fact and law. Pertinent here, the question of whether an EIR's discussion of health impacts from air pollution is sufficient to allow the public to understand and consider meaningfully the issues involves two inquiries: (1) Is it feasible to provide the information or analysis that a commenter is requesting or a petitioner is arguing should be required?; and (2) Even if it is feasible, is the agency relying on other policy or legal considerations to justify not preparing the requested analysis? The first question of whether an analysis is feasible is primarily a question of fact that should be judged by the substantial evidence standard. The second inquiry involves evaluating CEQA's information disclosure purposes against the asserted reasons to not perform the requested analysis. For example, an agency might believe that its EIR meets CEQA's informational disclosure standards even without a particular analysis, and therefore choose not to conduct that analysis. SCAQMD submits that this is more of a legal question, which should be reviewed de novo as a question of law.

ARGUMENT

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK.

A. Air Quality Regulatory Background

The South Coast Air Quality Management District (SCAQMD) is one of the local and regional air pollution control districts and air quality

management districts in California. The SCAQMD is the regional air pollution agency for the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410, 17 Cal. Code Reg. § 60104.) The SCAQMD also includes the Coachella Valley in Riverside County (Palm Springs area to the Salton Sea). (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "chapter 7" hyperlink; pp 7-1, 7-3 (last visited Apr. 1, 2015).) The SCAQMD's jurisdiction includes over 16 million residents and has the worst or nearly the worst air pollution levels in the country for ozone and fine particulate matter. (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Executive Summary" hyperlink p. ES-1 (last visited Apr. 1, 2015).)

Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. (Health & Saf. Code § 40000.) The California Air Resources Board (CARB), part of the California Environmental Protection Agency, is primarily responsible for controlling pollution from motor vehicles. (*Id.*) The air districts must adopt rules to achieve and maintain the state and federal ambient air quality standards within their jurisdictions. (Health & Saf. Code § 40001.)

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to identify pollutants that are widely distributed and pose a threat to human health, developing a so-called "criteria" document. (42 U.S.C. § 7408; CAA § 108.) These pollutants are frequently called "criteria pollutants." EPA must then establish "national ambient air quality standards" at levels "requisite to protect public health",

allowing "an adequate margin of safety." (42 U.S.C. § 7409; CAA § 109.) EPA has set standards for six identified pollutants: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter (PM), and lead. (U.S. EPA, National Ambient Air Quality Standards (NAAQS), http://www.epa.gov/air/criteria.html (last updated Oct. 21, 2014).)[2]

Under the Clean Air Act, EPA sets emission standards for motor vehicles and "nonroad engines" (mobile farm and construction equipment, marine vessels, locomotives, aircraft, etc.). (42 U.S.C. §§ 7521, 7547; CAA §§ 202, 213.) California is the only state allowed to establish emission standards for motor vehicles and most nonroad sources; however, it may only do so with EPA's approval. (42 U.S.C. §§ 7543(b), 7543(e); CAA §§ 209(b), 209(c).) Sources such as manufacturing facilities, power plants and refineries that are not mobile are often referred to as "stationary sources." The Clean Air Act charges state and local agencies with the primary responsibility to attain the national ambient air quality standards. (42 U.S.C. § 7401(a)(3); CAA § 101(a)(3).) Each state must adopt and implement a plan including enforceable measures to achieve and maintain the national ambient air quality standards. (42 U.S.C. § 7410; CAA § 110.) The SCAQMD and CARB jointly prepare portion of the plan for the South Coast Air Basin and submit it for approval by EPA. (Health & Saf. Code §§ 40460, et seq.)

The Clean Air Act also requires state and local agencies to adopt a permit program requiring, among other things, that new or modified "major" stationary sources use technology to achieve the "lowest achievable emission rate," and to control minor stationary sources as

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[2] Particulate matter (PM) is further divided into two categories: fine particulate or $PM_{2.5}$ (particles with a diameter of less than or equal to 2.5 microns) and coarse particulate (PM_{10}) (particles with a diameter of 10 microns or less). (U.S. EPA, Particulate Matter (PM), http://www.epa.gov/airquality/particlepollution/ (last visited Apr. 1, 2015).)

needed to help attain the standards. (42 U.S.C. §§ 7502(c)(5), 7503(a)(2), 7410(a)(2)(C); CAA §§ 172(c)(5), 173(a)(2), 110(a)(2)(C).) The air districts implement these permit programs in California. (Health & Saf. Code §§ 42300, et seq.)

The Clean Air Act also sets out a regulatory structure for over 100 so-called "hazardous air pollutants" calling for EPA to establish "maximum achievable control technology" (MACT) for sources of these pollutants. (42 U.S.C. § 7412(d)(2); CAA § 112(d)(2).) California refers to these pollutants as "toxic air contaminants" (TACs) which are subject to two state-required programs. The first program requires "air toxics control measures" for specific categories of sources. (Health & Saf. Code § 39666.) The other program requires larger stationary sources and sources identified by air districts to prepare "health risk assessments" for impacts of toxic air contaminants. (Health & Saf. Code §§ 44320(b), 44322, 44360.) If the health risk exceeds levels identified by the district as "significant," the facility must implement a "risk reduction plan" to bring its risk levels below "significant" levels. Air districts may adopt additional more stringent requirements than those required by state law, including requirements for toxic air contaminants. (Health & Saf. Code § 41508; *Western Oil & Gas Assn. v. Monterey Bay Unified APCD* (1989) 49 Cal.3d 408, 414.) For example, SCAQMD has adopted a rule requiring new or modified sources to keep their risks below specified levels and use best available control technology (BACT) for toxics. (SCAQMD, *Rule 1401-New Source Review of Toxic Air Contaminants*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiv; then follow "Rule 1401" hyperlink (last visited Apr. 1, 2015).)

B. The SCAQMD's Role Under CEQA

The California Environmental Quality Act (CEQA) requires public agencies to perform an environmental review and appropriate analysis for projects that they implement or approve. (Pub. Resources Code § 21080(a).) The agency with primary approval authority for a particular project is generally the "lead agency" that prepares the appropriate CEQA document. (CEQA Guidelines §§ 15050, 15051.) Other agencies having a subsequent approval authority over all or part of a project are called "responsible" agencies that must determine whether the CEQA document is adequate for their use. (CEQA Guidelines §§ 15096(c), 15381.) Lead agencies must also consult with and circulate their environmental impact reports to "trustee agencies" and agencies "with jurisdiction by law" including "authority over resources which may be affected by the project." (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines §§ 15086(a)(3), 15073(c).) The SCAQMD has a role in all these aspects of CEQA.

Fulfilling its responsibilities to implement its air quality plan and adopt rules to attain the national ambient air quality standards, SCAQMD adopts a dozen or more rules each year to require pollution reductions from a wide variety of sources. The SCAQMD staff evaluates each rule for any adverse environmental impact and prepares the appropriate CEQA document. Although most rules reduce air emissions, they may have secondary environmental impacts such as use of water or energy or disposal of waste—e.g., spent catalyst from control equipment.[3]

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[3] The SCAQMD's CEQA program for its rules is a "Certified Regulatory Program" under which it prepares a "functionally equivalent" document in lieu of a negative declaration or EIR. (Pub. Resources Code § 21080.5, CEQA Guidelines § 15251(l).)

The SCAQMD also approves a large number of permits every year to construct new, modified, or replacement facilities that emit regulated air pollutants. The majority of these air pollutant sources have already been included in an earlier CEQA evaluation for a larger project, are currently being evaluated by a local government as lead agency, or qualify for an exemption. However, the SCAQMD sometimes acts as lead agency for major projects where the local government does not have a discretionary approval. In such cases, SCAQMD prepares and certifies a negative declaration or environmental impact report (EIR) as appropriate.[4] SCAQMD evaluates perhaps a dozen such permit projects under CEQA each year. SCAQMD is often also a "responsible agency" for many projects since it must issue a permit for part of the projects (e.g., a boiler used to provide heat in a commercial building). For permit projects evaluated by another lead agency under CEQA, SCAQMD has the right to determine that the CEQA document is inadequate for its purposes as a responsible agency, but it may not do so because its permit program already requires all permitted sources to use the best available air pollution control technology. (SCAQMD, *Rule 1303(a)(1) – Requirements*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiii; then follow "Rule 1303" hyperlink (last visited Apr. 1, 2015).)

Finally, SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality—a natural resource affected by the project. (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines § 15366(a)(3).) The SCAQMD staff provides comments on as many as 25 or 30 such documents each month.

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[4] The SCAQMD's permit projects are not included in its Certified Regulatory Program, and are evaluated under the traditional local government CEQA analysis. (Pub. Resources Code §§ 21150-21154.)

(SCAQMD Governing Board Agenda, Apr. 3, 2015, Agenda Item 16, Attachment A, http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-april-3-2015; then follow "16. Lead Agency Projects and Environmental Documents Received by SCAQMD" hyperlink (last visited Apr. 1, 2015).) Of course, SCAQMD focuses its commenting efforts on the more significant projects.

Typically, SCAQMD comments on the adequacy of air quality analysis, appropriateness of assumptions and methodology, and completeness of the recommended air quality mitigation measures. Staff may comment on the need to prepare a health risk assessment detailing the projected cancer and noncancer risks from toxic air contaminants resulting from the project, particularly the impacts of diesel particulate matter, which CARB has identified as a toxic air contaminant based on its carcinogenic effects. (California Air Resources Board, Resolution 98-35, Aug. 27, 1998, http://www.arb.ca.gov/regact/diesltac/diesltac.htm; then follow Resolution 98-35 hyperlink (last visited Apr. 1, 2015).) Because SCAQMD already requires new or modified stationary sources of toxic air contaminants to use the best available control technology for toxics and to keep their risks below specified levels, (SCAQMD Rule 1401, supra, note 15), the greatest opportunity to further mitigate toxic impacts through the CEQA process is by reducing emissions—particularly diesel emissions—from vehicles.

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS.

Numerous cases hold that courts do not review the correctness of an EIR's conclusions but rather its sufficiency as an informative document. (*Laurel Heights 1*, *supra*, 47 Cal.3d at p. 392; *Citizens of Goleta Valley v.*

Bd. of Supervisors (1990) 52 Cal.3d 553, 569; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197.)

As stated by the Court of Appeal in this case, where an EIR has addressed a topic, but the petitioner claims that the information provided about that topic is insufficient, courts must "draw[] a line that divides *sufficient* discussions from those that are *insufficient*." (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) The Court of Appeal readily admitted that "[t]he terms themselves – sufficient and insufficient – provide little, if any, guidance as to where the line should be drawn. They are simply labels applied once the court has completed its analysis." (*Id.*)

The CEQA Guidelines, however, provide guidance regarding what constitutes a sufficient discussion of impacts. Section 15151 states that "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." Case law reflects this: "Analysis of environmental effects need not be exhaustive, but will be judged in light of what was reasonably feasible." (*Association of Irritated Residents v. County of Madera, supra,* 107 Cal.App.4th at p. 1390; see also CEQA Guidelines § 15204(a).)

Applying this test, this Court cannot realistically establish a hard-and-fast rule that an analysis correlating air pollution impacts of a project to quantified resulting health impacts is always required, or indeed that it is never required. Simply put, in some cases such an analysis will be "feasible"; in some cases it will not.

For example, air pollution control districts often require a proposed new source of toxic air contaminants to prepare a "health risk assessment" before issuing a permit to construct. District rules often limit the allowable cancer risk the new source may cause to the "maximally exposed individual" (worker and residence exposures). (*See, e.g.*, SCAQMD Rule 1401(c)(8); 1401(d)(1), *supra* note 15.) In order to perform this analysis, it

is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). (SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), pp. 11-16*; (last visited Apr. 1, 2015) http://www.aqmd.gov/home/library/documents-support-material; "Guidelines" hyperlink; AB2588; then follow AB2588 Risk Assessment Guidelines hyperlink.)

Thus, it is feasible to determine the health risk posed by a new gas station locating at an intersection in a mixed use area, where receptor locations are known. On the other hand, it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk—it does not necessarily mean anyone will contract cancer as a result of the project.

In order to find the "cancer burden" or expected additional cases of cancer resulting from the project, it is also necessary to know the numbers and location of individuals living within the "zone of impact" of the project: i.e., those living in areas where the projected cancer risk from the project exceeds one in a million. (SCAQMD, Health Risk Assessment Summary form, http://www.aqmd.gov/home/forms ; filter by "AB2588" category; then "Health Risk Assessment" hyperlink (last visited Apr. 1, 2015).) The affected population is divided into bands of those exposed to at least 1 in a million risk, those exposed to at least 10 in a million risk, etc. up to those exposed at the highest levels. (*Id.*) This data allows agencies to calculate an approximate number of additional cancer cases expected from

the project. However, it is not possible to predict which particular individuals will be affected.

For the so-called criteria pollutants[5], such as ozone, it may be more difficult to quantify health impacts. Ozone is formed in the atmosphere from the chemical reaction of the nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. (U.S. EPA, Ground Level Ozone, http://www.epa.gov/airquality/ozonepollution/ (last updated Mar. 25, 2015).) It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. (U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2, http://www.epa.gov/ttnamti1/archive/cpreldoc.html (last visited Apr. 1, 2015).) NO_x and VOC are known as "precursors" of ozone.

Scientifically, health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes. (U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, http://www.epa.gov/apti/ozonehealth/population.html#levels (last visited Apr. 1, 2015).) However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. For example, the SCAQMD's 2012 AQMP showed that reducing NO_x by 432 tons per day (157,680 tons/year) and reducing VOC by 187 tons per day (68,255 tons/year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. (South Coast Air Quality Management District, *Final 2012 AQMP (February 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Appendix V: Modeling & Attainment Demonstrations" hyperlink,

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[5] See discussion of types of pollutants, supra, Part I.A.

pp. v-4-2, v-7-4, v-7-24.) SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects.

On the other hand, this type of analysis may be feasible for projects on a regional scale with very high emissions of NO_x and VOCs, where impacts are regional. For example, in 2011 the SCAQMD performed a health impact analysis in its CEQA document for proposed Rule 1315, which authorized various newly-permitted sources to use offsets from the districts "internal bank" of emission reductions. This CEQA analysis accounted for essentially *all* the increases in emissions due to new or modified sources in the District between 2010 and 2030.[6] The SCAQMD was able to correlate this very large emissions increase (e.g., 6,620 pounds per day NO_x (1,208 tons per year), 89,180 pounds per day VOC (16,275 tons per year)) to expected health outcomes from ozone and particulate matter (e.g., 20 premature deaths per year and 89,947 school absences in the year 2030 due to ozone).[7] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System* (see hyperlink in fn 6) at p. 4.1-35, Table 4.1-29.)

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[6] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, Attachment G, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System, Vol. 1, p.4.0-6*, http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-february-4-2011; the follow "26. Adopt Proposed Rule 1315 – Federal New Source Review Tracking System" (last visited April 1, 2015).)

[7] The SCAQMD was able to establish the location of future NO_x and VOC emissions by assuming that new projects would be built in the same locations and proportions as existing stationary sources. This CEQA document was upheld by the Los Angeles County Superior Court in *Natural Res. Def. Council v SCAQMD*, Los Angeles Superior Court No. BS110792).

However, a project emitting only 10 tons per year of NO_x or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels. Thus, in this case it would not be feasible to directly correlate project emissions of VOC or NO_x with specific health impacts from ozone. This is in part because ozone formation is not linearly related to emissions. Ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology and seasonal impacts, and because ozone is formed some time later and downwind from the actual emission. (EPA Guideline on Ozone Monitoring Site Selection (Aug. 1998) EPA-454/R-98-002, § 5.1.2; https://www.epa.gov/ttnamti1/archive/cpreldoc.html; then search "Guideline on Ozone Monitoring Site Selection" click on pdf) (last viewed Apr. 1, 2015).)

SCAQMD has set its CEQA "significance" threshold for NO_x and VOC at 10 tons per year (expressed as 55 lb/day). (SCAQMD, *Air Quality Analysis Handbook*, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook; then follow "SCAQMD Air Quality Significance Thresholds" hyperlink (last visited Apr. 1, 2015).) This is because the federal Clean Air Act defines a "major" stationary source for "extreme" ozone nonattainment areas such as SCAQMD as one emitting 10 tons/year. (42 U.S.C. §§ 7511a(e), 7511a(f); CAA §§ 182(e), 182(f).) Under the Clean Air Act, such sources are subject to enhanced control requirements (42 U.S.C. §§ 7502(c)(5), 7503; CAA §§ 172(c)(5), 173), so SCAQMD decided this was an appropriate threshold for making a CEQA "significance" finding and requiring feasible mitigation. Essentially, SCAQMD takes the position that a source that emits 10 tons/year of NO_x or VOC would contribute cumulatively to ozone formation. Therefore, lead agencies that use SCAQMD's thresholds of significance may determine

that many projects have "significant" air quality impacts and must apply all feasible mitigation measures, yet will not be able to precisely correlate the project to quantifiable health impacts, unless the emissions are sufficiently high to use a regional modeling program.

In the case of particulate matter ($PM_{2.5}$)[8], another "criteria" pollutant, SCAQMD staff is aware of two possible methods of analysis. SCAQMD used regional modeling to predict expected health impacts from its proposed Rule 1315, as mentioned above. Also, the California Air Resources Board (CARB) has developed a methodology that can predict expected mortality (premature deaths) from large amounts of $PM_{2.5}$. (California Air Resources Board, *Health Impacts Analysis: PM Premature Death Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort_arch.htm (last reviewed Jan. 19, 2012).) SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1837 lbs/day). (Final Environmental Assessment for Rule 1315, *supra*, pp 4.0-12, 4.1-13, 4.1-37 (e.g., 125 premature deaths in the entire SCAQMD in 2030), 4.1-39 (0.05 to 1.77 annual premature deaths from power plants.) Again, this project involved large amounts of additional $PM_{2.5}$ in the District, up to 2.82 tons/day (5,650 lbs/day of $PM_{2.5}$, or, or 1029 tons/year. (*Id.* at table 4.1-4, p. 4.1-10.)

However, the primary author of the CARB methodology has reported that this $PM_{2.5}$ health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties.[9] (SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren*

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[8] SCAQMD has not attained the latest annual or 24-hour national ambient air quality standards for "$PM_{2.5}$" or particulate matter less than 2.5 microns in diameter.

[9] Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts. (*Id.* at p. 2-24.)

E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011), http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2011; then follow "Final Subsequent Mitigated Negative Declaration for Warren E&P Inc. WTU Central Facility, New Equipment Project" hyperlink, pp. 2-22, 2-23 (last visited Apr. 1, 2015).) Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small $PM_{2.5}$ increases (3.8 lb/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated $PM_{2.5}$ emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so. (*Id.* at pp 2-22 to 2-24.) SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information. (*Id.* at pp. 2-23, 2-25.) This CEQA document was not challenged in court.

In the above case, while it may have been technically possible to plug the data into the methodology, the results would not have been reliable or meaningful. SCAQMD believes that an agency should not be required to perform analyses that do not produce reliable or meaningful results. This Court has already held that an agency may decline to use even the "normal" "existing conditions" CEQA baseline where to do so would be misleading or without informational value. (*Neighbors for Smart Rail v. Exposition Metro Line* (2013) 57 Cal.4th 439, 448, 457.) The same should be true for a decision that a particular study or analysis would not provide reliable or meaningful results.[10]

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[10] Whether a particular study would result in "informational value" is a part of deciding whether it is "feasible." CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and

Therefore, it is not possible to set a hard-and-fast rule on whether a correlation of air quality impacts with specific quantifiable health impacts is required in all cases. Instead, the result turns on whether such an analysis is reasonably feasible in the particular case.[11] Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths. (California Air Resources Board, *Health Impacts Analysis: PM Mortality Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort.htm (last reviewed Dec. 29, 2010).) This factor also counsels against setting any hard-and-fast rule in this case.

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW.

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document

A second issue in this case is whether courts should review an EIR's informational sufficiency under the "substantial evidence" test as argued by Friant Ranch or the "independent judgment" test as argued by Sierra Club.

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technological factors." (Pub. Resources Code § 21061.1.) A study cannot be "accomplished in a *successful* manner" if it produces unreliable or misleading results.

[11] In this case, the lead agency did not have an opportunity to determine whether the requested analysis was feasible because the comment was non-specific. Therefore, SCAQMD suggests that this Court, after resolving the legal issues in the case, direct the Court of Appeal to remand the case to the lead agency for a determination of whether the requested analysis is feasible. Because Fresno County, the lead agency, did not seek review in this Court, it seems likely that the County has concluded that at least some level of correlation of air pollution with health impacts is feasible.

As this Court has explained, "a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 435.) For questions regarding compliance with proper procedure or other legal questions, courts review an agency's action de novo under the "independent judgment" test. (*Id.*) On the other hand, courts review factual disputes only for substantial evidence, thereby "accord[ing] greater deference to the agency's substantive factual conclusions." (*Id.*)

Here, Friant Ranch and Sierra Club agree that the case involves the question of whether an EIR includes sufficient information regarding a project's impacts. However, they disagree on the proper standard of review for answering this question: Sierra Club contends that courts use the independent judgment standard to determine whether an EIR's analysis is sufficient to meet CEQA's informational purposes,[12] while Friant Ranch contends that the substantial evidence standard applies to this question.

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[12] Sierra Club acknowledges that courts use the substantial evidence standard when reviewing predicate factual issues, but argues that courts ultimately decide as a matter of law what CEQA requires. (Answering Brief, pp. 14, 23.)

SCAQMD submits that the issue is more nuanced than either party contends. We submit that, whether a CEQA document includes sufficient analysis to satisfy CEQA's informational mandates is a mixed question of fact and law,[13] containing two levels of inquiry that should be judged by different standards.[14]

The state CEQA Guidelines set forth standards for the adequacy of environmental analysis. Guidelines Section 15151 states:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

In this case, the basic question is whether the underlying analysis of air quality impacts made the EIR "sufficient" as an informative document. However, whether the EIR's analysis was sufficient is judged in light of what was reasonably feasible. This represents a mixed question of fact and law that is governed by two different standards of review.

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[13] Friant Ranch actually states that the claim that an EIR lacks sufficient relevant information is, "most properly thought of as raising mixed questions of fact and law." (Opening Brief, p. 27.) However, the remainder of its argument claims that the court should apply the substantial evidence standard of review to all aspects of the issue.

[14] Mixed questions of fact and law issues may implicate predominantly factual subordinate questions that are reviewed under the substantial evidence test even though the ultimate question may be reviewed by the independent judgment test. *Crocker National Bank v. City and County of San Francisco* (1989) 49 Cal.3d 881, 888-889.

SCAQMD submits that an EIR's sufficiency as an informational document is ultimately a legal question that courts should determine using their independent judgment. This Court's language in *Laurel Heights I* supports this position. As this Court explained: "The court does not pass upon the correctness of the EIR's environmental conclusions, but only upon its *sufficiency as an informative document.*" (*Laurel Heights I, supra,* 47 Cal.3d at 392-393) (emphasis added.) As described above, the Court in *Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 431, also used its independent judgment to determine what level of analysis CEQA requires for water supply impacts. The Court did not defer to the lead agency's opinion regarding the law's requirements; rather, it determined for itself what level of analysis was necessary to meet "[t]he law's informational demands." (*Id.* at p. 432.) Further, existing case law also holds that where an agency fails to comply with CEQA's information disclosure requirements, the agency has "failed to proceed in the manner required by law." (*Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 118.)

However, whether an EIR satisfies CEQA's requirements depends in part on whether it was reasonably feasible for an agency to conduct additional or more thorough analysis. EIRs must contain "a detailed statement" of a project's impacts (Pub. Res. Code § 21061), and an agency must "use its best efforts to find out and disclose all that it reasonably can." (CEQA Guidelines § 15144.) Nevertheless, "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." (CEQA Guidelines § 15151.)

SCAQMD submits that the question of whether additional analysis or a particular study suggested by a commenter is "feasible" is generally a question of fact. Courts have already held that whether a particular alternative is "feasible" is reviewed by the substantial evidence test.

(*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 598-99; *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 883.) Thus, if a lead agency determines that a particular study or analysis is infeasible, that decision should generally be judged by the substantial evidence standard. However, SCAQMD urges this Court to hold that lead agencies must explain the basis of any determination that a particular analysis is infeasible in the EIR itself. An EIR must discuss information, including issues related to the feasibility of particular analyses "in sufficient detail to enable meaningful participation and criticism by the public. '[W]hatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.'" (*Laurel Heights I, supra*, 47 Cal.3d at p. 405 (quoting *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 831) (discussing analysis of alternatives).) The evidence on which the determination is based should also be summarized in the EIR itself, with appropriate citations to reference materials if necessary. Otherwise commenting agencies such as SCAQMD would be forced to guess where the lead agency's evidence might be located, thus thwarting effective public participation.

Moreover, if a lead agency determines that a particular study or analysis would not result in reliable or useful information and for that reason is not feasible, that determination should be judged by the substantial evidence test. (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority, supra*, 57 Cal.4th 439, 448, 457:

whether "existing conditions" baseline would be misleading or uninformative judged by substantial evidence standard.[15])

If the lead agency's determination that a particular analysis or study is not feasible is supported by substantial evidence, then the agency has not violated CEQA's information disclosure provisions, since it would be infeasible to provide additional information. This Court's decisions provide precedent for such a result. For example, this Court determined that the issue of whether the EIR should have included a more detailed discussion of future herbicide use was resolved because substantial evidence supported the agency's finding that "the precise parameters of future herbicide use could not be predicted." *Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 955.

Of course, SCAQMD expects that courts will continue to hold lead agencies to their obligations to consult with, and not to ignore or misrepresent, the views of sister agencies having special expertise in the area of air quality. (*Berkeley Keep Jets Over the Bay v. Board of Port Commissioners* (2007) 91 Cal.App.4th 1344, 1364 n.11.) In some cases, information provided by such expert agencies may establish that the purported evidence relied on by the lead agency is not in fact "substantial". (*Id.* at pp. 1369-1371.)

In sum, courts retain ultimate responsibility to determine what CEQA requires. However, the law does not require exhaustive analysis, but only what is reasonably feasible. Agencies deserve deference for their factual determinations regarding what type of analysis is reasonably feasible. On the other hand, if a commenter requests more information, and the lead agency declines to provide it but does *not* determine that the

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[15] The substantial evidence standard recognizes that the courts "have neither the resources nor the scientific expertise" to weigh conflicting evidence on technical issues. (*Laurel Heights I, supra,* 47 Cal.3d 376, 393.)

requested study or analysis would be infeasible, misleading or uninformative, the question becomes whether the omission of that analysis renders the EIR inadequate to satisfy CEQA's informational purposes. (*Id.* at pp. 1370-71.) Again, this is predominantly a question of law and should be judged by the de novo or independent judgment standard of review. Of course, this Court has recognized that a "project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR. That further study...might be helpful does not make it necessary." (*Laurel Heights I, supra,* 47 Cal.3d 376, 415 – see also CEQA Guidelines § 15204(a) [CEQA "does not require a lead agency to conduct every test. . . recommended or demanded by commenters."].) Courts, then, must adjudicate whether an omission of particular information renders an EIR inadequate to serve CEQA's informational purposes.[16]

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[16] We recognize that there is case law stating that the substantial evidence standard applies to "challenges to the scope of an EIR's analysis of a topic" as well as the methodology used and the accuracy of the data relied on in the document "because these types of challenges involve factual questions." (*Bakersfield Citizens for Local Control v. City of Bakersfield, supra,* 124 Cal.App.4th 1184, 1198, and cases relied on therein.) However, we interpret this language to refer to situations where the question of the scope of the analysis really is factual—that is, where it involves whether further analysis is feasible, as discussed above. This interpretation is supported by the fact that the *Bakersfield* court expressly rejected an argument that a claimed "omission of information from the EIR should be treated as inquiries whether there is substantial evidence supporting the decision approving the project. " *Bakersfield, supra,* 124 Cal.App.4th at p. 1208. And the *Bakersfield* court ultimately decided that the lead agency must analyze the connection between the identified air pollution impacts and resulting health impacts, even though the EIR already included some discussion of air-pollution-related respiratory illnesses. *Bakersfield, supra,* 124 Cal.App.4th at p. 1220. Therefore, the court must not have interpreted this question as one of the "scope of the analysis" to be judged by the substantial evidence standard.

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law.

In its brief, Friant Ranch makes a distinction between cases where a required CEQA topic is not discussed at all (to be reviewed by independent judgment as a failure to proceed in the manner required by law) and cases where a topic is discussed, but the commenter claims the information provided is insufficient (to be judged by the substantial evidence test). (Opening Brief, pp. 13-17.) The Court of Appeal recognized these two types of cases, but concluded that both raised questions of law. (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) We believe the distinction drawn by Friant Ranch is unduly narrow, and inconsistent with cases which have concluded that CEQA documents are insufficient. In many instances, CEQA's requirements are stated broadly, and the courts must interpret the law to determine what level of analysis satisfies CEQA's mandate for providing meaningful information, even though the EIR discusses the issue to some extent.

For example, the CEQA Guidelines require discussion of the existing environmental baseline. In *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 954-955, the lead agency had discussed the environmental baseline by describing historic month-end water levels in the affected lakes. However, the court held that this was not an adequate baseline discussion because it failed to discuss the timing and amounts of past actual water releases, to allow comparison with the proposed project. The court evidently applied the independent judgment test to its decision, even though the agency discussed the issue to some extent.

Likewise, in *Vineyard Area Citizens* (2007) 40 Cal.4th 412, this Court addressed the question of whether an EIR's analysis of water supply impacts complied with CEQA. The parties agreed that the EIR was required to analyze the effects of providing water to the development project, "and that in order to do so the EIR had, in some manner, to identify the planned sources of that water." (*Vineyard Area Citizens, supra,* at p. 428.) However, the parties disagreed as to the level of detail required for this analysis and "what level of uncertainty regarding the availability of water supplies can be tolerated in an EIR . . . ." (*Id.*) In other words, the EIR had analyzed water supply impacts for the project, but the petitioner claimed that the analysis was insufficient.

This Court noted that neither CEQA's statutory language or the CEQA Guidelines specifically addressed the question of how precisely an EIR must discuss water supply impacts. (*Id.*) However, it explained that CEQA "states that '[w]hile foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.'" (*Id.*, [Guidelines § 15144].) The Court used this general principle, along with prior precedent, to elucidate four "principles for analytical adequacy" that are necessary in order to satisfy "CEQA's informational purposes." (*Vineyard Area Citizens, supra,* at p. 430.) The Court did not defer to the agency's determination that the EIR's analysis of water supply impacts was sufficient. Rather, this Court used its independent judgment to determine for itself the level of analysis required to satisfy CEQA's fundamental purposes. (*Vineyard Area Citizens, supra,* at p. 441: an EIR does not serve its purposes where it neglects to explain likely sources of water and "... leaves long term water supply considerations to later stages of the project.")

Similarly, the CEQA Guidelines require an analysis of noise impacts of the project. (Appendix G, "Environmental Checklist Form."[17]) In *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1123, the court held that the lead agency's noise impact analysis was inadequate even though it had addressed the issue and concluded that the increase would not be noticeable. If the court had been using the substantial evidence standard, it likely would have upheld this discussion.

Therefore, we do not agree that the issue can be resolved on the basis suggested by Friant Ranch, which would apply the substantial evidence standard to *every* challenge to an analysis that addresses a required CEQA topic. This interpretation would subvert the courts' proper role in interpreting CEQA and determining what the law requires.

Nor do we agree that the Court of Appeal in this case violated CEQA's prohibition on courts interpreting its provisions "in a manner which imposes procedural or substantive requirements beyond those explicitly stated in this division or in the state guidelines." (Pub. Resources Code § 21083.1.) CEQA requires an EIR to describe *all* significant impacts of the project on the environment. (Pub. Resources Code § 21100(b)(2); *Vineyard Area Citizens, supra,* at p. 428.) Human beings are part of the environment, so CEQA requires EIRs to discuss a project's significant impacts on human health. However, except in certain particular circumstances,[18] neither the CEQA statute nor Guidelines specify the precise level of analysis that agencies must undertake to satisfy the law's requirements. (see, e.g., CEQA Guidelines § 15126.2(a) [EIRs must describe "health and safety problems caused by {a project's} physical changes"].) Accordingly, courts must interpret CEQA as a whole to

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[17] Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) p.287.

[18] E.g., Pub. Resources Code § 21151.8(C)(3)(B)(iii) (requiring specific type of health risk analysis for siting schools).

determine whether a particular EIR is sufficient as an informational document. A court determining whether an EIR's discussion of human health impacts is legally sufficient does not constitute imposing a new substantive requirement.[19] Under Friant Ranch's theory, the above-referenced cases holding a CEQA analysis inadequate would have violated the law. This is not a reasonable interpretation.

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS

Courts must "scrupulously enforce" CEQA's legislatively mandated requirements. (*Vineyard Area Citizens, supra*, 40 Cal.4th 412, 435.) Case law has firmly established that lead agencies must consult with the relevant air pollution control district before conducting an initial study, and must provide the districts with notice of the intention to adopt a negative declaration (or EIR). (*Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 958.) As *Schenck* held, neither publishing the notice nor providing it to the State Clearinghouse was a sufficient substitute for sending notice directly to the air district. (*Id.*) Rather, courts "must be satisfied that [administrative] agencies have fully complied with the procedural requirements of CEQA, since only in this way can the important public purposes of CEQA be protected from subversion." *Schenck,* 198 Cal.App.4th at p. 959 (citations omitted).[20]

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[19] We submit that Public Resources Code Section 21083.1 was intended to prevent courts from, for example, holding that an agency must analyze economic impacts of a project where there are no resulting environmental impacts (see CEQA Guidelines § 15131) , or imposing new procedural requirements, such as imposing additional public notice requirements not set forth in CEQA or the Guidelines.

[20] Lead agencies must consult air districts, as public agencies with jurisdiction by law over resources affected by the project, *before* releasing an EIR. (Pub. Resources Code §§ 21104(a); 21153.) Moreover, air

Lead agencies should be aware, therefore, that failure to properly seek and consider input from the relevant air district constitutes legal error which may jeopardize their project approvals. For example, the court in *Fall River Wild Trout Foundation v. County of Shasta,* (1999) 70 Cal.App.4th 482, 492 held that the failure to give notice to a trustee agency (Department of Fish and Game) was prejudicial error requiring reversal. The court explained that the lack of notice prevented the Department from providing any response to the CEQA document. (*Id.* at p. 492.) It therefore prevented relevant information from being presented to the lead agency, which was prejudicial error because it precluded informed decision-making. (*Id.*)[21]

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districts should be considered "state agencies" for purposes of the requirement to consult with "trustee agencies" as set forth in Public Resources Code § 20180.3(a). This Court has long ago held that the districts are not mere "local agencies" whose regulations are superseded by those of a state agency regarding matters of statewide concern, but rather have concurrent jurisdiction over such issues. (*Orange County Air Pollution Control District v. Public Util. Com.* (1971) 4 Cal.3d 945, 951, 954.) Since air pollution is a matter of statewide concern, *Id* at 952, air districts should be entitled to trustee agency status in order to ensure that this vital concern is adequately protected during the CEQA process.

[21] In *Schenck,* the court concluded that failure to give notice to the air district was not prejudicial, but this was partly because the trial court had already corrected the error before the case arrived at the Court of Appeal. The trial court issued a writ of mandate requiring the lead agency to give notice to the air district. The air district responded by concurring with the lead agency that air impacts were not significant. (*Schenck,* 198 Cal.App.4th 949, 960.) We disagree with the *Schenck* court that the failure to give notice to the air district would not have been prejudicial (even in the absence of the trial court writ) merely because the lead agency purported to follow the air district's published CEQA guidelines for significance. (*Id.*, 198 Cal.App.4th at p. 960.) In the first place, absent notice to the air district, it is uncertain whether the lead agency properly followed those guidelines. Moreover, it is not realistic to expect that an air district's published guidelines would necessarily fully address all possible air-quality related issues that can arise with a CEQA project, or that those

Similarly, lead agencies must obtain additional information requested by expert agencies, including those with jurisdiction by law, if that information is necessary to determine a project's impacts. (*Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236-37.) Approving a project without obtaining that information constitutes a failure to proceed in the manner prescribed by CEQA. (*Id.* at p. 1236.)

Moreover, a lead agency can save significant time and money by consulting with the air district early in the process. For example, the lead agency can learn what the air district recommends as an appropriate analysis on the facts of its case, including what kinds of health impacts analysis may be available, and what models are appropriate for use. This saves the lead agency from the need to do its analysis all over again and possibly needing to recirculate the document after errors are corrected, if new significant impacts are identified. (CEQA Guidelines § 15088.5(a).) At the same time, the air district's expert input can help the lead agency properly determine whether another commenter's request for additional analysis or studies is reasonable or feasible. Finally, the air district can provide input on what mitigation measures would be feasible and effective.

Therefore, we suggest that this Court provide guidance to lead agencies reminding them of the importance of consulting with the relevant air districts regarding these issues. Otherwise, their feasibility decisions may be vulnerable to air district evidence that establishes that there is no substantial evidence to support the lead agency decision not to provide specific analysis. (*See Berkeley Keep Jets Over the Bay, supra,* 91 Cal.App.4th 1344, 1369-1371.)

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guidelines would necessarily be continually modified to reflect new developments. Therefore we believe that, had the trial court not already ordered the lead agency to obtain the air district's views, the failure to give notice would have been prejudicial, as in *Fall River, supra,* 70 Cal.App.4th 482, 492.

CONCLUSION

The SCAQMD respectfully requests this Court *not* to establish a hard-and-fast rule concerning whether CEQA requires a lead agency to correlate identified air quality impacts of a project with resulting health outcomes. Moreover, the question of whether an EIR is "sufficient as an informational document" is a mixed question of fact and law containing two levels of inquiry. Whether a particular proposed analysis is feasible is predominantly a question of fact to be judged by the substantial evidence standard of review. Where the requested analysis is feasible, but the lead agency relies on legal or policy reasons not to provide it, the question of whether the EIR is nevertheless sufficient as an informational document is predominantly a question of law to be judged by the independent judgment standard of review.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT
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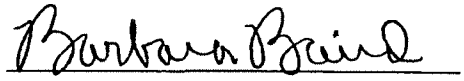
CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.520(c)(1) of the California Rules of Court, I hereby certify that this brief contains 8,476 words, including footnotes, but excluding the Application, Table of Contents, Table of Authorities, Certificate of Service, this Certificate of Word Count, and signature blocks. I have relied on the word count of the Microsoft Word Vista program used to prepare this Certificate.

DATED: April 3, 2015 Respectfully submitted,



Barbara Baird

PROOF OF SERVICE

I am employed in the County of Los Angeles, California. I am over the age of 18 years and not a party to the within action. My business address is 21865 Copley Drive, Diamond Bar, California 91765.

On April 3, 2015 I served true copies of the following document(s) described as **APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*** by placing a true copy of the foregoing document(s) in a sealed envelope addressed as set forth on the attached service list as follows:

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing following our ordinary business practices. I am readily familiar with this District's practice for collection and processing of correspondence for mailing. Under that practice, the correspondence would be deposited with the United States Postal Service, with postage thereon fully prepaid at Diamond Bar, California, in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on April 3, 2015 at Diamond Bar, California.

Patricia Anderson

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