

**PROPONENT'S ENVIRONMENTAL ASSESSMENT  
SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT**

**VOLUME II: APPENDICES**

Application No. 15-xx-xxx

Prepared for

**NextEra Energy Transmission West, LLC**  
700 Universe Boulevard  
Juno Beach, Florida 33408  
Michael Sheehan (Executive Director, Development)  
(561) 304-5243

Prepared by

**SWCA Environmental Consultants**  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019  
(650) 440-4160  
[www.swca.com](http://www.swca.com)

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**Appendix A:**  
**Confidential Submittals**



## **Appendix A-1:**

### **Confidential Existing Transmission Facilities Map**

*This appendix has been redacted from the public version of this report  
because it contains confidential site information.*



## **Appendix A-2:**

### **Confidential Cultural Resources Survey Results Location Maps and Site Records**

*This appendix has been redacted from the public version of this report  
because it contains confidential site information.*



**Appendix B:**  
**Photographs of Key Observation Points**





**KOP 3.** View looking east from Bell Bluff Truck Trail at the entrance to the Suncrest Substation.



**KOP 6.** View looking east at Bell Bluff Truck Trail and the Wilson Laydown Yard.





**KOP 7.** View along Bell Bluff Truck Trail looking southwest at the Wilson Laydown Yard.



**KOP 8.** View looking west along Bell Bluff Truck, 0.25 mile northeast of the Wilson Laydown Yard.





**KOP 9.** View looking west at the southeast corner of the Wilson Laydown Yard.



**KOP 10.** View looking southwest at the eastbound I-8 scenic viewpoint; Sunrise Powerlink 230 kV transmission line towers are visible along the ridges on the right side of photograph.





**KOP 11.** View looking northeast along Japatul Valley Road, 3 miles south of Proposed Project; existing Suncrest Substation is visible along the ridgeline on the left of the photograph.



**KOP 12.** View looking north from the nearest residence's western property line to the Proposed Project; Wilson Laydown Yard is visible in center of photograph.





**KOP 13.** View looking north along Japatul Lane, showing the Suncrest Substation and Sunrise Powerlink 230 kV transmission line structures.



**KOP 14.** View looking north along Japatul Lane towards the Suncrest Substation.





**KOP 15.** View looking northwest at the intersection of Vista Esperanza Lane and Japatul Valley Road, showing the existing Suncrest Substation and Sunrise Powerlink 230 kV transmission line structures.



**KOP 16.** View looking west along Japatul Highlands Road; existing Sunrise Powerlink 230 kV transmission line and the Suncrest Substation visible in center of photograph.





**KOP 17.** View looking west along Avenida De Los Arboles (Bell Bluff Truck Trail), 1.3 miles east of Proposed Project SVC area; existing Sunrise Powerlink 230-kV transmission line structure which connects to the Suncrest Substation is visible on the right of photograph.



**Appendix C:**  
**Air Quality Calculations**



## Suncrest Reactive Power Support Project

### San Diego County, Annual

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	90.00	1000sqft	12.00	90,000.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Rural	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	40
<b>Climate Zone</b>	13			<b>Operational Year</b>	2018
<b>Utility Company</b>	San Diego Gas & Electric				
<b>CO2 Intensity (lb/MW hr)</b>	720.49	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage setup to 12

Construction Phase - Construction Schedule from Suncrest Construction Plan 071315

Off-road Equipment - Equipment Roster

Off-road Equipment - Splice truck

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster



Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Test truck

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Trips and VMT - 3,500 cubic yards of spoils will need to be hauled offsite = 438 trips \* 8 cubic yards/trip

Grading -

Vehicle Trips - Assumes one (1) trip per day

Water And Wastewater - Unmanned facility, No planned indoor water use

Solid Waste - Unmanned facility, No solid waste generation

Land Use Change -

Construction Off-road Equipment Mitigation - All Engines are assumed to comply with Tier 2 engine

Area Mitigation - Low VOC paint

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[illegible]



[illegible]



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## 2.0 Emissions Summary

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## 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					
2016	0.9418	10.5630	5.5484	0.0140	0.2579	0.4446	0.7025	0.0972	0.4120	0.5091	0.0000	1,287.915 2	1,287.915 2	0.2918	0.0000	1,294.043 2
2017	0.4489	4.8833	2.7230	7.1200e-003	0.0817	0.2045	0.2862	0.0206	0.1899	0.2104	0.0000	643.6559	643.6559	0.1549	0.0000	646.9090
Total	1.3908	15.4463	8.2714	0.0211	0.3396	0.6491	0.9887	0.1177	0.6018	0.7196	0.0000	1,931.571 1	1,931.571 1	0.4467	0.0000	1,940.952 2

### 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					
2016	0.3510	9.3234	6.6296	0.0140	0.1903	0.2317	0.4220	0.0625	0.2305	0.2929	0.0000	1,287.9140	1,287.9140	0.2918	0.0000	1,294.0420
2017	0.1803	4.8134	3.5312	7.1200e-003	0.0755	0.1221	0.1975	0.0199	0.1217	0.1416	0.0000	643.6553	643.6553	0.1549	0.0000	646.9084
Total	0.5312	14.1369	10.1608	0.0211	0.2658	0.3537	0.6195	0.0824	0.3521	0.4345	0.0000	1,931.5693	1,931.5693	0.4467	0.0000	1,940.9504

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	61.80	8.48	-22.84	0.00	21.75	45.50	37.34	30.03	41.49	39.61	0.00	0.00	0.00	0.00	0.00	0.00



**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	0.4559	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7000e-003
Energy	5.7200e-003	0.0520	0.0437	3.1000e-004		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	321.3394	321.3394	0.0117	3.2400e-003	322.5912
Mobile	0.0549	0.1314	0.5847	1.4300e-003	0.0988	1.7500e-003	0.1006	0.0264	1.6100e-003	0.0280	0.0000	106.4810	106.4810	4.2800e-003	0.0000	106.5709
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
<b>Total</b>	<b>0.5165</b>	<b>0.1834</b>	<b>0.6293</b>	<b>1.7400e-003</b>	<b>0.0988</b>	<b>5.7000e-003</b>	<b>0.1045</b>	<b>0.0264</b>	<b>5.5600e-003</b>	<b>0.0320</b>	<b>0.0000</b>	<b>427.8220</b>	<b>427.8220</b>	<b>0.0160</b>	<b>3.2400e-003</b>	<b>429.1638</b>







## 2.3 Vegetation

### Vegetation

		CO2e
Category		MT
Vegetation Land Change	...	-8.6200
Total		-8.6200

## 3.0 Construction Detail

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### Construction Phase



Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Field Survey	Site Preparation	8/1/2016	8/15/2016	7	15	Surveying includes setting up survey equipment, taking measurements, and installing stakes
2	SDG&E Site preparation	Site Preparation	9/1/2016	10/31/2016	7	61	SDG&E Site preparation phase
3	SVC Site Grading	Grading	9/1/2016	9/30/2016	7	30	Site earthwork and grading.
4	Trenching	Trenching	9/1/2016	12/10/2016	7	101	Trench will be approximately 30" wide by 60" deep.
5	Set SVC Substation Foundations	Building Construction	10/1/2016	11/20/2016	7	51	Auguring holes, removing soil, and foundation forming.
6	Material delivery	Building Construction	10/7/2016	1/15/2017	7	101	Material haul, transporting material to the site.
7	Substation construction	Building Construction	10/31/2016	3/10/2017	7	131	Install equipment, structural steel and bus work.
8	Structure Erection	Building Construction	11/1/2016	12/31/2016	7	61	SDG&E Suncrest Substation Structure and Equipment erection
9	Install Vaults	Building Construction	12/11/2016	1/9/2017	7	30	Excavate hole for vault, install vault sections, backfill with concrete
10	Install Transmission line foundations	Building Construction	12/31/2016	1/15/2017	7	16	Foundation installation includes auguring holes, remove soil and foundation formation.
11	Install duct package	Building Construction	1/10/2017	2/28/2017	7	50	Install approximately 100 feet of duct/day
12	Wire Stringing	Building Construction	1/15/2017	1/27/2017	5	10	Wire Stringing into SDG&E Suncrest Substation
13	Transformer & SVC Delivery	Building Construction	1/16/2017	1/30/2017	7	15	Install transformer and SVC
14	Pull cable	Building Construction	3/1/2017	3/21/2017	7	21	6 pulls at 850feet each
15	Install cable splices	Building Construction	3/22/2017	4/22/2017	7	32	Install cable splice. Assume 16 hours/day
16	Right-of-way restoration and cleanup	Site Preparation	4/15/2017	6/15/2017	7	62	Restore back to natural state, removing culverts, restoring original grade, seeding area with native plants
17	Test cable splices	Building Construction	4/23/2017	4/24/2017	7	2	Test cable splices per accepted standards and techniques.

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Note: This is a known issue with CalEEMod. Even though the emissions are calculated appropriately, the output file always shows "0" here, regardless of the actual calculation.



**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Field Survey	Off-Highway Trucks	0	10.00	400	0.38
Field Survey	Rubber Tired Dozers	0	8.00	255	0.40
Field Survey	Tractors/Loaders/Backhoes	0	8.00	97	0.37
SDG&E Site preparation	Bore/Drill Rigs	1	5.00	205	0.50
SDG&E Site preparation	Cranes	1	2.50	226	0.29
SDG&E Site preparation	Excavators	1	7.00	162	0.38
SDG&E Site preparation	Off-Highway Trucks	2	10.00	400	0.38
SDG&E Site preparation	Off-Highway Trucks	2	3.00	400	0.38
SDG&E Site preparation	Rubber Tired Dozers	0	8.00	255	0.40
SDG&E Site preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
SVC Site Grading	Dumpers/Tenders	1	9.00	16	0.38
SVC Site Grading	Dumpers/Tenders	10	5.00	16	0.38
SVC Site Grading	Excavators	0	8.00	162	0.38
SVC Site Grading	Graders	1	9.00	174	0.41
SVC Site Grading	Off-Highway Trucks	1	10.00	400	0.38
SVC Site Grading	Rollers	2	5.00	80	0.38
SVC Site Grading	Rubber Tired Dozers	1	9.00	255	0.40
SVC Site Grading	Rubber Tired Loaders	1	9.00	199	0.36
SVC Site Grading	Scrapers	0	8.00	361	0.48
SVC Site Grading	Tractors/Loaders/Backhoes	1	9.00	97	0.37
Trenching	Dumpers/Tenders	1	10.00	16	0.38
Trenching	Off-Highway Trucks	1	10.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Trenching	Trenchers	1	10.00	80	0.50



Set SVC Substation Foundations	Bore/Drill Rigs	1	5.00	205	0.50
Set SVC Substation Foundations	Cranes	1	3.00	226	0.29
Set SVC Substation Foundations	Excavators	1	9.00	162	0.38
Set SVC Substation Foundations	Forklifts	0	8.00	89	0.20
Set SVC Substation Foundations	Generator Sets	1	8.00	84	0.74
Set SVC Substation Foundations	Off-Highway Trucks	1	10.00	400	0.38
Set SVC Substation Foundations	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Set SVC Substation Foundations	Welders	0	8.00	46	0.45
Material delivery	Cranes	2	5.00	226	0.29
Material delivery	Forklifts	1	5.00	89	0.20
Material delivery	Generator Sets	0	8.00	84	0.74
Material delivery	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Material delivery	Welders	0	8.00	46	0.45
Substation construction	Cranes	1	7.50	226	0.29
Substation construction	Forklifts	0	8.00	89	0.20
Substation construction	Generator Sets	1	8.00	84	0.74
Substation construction	Off-Highway Trucks	2	10.00	400	0.38
Substation construction	Off-Highway Trucks	2	5.00	400	0.38
Substation construction	Tractors/Loaders/Backhoes	1	2.50	97	0.37
Substation construction	Welders	0	8.00	46	0.45
Structure Erection	Cranes	2	5.00	226	0.29
Structure Erection	Forklifts	0	8.00	89	0.20
Structure Erection	Generator Sets	1	8.00	84	0.74
Structure Erection	Off-Highway Trucks	5	10.00	400	0.38
Structure Erection	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Structure Erection	Welders	0	8.00	46	0.45
Install Vaults	Cranes	0	7.00	226	0.29
Install Vaults	Forklifts	0	8.00	89	0.20



Install Vaults	Generator Sets	1	8.00	84	0.74
Install Vaults	Off-Highway Trucks	3	10.00	400	0.38
Install Vaults	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Install Vaults	Welders	0	8.00	46	0.45
Install Transmission line foundations	Bore/Drill Rigs	1	5.00	205	0.50
Install Transmission line foundations	Cranes	1	2.50	226	0.29
Install Transmission line foundations	Excavators	1	7.00	162	0.38
Install Transmission line foundations	Forklifts	0	8.00	89	0.20
Install Transmission line foundations	Generator Sets	1	8.00	84	0.74
Install Transmission line foundations	Off-Highway Trucks	2	10.00	400	0.38
Install Transmission line foundations	Off-Highway Trucks	2	3.00	400	0.38
Install Transmission line foundations	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install Transmission line foundations	Welders	0	8.00	46	0.45
Install duct package	Cranes	0	7.00	226	0.29
Install duct package	Forklifts	0	8.00	89	0.20
Install duct package	Generator Sets	1	8.00	84	0.74
Install duct package	Off-Highway Trucks	2	7.50	400	0.38
Install duct package	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install duct package	Welders	0	8.00	46	0.45
Wire Stringing	Cranes	1	1.00	226	0.29
Wire Stringing	Forklifts	0	8.00	89	0.20
Wire Stringing	Generator Sets	0	8.00	84	0.74
Wire Stringing	Off-Highway Trucks	3	10.00	400	0.38
Wire Stringing	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Wire Stringing	Welders	0	8.00	46	0.45
Transformer & SVC Delivery	Cranes	1	2.50	226	0.29
Transformer & SVC Delivery	Forklifts	0	8.00	89	0.20
Transformer & SVC Delivery	Generator Sets	0	8.00	84	0.74



Transformer & SVC Delivery	Tractors/Loaders/Backhoes	1	2.50	97	0.37
Transformer & SVC Delivery	Welders	0	8.00	46	0.45
Pull cable	Cranes	0	7.00	226	0.29
Pull cable	Forklifts	0	8.00	89	0.20
Pull cable	Generator Sets	0	8.00	84	0.74
Pull cable	Off-Highway Trucks	1	10.00	400	0.38
Pull cable	Other General Industrial Equipment	3	10.00	87	0.34
Pull cable	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Pull cable	Welders	0	8.00	46	0.45
Install cable splices	Cranes	0	7.00	226	0.29
Install cable splices	Forklifts	0	8.00	89	0.20
Install cable splices	Generator Sets	0	8.00	84	0.74
Install cable splices	Other Material Handling Equipment	1	16.00	167	0.40
Install cable splices	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install cable splices	Welders	0	8.00	46	0.45
Right-of-way restoration and cleanup	Excavators	1	5.00	162	0.38
Right-of-way restoration and cleanup	Graders	1	5.00	174	0.41
Right-of-way restoration and cleanup	Off-Highway Trucks	1	10.00	400	0.38
Right-of-way restoration and cleanup	Off-Highway Trucks	1	10.00	400	0.38
Right-of-way restoration and cleanup	Rubber Tired Dozers	0	8.00	255	0.40
Right-of-way restoration and cleanup	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Test cable splices	Cranes	0	7.00	226	0.29
Test cable splices	Forklifts	0	8.00	89	0.20
Test cable splices	Generator Sets	0	8.00	84	0.74
Test cable splices	Other General Industrial Equipment	1	10.00	87	0.34
Test cable splices	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Test cable splices	Welders	0	8.00	46	0.45



**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Field Survey	0	3.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
SDG&E Site Preparation	7	9.00	5.00	0.00	65.00	91.00	65.00	LD_Mix	HDT_Mix	HHDT
SVC Site Grading	18	18.00	12.00	438.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Set SVC Substation Foundations	5	6.00	2.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Material delivery	4	3.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Substation construction	7	8.00	6.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Structure Erection	9	8.00	9.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install Vaults	5	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install Transmission line foundations	8	5.00	5.00	0.00	65.00	143.00	65.00	LD_Mix	HDT_Mix	HHDT
Install duct package	3	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Wire Stringing	5	15.00	6.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Transformer & SVC Delivery	2	5.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Pull cable	4	10.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install cable splices	1	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Right-of-way restoration and cleanup	4	6.00	3.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Test cable splices	1	3.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

Note: The format of this table is not editable by the end user, but several Phase Names have been truncated to fit into the table. The truncated phases are, in order:  
SDG&E Site Preparation  
Set SVC Substation Foundations  
Substation Construction  
Install Transmission Line Foundations  
Transformer & SVC Delivery  
Right-of-way restoration and cleanup



### 3.2 Field Survey - 2016

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

#### 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	3.0000e-004	5.2700e-003	2.3700e-003	1.0000e-005	4.3000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.1000e-004	0.0000	1.3481	1.3481	1.0000e-005	0.0000	1.3483
Worker	1.9000e-004	5.5000e-004	4.9500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9883	0.9883	5.0000e-005	0.0000	0.9893
<b>Total</b>	<b>4.9000e-004</b>	<b>5.8200e-003</b>	<b>7.3200e-003</b>	<b>2.0000e-005</b>	<b>1.5100e-003</b>	<b>1.0000e-004</b>	<b>1.6200e-003</b>	<b>4.1000e-004</b>	<b>9.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>2.3364</b>	<b>2.3364</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>2.3376</b>



### 3.2 Field Survey - 2016

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

#### 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	3.0000e-004	5.2700e-003	2.3700e-003	1.0000e-005	4.3000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.1000e-004	0.0000	1.3481	1.3481	1.0000e-005	0.0000	1.3483
Worker	1.9000e-004	5.5000e-004	4.9500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9883	0.9883	5.0000e-005	0.0000	0.9893
<b>Total</b>	<b>4.9000e-004</b>	<b>5.8200e-003</b>	<b>7.3200e-003</b>	<b>2.0000e-005</b>	<b>1.5100e-003</b>	<b>1.0000e-004</b>	<b>1.6200e-003</b>	<b>4.1000e-004</b>	<b>9.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>2.3364</b>	<b>2.3364</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>2.3376</b>



### 3.3 SDG&E Site preparation - 2016

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1172	1.3753	0.6600	1.6700e-003		0.0530	0.0530		0.0488	0.0488	0.0000	156.9936	156.9936	0.0474	0.0000	157.9880
<b>Total</b>	<b>0.1172</b>	<b>1.3753</b>	<b>0.6600</b>	<b>1.6700e-003</b>	<b>0.0000</b>	<b>0.0530</b>	<b>0.0530</b>	<b>0.0000</b>	<b>0.0488</b>	<b>0.0488</b>	<b>0.0000</b>	<b>156.9936</b>	<b>156.9936</b>	<b>0.0474</b>	<b>0.0000</b>	<b>157.9880</b>

#### 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	8.1500e-003	0.1489	0.0606	4.2000e-004	0.0123	2.6200e-003	0.0149	3.5200e-003	2.4100e-003	5.9300e-003	0.0000	38.2805	38.2805	2.6000e-004	0.0000	38.2861
Worker	2.3700e-003	6.7300e-003	0.0604	1.6000e-004	0.0132	9.0000e-005	0.0133	3.5200e-003	8.0000e-005	3.6000e-003	0.0000	12.0566	12.0566	6.1000e-004	0.0000	12.0693
<b>Total</b>	<b>0.0105</b>	<b>0.1556</b>	<b>0.1210</b>	<b>5.8000e-004</b>	<b>0.0256</b>	<b>2.7100e-003</b>	<b>0.0283</b>	<b>7.0400e-003</b>	<b>2.4900e-003</b>	<b>9.5300e-003</b>	<b>0.0000</b>	<b>50.3371</b>	<b>50.3371</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>50.3554</b>



### 3.3 SDG&E Site preparation - 2016

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0429	1.3167	0.9164	1.6700e-003		0.0311	0.0311		0.0311	0.0311	0.0000	156.9934	156.9934	0.0474	0.0000	157.9878
<b>Total</b>	<b>0.0429</b>	<b>1.3167</b>	<b>0.9164</b>	<b>1.6700e-003</b>	<b>0.0000</b>	<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>156.9934</b>	<b>156.9934</b>	<b>0.0474</b>	<b>0.0000</b>	<b>157.9878</b>

#### 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	8.1500e-003	0.1489	0.0606	4.2000e-004	0.0123	2.6200e-003	0.0149	3.5200e-003	2.4100e-003	5.9300e-003	0.0000	38.2805	38.2805	2.6000e-004	0.0000	38.2861
Worker	2.3700e-003	6.7300e-003	0.0604	1.6000e-004	0.0132	9.0000e-005	0.0133	3.5200e-003	8.0000e-005	3.6000e-003	0.0000	12.0566	12.0566	6.1000e-004	0.0000	12.0693
<b>Total</b>	<b>0.0105</b>	<b>0.1556</b>	<b>0.1210</b>	<b>5.8000e-004</b>	<b>0.0256</b>	<b>2.7100e-003</b>	<b>0.0283</b>	<b>7.0400e-003</b>	<b>2.4900e-003</b>	<b>9.5300e-003</b>	<b>0.0000</b>	<b>50.3371</b>	<b>50.3371</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>50.3554</b>



**3.4 SVC Site Grading - 2016****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					0.1108	0.0000	0.1108	0.0569	0.0000	0.0569	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0844	0.8870	0.4921	7.9000e-004		0.0427	0.0427		0.0395	0.0395	0.0000	72.7756	72.7756	0.0208	0.0000	73.2118
<b>Total</b>	<b>0.0844</b>	<b>0.8870</b>	<b>0.4921</b>	<b>7.9000e-004</b>	<b>0.1108</b>	<b>0.0427</b>	<b>0.1536</b>	<b>0.0569</b>	<b>0.0395</b>	<b>0.0963</b>	<b>0.0000</b>	<b>72.7756</b>	<b>72.7756</b>	<b>0.0208</b>	<b>0.0000</b>	<b>73.2118</b>

**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	9.9900e-003	0.1954	0.0850	5.2000e-004	0.0121	2.7000e-003	0.0148	3.3300e-003	2.4800e-003	5.8100e-003	0.0000	47.8357	47.8357	3.2000e-004	0.0000	47.8425
Vendor	7.2700e-003	0.1266	0.0570	3.5000e-004	0.0104	2.2100e-003	0.0126	2.9700e-003	2.0300e-003	5.0000e-003	0.0000	32.3544	32.3544	2.2000e-004	0.0000	32.3591
Worker	2.3300e-003	6.6200e-003	0.0594	1.6000e-004	0.0130	9.0000e-005	0.0131	3.4600e-003	8.0000e-005	3.5400e-003	0.0000	11.8590	11.8590	6.0000e-004	0.0000	11.8715
<b>Total</b>	<b>0.0196</b>	<b>0.3286</b>	<b>0.2013</b>	<b>1.0300e-003</b>	<b>0.0355</b>	<b>5.0000e-003</b>	<b>0.0405</b>	<b>9.7600e-003</b>	<b>4.5900e-003</b>	<b>0.0144</b>	<b>0.0000</b>	<b>92.0491</b>	<b>92.0491</b>	<b>1.1400e-003</b>	<b>0.0000</b>	<b>92.0731</b>



**3.4 SVC Site Grading - 2016****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					0.0432	0.0000	0.0432	0.0222	0.0000	0.0222	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0210	0.5920	0.4203	7.9000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	72.7755	72.7755	0.0208	0.0000	73.2117
<b>Total</b>	<b>0.0210</b>	<b>0.5920</b>	<b>0.4203</b>	<b>7.9000e-004</b>	<b>0.0432</b>	<b>0.0157</b>	<b>0.0589</b>	<b>0.0222</b>	<b>0.0157</b>	<b>0.0379</b>	<b>0.0000</b>	<b>72.7755</b>	<b>72.7755</b>	<b>0.0208</b>	<b>0.0000</b>	<b>73.2117</b>

**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	9.9900e-003	0.1954	0.0850	5.2000e-004	0.0121	2.7000e-003	0.0148	3.3300e-003	2.4800e-003	5.8100e-003	0.0000	47.8357	47.8357	3.2000e-004	0.0000	47.8425
Vendor	7.2700e-003	0.1266	0.0570	3.5000e-004	0.0104	2.2100e-003	0.0126	2.9700e-003	2.0300e-003	5.0000e-003	0.0000	32.3544	32.3544	2.2000e-004	0.0000	32.3591
Worker	2.3300e-003	6.6200e-003	0.0594	1.6000e-004	0.0130	9.0000e-005	0.0131	3.4600e-003	8.0000e-005	3.5400e-003	0.0000	11.8590	11.8590	6.0000e-004	0.0000	11.8715
<b>Total</b>	<b>0.0196</b>	<b>0.3286</b>	<b>0.2013</b>	<b>1.0300e-003</b>	<b>0.0355</b>	<b>5.0000e-003</b>	<b>0.0405</b>	<b>9.7600e-003</b>	<b>4.5900e-003</b>	<b>0.0144</b>	<b>0.0000</b>	<b>92.0491</b>	<b>92.0491</b>	<b>1.1400e-003</b>	<b>0.0000</b>	<b>92.0731</b>



**3.5 Trenching - 2016****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	0.1207	1.2275	0.6648	1.2900e-003		0.0670	0.0670		0.0617	0.0617	0.0000	120.8994	120.8994	0.0358	0.0000	121.6511
<b>Total</b>	<b>0.1207</b>	<b>1.2275</b>	<b>0.6648</b>	<b>1.2900e-003</b>		<b>0.0670</b>	<b>0.0670</b>		<b>0.0617</b>	<b>0.0617</b>	<b>0.0000</b>	<b>120.8994</b>	<b>120.8994</b>	<b>0.0358</b>	<b>0.0000</b>	<b>121.6511</b>

**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	2.1800e-003	6.1900e-003	0.0555	1.5000e-004	0.0122	8.0000e-005	0.0123	3.2300e-003	8.0000e-005	3.3100e-003	0.0000	11.0903	11.0903	5.6000e-004	0.0000	11.1020
<b>Total</b>	<b>2.1800e-003</b>	<b>6.1900e-003</b>	<b>0.0555</b>	<b>1.5000e-004</b>	<b>0.0122</b>	<b>8.0000e-005</b>	<b>0.0123</b>	<b>3.2300e-003</b>	<b>8.0000e-005</b>	<b>3.3100e-003</b>	<b>0.0000</b>	<b>11.0903</b>	<b>11.0903</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>11.1020</b>



**3.5 Trenching - 2016****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	0.0397	1.0427	0.7526	1.2900e-003		0.0311	0.0311		0.0311	0.0311	0.0000	120.8992	120.8992	0.0358	0.0000	121.6509
<b>Total</b>	<b>0.0397</b>	<b>1.0427</b>	<b>0.7526</b>	<b>1.2900e-003</b>		<b>0.0311</b>	<b>0.0311</b>		<b>0.0311</b>	<b>0.0311</b>	<b>0.0000</b>	<b>120.8992</b>	<b>120.8992</b>	<b>0.0358</b>	<b>0.0000</b>	<b>121.6509</b>

**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	2.1800e-003	6.1900e-003	0.0555	1.5000e-004	0.0122	8.0000e-005	0.0123	3.2300e-003	8.0000e-005	3.3100e-003	0.0000	11.0903	11.0903	5.6000e-004	0.0000	11.1020
<b>Total</b>	<b>2.1800e-003</b>	<b>6.1900e-003</b>	<b>0.0555</b>	<b>1.5000e-004</b>	<b>0.0122</b>	<b>8.0000e-005</b>	<b>0.0123</b>	<b>3.2300e-003</b>	<b>8.0000e-005</b>	<b>3.3100e-003</b>	<b>0.0000</b>	<b>11.0903</b>	<b>11.0903</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>11.1020</b>



### 3.6 Set SVC Substation Foundations - 2016

#### 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	0.0699	0.7615	0.4176	9.3000e-004		0.0341	0.0341		0.0321	0.0321	0.0000	86.4586	86.4586	0.0231	0.0000	86.9427
<b>Total</b>	<b>0.0699</b>	<b>0.7615</b>	<b>0.4176</b>	<b>9.3000e-004</b>		<b>0.0341</b>	<b>0.0341</b>		<b>0.0321</b>	<b>0.0321</b>	<b>0.0000</b>	<b>86.4586</b>	<b>86.4586</b>	<b>0.0231</b>	<b>0.0000</b>	<b>86.9427</b>

#### 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	2.0600e-003	0.0359	0.0161	1.0000e-004	2.9400e-003	6.3000e-004	3.5700e-003	8.4000e-004	5.8000e-004	1.4200e-003	0.0000	9.1671	9.1671	6.0000e-005	0.0000	9.1684
Worker	1.3200e-003	3.7500e-003	0.0337	9.0000e-005	7.3800e-003	5.0000e-005	7.4300e-003	1.9600e-003	5.0000e-005	2.0100e-003	0.0000	6.7201	6.7201	3.4000e-004	0.0000	6.7272
<b>Total</b>	<b>3.3800e-003</b>	<b>0.0396</b>	<b>0.0498</b>	<b>1.9000e-004</b>	<b>0.0103</b>	<b>6.8000e-004</b>	<b>0.0110</b>	<b>2.8000e-003</b>	<b>6.3000e-004</b>	<b>3.4300e-003</b>	<b>0.0000</b>	<b>15.8872</b>	<b>15.8872</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>15.8956</b>



### 3.6 Set SVC Substation Foundations - 2016

#### 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	0.0274	0.7520	0.5445	9.3000e-004		0.0204	0.0204		0.0204	0.0204	0.0000	86.4585	86.4585	0.0231	0.0000	86.9426
<b>Total</b>	<b>0.0274</b>	<b>0.7520</b>	<b>0.5445</b>	<b>9.3000e-004</b>		<b>0.0204</b>	<b>0.0204</b>		<b>0.0204</b>	<b>0.0204</b>	<b>0.0000</b>	<b>86.4585</b>	<b>86.4585</b>	<b>0.0231</b>	<b>0.0000</b>	<b>86.9426</b>

#### 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	2.0600e-003	0.0359	0.0161	1.0000e-004	2.9400e-003	6.3000e-004	3.5700e-003	8.4000e-004	5.8000e-004	1.4200e-003	0.0000	9.1671	9.1671	6.0000e-005	0.0000	9.1684
Worker	1.3200e-003	3.7500e-003	0.0337	9.0000e-005	7.3800e-003	5.0000e-005	7.4300e-003	1.9600e-003	5.0000e-005	2.0100e-003	0.0000	6.7201	6.7201	3.4000e-004	0.0000	6.7272
<b>Total</b>	<b>3.3800e-003</b>	<b>0.0396</b>	<b>0.0498</b>	<b>1.9000e-004</b>	<b>0.0103</b>	<b>6.8000e-004</b>	<b>0.0110</b>	<b>2.8000e-003</b>	<b>6.3000e-004</b>	<b>3.4300e-003</b>	<b>0.0000</b>	<b>15.8872</b>	<b>15.8872</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>15.8956</b>



**3.7 Material delivery - 2016****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	0.0540	0.5985	0.2592	4.3000e-004		0.0319	0.0319		0.0294	0.0294	0.0000	40.3467	40.3467	0.0122	0.0000	40.6023
<b>Total</b>	<b>0.0540</b>	<b>0.5985</b>	<b>0.2592</b>	<b>4.3000e-004</b>		<b>0.0319</b>	<b>0.0319</b>		<b>0.0294</b>	<b>0.0294</b>	<b>0.0000</b>	<b>40.3467</b>	<b>40.3467</b>	<b>0.0122</b>	<b>0.0000</b>	<b>40.6023</b>

**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	1.7400e-003	0.0302	0.0136	8.0000e-005	2.4800e-003	5.3000e-004	3.0100e-003	7.1000e-004	4.9000e-004	1.2000e-003	0.0000	7.7291	7.7291	5.0000e-005	0.0000	7.7302
Worker	1.1100e-003	3.1600e-003	0.0284	7.0000e-005	6.2200e-003	4.0000e-005	6.2600e-003	1.6500e-003	4.0000e-005	1.6900e-003	0.0000	5.6660	5.6660	2.8000e-004	0.0000	5.6719
<b>Total</b>	<b>2.8500e-003</b>	<b>0.0334</b>	<b>0.0420</b>	<b>1.5000e-004</b>	<b>8.7000e-003</b>	<b>5.7000e-004</b>	<b>9.2700e-003</b>	<b>2.3600e-003</b>	<b>5.3000e-004</b>	<b>2.8900e-003</b>	<b>0.0000</b>	<b>13.3951</b>	<b>13.3951</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>13.4022</b>



**3.7 Material delivery - 2016****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	0.0133	0.3787	0.2557	4.3000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	40.3466	40.3466	0.0122	0.0000	40.6022
<b>Total</b>	<b>0.0133</b>	<b>0.3787</b>	<b>0.2557</b>	<b>4.3000e-004</b>		<b>0.0104</b>	<b>0.0104</b>		<b>0.0104</b>	<b>0.0104</b>	<b>0.0000</b>	<b>40.3466</b>	<b>40.3466</b>	<b>0.0122</b>	<b>0.0000</b>	<b>40.6022</b>

**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	1.7400e-003	0.0302	0.0136	8.0000e-005	2.4800e-003	5.3000e-004	3.0100e-003	7.1000e-004	4.9000e-004	1.2000e-003	0.0000	7.7291	7.7291	5.0000e-005	0.0000	7.7302
Worker	1.1100e-003	3.1600e-003	0.0284	7.0000e-005	6.2200e-003	4.0000e-005	6.2600e-003	1.6500e-003	4.0000e-005	1.6900e-003	0.0000	5.6660	5.6660	2.8000e-004	0.0000	5.6719
<b>Total</b>	<b>2.8500e-003</b>	<b>0.0334</b>	<b>0.0420</b>	<b>1.5000e-004</b>	<b>8.7000e-003</b>	<b>5.7000e-004</b>	<b>9.2700e-003</b>	<b>2.3600e-003</b>	<b>5.3000e-004</b>	<b>2.8900e-003</b>	<b>0.0000</b>	<b>13.3951</b>	<b>13.3951</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>13.4022</b>



**3.7 Material delivery - 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	8.5500e-003	0.0950	0.0429	7.0000e-005		4.9900e-003	4.9900e-003		4.6000e-003	4.6000e-003	0.0000	6.9272	6.9272	2.1200e-003	0.0000	6.9718
<b>Total</b>	<b>8.5500e-003</b>	<b>0.0950</b>	<b>0.0429</b>	<b>7.0000e-005</b>		<b>4.9900e-003</b>	<b>4.9900e-003</b>		<b>4.6000e-003</b>	<b>4.6000e-003</b>	<b>0.0000</b>	<b>6.9272</b>	<b>6.9272</b>	<b>2.1200e-003</b>	<b>0.0000</b>	<b>6.9718</b>

**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	2.8000e-004	4.6500e-003	2.2000e-003	1.0000e-005	4.3000e-004	8.0000e-005	5.1000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	1.3253	1.3253	1.0000e-005	0.0000	1.3255
Worker	1.7000e-004	5.0000e-004	4.4500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9500	0.9500	5.0000e-005	0.0000	0.9510
<b>Total</b>	<b>4.5000e-004</b>	<b>5.1500e-003</b>	<b>6.6500e-003</b>	<b>2.0000e-005</b>	<b>1.5100e-003</b>	<b>9.0000e-005</b>	<b>1.6000e-003</b>	<b>4.1000e-004</b>	<b>8.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>2.2753</b>	<b>2.2753</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>2.2765</b>



**3.7 Material delivery - 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	2.3200e-003	0.0661	0.0446	7.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	6.9272	6.9272	2.1200e-003	0.0000	6.9718
<b>Total</b>	<b>2.3200e-003</b>	<b>0.0661</b>	<b>0.0446</b>	<b>7.0000e-005</b>		<b>1.8100e-003</b>	<b>1.8100e-003</b>		<b>1.8100e-003</b>	<b>1.8100e-003</b>	<b>0.0000</b>	<b>6.9272</b>	<b>6.9272</b>	<b>2.1200e-003</b>	<b>0.0000</b>	<b>6.9718</b>

**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	2.8000e-004	4.6500e-003	2.2000e-003	1.0000e-005	4.3000e-004	8.0000e-005	5.1000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	1.3253	1.3253	1.0000e-005	0.0000	1.3255
Worker	1.7000e-004	5.0000e-004	4.4500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9500	0.9500	5.0000e-005	0.0000	0.9510
<b>Total</b>	<b>4.5000e-004</b>	<b>5.1500e-003</b>	<b>6.6500e-003</b>	<b>2.0000e-005</b>	<b>1.5100e-003</b>	<b>9.0000e-005</b>	<b>1.6000e-003</b>	<b>4.1000e-004</b>	<b>8.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>2.2753</b>	<b>2.2753</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>2.2765</b>



**3.8 Substation construction - 2016****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	0.1535	1.6909	0.8155	1.9300e-003		0.0718	0.0718		0.0669	0.0669	0.0000	179.9699	179.9699	0.0506	0.0000	181.0325
<b>Total</b>	<b>0.1535</b>	<b>1.6909</b>	<b>0.8155</b>	<b>1.9300e-003</b>		<b>0.0718</b>	<b>0.0718</b>		<b>0.0669</b>	<b>0.0669</b>	<b>0.0000</b>	<b>179.9699</b>	<b>179.9699</b>	<b>0.0506</b>	<b>0.0000</b>	<b>181.0325</b>

**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	7.5100e-003	0.1308	0.0589	3.7000e-004	0.0107	2.2900e-003	0.0130	3.0700e-003	2.1000e-003	5.1700e-003	0.0000	33.4328	33.4328	2.3000e-004	0.0000	33.4377
Worker	2.1400e-003	6.0800e-003	0.0545	1.4000e-004	0.0120	8.0000e-005	0.0120	3.1800e-003	8.0000e-005	3.2500e-003	0.0000	10.8927	10.8927	5.5000e-004	0.0000	10.9042
<b>Total</b>	<b>9.6500e-003</b>	<b>0.1369</b>	<b>0.1134</b>	<b>5.1000e-004</b>	<b>0.0227</b>	<b>2.3700e-003</b>	<b>0.0251</b>	<b>6.2500e-003</b>	<b>2.1800e-003</b>	<b>8.4200e-003</b>	<b>0.0000</b>	<b>44.3255</b>	<b>44.3255</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>44.3419</b>



### 3.8 Substation construction - 2016

#### 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	0.0507	1.5111	1.0461	1.9300e-003		0.0381	0.0381		0.0381	0.0381	0.0000	179.9697	179.9697	0.0506	0.0000	181.0323
<b>Total</b>	<b>0.0507</b>	<b>1.5111</b>	<b>1.0461</b>	<b>1.9300e-003</b>		<b>0.0381</b>	<b>0.0381</b>		<b>0.0381</b>	<b>0.0381</b>	<b>0.0000</b>	<b>179.9697</b>	<b>179.9697</b>	<b>0.0506</b>	<b>0.0000</b>	<b>181.0323</b>

#### 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	7.5100e-003	0.1308	0.0589	3.7000e-004	0.0107	2.2900e-003	0.0130	3.0700e-003	2.1000e-003	5.1700e-003	0.0000	33.4328	33.4328	2.3000e-004	0.0000	33.4377
Worker	2.1400e-003	6.0800e-003	0.0545	1.4000e-004	0.0120	8.0000e-005	0.0120	3.1800e-003	8.0000e-005	3.2500e-003	0.0000	10.8927	10.8927	5.5000e-004	0.0000	10.9042
<b>Total</b>	<b>9.6500e-003</b>	<b>0.1369</b>	<b>0.1134</b>	<b>5.1000e-004</b>	<b>0.0227</b>	<b>2.3700e-003</b>	<b>0.0251</b>	<b>6.2500e-003</b>	<b>2.1800e-003</b>	<b>8.4200e-003</b>	<b>0.0000</b>	<b>44.3255</b>	<b>44.3255</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>44.3419</b>



**3.8 Substation 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	0.1569	1.7080	0.8513	2.1400e-003		0.0712	0.0712		0.0663	0.0663	0.0000	197.3217	197.3217	0.0561	0.0000	198.4991
<b>Total</b>	<b>0.1569</b>	<b>1.7080</b>	<b>0.8513</b>	<b>2.1400e-003</b>		<b>0.0712</b>	<b>0.0712</b>		<b>0.0663</b>	<b>0.0663</b>	<b>0.0000</b>	<b>197.3217</b>	<b>197.3217</b>	<b>0.0561</b>	<b>0.0000</b>	<b>198.4991</b>

**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	7.6900e-003	0.1284	0.0606	4.1000e-004	0.0120	2.2100e-003	0.0142	3.4200e-003	2.0300e-003	5.4500e-003	0.0000	36.5777	36.5777	2.4000e-004	0.0000	36.5828
Worker	2.0800e-003	6.1600e-003	0.0546	1.6000e-004	0.0133	9.0000e-005	0.0134	3.5300e-003	8.0000e-005	3.6200e-003	0.0000	11.6537	11.6537	5.6000e-004	0.0000	11.6656
<b>Total</b>	<b>9.7700e-003</b>	<b>0.1346</b>	<b>0.1152</b>	<b>5.7000e-004</b>	<b>0.0253</b>	<b>2.3000e-003</b>	<b>0.0276</b>	<b>6.9500e-003</b>	<b>2.1100e-003</b>	<b>9.0700e-003</b>	<b>0.0000</b>	<b>48.2314</b>	<b>48.2314</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>48.2484</b>



### 3.8 Substation 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	0.0564	1.6817	1.1642	2.1400e-003		0.0424	0.0424		0.0424	0.0424	0.0000	197.3215	197.3215	0.0561	0.0000	198.4988
<b>Total</b>	<b>0.0564</b>	<b>1.6817</b>	<b>1.1642</b>	<b>2.1400e-003</b>		<b>0.0424</b>	<b>0.0424</b>		<b>0.0424</b>	<b>0.0424</b>	<b>0.0000</b>	<b>197.3215</b>	<b>197.3215</b>	<b>0.0561</b>	<b>0.0000</b>	<b>198.4988</b>

#### 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	7.6900e-003	0.1284	0.0606	4.1000e-004	0.0120	2.2100e-003	0.0142	3.4200e-003	2.0300e-003	5.4500e-003	0.0000	36.5777	36.5777	2.4000e-004	0.0000	36.5828
Worker	2.0800e-003	6.1600e-003	0.0546	1.6000e-004	0.0133	9.0000e-005	0.0134	3.5300e-003	8.0000e-005	3.6200e-003	0.0000	11.6537	11.6537	5.6000e-004	0.0000	11.6656
<b>Total</b>	<b>9.7700e-003</b>	<b>0.1346</b>	<b>0.1152</b>	<b>5.7000e-004</b>	<b>0.0253</b>	<b>2.3000e-003</b>	<b>0.0276</b>	<b>6.9500e-003</b>	<b>2.1100e-003</b>	<b>9.0700e-003</b>	<b>0.0000</b>	<b>48.2314</b>	<b>48.2314</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>48.2484</b>



**3.9 Structure Erection - 2016****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	0.2291	2.5662	1.2116	2.9500e-003		0.1051	0.1051		0.0975	0.0975	0.0000	276.1248	276.1248	0.0797	0.0000	277.7978
<b>Total</b>	<b>0.2291</b>	<b>2.5662</b>	<b>1.2116</b>	<b>2.9500e-003</b>		<b>0.1051</b>	<b>0.1051</b>		<b>0.0975</b>	<b>0.0975</b>	<b>0.0000</b>	<b>276.1248</b>	<b>276.1248</b>	<b>0.0797</b>	<b>0.0000</b>	<b>277.7978</b>

**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	0.0111	0.1931	0.0869	5.4000e-004	0.0159	3.3700e-003	0.0192	4.5300e-003	3.1000e-003	7.6300e-003	0.0000	49.3404	49.3404	3.4000e-004	0.0000	49.3476
Worker	2.1000e-003	5.9800e-003	0.0537	1.4000e-004	0.0118	8.0000e-005	0.0119	3.1200e-003	7.0000e-005	3.2000e-003	0.0000	10.7170	10.7170	5.4000e-004	0.0000	10.7283
<b>Total</b>	<b>0.0132</b>	<b>0.1990</b>	<b>0.1405</b>	<b>6.8000e-004</b>	<b>0.0276</b>	<b>3.4500e-003</b>	<b>0.0311</b>	<b>7.6500e-003</b>	<b>3.1700e-003</b>	<b>0.0108</b>	<b>0.0000</b>	<b>60.0574</b>	<b>60.0574</b>	<b>8.8000e-004</b>	<b>0.0000</b>	<b>60.0759</b>



### 3.9 Structure Erection - 2016

#### 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	0.0754	2.3015	1.5848	2.9500e-003		0.0562	0.0562		0.0562	0.0562	0.0000	276.1245	276.1245	0.0797	0.0000	277.7975
<b>Total</b>	<b>0.0754</b>	<b>2.3015</b>	<b>1.5848</b>	<b>2.9500e-003</b>		<b>0.0562</b>	<b>0.0562</b>		<b>0.0562</b>	<b>0.0562</b>	<b>0.0000</b>	<b>276.1245</b>	<b>276.1245</b>	<b>0.0797</b>	<b>0.0000</b>	<b>277.7975</b>

#### 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	0.0111	0.1931	0.0869	5.4000e-004	0.0159	3.3700e-003	0.0192	4.5300e-003	3.1000e-003	7.6300e-003	0.0000	49.3404	49.3404	3.4000e-004	0.0000	49.3476
Worker	2.1000e-003	5.9800e-003	0.0537	1.4000e-004	0.0118	8.0000e-005	0.0119	3.1200e-003	7.0000e-005	3.2000e-003	0.0000	10.7170	10.7170	5.4000e-004	0.0000	10.7283
<b>Total</b>	<b>0.0132</b>	<b>0.1990</b>	<b>0.1405</b>	<b>6.8000e-004</b>	<b>0.0276</b>	<b>3.4500e-003</b>	<b>0.0311</b>	<b>7.6500e-003</b>	<b>3.1700e-003</b>	<b>0.0108</b>	<b>0.0000</b>	<b>60.0574</b>	<b>60.0574</b>	<b>8.8000e-004</b>	<b>0.0000</b>	<b>60.0759</b>



**3.10 Install Vaults - 2016****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	0.0483	0.5208	0.2706	6.3000e-004		0.0230	0.0230		0.0214	0.0214	0.0000	58.6129	58.6129	0.0164	0.0000	58.9580
<b>Total</b>	<b>0.0483</b>	<b>0.5208</b>	<b>0.2706</b>	<b>6.3000e-004</b>		<b>0.0230</b>	<b>0.0230</b>		<b>0.0214</b>	<b>0.0214</b>	<b>0.0000</b>	<b>58.6129</b>	<b>58.6129</b>	<b>0.0164</b>	<b>0.0000</b>	<b>58.9580</b>

**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	4.5000e-004	1.2900e-003	0.0116	3.0000e-005	2.5300e-003	2.0000e-005	2.5500e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.3059	2.3059	1.2000e-004	0.0000	2.3083
<b>Total</b>	<b>4.5000e-004</b>	<b>1.2900e-003</b>	<b>0.0116</b>	<b>3.0000e-005</b>	<b>2.5300e-003</b>	<b>2.0000e-005</b>	<b>2.5500e-003</b>	<b>6.7000e-004</b>	<b>2.0000e-005</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>2.3059</b>	<b>2.3059</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.3083</b>



**3.10 Install Vaults - 2016****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	0.0172	0.4942	0.3478	6.3000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	58.6128	58.6128	0.0164	0.0000	58.9579
<b>Total</b>	<b>0.0172</b>	<b>0.4942</b>	<b>0.3478</b>	<b>6.3000e-004</b>		<b>0.0131</b>	<b>0.0131</b>		<b>0.0131</b>	<b>0.0131</b>	<b>0.0000</b>	<b>58.6128</b>	<b>58.6128</b>	<b>0.0164</b>	<b>0.0000</b>	<b>58.9579</b>

**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	4.5000e-004	1.2900e-003	0.0116	3.0000e-005	2.5300e-003	2.0000e-005	2.5500e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.3059	2.3059	1.2000e-004	0.0000	2.3083
<b>Total</b>	<b>4.5000e-004</b>	<b>1.2900e-003</b>	<b>0.0116</b>	<b>3.0000e-005</b>	<b>2.5300e-003</b>	<b>2.0000e-005</b>	<b>2.5500e-003</b>	<b>6.7000e-004</b>	<b>2.0000e-005</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>2.3059</b>	<b>2.3059</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.3083</b>



**3.10 Install Vaults - 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	0.0191	0.2032	0.1095	2.7000e-004		8.8000e-003	8.8000e-003		8.2000e-003	8.2000e-003	0.0000	24.7465	24.7465	7.0100e-003	0.0000	24.8937
<b>Total</b>	<b>0.0191</b>	<b>0.2032</b>	<b>0.1095</b>	<b>2.7000e-004</b>		<b>8.8000e-003</b>	<b>8.8000e-003</b>		<b>8.2000e-003</b>	<b>8.2000e-003</b>	<b>0.0000</b>	<b>24.7465</b>	<b>24.7465</b>	<b>7.0100e-003</b>	<b>0.0000</b>	<b>24.8937</b>

**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	5.0000e-004	4.4500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9500	0.9500	5.0000e-005	0.0000	0.9510
<b>Total</b>	<b>1.7000e-004</b>	<b>5.0000e-004</b>	<b>4.4500e-003</b>	<b>1.0000e-005</b>	<b>1.0800e-003</b>	<b>1.0000e-005</b>	<b>1.0900e-003</b>	<b>2.9000e-004</b>	<b>1.0000e-005</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>0.9500</b>	<b>0.9500</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.9510</b>



**3.10 Install Vaults - 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	7.3800e-003	0.2118	0.1491	2.7000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	24.7465	24.7465	7.0100e-003	0.0000	24.8936
<b>Total</b>	<b>7.3800e-003</b>	<b>0.2118</b>	<b>0.1491</b>	<b>2.7000e-004</b>		<b>5.6100e-003</b>	<b>5.6100e-003</b>		<b>5.6100e-003</b>	<b>5.6100e-003</b>	<b>0.0000</b>	<b>24.7465</b>	<b>24.7465</b>	<b>7.0100e-003</b>	<b>0.0000</b>	<b>24.8936</b>

**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	5.0000e-004	4.4500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9500	0.9500	5.0000e-005	0.0000	0.9510
<b>Total</b>	<b>1.7000e-004</b>	<b>5.0000e-004</b>	<b>4.4500e-003</b>	<b>1.0000e-005</b>	<b>1.0800e-003</b>	<b>1.0000e-005</b>	<b>1.0900e-003</b>	<b>2.9000e-004</b>	<b>1.0000e-005</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>0.9500</b>	<b>0.9500</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.9510</b>



**3.11 Install Transmission line foundations - 2016****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	2.2400e-003	0.0250	0.0127	3.0000e-005		1.0400e-003	1.0400e-003		9.7000e-004	9.7000e-004	0.0000	2.8563	2.8563	8.0000e-004	0.0000	2.8731
<b>Total</b>	<b>2.2400e-003</b>	<b>0.0250</b>	<b>0.0127</b>	<b>3.0000e-005</b>		<b>1.0400e-003</b>	<b>1.0400e-003</b>		<b>9.7000e-004</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>2.8563</b>	<b>2.8563</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.8731</b>

**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	2.0000e-004	3.8000e-003	1.4000e-003	1.0000e-005	3.2000e-004	7.0000e-005	3.8000e-004	9.0000e-005	6.0000e-005	1.5000e-004	0.0000	0.9839	0.9839	1.0000e-005	0.0000	0.9841
Worker	2.0000e-005	6.0000e-005	5.5000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1098	0.1098	1.0000e-005	0.0000	0.1099
<b>Total</b>	<b>2.2000e-004</b>	<b>3.8600e-003</b>	<b>1.9500e-003</b>	<b>1.0000e-005</b>	<b>4.4000e-004</b>	<b>7.0000e-005</b>	<b>5.0000e-004</b>	<b>1.2000e-004</b>	<b>6.0000e-005</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>1.0937</b>	<b>1.0937</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.0940</b>



**3.11 Install Transmission line foundations - 2016****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3000e-004	0.0242	0.0171	3.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	2.8563	2.8563	8.0000e-004	0.0000	2.8731
<b>Total</b>	<b>8.3000e-004</b>	<b>0.0242</b>	<b>0.0171</b>	<b>3.0000e-005</b>		<b>6.2000e-004</b>	<b>6.2000e-004</b>		<b>6.2000e-004</b>	<b>6.2000e-004</b>	<b>0.0000</b>	<b>2.8563</b>	<b>2.8563</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.8731</b>

**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	2.0000e-004	3.8000e-003	1.4000e-003	1.0000e-005	3.2000e-004	7.0000e-005	3.8000e-004	9.0000e-005	6.0000e-005	1.5000e-004	0.0000	0.9839	0.9839	1.0000e-005	0.0000	0.9841
Worker	2.0000e-005	6.0000e-005	5.5000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1098	0.1098	1.0000e-005	0.0000	0.1099
<b>Total</b>	<b>2.2000e-004</b>	<b>3.8600e-003</b>	<b>1.9500e-003</b>	<b>1.0000e-005</b>	<b>4.4000e-004</b>	<b>7.0000e-005</b>	<b>5.0000e-004</b>	<b>1.2000e-004</b>	<b>6.0000e-005</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>1.0937</b>	<b>1.0937</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.0940</b>



**3.11 Install Transmission line foundations - 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	0.0309	0.3390	0.1808	4.6000e-004		0.0139	0.0139		0.0129	0.0129	0.0000	42.2126	42.2126	0.0120	0.0000	42.4641
<b>Total</b>	<b>0.0309</b>	<b>0.3390</b>	<b>0.1808</b>	<b>4.6000e-004</b>		<b>0.0139</b>	<b>0.0139</b>		<b>0.0129</b>	<b>0.0129</b>	<b>0.0000</b>	<b>42.2126</b>	<b>42.2126</b>	<b>0.0120</b>	<b>0.0000</b>	<b>42.4641</b>

**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	0.0503	0.0193	1.6000e-004	4.7600e-003	8.8000e-004	5.6400e-003	1.3600e-003	8.1000e-004	2.1700e-003	0.0000	14.5089	14.5089	9.0000e-005	0.0000	14.5109
Worker	2.8000e-004	8.4000e-004	7.4200e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5834	1.5834	8.0000e-005	0.0000	1.5850
<b>Total</b>	<b>3.0300e-003</b>	<b>0.0511</b>	<b>0.0267</b>	<b>1.8000e-004</b>	<b>6.5700e-003</b>	<b>8.9000e-004</b>	<b>7.4600e-003</b>	<b>1.8400e-003</b>	<b>8.2000e-004</b>	<b>2.6600e-003</b>	<b>0.0000</b>	<b>16.0923</b>	<b>16.0923</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>16.0959</b>



**3.11 Install Transmission line foundations - 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	0.0124	0.3628	0.2558	4.6000e-004		9.2300e-003	9.2300e-003		9.2300e-003	9.2300e-003	0.0000	42.2126	42.2126	0.0120	0.0000	42.4641
<b>Total</b>	<b>0.0124</b>	<b>0.3628</b>	<b>0.2558</b>	<b>4.6000e-004</b>		<b>9.2300e-003</b>	<b>9.2300e-003</b>		<b>9.2300e-003</b>	<b>9.2300e-003</b>	<b>0.0000</b>	<b>42.2126</b>	<b>42.2126</b>	<b>0.0120</b>	<b>0.0000</b>	<b>42.4641</b>

**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	0.0503	0.0193	1.6000e-004	4.7600e-003	8.8000e-004	5.6400e-003	1.3600e-003	8.1000e-004	2.1700e-003	0.0000	14.5089	14.5089	9.0000e-005	0.0000	14.5109
Worker	2.8000e-004	8.4000e-004	7.4200e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5834	1.5834	8.0000e-005	0.0000	1.5850
<b>Total</b>	<b>3.0300e-003</b>	<b>0.0511</b>	<b>0.0267</b>	<b>1.8000e-004</b>	<b>6.5700e-003</b>	<b>8.9000e-004</b>	<b>7.4600e-003</b>	<b>1.8400e-003</b>	<b>8.2000e-004</b>	<b>2.6600e-003</b>	<b>0.0000</b>	<b>16.0923</b>	<b>16.0923</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>16.0959</b>



**3.12 Install duct package - 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	0.0551	0.5726	0.3140	7.8000e-004		0.0246	0.0246		0.0233	0.0233	0.0000	71.2940	71.2940	0.0187	0.0000	71.6858
<b>Total</b>	<b>0.0551</b>	<b>0.5726</b>	<b>0.3140</b>	<b>7.8000e-004</b>		<b>0.0246</b>	<b>0.0246</b>		<b>0.0233</b>	<b>0.0233</b>	<b>0.0000</b>	<b>71.2940</b>	<b>71.2940</b>	<b>0.0187</b>	<b>0.0000</b>	<b>71.6858</b>

**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	9.4000e-004	2.7900e-003	0.0247	7.0000e-005	6.0300e-003	4.0000e-005	6.0700e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.2780	5.2780	2.6000e-004	0.0000	5.2833
<b>Total</b>	<b>9.4000e-004</b>	<b>2.7900e-003</b>	<b>0.0247</b>	<b>7.0000e-005</b>	<b>6.0300e-003</b>	<b>4.0000e-005</b>	<b>6.0700e-003</b>	<b>1.6000e-003</b>	<b>4.0000e-005</b>	<b>1.6400e-003</b>	<b>0.0000</b>	<b>5.2780</b>	<b>5.2780</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>5.2833</b>



**3.12 Install duct package - 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	0.0214	0.6065	0.4281	7.8000e-004		0.0163	0.0163		0.0163	0.0163	0.0000	71.2939	71.2939	0.0187	0.0000	71.6857
<b>Total</b>	<b>0.0214</b>	<b>0.6065</b>	<b>0.4281</b>	<b>7.8000e-004</b>		<b>0.0163</b>	<b>0.0163</b>		<b>0.0163</b>	<b>0.0163</b>	<b>0.0000</b>	<b>71.2939</b>	<b>71.2939</b>	<b>0.0187</b>	<b>0.0000</b>	<b>71.6857</b>

**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	9.4000e-004	2.7900e-003	0.0247	7.0000e-005	6.0300e-003	4.0000e-005	6.0700e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.2780	5.2780	2.6000e-004	0.0000	5.2833
<b>Total</b>	<b>9.4000e-004</b>	<b>2.7900e-003</b>	<b>0.0247</b>	<b>7.0000e-005</b>	<b>6.0300e-003</b>	<b>4.0000e-005</b>	<b>6.0700e-003</b>	<b>1.6000e-003</b>	<b>4.0000e-005</b>	<b>1.6400e-003</b>	<b>0.0000</b>	<b>5.2780</b>	<b>5.2780</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>5.2833</b>



**3.13 Wire Stringing - 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	0.0187	0.2082	0.1045	2.7000e-004		8.4900e-003	8.4900e-003		7.8100e-003	7.8100e-003	0.0000	24.9973	24.9973	7.6600e-003	0.0000	25.1582
<b>Total</b>	<b>0.0187</b>	<b>0.2082</b>	<b>0.1045</b>	<b>2.7000e-004</b>		<b>8.4900e-003</b>	<b>8.4900e-003</b>		<b>7.8100e-003</b>	<b>7.8100e-003</b>	<b>0.0000</b>	<b>24.9973</b>	<b>24.9973</b>	<b>7.6600e-003</b>	<b>0.0000</b>	<b>25.1582</b>

**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	1.1100e-003	0.0186	8.7900e-003	6.0000e-005	1.7300e-003	3.2000e-004	2.0500e-003	4.9000e-004	2.9000e-004	7.9000e-004	0.0000	5.3011	5.3011	3.0000e-005	0.0000	5.3019
Worker	5.7000e-004	1.6700e-003	0.0148	4.0000e-005	3.6200e-003	2.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.1668	3.1668	1.5000e-004	0.0000	3.1700
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0203</b>	<b>0.0236</b>	<b>1.0000e-004</b>	<b>5.3500e-003</b>	<b>3.4000e-004</b>	<b>5.6900e-003</b>	<b>1.4500e-003</b>	<b>3.1000e-004</b>	<b>1.7700e-003</b>	<b>0.0000</b>	<b>8.4679</b>	<b>8.4679</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>8.4718</b>



**3.13 Wire Stringing - 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	7.0300e-003	0.2123	0.1472	2.7000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	24.9973	24.9973	7.6600e-003	0.0000	25.1582
<b>Total</b>	<b>7.0300e-003</b>	<b>0.2123</b>	<b>0.1472</b>	<b>2.7000e-004</b>		<b>5.2500e-003</b>	<b>5.2500e-003</b>		<b>5.2500e-003</b>	<b>5.2500e-003</b>	<b>0.0000</b>	<b>24.9973</b>	<b>24.9973</b>	<b>7.6600e-003</b>	<b>0.0000</b>	<b>25.1582</b>

**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	1.1100e-003	0.0186	8.7900e-003	6.0000e-005	1.7300e-003	3.2000e-004	2.0500e-003	4.9000e-004	2.9000e-004	7.9000e-004	0.0000	5.3011	5.3011	3.0000e-005	0.0000	5.3019
Worker	5.7000e-004	1.6700e-003	0.0148	4.0000e-005	3.6200e-003	2.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.1668	3.1668	1.5000e-004	0.0000	3.1700
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0203</b>	<b>0.0236</b>	<b>1.0000e-004</b>	<b>5.3500e-003</b>	<b>3.4000e-004</b>	<b>5.6900e-003</b>	<b>1.4500e-003</b>	<b>3.1000e-004</b>	<b>1.7700e-003</b>	<b>0.0000</b>	<b>8.4679</b>	<b>8.4679</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>8.4718</b>



**3.14 Transformer & SVC Delivery - 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	2.2600e-003	0.0252	0.0121	2.0000e-005		1.3400e-003	1.3400e-003		1.2300e-003	1.2300e-003	0.0000	1.9040	1.9040	5.8000e-004	0.0000	1.9163
<b>Total</b>	<b>2.2600e-003</b>	<b>0.0252</b>	<b>0.0121</b>	<b>2.0000e-005</b>		<b>1.3400e-003</b>	<b>1.3400e-003</b>		<b>1.2300e-003</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>1.9040</b>	<b>1.9040</b>	<b>5.8000e-004</b>	<b>0.0000</b>	<b>1.9163</b>

**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	2.8000e-004	4.6500e-003	2.2000e-003	1.0000e-005	4.3000e-004	8.0000e-005	5.1000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	1.3253	1.3253	1.0000e-005	0.0000	1.3255
Worker	2.8000e-004	8.4000e-004	7.4200e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5834	1.5834	8.0000e-005	0.0000	1.5850
<b>Total</b>	<b>5.6000e-004</b>	<b>5.4900e-003</b>	<b>9.6200e-003</b>	<b>3.0000e-005</b>	<b>2.2400e-003</b>	<b>9.0000e-005</b>	<b>2.3300e-003</b>	<b>6.0000e-004</b>	<b>8.0000e-005</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>2.9087</b>	<b>2.9087</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.9105</b>



**3.14 Transformer & SVC Delivery - 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	6.7000e-004	0.0183	0.0125	2.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.9040	1.9040	5.8000e-004	0.0000	1.9163
<b>Total</b>	<b>6.7000e-004</b>	<b>0.0183</b>	<b>0.0125</b>	<b>2.0000e-005</b>		<b>5.2000e-004</b>	<b>5.2000e-004</b>		<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>1.9040</b>	<b>1.9040</b>	<b>5.8000e-004</b>	<b>0.0000</b>	<b>1.9163</b>

**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	2.8000e-004	4.6500e-003	2.2000e-003	1.0000e-005	4.3000e-004	8.0000e-005	5.1000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	1.3253	1.3253	1.0000e-005	0.0000	1.3255
Worker	2.8000e-004	8.4000e-004	7.4200e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5834	1.5834	8.0000e-005	0.0000	1.5850
<b>Total</b>	<b>5.6000e-004</b>	<b>5.4900e-003</b>	<b>9.6200e-003</b>	<b>3.0000e-005</b>	<b>2.2400e-003</b>	<b>9.0000e-005</b>	<b>2.3300e-003</b>	<b>6.0000e-004</b>	<b>8.0000e-005</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>2.9087</b>	<b>2.9087</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.9105</b>



**3.15 Pull cable - 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	0.0250	0.2466	0.1436	2.7000e-004		0.0145	0.0145		0.0133	0.0133	0.0000	25.2511	25.2511	7.7400e-003	0.0000	25.4136
<b>Total</b>	<b>0.0250</b>	<b>0.2466</b>	<b>0.1436</b>	<b>2.7000e-004</b>		<b>0.0145</b>	<b>0.0145</b>		<b>0.0133</b>	<b>0.0133</b>	<b>0.0000</b>	<b>25.2511</b>	<b>25.2511</b>	<b>7.7400e-003</b>	<b>0.0000</b>	<b>25.4136</b>

**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	7.9000e-004	2.3400e-003	0.0208	6.0000e-005	5.0600e-003	3.0000e-005	5.1000e-003	1.3400e-003	3.0000e-005	1.3800e-003	0.0000	4.4335	4.4335	2.1000e-004	0.0000	4.4380
<b>Total</b>	<b>7.9000e-004</b>	<b>2.3400e-003</b>	<b>0.0208</b>	<b>6.0000e-005</b>	<b>5.0600e-003</b>	<b>3.0000e-005</b>	<b>5.1000e-003</b>	<b>1.3400e-003</b>	<b>3.0000e-005</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>4.4335</b>	<b>4.4335</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>4.4380</b>



**3.15 Pull cable - 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	8.9500e-003	0.2309	0.1675	2.7000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	25.2511	25.2511	7.7400e-003	0.0000	25.4135
<b>Total</b>	<b>8.9500e-003</b>	<b>0.2309</b>	<b>0.1675</b>	<b>2.7000e-004</b>		<b>7.0400e-003</b>	<b>7.0400e-003</b>		<b>7.0400e-003</b>	<b>7.0400e-003</b>	<b>0.0000</b>	<b>25.2511</b>	<b>25.2511</b>	<b>7.7400e-003</b>	<b>0.0000</b>	<b>25.4135</b>

**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	7.9000e-004	2.3400e-003	0.0208	6.0000e-005	5.0600e-003	3.0000e-005	5.1000e-003	1.3400e-003	3.0000e-005	1.3800e-003	0.0000	4.4335	4.4335	2.1000e-004	0.0000	4.4380
<b>Total</b>	<b>7.9000e-004</b>	<b>2.3400e-003</b>	<b>0.0208</b>	<b>6.0000e-005</b>	<b>5.0600e-003</b>	<b>3.0000e-005</b>	<b>5.1000e-003</b>	<b>1.3400e-003</b>	<b>3.0000e-005</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>4.4335</b>	<b>4.4335</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>4.4380</b>



**3.16 Install cable splices - 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	0.0161	0.1692	0.1263	1.8000e-004		8.9700e-003	8.9700e-003		8.2500e-003	8.2500e-003	0.0000	17.0479	17.0479	5.2200e-003	0.0000	17.1576
<b>Total</b>	<b>0.0161</b>	<b>0.1692</b>	<b>0.1263</b>	<b>1.8000e-004</b>		<b>8.9700e-003</b>	<b>8.9700e-003</b>		<b>8.2500e-003</b>	<b>8.2500e-003</b>	<b>0.0000</b>	<b>17.0479</b>	<b>17.0479</b>	<b>5.2200e-003</b>	<b>0.0000</b>	<b>17.1576</b>

**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-004	1.7800e-003	0.0158	5.0000e-005	3.8600e-003	3.0000e-005	3.8800e-003	1.0200e-003	2.0000e-005	1.0500e-003	0.0000	3.3779	3.3779	1.6000e-004	0.0000	3.3813
<b>Total</b>	<b>6.0000e-004</b>	<b>1.7800e-003</b>	<b>0.0158</b>	<b>5.0000e-005</b>	<b>3.8600e-003</b>	<b>3.0000e-005</b>	<b>3.8800e-003</b>	<b>1.0200e-003</b>	<b>2.0000e-005</b>	<b>1.0500e-003</b>	<b>0.0000</b>	<b>3.3779</b>	<b>3.3779</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>3.3813</b>



**3.16 Install cable splices - 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	7.1600e-003	0.1572	0.1395	1.8000e-004		4.8300e-003	4.8300e-003		4.8300e-003	4.8300e-003	0.0000	17.0479	17.0479	5.2200e-003	0.0000	17.1576
<b>Total</b>	<b>7.1600e-003</b>	<b>0.1572</b>	<b>0.1395</b>	<b>1.8000e-004</b>		<b>4.8300e-003</b>	<b>4.8300e-003</b>		<b>4.8300e-003</b>	<b>4.8300e-003</b>	<b>0.0000</b>	<b>17.0479</b>	<b>17.0479</b>	<b>5.2200e-003</b>	<b>0.0000</b>	<b>17.1576</b>

**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-004	1.7800e-003	0.0158	5.0000e-005	3.8600e-003	3.0000e-005	3.8800e-003	1.0200e-003	2.0000e-005	1.0500e-003	0.0000	3.3779	3.3779	1.6000e-004	0.0000	3.3813
<b>Total</b>	<b>6.0000e-004</b>	<b>1.7800e-003</b>	<b>0.0158</b>	<b>5.0000e-005</b>	<b>3.8600e-003</b>	<b>3.0000e-005</b>	<b>3.8800e-003</b>	<b>1.0200e-003</b>	<b>2.0000e-005</b>	<b>1.0500e-003</b>	<b>0.0000</b>	<b>3.3779</b>	<b>3.3779</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>3.3813</b>



**3.17 Right-of-way restoration and cleanup - 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					0.0103	0.0000	0.0103	1.1100e-003	0.0000	1.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0931	1.0268	0.5231	1.2400e-003		0.0426	0.0426		0.0392	0.0392	0.0000	115.2313	115.2313	0.0353	0.0000	115.9728
<b>Total</b>	<b>0.0931</b>	<b>1.0268</b>	<b>0.5231</b>	<b>1.2400e-003</b>	<b>0.0103</b>	<b>0.0426</b>	<b>0.0529</b>	<b>1.1100e-003</b>	<b>0.0392</b>	<b>0.0403</b>	<b>0.0000</b>	<b>115.2313</b>	<b>115.2313</b>	<b>0.0353</b>	<b>0.0000</b>	<b>115.9728</b>

**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	3.4500e-003	0.0577	0.0272	1.8000e-004	5.3700e-003	9.9000e-004	6.3600e-003	1.5300e-003	9.1000e-004	2.4500e-003	0.0000	16.4335	16.4335	1.1000e-004	0.0000	16.4357
Worker	1.4000e-003	4.1500e-003	0.0368	1.1000e-004	8.9700e-003	6.0000e-005	9.0300e-003	2.3800e-003	5.0000e-005	2.4400e-003	0.0000	7.8536	7.8536	3.8000e-004	0.0000	7.8616
<b>Total</b>	<b>4.8500e-003</b>	<b>0.0618</b>	<b>0.0640</b>	<b>2.9000e-004</b>	<b>0.0143</b>	<b>1.0500e-003</b>	<b>0.0154</b>	<b>3.9100e-003</b>	<b>9.6000e-004</b>	<b>4.8900e-003</b>	<b>0.0000</b>	<b>24.2871</b>	<b>24.2871</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>24.2973</b>



**3.17 Right-of-way restoration and cleanup - 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					4.0100e-003	0.0000	4.0100e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0336	0.9768	0.7082	1.2400e-003		0.0241	0.0241		0.0241	0.0241	0.0000	115.2312	115.2312	0.0353	0.0000	115.9727
<b>Total</b>	<b>0.0336</b>	<b>0.9768</b>	<b>0.7082</b>	<b>1.2400e-003</b>	<b>4.0100e-003</b>	<b>0.0241</b>	<b>0.0281</b>	<b>4.3000e-004</b>	<b>0.0241</b>	<b>0.0245</b>	<b>0.0000</b>	<b>115.2312</b>	<b>115.2312</b>	<b>0.0353</b>	<b>0.0000</b>	<b>115.9727</b>

**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	3.4500e-003	0.0577	0.0272	1.8000e-004	5.3700e-003	9.9000e-004	6.3600e-003	1.5300e-003	9.1000e-004	2.4500e-003	0.0000	16.4335	16.4335	1.1000e-004	0.0000	16.4357
Worker	1.4000e-003	4.1500e-003	0.0368	1.1000e-004	8.9700e-003	6.0000e-005	9.0300e-003	2.3800e-003	5.0000e-005	2.4400e-003	0.0000	7.8536	7.8536	3.8000e-004	0.0000	7.8616
<b>Total</b>	<b>4.8500e-003</b>	<b>0.0618</b>	<b>0.0640</b>	<b>2.9000e-004</b>	<b>0.0143</b>	<b>1.0500e-003</b>	<b>0.0154</b>	<b>3.9100e-003</b>	<b>9.6000e-004</b>	<b>4.8900e-003</b>	<b>0.0000</b>	<b>24.2871</b>	<b>24.2871</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>24.2973</b>



**3.18 Test cable splices - 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	4.3000e-004	3.7300e-003	2.6100e-003	0.0000		3.1000e-004	3.1000e-004		2.8000e-004	2.8000e-004	0.0000	0.2935	0.2935	9.0000e-005	0.0000	0.2954
<b>Total</b>	<b>4.3000e-004</b>	<b>3.7300e-003</b>	<b>2.6100e-003</b>	<b>0.0000</b>		<b>3.1000e-004</b>	<b>3.1000e-004</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.2935</b>	<b>0.2935</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.2954</b>

**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	7.0000e-005	5.9000e-004	0.0000	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1267	0.1267	1.0000e-005	0.0000	0.1268
<b>Total</b>	<b>2.0000e-005</b>	<b>7.0000e-005</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1267</b>	<b>0.1267</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1268</b>



**3.18 Test cable splices - 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	1.5000e-004	3.1000e-003	2.4100e-003	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.2935	0.2935	9.0000e-005	0.0000	0.2954
<b>Total</b>	<b>1.5000e-004</b>	<b>3.1000e-003</b>	<b>2.4100e-003</b>	<b>0.0000</b>		<b>1.3000e-004</b>	<b>1.3000e-004</b>		<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.2935</b>	<b>0.2935</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.2954</b>

**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	7.0000e-005	5.9000e-004	0.0000	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1267	0.1267	1.0000e-005	0.0000	0.1268
<b>Total</b>	<b>2.0000e-005</b>	<b>7.0000e-005</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1267</b>	<b>0.1267</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1268</b>

**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	0.0549	0.1314	0.5847	1.4300e-003	0.0988	1.7500e-003	0.1006	0.0264	1.6100e-003	0.0280	0.0000	106.4810	106.4810	4.2800e-003	0.0000	106.5709
Unmitigated	0.0549	0.1314	0.5847	1.4300e-003	0.0988	1.7500e-003	0.1006	0.0264	1.6100e-003	0.0280	0.0000	106.4810	106.4810	4.2800e-003	0.0000	106.5709

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	90.00	90.00	90.00	262,756	262,756
Total	90.00	90.00	90.00	262,756	262,756

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

#### 5.0 Energy Detail

##### 4.4 Fleet Mix

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	264.7151	264.7151	0.0107	2.2000e-003	265.6222
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	264.7151	264.7151	0.0107	2.2000e-003	265.6222
NaturalGas Mitigated	5.7200e-003	0.0520	0.0437	3.1000e-004		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	56.6243	56.6243	1.0900e-003	1.0400e-003	56.9689
NaturalGas Unmitigated	5.7200e-003	0.0520	0.0437	3.1000e-004		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	56.6243	56.6243	1.0900e-003	1.0400e-003	56.9689

## 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					
General Light Industry	1.0611e+006	5.7200e-003	0.0520	0.0437	3.1000e-004		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	56.6243	56.6243	1.0900e-003	1.0400e-003	56.9689
<b>Total</b>		<b>5.7200e-003</b>	<b>0.0520</b>	<b>0.0437</b>	<b>3.1000e-004</b>		<b>3.9500e-003</b>	<b>3.9500e-003</b>		<b>3.9500e-003</b>	<b>3.9500e-003</b>	<b>0.0000</b>	<b>56.6243</b>	<b>56.6243</b>	<b>1.0900e-003</b>	<b>1.0400e-003</b>	<b>56.9689</b>



## 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					
General Light Industry	1.0611e+006	5.7200e-003	0.0520	0.0437	3.1000e-004		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	56.6243	56.6243	1.0900e-003	1.0400e-003	56.9689
<b>Total</b>		<b>5.7200e-003</b>	<b>0.0520</b>	<b>0.0437</b>	<b>3.1000e-004</b>		<b>3.9500e-003</b>	<b>3.9500e-003</b>		<b>3.9500e-003</b>	<b>3.9500e-003</b>	<b>0.0000</b>	<b>56.6243</b>	<b>56.6243</b>	<b>1.0900e-003</b>	<b>1.0400e-003</b>	<b>56.9689</b>

## 5.3 Energy by Land Use - Electricity

### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	810000	264.7151	0.0107	2.2000e-003	265.6222
<b>Total</b>		<b>264.7151</b>	<b>0.0107</b>	<b>2.2000e-003</b>	<b>265.6222</b>



### 5.3 Energy by Land Use - Electricity

#### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	810000	264.7151	0.0107	2.2000e-003	265.6222
<b>Total</b>		<b>264.7151</b>	<b>0.0107</b>	<b>2.2000e-003</b>	<b>265.6222</b>

### 6.0 Area Detail

#### 6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4559	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7000e-003
Unmitigated	0.4559	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7000e-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	0.1043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7000e-003
<b>Total</b>	<b>0.4559</b>	<b>1.0000e-005</b>	<b>8.4000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6100e-003</b>	<b>1.6100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-003</b>

### 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	0.1043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7000e-003
<b>Total</b>	<b>0.4559</b>	<b>1.0000e-005</b>	<b>8.4000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6100e-003</b>	<b>1.6100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-003</b>

## 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			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



## 7.2 Water by Land Use

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 8.0 Waste Detail

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### 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			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 9.0 Operational Offroad

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

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	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-8.6200	0.0000	0.0000	-8.6200

## 10.1 Vegetation Land Change

### Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	12 / 10	-8.6200	0.0000	0.0000	-8.6200
<b>Total</b>		<b>-8.6200</b>	<b>0.0000</b>	<b>0.0000</b>	<b>-8.6200</b>



## Suncrest Reactive Power Support Project

### San Diego County, Summer

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	90.00	1000sqft	12.00	90,000.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Rural	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	40
<b>Climate Zone</b>	13			<b>Operational Year</b>	2018
<b>Utility Company</b>	San Diego Gas & Electric				
<b>CO2 Intensity (lb/MW hr)</b>	720.49	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage setup to 12

Construction Phase - Construction Schedule from Suncrest Construction Plan 20150625

Off-road Equipment - Equipment Roster

Off-road Equipment - Splice truck

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster



Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Test truck

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Trips and VMT - 3,500 cubic yards of spoils will need to be hauled offsite = 438 trips \* 8 cubic yards/trip

Grading -

Vehicle Trips - Assumes one (1) trip per day

Water And Wastewater - Unmanned facility, No planned indoor water use

Solid Waste - Unmanned facility, No solid waste generation

Land Use Change -

Construction Off-road Equipment Mitigation - All Engines are assumed to comply with Tier 2 engine

Area Mitigation - Low VOC paint

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00



[illegible]



[illegible]



tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	1/25/2017	1/15/2017
tblConstructionPhase	PhaseEndDate	3/6/2017	2/28/2017
tblConstructionPhase	PhaseEndDate	3/14/2017	1/27/2017
tblConstructionPhase	PhaseEndDate	2/11/2017	1/30/2017
tblConstructionPhase	PhaseEndDate	2/20/2017	3/21/2017
tblConstructionPhase	PhaseEndDate	6/17/2017	4/24/2017
tblConstructionPhase	PhaseEndDate	1/30/2017	11/20/2016
tblConstructionPhase	PhaseEndDate	3/1/2017	1/15/2017
tblConstructionPhase	PhaseEndDate	5/26/2017	3/10/2017
tblConstructionPhase	PhaseEndDate	5/10/2017	12/31/2016
tblConstructionPhase	PhaseEndDate	1/30/2017	1/9/2017
tblConstructionPhase	PhaseEndDate	11/30/2016	9/30/2016
tblConstructionPhase	PhaseEndDate	6/23/2017	6/15/2017
tblConstructionPhase	PhaseEndDate	10/15/2016	10/31/2016
tblConstructionPhase	PhaseEndDate	1/9/2017	12/10/2016
tblConstructionPhase	PhaseStartDate	1/10/2017	12/31/2016
tblConstructionPhase	PhaseStartDate	1/16/2017	1/10/2017
tblConstructionPhase	PhaseStartDate	3/1/2017	1/15/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	1/16/2017
tblConstructionPhase	PhaseStartDate	1/31/2017	3/1/2017
tblConstructionPhase	PhaseStartDate	6/16/2017	4/23/2017
tblConstructionPhase	PhaseStartDate	12/11/2016	10/1/2016
tblConstructionPhase	PhaseStartDate	11/21/2016	10/7/2016
tblConstructionPhase	PhaseStartDate	1/16/2017	10/31/2016
tblConstructionPhase	PhaseStartDate	3/11/2017	11/1/2016



tblConstructionPhase	PhaseStartDate	1/1/2017	12/11/2016
tblConstructionPhase	PhaseStartDate	11/1/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	4/23/2017	4/15/2017
tblConstructionPhase	PhaseStartDate	8/16/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	10/1/2016	9/1/2016
tblGrading	MaterialExported	0.00	3,500.00
tblLandUse	LotAcreage	2.07	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00



tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	2.50
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tblOffRoadEquipment	UsageHours	7.00	2.50
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	9.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural



[illegible]



tblTripsAndVMT	VendorTripLength	6.60	65.00
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tblTripsAndVMT	WorkerTripLength	16.80	65.00



tblTripsAndVMT	WorkerTripLength	16.80	65.00
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tblTripsAndVMT	WorkerTripNumber	38.00	3.00
tblTripsAndVMT	WorkerTripNumber	38.00	8.00
tblTripsAndVMT	WorkerTripNumber	38.00	8.00



tblTripsAndVMT	WorkerTripNumber	38.00	5.00
tblVehicleTrips	CC_TL	6.60	7.30
tblVehicleTrips	CNW_TL	6.60	7.30
tblVehicleTrips	CW_TL	14.70	9.50
tblVehicleTrips	ST_TR	1.32	1.00
tblVehicleTrips	SU_TR	0.68	1.00
tblVehicleTrips	WD_TR	6.97	1.00
tblWater	IndoorWaterUseRate	20,812,500.00	0.00

## 2.0 Emissions Summary

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## 2.1 Overall Construction (Maximum Daily Emission)

### 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	lb/day										lb/day					
2016	24.0832	270.9327	137.5461	0.3605	10.9137	11.1076	17.2508	4.7550	10.3274	11.1603	0.0000	36,686.1062	36,686.1062	8.5917	0.0000	36,866.5308
2017	16.8753	186.8572	101.6845	0.2874	3.1918	7.5276	10.7194	0.8742	6.9975	7.8717	0.0000	28,615.6165	28,615.6165	6.4867	0.0000	28,751.8373
Total	40.9585	457.7899	239.2306	0.6480	14.1055	18.6352	27.9701	5.6292	17.3249	19.0320	0.0000	65,301.7227	65,301.7227	15.0784	0.0000	65,618.3681

### 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	lb/day										lb/day					
2016	8.9982	247.2625	173.1483	0.3605	6.4071	6.1298	9.5113	2.4425	6.1025	6.9354	0.0000	36,686.1062	36,686.1062	8.5917	0.0000	36,866.5308
2017	6.9792	187.5968	134.0784	0.2874	3.1918	4.6688	7.8606	0.8742	4.6474	5.5216	0.0000	28,615.6165	28,615.6165	6.4867	0.0000	28,751.8373
Total	15.9774	434.8593	307.2266	0.6480	9.5989	10.7986	17.3719	3.3167	10.7499	12.4570	0.0000	65,301.7227	65,301.7227	15.0784	0.0000	65,618.3681

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	60.99	5.01	-28.42	0.00	31.95	42.05	37.89	41.08	37.95	34.55	0.00	0.00	0.00	0.00	0.00	0.00



## 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	lb/day										lb/day					
Area	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
Energy	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
Mobile	0.3025	0.6823	3.1569	8.2400e-003	0.5560	9.6200e-003	0.5656	0.1484	8.8600e-003	0.1573		672.8211	672.8211	0.0260		673.3661
<b>Total</b>	<b>2.8322</b>	<b>0.9674</b>	<b>3.4057</b>	<b>9.9500e-003</b>	<b>0.5560</b>	<b>0.0313</b>	<b>0.5873</b>	<b>0.1484</b>	<b>0.0306</b>	<b>0.1790</b>		<b>1,014.8553</b>	<b>1,014.8553</b>	<b>0.0326</b>	<b>6.2700e-003</b>	<b>1,017.4828</b>

### 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	lb/day										lb/day					
Area	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
Energy	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
Mobile	0.3025	0.6823	3.1569	8.2400e-003	0.5560	9.6200e-003	0.5656	0.1484	8.8600e-003	0.1573		672.8211	672.8211	0.0260		673.3661
<b>Total</b>	<b>2.8322</b>	<b>0.9674</b>	<b>3.4057</b>	<b>9.9500e-003</b>	<b>0.5560</b>	<b>0.0313</b>	<b>0.5873</b>	<b>0.1484</b>	<b>0.0306</b>	<b>0.1790</b>		<b>1,014.8553</b>	<b>1,014.8553</b>	<b>0.0326</b>	<b>6.2700e-003</b>	<b>1,017.4828</b>



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

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#### Construction Phase



Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Field Survey	Site Preparation	8/1/2016	8/15/2016	7	15	Surveying includes setting up survey equipment, taking measurements, and installing stakes
2	SDG&E Site preparation	Site Preparation	9/1/2016	10/31/2016	7	61	SDG&E Site preparation phase
3	SVC Site Grading	Grading	9/1/2016	9/30/2016	7	30	Site earthwork and grading.
4	Trenching	Trenching	9/1/2016	12/10/2016	7	101	Trench will be approximately 30" wide by 60" deep.
5	Set SVC Substation Foundations	Building Construction	10/1/2016	11/20/2016	7	51	Auguring holes, removing soil, and foundation forming.
6	Material delivery	Building Construction	10/7/2016	1/15/2017	7	101	Material haul, transporting material to the site.
7	Substation construction	Building Construction	10/31/2016	3/10/2017	7	131	Install equipment, structural steel and bus work.
8	Structure Erection	Building Construction	11/1/2016	12/31/2016	7	61	SDG&E Suncrest Substation Structure and Equipment erection
9	Install Vaults	Building Construction	12/11/2016	1/9/2017	7	30	Excavate hole for vault, install vault sections, backfill with concrete
10	Install Transmission line foundations	Building Construction	12/31/2016	1/15/2017	7	16	Foundation installation includes auguring holes, remove soil and foundation formation.
11	Install duct package	Building Construction	1/10/2017	2/28/2017	7	50	Install approximately 100 feet of duct/day
12	Wire Stringing	Building Construction	1/15/2017	1/27/2017	5	10	Wire Stringing into SDG&E Suncrest Substation
13	Transformer & SVC Delivery	Building Construction	1/16/2017	1/30/2017	7	15	Install transformer and SVC
14	Pull cable	Building Construction	3/1/2017	3/21/2017	7	21	6 pulls at 850feet each
15	Install cable splices	Building Construction	3/22/2017	4/22/2017	7	32	Install cable splice. Assume 16 hours/day
16	Right-of-way restoration and cleanup	Site Preparation	4/15/2017	6/15/2017	7	62	Restore back to natural state, removing culverts, restoring original grade, seeding area with native plants
17	Test cable splices	Building Construction	4/23/2017	4/24/2017	7	2	Test cable splices per accepted standards and techniques.

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0



**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Field Survey	Off-Highway Trucks	0	10.00	400	0.38
Field Survey	Rubber Tired Dozers	0	8.00	255	0.40
Field Survey	Tractors/Loaders/Backhoes	0	8.00	97	0.37
SDG&E Site preparation	Bore/Drill Rigs	1	5.00	205	0.50
SDG&E Site preparation	Cranes	1	2.50	226	0.29
SDG&E Site preparation	Excavators	1	7.00	162	0.38
SDG&E Site preparation	Off-Highway Trucks	2	10.00	400	0.38
SDG&E Site preparation	Off-Highway Trucks	2	3.00	400	0.38
SDG&E Site preparation	Rubber Tired Dozers	0	8.00	255	0.40
SDG&E Site preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
SVC Site Grading	Dumpers/Tenders	1	9.00	16	0.38
SVC Site Grading	Dumpers/Tenders	10	5.00	16	0.38
SVC Site Grading	Excavators	0	8.00	162	0.38
SVC Site Grading	Graders	1	9.00	174	0.41
SVC Site Grading	Off-Highway Trucks	1	10.00	400	0.38
SVC Site Grading	Rollers	2	5.00	80	0.38
SVC Site Grading	Rubber Tired Dozers	1	9.00	255	0.40
SVC Site Grading	Rubber Tired Loaders	1	9.00	199	0.36
SVC Site Grading	Scrapers	0	8.00	361	0.48
SVC Site Grading	Tractors/Loaders/Backhoes	1	9.00	97	0.37
Trenching	Dumpers/Tenders	1	10.00	16	0.38
Trenching	Off-Highway Trucks	1	10.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Trenching	Trenchers	1	10.00	80	0.50



Set SVC Substation Foundations	Bore/Drill Rigs	1	5.00	205	0.50
Set SVC Substation Foundations	Cranes	1	3.00	226	0.29
Set SVC Substation Foundations	Excavators	1	9.00	162	0.38
Set SVC Substation Foundations	Forklifts	0	8.00	89	0.20
Set SVC Substation Foundations	Generator Sets	1	8.00	84	0.74
Set SVC Substation Foundations	Off-Highway Trucks	1	10.00	400	0.38
Set SVC Substation Foundations	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Set SVC Substation Foundations	Welders	0	8.00	46	0.45
Material delivery	Cranes	2	5.00	226	0.29
Material delivery	Forklifts	1	5.00	89	0.20
Material delivery	Generator Sets	0	8.00	84	0.74
Material delivery	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Material delivery	Welders	0	8.00	46	0.45
Substation construction	Cranes	1	7.50	226	0.29
Substation construction	Forklifts	0	8.00	89	0.20
Substation construction	Generator Sets	1	8.00	84	0.74
Substation construction	Off-Highway Trucks	2	10.00	400	0.38
Substation construction	Off-Highway Trucks	2	5.00	400	0.38
Substation construction	Tractors/Loaders/Backhoes	1	2.50	97	0.37
Substation construction	Welders	0	8.00	46	0.45
Structure Erection	Cranes	2	5.00	226	0.29
Structure Erection	Forklifts	0	8.00	89	0.20
Structure Erection	Generator Sets	1	8.00	84	0.74
Structure Erection	Off-Highway Trucks	5	10.00	400	0.38
Structure Erection	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Structure Erection	Welders	0	8.00	46	0.45
Install Vaults	Cranes	0	7.00	226	0.29
Install Vaults	Forklifts	0	8.00	89	0.20



Install Vaults	Generator Sets	1	8.00	84	0.74
Install Vaults	Off-Highway Trucks	3	10.00	400	0.38
Install Vaults	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Install Vaults	Welders	0	8.00	46	0.45
Install Transmission line foundations	Bore/Drill Rigs	1	5.00	205	0.50
Install Transmission line foundations	Cranes	1	2.50	226	0.29
Install Transmission line foundations	Excavators	1	7.00	162	0.38
Install Transmission line foundations	Forklifts	0	8.00	89	0.20
Install Transmission line foundations	Generator Sets	1	8.00	84	0.74
Install Transmission line foundations	Off-Highway Trucks	2	10.00	400	0.38
Install Transmission line foundations	Off-Highway Trucks	2	3.00	400	0.38
Install Transmission line foundations	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install Transmission line foundations	Welders	0	8.00	46	0.45
Install duct package	Cranes	0	7.00	226	0.29
Install duct package	Forklifts	0	8.00	89	0.20
Install duct package	Generator Sets	1	8.00	84	0.74
Install duct package	Off-Highway Trucks	2	7.50	400	0.38
Install duct package	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install duct package	Welders	0	8.00	46	0.45
Wire Stringing	Cranes	1	1.00	226	0.29
Wire Stringing	Forklifts	0	8.00	89	0.20
Wire Stringing	Generator Sets	0	8.00	84	0.74
Wire Stringing	Off-Highway Trucks	3	10.00	400	0.38
Wire Stringing	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Wire Stringing	Welders	0	8.00	46	0.45
Transformer & SVC Delivery	Cranes	1	2.50	226	0.29
Transformer & SVC Delivery	Forklifts	0	8.00	89	0.20
Transformer & SVC Delivery	Generator Sets	0	8.00	84	0.74



Transformer & SVC Delivery	Tractors/Loaders/Backhoes	1	2.50	97	0.37
Transformer & SVC Delivery	Welders	0	8.00	46	0.45
Pull cable	Cranes	0	7.00	226	0.29
Pull cable	Forklifts	0	8.00	89	0.20
Pull cable	Generator Sets	0	8.00	84	0.74
Pull cable	Off-Highway Trucks	1	10.00	400	0.38
Pull cable	Other General Industrial Equipment	3	10.00	87	0.34
Pull cable	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Pull cable	Welders	0	8.00	46	0.45
Install cable splices	Cranes	0	7.00	226	0.29
Install cable splices	Forklifts	0	8.00	89	0.20
Install cable splices	Generator Sets	0	8.00	84	0.74
Install cable splices	Other Material Handling Equipment	1	16.00	167	0.40
Install cable splices	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install cable splices	Welders	0	8.00	46	0.45
Right-of-way restoration and cleanup	Excavators	1	5.00	162	0.38
Right-of-way restoration and cleanup	Graders	1	5.00	174	0.41
Right-of-way restoration and cleanup	Off-Highway Trucks	1	10.00	400	0.38
Right-of-way restoration and cleanup	Off-Highway Trucks	1	10.00	400	0.38
Right-of-way restoration and cleanup	Rubber Tired Dozers	0	8.00	255	0.40
Right-of-way restoration and cleanup	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Test cable splices	Cranes	0	7.00	226	0.29
Test cable splices	Forklifts	0	8.00	89	0.20
Test cable splices	Generator Sets	0	8.00	84	0.74
Test cable splices	Other General Industrial Equipment	1	10.00	87	0.34
Test cable splices	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Test cable splices	Welders	0	8.00	46	0.45



**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Field Survey	0	3.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
SDG&E Site preparation	7	9.00	5.00	0.00	65.00	91.00	65.00	LD_Mix	HDT_Mix	HHDT
SVC Site Grading	18	18.00	12.00	438.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Set SVC Substation Foundations	5	6.00	2.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Material delivery	4	3.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Substation construction	7	8.00	6.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Structure Erection	9	8.00	9.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install Vaults	5	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install Transmission line foundations	8	5.00	5.00	0.00	65.00	143.00	65.00	LD_Mix	HDT_Mix	HHDT
Install duct package	3	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Wire Stringing	5	15.00	6.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Transformer & SVC Delivery	2	5.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Pull cable	4	10.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install cable splices	1	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Right-of-way restoration and cleanup	4	6.00	3.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Test cable splices	1	3.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads



**3.2 Field Survey - 2016****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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**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	lb/day										lb/day					
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
Vendor	0.0395	0.6774	0.2921	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.2133	198.2133	1.3700e-003		198.2422
Worker	0.0267	0.0665	0.7156	1.8400e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		153.2679	153.2679	7.3000e-003		153.4212
<b>Total</b>	<b>0.0662</b>	<b>0.7439</b>	<b>1.0077</b>	<b>3.8100e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>351.4812</b>	<b>351.4812</b>	<b>8.6700e-003</b>		<b>351.6633</b>



### 3.2 Field Survey - 2016

#### 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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0395	0.6774	0.2921	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.2133	198.2133	1.3700e-003		198.2422
Worker	0.0267	0.0665	0.7156	1.8400e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		153.2679	153.2679	7.3000e-003		153.4212
<b>Total</b>	<b>0.0662</b>	<b>0.7439</b>	<b>1.0077</b>	<b>3.8100e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>351.4812</b>	<b>351.4812</b>	<b>8.6700e-003</b>		<b>351.6633</b>



### 3.3 SDG&E Site preparation - 2016

#### 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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	3.8435	45.0908	21.6382	0.0546		1.7386	1.7386		1.5995	1.5995		5,673.960 3	5,673.960 3	1.7115		5,709.901 1
<b>Total</b>	<b>3.8435</b>	<b>45.0908</b>	<b>21.6382</b>	<b>0.0546</b>	<b>0.0000</b>	<b>1.7386</b>	<b>1.7386</b>	<b>0.0000</b>	<b>1.5995</b>	<b>1.5995</b>		<b>5,673.960 3</b>	<b>5,673.960 3</b>	<b>1.7115</b>		<b>5,709.901 1</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2630	4.6998	1.8677	0.0137	0.4123	0.0859	0.4982	0.1175	0.0790	0.1965		1,383.893 1	1,383.893 1	9.5400e-003		1,384.093 5
Worker	0.0802	0.1996	2.1468	5.5100e-003	0.4445	2.9800e-003	0.4475	0.1179	2.7400e-003	0.1206		459.8037	459.8037	0.0219		460.2635
<b>Total</b>	<b>0.3432</b>	<b>4.8993</b>	<b>4.0145</b>	<b>0.0192</b>	<b>0.8568</b>	<b>0.0888</b>	<b>0.9457</b>	<b>0.2353</b>	<b>0.0817</b>	<b>0.3171</b>		<b>1,843.696 8</b>	<b>1,843.696 8</b>	<b>0.0314</b>		<b>1,844.357 0</b>



### 3.3 SDG&E Site preparation - 2016

#### 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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.4050	43.1706	30.0449	0.0546		1.0195	1.0195		1.0195	1.0195	0.0000	5,673.960 3	5,673.960 3	1.7115		5,709.901 1
<b>Total</b>	<b>1.4050</b>	<b>43.1706</b>	<b>30.0449</b>	<b>0.0546</b>	<b>0.0000</b>	<b>1.0195</b>	<b>1.0195</b>	<b>0.0000</b>	<b>1.0195</b>	<b>1.0195</b>	<b>0.0000</b>	<b>5,673.960 3</b>	<b>5,673.960 3</b>	<b>1.7115</b>		<b>5,709.901 1</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2630	4.6998	1.8677	0.0137	0.4123	0.0859	0.4982	0.1175	0.0790	0.1965		1,383.893 1	1,383.893 1	9.5400e-003		1,384.093 5
Worker	0.0802	0.1996	2.1468	5.5100e-003	0.4445	2.9800e-003	0.4475	0.1179	2.7400e-003	0.1206		459.8037	459.8037	0.0219		460.2635
<b>Total</b>	<b>0.3432</b>	<b>4.8993</b>	<b>4.0145</b>	<b>0.0192</b>	<b>0.8568</b>	<b>0.0888</b>	<b>0.9457</b>	<b>0.2353</b>	<b>0.0817</b>	<b>0.3171</b>		<b>1,843.696 8</b>	<b>1,843.696 8</b>	<b>0.0314</b>		<b>1,844.357 0</b>



**3.4 SVC Site Grading - 2016****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	lb/day										lb/day					
Fugitive Dust					7.3880	0.0000	7.3880	3.7909	0.0000	3.7909			0.0000			0.0000
Off-Road	5.6254	59.1329	32.8038	0.0527		2.8487	2.8487		2.6319	2.6319		5,348.089 3	5,348.089 3	1.5266		5,380.148 7
<b>Total</b>	<b>5.6254</b>	<b>59.1329</b>	<b>32.8038</b>	<b>0.0527</b>	<b>7.3880</b>	<b>2.8487</b>	<b>10.2366</b>	<b>3.7909</b>	<b>2.6319</b>	<b>6.4228</b>		<b>5,348.089 3</b>	<b>5,348.089 3</b>	<b>1.5266</b>		<b>5,380.148 7</b>

**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	lb/day										lb/day					
Hauling	0.6470	12.5532	5.1074	0.0348	0.8261	0.1800	1.0061	0.2261	0.1656	0.3917		3,516.407 9	3,516.407 9	0.0238		3,516.907 5
Vendor	0.4741	8.1289	3.5047	0.0236	0.7069	0.1474	0.8543	0.2014	0.1356	0.3370		2,378.560 1	2,378.560 1	0.0165		2,378.906 1
Worker	0.1604	0.3991	4.2935	0.0110	0.8890	5.9700e-003	0.8950	0.2357	5.4800e-003	0.2412		919.6073	919.6073	0.0438		920.5270
<b>Total</b>	<b>1.2814</b>	<b>21.0812</b>	<b>12.9056</b>	<b>0.0694</b>	<b>2.4220</b>	<b>0.3334</b>	<b>2.7554</b>	<b>0.6633</b>	<b>0.3067</b>	<b>0.9699</b>		<b>6,814.575 3</b>	<b>6,814.575 3</b>	<b>0.0841</b>		<b>6,816.340 6</b>



**3.4 SVC Site Grading - 2016****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	lb/day										lb/day					
Fugitive Dust					2.8813	0.0000	2.8813	1.4785	0.0000	1.4785			0.0000			0.0000
Off-Road	1.4024	39.4670	28.0224	0.0527		1.0447	1.0447		1.0447	1.0447	0.0000	5,348.089 3	5,348.089 3	1.5266		5,380.148 7
<b>Total</b>	<b>1.4024</b>	<b>39.4670</b>	<b>28.0224</b>	<b>0.0527</b>	<b>2.8813</b>	<b>1.0447</b>	<b>3.9260</b>	<b>1.4785</b>	<b>1.0447</b>	<b>2.5231</b>	<b>0.0000</b>	<b>5,348.089 3</b>	<b>5,348.089 3</b>	<b>1.5266</b>		<b>5,380.148 7</b>

**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	lb/day										lb/day					
Hauling	0.6470	12.5532	5.1074	0.0348	0.8261	0.1800	1.0061	0.2261	0.1656	0.3917		3,516.407 9	3,516.407 9	0.0238		3,516.907 5
Vendor	0.4741	8.1289	3.5047	0.0236	0.7069	0.1474	0.8543	0.2014	0.1356	0.3370		2,378.560 1	2,378.560 1	0.0165		2,378.906 1
Worker	0.1604	0.3991	4.2935	0.0110	0.8890	5.9700e-003	0.8950	0.2357	5.4800e-003	0.2412		919.6073	919.6073	0.0438		920.5270
<b>Total</b>	<b>1.2814</b>	<b>21.0812</b>	<b>12.9056</b>	<b>0.0694</b>	<b>2.4220</b>	<b>0.3334</b>	<b>2.7554</b>	<b>0.6633</b>	<b>0.3067</b>	<b>0.9699</b>		<b>6,814.575 3</b>	<b>6,814.575 3</b>	<b>0.0841</b>		<b>6,816.340 6</b>



**3.5 Trenching - 2016****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	lb/day										lb/day					
Off-Road	2.3905	24.3073	13.1642	0.0256		1.3259	1.3259		1.2217	1.2217		2,638.9849	2,638.9849	0.7813		2,655.3931
<b>Total</b>	<b>2.3905</b>	<b>24.3073</b>	<b>13.1642</b>	<b>0.0256</b>		<b>1.3259</b>	<b>1.3259</b>		<b>1.2217</b>	<b>1.2217</b>		<b>2,638.9849</b>	<b>2,638.9849</b>	<b>0.7813</b>		<b>2,655.3931</b>

**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	lb/day										lb/day					
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
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
Worker	0.0446	0.1109	1.1926	3.0600e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		255.4465	255.4465	0.0122		255.7019
<b>Total</b>	<b>0.0446</b>	<b>0.1109</b>	<b>1.1926</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>255.4465</b>	<b>255.4465</b>	<b>0.0122</b>		<b>255.7019</b>



**3.5 Trenching - 2016****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	lb/day										lb/day					
Off-Road	0.7869	20.6476	14.9031	0.0256		0.6161	0.6161		0.6161	0.6161	0.0000	2,638.9849	2,638.9849	0.7813		2,655.3931
<b>Total</b>	<b>0.7869</b>	<b>20.6476</b>	<b>14.9031</b>	<b>0.0256</b>		<b>0.6161</b>	<b>0.6161</b>		<b>0.6161</b>	<b>0.6161</b>	<b>0.0000</b>	<b>2,638.9849</b>	<b>2,638.9849</b>	<b>0.7813</b>		<b>2,655.3931</b>

**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	lb/day										lb/day					
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
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
Worker	0.0446	0.1109	1.1926	3.0600e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		255.4465	255.4465	0.0122		255.7019
<b>Total</b>	<b>0.0446</b>	<b>0.1109</b>	<b>1.1926</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>255.4465</b>	<b>255.4465</b>	<b>0.0122</b>		<b>255.7019</b>



### 3.6 Set SVC Substation Foundations - 2016

#### 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	lb/day										lb/day					
Off-Road	2.7408	29.8627	16.3770	0.0366		1.3372	1.3372		1.2573	1.2573		3,737.4250	3,737.4250	0.9964		3,758.3498
<b>Total</b>	<b>2.7408</b>	<b>29.8627</b>	<b>16.3770</b>	<b>0.0366</b>		<b>1.3372</b>	<b>1.3372</b>		<b>1.2573</b>	<b>1.2573</b>		<b>3,737.4250</b>	<b>3,737.4250</b>	<b>0.9964</b>		<b>3,758.3498</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0790	1.3548	0.5841	3.9300e-003	0.1178	0.0246	0.1424	0.0336	0.0226	0.0562		396.4267	396.4267	2.7500e-003		396.4843
Worker	0.0535	0.1330	1.4312	3.6700e-003	0.2964	1.9900e-003	0.2983	0.0786	1.8300e-003	0.0804		306.5358	306.5358	0.0146		306.8423
<b>Total</b>	<b>0.1325</b>	<b>1.4879</b>	<b>2.0153</b>	<b>7.6000e-003</b>	<b>0.4142</b>	<b>0.0266</b>	<b>0.4407</b>	<b>0.1121</b>	<b>0.0244</b>	<b>0.1366</b>		<b>702.9625</b>	<b>702.9625</b>	<b>0.0174</b>		<b>703.3267</b>



### 3.6 Set SVC Substation Foundations - 2016

#### 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	lb/day										lb/day					
Off-Road	1.0740	29.4892	21.3531	0.0366		0.7993	0.7993		0.7993	0.7993	0.0000	3,737.4250	3,737.4250	0.9964		3,758.3498
<b>Total</b>	<b>1.0740</b>	<b>29.4892</b>	<b>21.3531</b>	<b>0.0366</b>		<b>0.7993</b>	<b>0.7993</b>		<b>0.7993</b>	<b>0.7993</b>	<b>0.0000</b>	<b>3,737.4250</b>	<b>3,737.4250</b>	<b>0.9964</b>		<b>3,758.3498</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0790	1.3548	0.5841	3.9300e-003	0.1178	0.0246	0.1424	0.0336	0.0226	0.0562		396.4267	396.4267	2.7500e-003		396.4843
Worker	0.0535	0.1330	1.4312	3.6700e-003	0.2964	1.9900e-003	0.2983	0.0786	1.8300e-003	0.0804		306.5358	306.5358	0.0146		306.8423
<b>Total</b>	<b>0.1325</b>	<b>1.4879</b>	<b>2.0153</b>	<b>7.6000e-003</b>	<b>0.4142</b>	<b>0.0266</b>	<b>0.4407</b>	<b>0.1121</b>	<b>0.0244</b>	<b>0.1366</b>		<b>702.9625</b>	<b>702.9625</b>	<b>0.0174</b>		<b>703.3267</b>



**3.7 Material delivery - 2016****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	lb/day										lb/day					
Off-Road	1.2547	13.9197	6.0283	9.9400e-003		0.7426	0.7426		0.6832	0.6832		1,034.2930	1,034.2930	0.3120		1,040.8445
<b>Total</b>	<b>1.2547</b>	<b>13.9197</b>	<b>6.0283</b>	<b>9.9400e-003</b>		<b>0.7426</b>	<b>0.7426</b>		<b>0.6832</b>	<b>0.6832</b>		<b>1,034.2930</b>	<b>1,034.2930</b>	<b>0.3120</b>		<b>1,040.8445</b>

**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	lb/day										lb/day					
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
Vendor	0.0395	0.6774	0.2921	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.2133	198.2133	1.3700e-003		198.2422
Worker	0.0267	0.0665	0.7156	1.8400e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		153.2679	153.2679	7.3000e-003		153.4212
<b>Total</b>	<b>0.0662</b>	<b>0.7439</b>	<b>1.0077</b>	<b>3.8100e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>351.4812</b>	<b>351.4812</b>	<b>8.6700e-003</b>		<b>351.6633</b>



**3.7 Material delivery - 2016****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	lb/day										lb/day					
Off-Road	0.3095	8.8076	5.9465	9.9400e-003		0.2408	0.2408		0.2408	0.2408	0.0000	1,034.2929	1,034.2929	0.3120		1,040.8445
<b>Total</b>	<b>0.3095</b>	<b>8.8076</b>	<b>5.9465</b>	<b>9.9400e-003</b>		<b>0.2408</b>	<b>0.2408</b>		<b>0.2408</b>	<b>0.2408</b>	<b>0.0000</b>	<b>1,034.2929</b>	<b>1,034.2929</b>	<b>0.3120</b>		<b>1,040.8445</b>

**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	lb/day										lb/day					
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
Vendor	0.0395	0.6774	0.2921	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.2133	198.2133	1.3700e-003		198.2422
Worker	0.0267	0.0665	0.7156	1.8400e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		153.2679	153.2679	7.3000e-003		153.4212
<b>Total</b>	<b>0.0662</b>	<b>0.7439</b>	<b>1.0077</b>	<b>3.8100e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>351.4812</b>	<b>351.4812</b>	<b>8.6700e-003</b>		<b>351.6633</b>



**3.7 Material delivery - 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	lb/day										lb/day					
Off-Road	1.1398	12.6602	5.7223	9.9500e-003		0.6660	0.6660		0.6127	0.6127		1,018.1223	1,018.1223	0.3120		1,024.6733
<b>Total</b>	<b>1.1398</b>	<b>12.6602</b>	<b>5.7223</b>	<b>9.9500e-003</b>		<b>0.6660</b>	<b>0.6660</b>		<b>0.6127</b>	<b>0.6127</b>		<b>1,018.1223</b>	<b>1,018.1223</b>	<b>0.3120</b>		<b>1,024.6733</b>

**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	lb/day										lb/day					
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
Vendor	0.0363	0.5976	0.2692	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8200e-003	0.0266		194.8586	194.8586	1.2800e-003		194.8855
Worker	0.0235	0.0605	0.6467	1.8400e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		147.3490	147.3490	6.7700e-003		147.4911
<b>Total</b>	<b>0.0599</b>	<b>0.6581</b>	<b>0.9159</b>	<b>3.8000e-003</b>	<b>0.2071</b>	<b>0.0116</b>	<b>0.2187</b>	<b>0.0561</b>	<b>0.0107</b>	<b>0.0668</b>		<b>342.2076</b>	<b>342.2076</b>	<b>8.0500e-003</b>		<b>342.3766</b>



**3.7 Material delivery - 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	lb/day										lb/day					
Off-Road	0.3095	8.8076	5.9465	9.9500e-003		0.2408	0.2408		0.2408	0.2408	0.0000	1,018.1223	1,018.1223	0.3120		1,024.6733
<b>Total</b>	<b>0.3095</b>	<b>8.8076</b>	<b>5.9465</b>	<b>9.9500e-003</b>		<b>0.2408</b>	<b>0.2408</b>		<b>0.2408</b>	<b>0.2408</b>	<b>0.0000</b>	<b>1,018.1223</b>	<b>1,018.1223</b>	<b>0.3120</b>		<b>1,024.6733</b>

**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	lb/day										lb/day					
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
Vendor	0.0363	0.5976	0.2692	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8200e-003	0.0266		194.8586	194.8586	1.2800e-003		194.8855
Worker	0.0235	0.0605	0.6467	1.8400e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		147.3490	147.3490	6.7700e-003		147.4911
<b>Total</b>	<b>0.0599</b>	<b>0.6581</b>	<b>0.9159</b>	<b>3.8000e-003</b>	<b>0.2071</b>	<b>0.0116</b>	<b>0.2187</b>	<b>0.0561</b>	<b>0.0107</b>	<b>0.0668</b>		<b>342.2076</b>	<b>342.2076</b>	<b>8.0500e-003</b>		<b>342.3766</b>



### 3.8 Substation construction - 2016

#### 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	lb/day										lb/day					
Off-Road	4.9529	54.5450	26.3078	0.0622		2.3153	2.3153		2.1572	2.1572		6,399.4458	6,399.4458	1.7994		6,437.2327
<b>Total</b>	<b>4.9529</b>	<b>54.5450</b>	<b>26.3078</b>	<b>0.0622</b>		<b>2.3153</b>	<b>2.3153</b>		<b>2.1572</b>	<b>2.1572</b>		<b>6,399.4458</b>	<b>6,399.4458</b>	<b>1.7994</b>		<b>6,437.2327</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2370	4.0645	1.7524	0.0118	0.3534	0.0737	0.4271	0.1007	0.0678	0.1685		1,189.2800	1,189.2800	8.2400e-003		1,189.4530
Worker	0.0713	0.1774	1.9082	4.9000e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		408.7144	408.7144	0.0195		409.1231
<b>Total</b>	<b>0.3083</b>	<b>4.2418</b>	<b>3.6606</b>	<b>0.0167</b>	<b>0.7486</b>	<b>0.0764</b>	<b>0.8249</b>	<b>0.2055</b>	<b>0.0702</b>	<b>0.2757</b>		<b>1,597.9944</b>	<b>1,597.9944</b>	<b>0.0277</b>		<b>1,598.5761</b>



### 3.8 Substation construction - 2016

#### 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	lb/day										lb/day					
Off-Road	1.6341	48.7455	33.7438	0.0622		1.2285	1.2285		1.2285	1.2285	0.0000	6,399.4458	6,399.4458	1.7994		6,437.2327
<b>Total</b>	<b>1.6341</b>	<b>48.7455</b>	<b>33.7438</b>	<b>0.0622</b>		<b>1.2285</b>	<b>1.2285</b>		<b>1.2285</b>	<b>1.2285</b>	<b>0.0000</b>	<b>6,399.4458</b>	<b>6,399.4458</b>	<b>1.7994</b>		<b>6,437.2327</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2370	4.0645	1.7524	0.0118	0.3534	0.0737	0.4271	0.1007	0.0678	0.1685		1,189.2800	1,189.2800	8.2400e-003		1,189.4530
Worker	0.0713	0.1774	1.9082	4.9000e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		408.7144	408.7144	0.0195		409.1231
<b>Total</b>	<b>0.3083</b>	<b>4.2418</b>	<b>3.6606</b>	<b>0.0167</b>	<b>0.7486</b>	<b>0.0764</b>	<b>0.8249</b>	<b>0.2055</b>	<b>0.0702</b>	<b>0.2757</b>		<b>1,597.9944</b>	<b>1,597.9944</b>	<b>0.0277</b>		<b>1,598.5761</b>



### 3.8 Substation 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	lb/day										lb/day					
Off-Road	4.5465	49.5064	24.6757	0.0621		2.0625	2.0625		1.9215	1.9215		6,304.6372	6,304.6372	1.7913		6,342.2537
<b>Total</b>	<b>4.5465</b>	<b>49.5064</b>	<b>24.6757</b>	<b>0.0621</b>		<b>2.0625</b>	<b>2.0625</b>		<b>1.9215</b>	<b>1.9215</b>		<b>6,304.6372</b>	<b>6,304.6372</b>	<b>1.7913</b>		<b>6,342.2537</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2181	3.5853	1.6152	0.0118	0.3535	0.0640	0.4175	0.1007	0.0589	0.1596		1,169.1514	1,169.1514	7.6800e-003		1,169.3127
Worker	0.0627	0.1614	1.7246	4.9000e-003	0.3951	2.5600e-003	0.3977	0.1048	2.3600e-003	0.1071		392.9307	392.9307	0.0181		393.3097
<b>Total</b>	<b>0.2808</b>	<b>3.7467</b>	<b>3.3398</b>	<b>0.0167</b>	<b>0.7486</b>	<b>0.0666</b>	<b>0.8152</b>	<b>0.2055</b>	<b>0.0613</b>	<b>0.2668</b>		<b>1,562.0820</b>	<b>1,562.0820</b>	<b>0.0257</b>		<b>1,562.6224</b>



### 3.8 Substation 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	lb/day										lb/day					
Off-Road	1.6341	48.7455	33.7438	0.0621		1.2285	1.2285		1.2285	1.2285	0.0000	6,304.637 2	6,304.637 2	1.7913		6,342.253 7
<b>Total</b>	<b>1.6341</b>	<b>48.7455</b>	<b>33.7438</b>	<b>0.0621</b>		<b>1.2285</b>	<b>1.2285</b>		<b>1.2285</b>	<b>1.2285</b>	<b>0.0000</b>	<b>6,304.637 2</b>	<b>6,304.637 2</b>	<b>1.7913</b>		<b>6,342.253 7</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2181	3.5853	1.6152	0.0118	0.3535	0.0640	0.4175	0.1007	0.0589	0.1596		1,169.151 4	1,169.151 4	7.6800e- 003		1,169.312 7
Worker	0.0627	0.1614	1.7246	4.9000e- 003	0.3951	2.5600e- 003	0.3977	0.1048	2.3600e- 003	0.1071		392.9307	392.9307	0.0181		393.3097
<b>Total</b>	<b>0.2808</b>	<b>3.7467</b>	<b>3.3398</b>	<b>0.0167</b>	<b>0.7486</b>	<b>0.0666</b>	<b>0.8152</b>	<b>0.2055</b>	<b>0.0613</b>	<b>0.2668</b>		<b>1,562.082 0</b>	<b>1,562.082 0</b>	<b>0.0257</b>		<b>1,562.622 4</b>



**3.9 Structure Erection - 2016****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	lb/day										lb/day					
Off-Road	7.5114	84.1375	39.7247	0.0967		3.4441	3.4441		3.1957	3.1957		9,979.5256	9,979.5256	2.8793		10,039.9900
<b>Total</b>	<b>7.5114</b>	<b>84.1375</b>	<b>39.7247</b>	<b>0.0967</b>		<b>3.4441</b>	<b>3.4441</b>		<b>3.1957</b>	<b>3.1957</b>		<b>9,979.5256</b>	<b>9,979.5256</b>	<b>2.8793</b>		<b>10,039.9900</b>

**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	lb/day										lb/day					
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
Vendor	0.3555	6.0967	2.6285	0.0177	0.5302	0.1106	0.6407	0.1511	0.1017	0.2528		1,783.9201	1,783.9201	0.0124		1,784.1796
Worker	0.0713	0.1774	1.9082	4.9000e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		408.7144	408.7144	0.0195		409.1231
<b>Total</b>	<b>0.4268</b>	<b>6.2741</b>	<b>4.5368</b>	<b>0.0226</b>	<b>0.9253</b>	<b>0.1132</b>	<b>1.0385</b>	<b>0.2558</b>	<b>0.1041</b>	<b>0.3600</b>		<b>2,192.6344</b>	<b>2,192.6344</b>	<b>0.0318</b>		<b>2,193.3026</b>



**3.9 Structure Erection - 2016****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	lb/day										lb/day					
Off-Road	2.4726	75.4575	51.9620	0.0967		1.8425	1.8425		1.8425	1.8425	0.0000	9,979.5256	9,979.5256	2.8793		10,039.9900
<b>Total</b>	<b>2.4726</b>	<b>75.4575</b>	<b>51.9620</b>	<b>0.0967</b>		<b>1.8425</b>	<b>1.8425</b>		<b>1.8425</b>	<b>1.8425</b>	<b>0.0000</b>	<b>9,979.5256</b>	<b>9,979.5256</b>	<b>2.8793</b>		<b>10,039.9900</b>

**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	lb/day										lb/day					
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
Vendor	0.3555	6.0967	2.6285	0.0177	0.5302	0.1106	0.6407	0.1511	0.1017	0.2528		1,783.9201	1,783.9201	0.0124		1,784.1796
Worker	0.0713	0.1774	1.9082	4.9000e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		408.7144	408.7144	0.0195		409.1231
<b>Total</b>	<b>0.4268</b>	<b>6.2741</b>	<b>4.5368</b>	<b>0.0226</b>	<b>0.9253</b>	<b>0.1132</b>	<b>1.0385</b>	<b>0.2558</b>	<b>0.1041</b>	<b>0.3600</b>		<b>2,192.6344</b>	<b>2,192.6344</b>	<b>0.0318</b>		<b>2,193.3026</b>



**3.10 Install Vaults - 2016****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	lb/day										lb/day					
Off-Road	4.5971	49.5983	25.7713	0.0598		2.1873	2.1873		2.0394	2.0394		6,153.298 1	6,153.298 1	1.7251		6,189.525 9
<b>Total</b>	<b>4.5971</b>	<b>49.5983</b>	<b>25.7713</b>	<b>0.0598</b>		<b>2.1873</b>	<b>2.1873</b>		<b>2.0394</b>	<b>2.0394</b>		<b>6,153.298 1</b>	<b>6,153.298 1</b>	<b>1.7251</b>		<b>6,189.525 9</b>

**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	lb/day										lb/day					
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
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
Worker	0.0446	0.1109	1.1926	3.0600e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		255.4465	255.4465	0.0122		255.7019
<b>Total</b>	<b>0.0446</b>	<b>0.1109</b>	<b>1.1926</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>255.4465</b>	<b>255.4465</b>	<b>0.0122</b>		<b>255.7019</b>



**3.10 Install Vaults - 2016****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	lb/day										lb/day					
Off-Road	1.6405	47.0671	33.1220	0.0598		1.2471	1.2471		1.2471	1.2471	0.0000	6,153.298 1	6,153.298 1	1.7251		6,189.525 9
<b>Total</b>	<b>1.6405</b>	<b>47.0671</b>	<b>33.1220</b>	<b>0.0598</b>		<b>1.2471</b>	<b>1.2471</b>		<b>1.2471</b>	<b>1.2471</b>	<b>0.0000</b>	<b>6,153.298 1</b>	<b>6,153.298 1</b>	<b>1.7251</b>		<b>6,189.525 9</b>

**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	lb/day										lb/day					
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
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
Worker	0.0446	0.1109	1.1926	3.0600e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		255.4465	255.4465	0.0122		255.7019
<b>Total</b>	<b>0.0446</b>	<b>0.1109</b>	<b>1.1926</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>255.4465</b>	<b>255.4465</b>	<b>0.0122</b>		<b>255.7019</b>



**3.10 Install Vaults - 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	lb/day										lb/day					
Off-Road	4.2360	45.1478	24.3359	0.0598		1.9556	1.9556		1.8231	1.8231		6,061.849 9	6,061.849 9	1.7169		6,097.904 3
<b>Total</b>	<b>4.2360</b>	<b>45.1478</b>	<b>24.3359</b>	<b>0.0598</b>		<b>1.9556</b>	<b>1.9556</b>		<b>1.8231</b>	<b>1.8231</b>		<b>6,061.849 9</b>	<b>6,061.849 9</b>	<b>1.7169</b>		<b>6,097.904 3</b>

**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	lb/day										lb/day					
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
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
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0392</b>	<b>0.1009</b>	<b>1.0779</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>245.5817</b>	<b>245.5817</b>	<b>0.0113</b>		<b>245.8186</b>



**3.10 Install Vaults - 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	lb/day										lb/day					
Off-Road	1.6405	47.0671	33.1220	0.0598		1.2471	1.2471		1.2471	1.2471	0.0000	6,061.849 9	6,061.849 9	1.7169		6,097.904 3
<b>Total</b>	<b>1.6405</b>	<b>47.0671</b>	<b>33.1220</b>	<b>0.0598</b>		<b>1.2471</b>	<b>1.2471</b>		<b>1.2471</b>	<b>1.2471</b>	<b>0.0000</b>	<b>6,061.849 9</b>	<b>6,061.849 9</b>	<b>1.7169</b>		<b>6,097.904 3</b>

**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	lb/day										lb/day					
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
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
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0392</b>	<b>0.1009</b>	<b>1.0779</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>245.5817</b>	<b>245.5817</b>	<b>0.0113</b>		<b>245.8186</b>



**3.11 Install Transmission line foundations - 2016****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	lb/day										lb/day					
Off-Road	4.4827	49.9256	25.4413	0.0612		2.0773	2.0773		1.9383	1.9383		6,296.9948	6,296.9948	1.7685		6,334.1328
<b>Total</b>	<b>4.4827</b>	<b>49.9256</b>	<b>25.4413</b>	<b>0.0612</b>		<b>2.0773</b>	<b>2.0773</b>		<b>1.9383</b>	<b>1.9383</b>		<b>6,296.9948</b>	<b>6,296.9948</b>	<b>1.7685</b>		<b>6,334.1328</b>

**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	lb/day										lb/day					
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
Vendor	0.3940	7.3252	2.6825	0.0215	0.6478	0.1348	0.7826	0.1846	0.1240	0.3086		2,169.5459	2,169.5459	0.0149		2,169.8588
Worker	0.0446	0.1109	1.1926	3.0600e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		255.4465	255.4465	0.0122		255.7019
<b>Total</b>	<b>0.4386</b>	<b>7.4360</b>	<b>3.8751</b>	<b>0.0246</b>	<b>0.8948</b>	<b>0.1364</b>	<b>1.0312</b>	<b>0.2501</b>	<b>0.1255</b>	<b>0.3756</b>		<b>2,424.9924</b>	<b>2,424.9924</b>	<b>0.0271</b>		<b>2,425.5608</b>



**3.11 Install Transmission line foundations - 2016****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	lb/day										lb/day					
Off-Road	1.6571	48.3781	34.1012	0.0612		1.2300	1.2300		1.2300	1.2300	0.0000	6,296.9948	6,296.9948	1.7685		6,334.1328
<b>Total</b>	<b>1.6571</b>	<b>48.3781</b>	<b>34.1012</b>	<b>0.0612</b>		<b>1.2300</b>	<b>1.2300</b>		<b>1.2300</b>	<b>1.2300</b>	<b>0.0000</b>	<b>6,296.9948</b>	<b>6,296.9948</b>	<b>1.7685</b>		<b>6,334.1328</b>

**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	lb/day										lb/day					
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
Vendor	0.3940	7.3252	2.6825	0.0215	0.6478	0.1348	0.7826	0.1846	0.1240	0.3086		2,169.5459	2,169.5459	0.0149		2,169.8588
Worker	0.0446	0.1109	1.1926	3.0600e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		255.4465	255.4465	0.0122		255.7019
<b>Total</b>	<b>0.4386</b>	<b>7.4360</b>	<b>3.8751</b>	<b>0.0246</b>	<b>0.8948</b>	<b>0.1364</b>	<b>1.0312</b>	<b>0.2501</b>	<b>0.1255</b>	<b>0.3756</b>		<b>2,424.9924</b>	<b>2,424.9924</b>	<b>0.0271</b>		<b>2,425.5608</b>



**3.11 Install Transmission line foundations - 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	lb/day										lb/day					
Off-Road	4.1195	45.1936	24.1009	0.0612		1.8489	1.8489		1.7250	1.7250		6,204.1899	6,204.1899	1.7605		6,241.1601
<b>Total</b>	<b>4.1195</b>	<b>45.1936</b>	<b>24.1009</b>	<b>0.0612</b>		<b>1.8489</b>	<b>1.8489</b>		<b>1.7250</b>	<b>1.7250</b>		<b>6,204.1899</b>	<b>6,204.1899</b>	<b>1.7605</b>		<b>6,241.1601</b>

**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	lb/day										lb/day					
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
Vendor	0.3627	6.4538	2.4598	0.0215	0.6479	0.1171	0.7650	0.1846	0.1077	0.2923		2,132.8211	2,132.8211	0.0139		2,133.1126
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.4019</b>	<b>6.5547</b>	<b>3.5377</b>	<b>0.0245</b>	<b>0.8948</b>	<b>0.1187</b>	<b>1.0135</b>	<b>0.2501</b>	<b>0.1092</b>	<b>0.3593</b>		<b>2,378.4028</b>	<b>2,378.4028</b>	<b>0.0252</b>		<b>2,378.9311</b>



**3.11 Install Transmission line foundations - 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	lb/day										lb/day					
Off-Road	1.6571	48.3781	34.1012	0.0612		1.2300	1.2300		1.2300	1.2300	0.0000	6,204.1899	6,204.1899	1.7605		6,241.1601
<b>Total</b>	<b>1.6571</b>	<b>48.3781</b>	<b>34.1012</b>	<b>0.0612</b>		<b>1.2300</b>	<b>1.2300</b>		<b>1.2300</b>	<b>1.2300</b>	<b>0.0000</b>	<b>6,204.1899</b>	<b>6,204.1899</b>	<b>1.7605</b>		<b>6,241.1601</b>

**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	lb/day										lb/day					
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
Vendor	0.3627	6.4538	2.4598	0.0215	0.6479	0.1171	0.7650	0.1846	0.1077	0.2923		2,132.8211	2,132.8211	0.0139		2,133.1126
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.4019</b>	<b>6.5547</b>	<b>3.5377</b>	<b>0.0245</b>	<b>0.8948</b>	<b>0.1187</b>	<b>1.0135</b>	<b>0.2501</b>	<b>0.1092</b>	<b>0.3593</b>		<b>2,378.4028</b>	<b>2,378.4028</b>	<b>0.0252</b>		<b>2,378.9311</b>



**3.12 Install duct package - 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	lb/day										lb/day					
Off-Road	2.2051	22.9036	12.5586	0.0312		0.9849	0.9849		0.9301	0.9301		3,143.5267	3,143.5267	0.8227		3,160.8035
<b>Total</b>	<b>2.2051</b>	<b>22.9036</b>	<b>12.5586</b>	<b>0.0312</b>		<b>0.9849</b>	<b>0.9849</b>		<b>0.9301</b>	<b>0.9301</b>		<b>3,143.5267</b>	<b>3,143.5267</b>	<b>0.8227</b>		<b>3,160.8035</b>

**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	lb/day										lb/day					
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
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
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0392</b>	<b>0.1009</b>	<b>1.0779</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>245.5817</b>	<b>245.5817</b>	<b>0.0113</b>		<b>245.8186</b>



**3.12 Install duct package - 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	lb/day										lb/day					
Off-Road	0.8553	24.2581	17.1254	0.0312		0.6528	0.6528		0.6528	0.6528	0.0000	3,143.5267	3,143.5267	0.8227		3,160.8035
<b>Total</b>	<b>0.8553</b>	<b>24.2581</b>	<b>17.1254</b>	<b>0.0312</b>		<b>0.6528</b>	<b>0.6528</b>		<b>0.6528</b>	<b>0.6528</b>	<b>0.0000</b>	<b>3,143.5267</b>	<b>3,143.5267</b>	<b>0.8227</b>		<b>3,160.8035</b>

**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	lb/day										lb/day					
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
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
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0392</b>	<b>0.1009</b>	<b>1.0779</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>245.5817</b>	<b>245.5817</b>	<b>0.0113</b>		<b>245.8186</b>



**3.13 Wire Stringing - 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	lb/day										lb/day					
Off-Road	3.7469	41.6453	20.9069	0.0539		1.6980	1.6980		1.5622	1.5622		5,510.970 1	5,510.970 1	1.6886		5,546.429 7
<b>Total</b>	<b>3.7469</b>	<b>41.6453</b>	<b>20.9069</b>	<b>0.0539</b>		<b>1.6980</b>	<b>1.6980</b>		<b>1.5622</b>	<b>1.5622</b>		<b>5,510.970 1</b>	<b>5,510.970 1</b>	<b>1.6886</b>		<b>5,546.429 7</b>

**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	lb/day										lb/day					
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
Vendor	0.2181	3.5853	1.6152	0.0118	0.3535	0.0640	0.4175	0.1007	0.0589	0.1596		1,169.151 4	1,169.151 4	7.6800e-003		1,169.312 7
Worker	0.1176	0.3026	3.2337	9.1800e-003	0.7409	4.8000e-003	0.7457	0.1964	4.4300e-003	0.2008		736.7450	736.7450	0.0338		737.4557
<b>Total</b>	<b>0.3357</b>	<b>3.8879</b>	<b>4.8488</b>	<b>0.0210</b>	<b>1.0943</b>	<b>0.0688</b>	<b>1.1632</b>	<b>0.2971</b>	<b>0.0633</b>	<b>0.3605</b>		<b>1,905.896 3</b>	<b>1,905.896 3</b>	<b>0.0415</b>		<b>1,906.768 4</b>



**3.13 Wire Stringing - 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	lb/day										lb/day					
Off-Road	1.4057	42.4592	29.4413	0.0539		1.0493	1.0493		1.0493	1.0493	0.0000	5,510.970 1	5,510.970 1	1.6886		5,546.429 7
<b>Total</b>	<b>1.4057</b>	<b>42.4592</b>	<b>29.4413</b>	<b>0.0539</b>		<b>1.0493</b>	<b>1.0493</b>		<b>1.0493</b>	<b>1.0493</b>	<b>0.0000</b>	<b>5,510.970 1</b>	<b>5,510.970 1</b>	<b>1.6886</b>		<b>5,546.429 7</b>

**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	lb/day										lb/day					
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
Vendor	0.2181	3.5853	1.6152	0.0118	0.3535	0.0640	0.4175	0.1007	0.0589	0.1596		1,169.151 4	1,169.151 4	7.6800e-003		1,169.312 7
Worker	0.1176	0.3026	3.2337	9.1800e-003	0.7409	4.8000e-003	0.7457	0.1964	4.4300e-003	0.2008		736.7450	736.7450	0.0338		737.4557
<b>Total</b>	<b>0.3357</b>	<b>3.8879</b>	<b>4.8488</b>	<b>0.0210</b>	<b>1.0943</b>	<b>0.0688</b>	<b>1.1632</b>	<b>0.2971</b>	<b>0.0633</b>	<b>0.3605</b>		<b>1,905.896 3</b>	<b>1,905.896 3</b>	<b>0.0415</b>		<b>1,906.768 4</b>



**3.14 Transformer & SVC Delivery - 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	lb/day										lb/day					
Off-Road	0.3015	3.3553	1.6094	2.7300e-003		0.1787	0.1787		0.1644	0.1644		279.8447	279.8447	0.0857		281.6453
<b>Total</b>	<b>0.3015</b>	<b>3.3553</b>	<b>1.6094</b>	<b>2.7300e-003</b>		<b>0.1787</b>	<b>0.1787</b>		<b>0.1644</b>	<b>0.1644</b>		<b>279.8447</b>	<b>279.8447</b>	<b>0.0857</b>		<b>281.6453</b>

**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	lb/day										lb/day					
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
Vendor	0.0363	0.5976	0.2692	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8200e-003	0.0266		194.8586	194.8586	1.2800e-003		194.8855
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0755</b>	<b>0.6984</b>	<b>1.3471</b>	<b>5.0200e-003</b>	<b>0.3059</b>	<b>0.0123</b>	<b>0.3181</b>	<b>0.0823</b>	<b>0.0113</b>	<b>0.0936</b>		<b>440.4402</b>	<b>440.4402</b>	<b>0.0126</b>		<b>440.7040</b>



**3.14 Transformer & SVC Delivery - 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	lb/day										lb/day					
Off-Road	0.0888	2.4387	1.6711	2.7300e-003		0.0698	0.0698		0.0698	0.0698	0.0000	279.8447	279.8447	0.0857		281.6453
<b>Total</b>	<b>0.0888</b>	<b>2.4387</b>	<b>1.6711</b>	<b>2.7300e-003</b>		<b>0.0698</b>	<b>0.0698</b>		<b>0.0698</b>	<b>0.0698</b>	<b>0.0000</b>	<b>279.8447</b>	<b>279.8447</b>	<b>0.0857</b>		<b>281.6453</b>

**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	lb/day										lb/day					
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
Vendor	0.0363	0.5976	0.2692	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8200e-003	0.0266		194.8586	194.8586	1.2800e-003		194.8855
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0755</b>	<b>0.6984</b>	<b>1.3471</b>	<b>5.0200e-003</b>	<b>0.3059</b>	<b>0.0123</b>	<b>0.3181</b>	<b>0.0823</b>	<b>0.0113</b>	<b>0.0936</b>		<b>440.4402</b>	<b>440.4402</b>	<b>0.0126</b>		<b>440.7040</b>



**3.15 Pull cable - 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	lb/day										lb/day					
Off-Road	2.3812	23.4861	13.6785	0.0259		1.3768	1.3768		1.2666	1.2666		2,650.9105	2,650.9105	0.8122		2,667.9674
<b>Total</b>	<b>2.3812</b>	<b>23.4861</b>	<b>13.6785</b>	<b>0.0259</b>		<b>1.3768</b>	<b>1.3768</b>		<b>1.2666</b>	<b>1.2666</b>		<b>2,650.9105</b>	<b>2,650.9105</b>	<b>0.8122</b>		<b>2,667.9674</b>

**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	lb/day										lb/day					
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
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
Worker	0.0784	0.2018	2.1558	6.1200e-003	0.4939	3.2000e-003	0.4971	0.1309	2.9500e-003	0.1339		491.1633	491.1633	0.0226		491.6371
<b>Total</b>	<b>0.0784</b>	<b>0.2018</b>	<b>2.1558</b>	<b>6.1200e-003</b>	<b>0.4939</b>	<b>3.2000e-003</b>	<b>0.4971</b>	<b>0.1309</b>	<b>2.9500e-003</b>	<b>0.1339</b>		<b>491.1633</b>	<b>491.1633</b>	<b>0.0226</b>		<b>491.6371</b>



**3.15 Pull cable - 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	lb/day										lb/day					
Off-Road	0.8521	21.9932	15.9513	0.0259		0.6705	0.6705		0.6705	0.6705	0.0000	2,650.9105	2,650.9105	0.8122		2,667.9674
<b>Total</b>	<b>0.8521</b>	<b>21.9932</b>	<b>15.9513</b>	<b>0.0259</b>		<b>0.6705</b>	<b>0.6705</b>		<b>0.6705</b>	<b>0.6705</b>	<b>0.0000</b>	<b>2,650.9105</b>	<b>2,650.9105</b>	<b>0.8122</b>		<b>2,667.9674</b>

**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	lb/day										lb/day					
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
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
Worker	0.0784	0.2018	2.1558	6.1200e-003	0.4939	3.2000e-003	0.4971	0.1309	2.9500e-003	0.1339		491.1633	491.1633	0.0226		491.6371
<b>Total</b>	<b>0.0784</b>	<b>0.2018</b>	<b>2.1558</b>	<b>6.1200e-003</b>	<b>0.4939</b>	<b>3.2000e-003</b>	<b>0.4971</b>	<b>0.1309</b>	<b>2.9500e-003</b>	<b>0.1339</b>		<b>491.1633</b>	<b>491.1633</b>	<b>0.0226</b>		<b>491.6371</b>



**3.16 Install cable splices - 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	lb/day										lb/day					
Off-Road	1.0058	10.5753	7.8964	0.0115		0.5605	0.5605		0.5157	0.5157		1,174.5068	1,174.5068	0.3599		1,182.0640
<b>Total</b>	<b>1.0058</b>	<b>10.5753</b>	<b>7.8964</b>	<b>0.0115</b>		<b>0.5605</b>	<b>0.5605</b>		<b>0.5157</b>	<b>0.5157</b>		<b>1,174.5068</b>	<b>1,174.5068</b>	<b>0.3599</b>		<b>1,182.0640</b>

**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	lb/day										lb/day					
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
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
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0392</b>	<b>0.1009</b>	<b>1.0779</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>245.5817</b>	<b>245.5817</b>	<b>0.0113</b>		<b>245.8186</b>



**3.16 Install cable splices - 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	lb/day										lb/day					
Off-Road	0.4477	9.8258	8.7183	0.0115		0.3016	0.3016		0.3016	0.3016	0.0000	1,174.5068	1,174.5068	0.3599		1,182.0640
<b>Total</b>	<b>0.4477</b>	<b>9.8258</b>	<b>8.7183</b>	<b>0.0115</b>		<b>0.3016</b>	<b>0.3016</b>		<b>0.3016</b>	<b>0.3016</b>	<b>0.0000</b>	<b>1,174.5068</b>	<b>1,174.5068</b>	<b>0.3599</b>		<b>1,182.0640</b>

**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	lb/day										lb/day					
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
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
Worker	0.0392	0.1009	1.0779	3.0600e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		245.5817	245.5817	0.0113		245.8186
<b>Total</b>	<b>0.0392</b>	<b>0.1009</b>	<b>1.0779</b>	<b>3.0600e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>245.5817</b>	<b>245.5817</b>	<b>0.0113</b>		<b>245.8186</b>



**3.17 Right-of-way restoration and cleanup - 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	lb/day										lb/day					
Fugitive Dust					0.3315	0.0000	0.3315	0.0358	0.0000	0.0358			0.0000			0.0000
Off-Road	3.0017	33.1222	16.8754	0.0401		1.3747	1.3747		1.2647	1.2647		4,097.4456	4,097.4456	1.2555		4,123.8100
<b>Total</b>	<b>3.0017</b>	<b>33.1222</b>	<b>16.8754</b>	<b>0.0401</b>	<b>0.3315</b>	<b>1.3747</b>	<b>1.7062</b>	<b>0.0358</b>	<b>1.2647</b>	<b>1.3005</b>		<b>4,097.4456</b>	<b>4,097.4456</b>	<b>1.2555</b>		<b>4,123.8100</b>

**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	lb/day										lb/day					
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
Vendor	0.1090	1.7927	0.8076	5.8900e-003	0.1767	0.0320	0.2088	0.0504	0.0295	0.0798		584.5757	584.5757	3.8400e-003		584.6564
Worker	0.0470	0.1211	1.2935	3.6700e-003	0.2964	1.9200e-003	0.2983	0.0786	1.7700e-003	0.0803		294.6980	294.6980	0.0135		294.9823
<b>Total</b>	<b>0.1561</b>	<b>1.9137</b>	<b>2.1011</b>	<b>9.5600e-003</b>	<b>0.4731</b>	<b>0.0339</b>	<b>0.5070</b>	<b>0.1289</b>	<b>0.0312</b>	<b>0.1602</b>		<b>879.2737</b>	<b>879.2737</b>	<b>0.0174</b>		<b>879.6386</b>



**3.17 Right-of-way restoration and cleanup - 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	lb/day										lb/day					
Fugitive Dust					0.1293	0.0000	0.1293	0.0140	0.0000	0.0140			0.0000			0.0000
Off-Road	1.0826	31.5097	22.8457	0.0401		0.7773	0.7773		0.7773	0.7773	0.0000	4,097.4456	4,097.4456	1.2555		4,123.8100
<b>Total</b>	<b>1.0826</b>	<b>31.5097</b>	<b>22.8457</b>	<b>0.0401</b>	<b>0.1293</b>	<b>0.7773</b>	<b>0.9066</b>	<b>0.0140</b>	<b>0.7773</b>	<b>0.7913</b>	<b>0.0000</b>	<b>4,097.4456</b>	<b>4,097.4456</b>	<b>1.2555</b>		<b>4,123.8100</b>

**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	lb/day										lb/day					
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
Vendor	0.1090	1.7927	0.8076	5.8900e-003	0.1767	0.0320	0.2088	0.0504	0.0295	0.0798		584.5757	584.5757	3.8400e-003		584.6564
Worker	0.0470	0.1211	1.2935	3.6700e-003	0.2964	1.9200e-003	0.2983	0.0786	1.7700e-003	0.0803		294.6980	294.6980	0.0135		294.9823
<b>Total</b>	<b>0.1561</b>	<b>1.9137</b>	<b>2.1011</b>	<b>9.5600e-003</b>	<b>0.4731</b>	<b>0.0339</b>	<b>0.5070</b>	<b>0.1289</b>	<b>0.0312</b>	<b>0.1602</b>		<b>879.2737</b>	<b>879.2737</b>	<b>0.0174</b>		<b>879.6386</b>



**3.18 Test cable splices - 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	lb/day										lb/day					
Off-Road	0.4304	3.7311	2.6073	3.1600e-003		0.3068	0.3068		0.2823	0.2823		323.5275	323.5275	0.0991		325.6092
<b>Total</b>	<b>0.4304</b>	<b>3.7311</b>	<b>2.6073</b>	<b>3.1600e-003</b>		<b>0.3068</b>	<b>0.3068</b>		<b>0.2823</b>	<b>0.2823</b>		<b>323.5275</b>	<b>323.5275</b>	<b>0.0991</b>		<b>325.6092</b>

**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	lb/day										lb/day					
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
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
Worker	0.0235	0.0605	0.6467	1.8400e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		147.3490	147.3490	6.7700e-003		147.4911
<b>Total</b>	<b>0.0235</b>	<b>0.0605</b>	<b>0.6467</b>	<b>1.8400e-003</b>	<b>0.1482</b>	<b>9.6000e-004</b>	<b>0.1491</b>	<b>0.0393</b>	<b>8.9000e-004</b>	<b>0.0402</b>		<b>147.3490</b>	<b>147.3490</b>	<b>6.7700e-003</b>		<b>147.4911</b>



**3.18 Test cable splices - 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	lb/day										lb/day					
Off-Road	0.1500	3.0976	2.4129	3.1600e-003		0.1252	0.1252		0.1252	0.1252	0.0000	323.5275	323.5275	0.0991		325.6092
<b>Total</b>	<b>0.1500</b>	<b>3.0976</b>	<b>2.4129</b>	<b>3.1600e-003</b>		<b>0.1252</b>	<b>0.1252</b>		<b>0.1252</b>	<b>0.1252</b>	<b>0.0000</b>	<b>323.5275</b>	<b>323.5275</b>	<b>0.0991</b>		<b>325.6092</b>

**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	lb/day										lb/day					
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
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
Worker	0.0235	0.0605	0.6467	1.8400e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		147.3490	147.3490	6.7700e-003		147.4911
<b>Total</b>	<b>0.0235</b>	<b>0.0605</b>	<b>0.6467</b>	<b>1.8400e-003</b>	<b>0.1482</b>	<b>9.6000e-004</b>	<b>0.1491</b>	<b>0.0393</b>	<b>8.9000e-004</b>	<b>0.0402</b>		<b>147.3490</b>	<b>147.3490</b>	<b>6.7700e-003</b>		<b>147.4911</b>

**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	lb/day										lb/day					
Mitigated	0.3025	0.6823	3.1569	8.2400e-003	0.5560	9.6200e-003	0.5656	0.1484	8.8600e-003	0.1573		672.8211	672.8211	0.0260		673.3661
Unmitigated	0.3025	0.6823	3.1569	8.2400e-003	0.5560	9.6200e-003	0.5656	0.1484	8.8600e-003	0.1573		672.8211	672.8211	0.0260		673.3661

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	90.00	90.00	90.00	262,756	262,756
Total	90.00	90.00	90.00	262,756	262,756

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

#### 5.0 Energy Detail

##### 4.4 Fleet Mix

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	lb/day										lb/day					
NaturalGas Mitigated	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
NaturalGas Unmitigated	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960

## 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	lb/day										lb/day					
General Light Industry	2907.12	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
<b>Total</b>		<b>0.0314</b>	<b>0.2850</b>	<b>0.2394</b>	<b>1.7100e-003</b>		<b>0.0217</b>	<b>0.0217</b>		<b>0.0217</b>	<b>0.0217</b>		<b>342.0145</b>	<b>342.0145</b>	<b>6.5600e-003</b>	<b>6.2700e-003</b>	<b>344.0960</b>



## 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	lb/day										lb/day					
General Light Industry	2.90712	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
<b>Total</b>		<b>0.0314</b>	<b>0.2850</b>	<b>0.2394</b>	<b>1.7100e-003</b>		<b>0.0217</b>	<b>0.0217</b>		<b>0.0217</b>	<b>0.0217</b>		<b>342.0145</b>	<b>342.0145</b>	<b>6.5600e-003</b>	<b>6.2700e-003</b>	<b>344.0960</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
Unmitigated	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208



## 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	lb/day										lb/day					
Architectural Coating	0.5714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9260					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.9000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
<b>Total</b>	<b>2.4983</b>	<b>9.0000e-005</b>	<b>9.3200e-003</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>0.0197</b>	<b>0.0197</b>	<b>5.0000e-005</b>		<b>0.0208</b>

### 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	lb/day										lb/day					
Architectural Coating	0.5714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9260					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.9000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
<b>Total</b>	<b>2.4983</b>	<b>9.0000e-005</b>	<b>9.3200e-003</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>0.0197</b>	<b>0.0197</b>	<b>5.0000e-005</b>		<b>0.0208</b>

## 7.0 Water Detail



**7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

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## Suncrest Reactive Power Support Project

### San Diego County, Winter

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	90.00	1000sqft	12.00	90,000.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Rural	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	40
<b>Climate Zone</b>	13			<b>Operational Year</b>	2018
<b>Utility Company</b>	San Diego Gas & Electric				
<b>CO2 Intensity (lb/MW hr)</b>	720.49	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage setup to 12

Construction Phase - Construction Schedule from Suncrest Construction Plan 20150625

Off-road Equipment - Equipment Roster

Off-road Equipment - Splice truck

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster



Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Test truck

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Off-road Equipment - Equipment Roster

Trips and VMT - 3,500 cubic yards of spoils will need to be hauled offsite = 438 trips \* 8 cubic yards/trip

Grading -

Vehicle Trips - Assumes one (1) trip per day

Water And Wastewater - Unmanned facility, No planned indoor water use

Solid Waste - Unmanned facility, No solid waste generation

Land Use Change -

Construction Off-road Equipment Mitigation - All Engines are assumed to comply with Tier 2 engine

Area Mitigation - Low VOC paint

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00



[illegible]



[illegible]



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tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
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tblConstructionPhase	PhaseEndDate	3/14/2017	1/27/2017
tblConstructionPhase	PhaseEndDate	2/11/2017	1/30/2017
tblConstructionPhase	PhaseEndDate	2/20/2017	3/21/2017
tblConstructionPhase	PhaseEndDate	6/17/2017	4/24/2017
tblConstructionPhase	PhaseEndDate	1/30/2017	11/20/2016
tblConstructionPhase	PhaseEndDate	3/1/2017	1/15/2017
tblConstructionPhase	PhaseEndDate	5/26/2017	3/10/2017
tblConstructionPhase	PhaseEndDate	5/10/2017	12/31/2016
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tblConstructionPhase	PhaseEndDate	6/23/2017	6/15/2017
tblConstructionPhase	PhaseEndDate	10/15/2016	10/31/2016
tblConstructionPhase	PhaseEndDate	1/9/2017	12/10/2016
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tblConstructionPhase	PhaseStartDate	3/1/2017	1/15/2017
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tblConstructionPhase	PhaseStartDate	11/21/2016	10/7/2016
tblConstructionPhase	PhaseStartDate	1/16/2017	10/31/2016
tblConstructionPhase	PhaseStartDate	3/11/2017	11/1/2016



tblConstructionPhase	PhaseStartDate	1/1/2017	12/11/2016
tblConstructionPhase	PhaseStartDate	11/1/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	4/23/2017	4/15/2017
tblConstructionPhase	PhaseStartDate	8/16/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	10/1/2016	9/1/2016
tblGrading	MaterialExported	0.00	3,500.00
tblLandUse	LotAcreage	2.07	12.00
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tblProjectCharacteristics	UrbanizationLevel	Urban	Rural



[illegible]



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tblTripsAndVMT	WorkerTripNumber	38.00	5.00
tblVehicleTrips	CC_TL	6.60	7.30
tblVehicleTrips	CNW_TL	6.60	7.30
tblVehicleTrips	CW_TL	14.70	9.50
tblVehicleTrips	ST_TR	1.32	1.00
tblVehicleTrips	SU_TR	0.68	1.00
tblVehicleTrips	WD_TR	6.97	1.00
tblWater	IndoorWaterUseRate	20,812,500.00	0.00

## 2.0 Emissions Summary

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## 2.1 Overall Construction (Maximum Daily Emission)

### 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	lb/day										lb/day					
2016	24.1142	271.6413	137.7157	0.3594	10.9137	11.1079	17.2512	4.7550	10.3277	11.1605	0.0000	36,590.7094	36,590.7094	8.5917	0.0000	36,771.1360
2017	16.8963	187.4388	101.5999	0.2860	3.1918	7.5278	10.7196	0.8742	6.9977	7.8719	0.0000	28,502.9956	28,502.9956	6.4868	0.0000	28,639.2182
Total	41.0105	459.0801	239.3155	0.6454	14.1055	18.6357	27.9708	5.6292	17.3254	19.0325	0.0000	65,093.7050	65,093.7050	15.0785	0.0000	65,410.3542

### 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	lb/day										lb/day					
2016	9.0292	247.9712	173.3179	0.3594	6.4071	6.1301	9.5117	2.4425	6.1028	6.9357	0.0000	36,590.7093	36,590.7093	8.5917	0.0000	36,771.1360
2017	7.0002	188.1783	133.9937	0.2860	3.1918	4.6690	7.8608	0.8742	4.6476	5.5218	0.0000	28,502.9956	28,502.9956	6.4868	0.0000	28,639.2182
Total	16.0294	436.1495	307.3116	0.6454	9.5989	10.7991	17.3725	3.3167	10.7504	12.4575	0.0000	65,093.7049	65,093.7049	15.0785	0.0000	65,410.3542

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	60.91	4.99	-28.41	0.00	31.95	42.05	37.89	41.08	37.95	34.55	0.00	0.00	0.00	0.00	0.00	0.00



## 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	lb/day										lb/day					
Area	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
Energy	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
Mobile	0.3210	0.7249	3.2982	7.8300e-003	0.5560	9.6600e-003	0.5656	0.1484	8.9000e-003	0.1573		640.4780	640.4780	0.0260		641.0234
<b>Total</b>	<b>2.8506</b>	<b>1.0100</b>	<b>3.5469</b>	<b>9.5400e-003</b>	<b>0.5560</b>	<b>0.0314</b>	<b>0.5873</b>	<b>0.1484</b>	<b>0.0306</b>	<b>0.1790</b>		<b>982.5122</b>	<b>982.5122</b>	<b>0.0326</b>	<b>6.2700e-003</b>	<b>985.1402</b>

### 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	lb/day										lb/day					
Area	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
Energy	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
Mobile	0.3210	0.7249	3.2982	7.8300e-003	0.5560	9.6600e-003	0.5656	0.1484	8.9000e-003	0.1573		640.4780	640.4780	0.0260		641.0234
<b>Total</b>	<b>2.8506</b>	<b>1.0100</b>	<b>3.5469</b>	<b>9.5400e-003</b>	<b>0.5560</b>	<b>0.0314</b>	<b>0.5873</b>	<b>0.1484</b>	<b>0.0306</b>	<b>0.1790</b>		<b>982.5122</b>	<b>982.5122</b>	<b>0.0326</b>	<b>6.2700e-003</b>	<b>985.1402</b>



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

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#### Construction Phase



Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Field Survey	Site Preparation	8/1/2016	8/15/2016	7	15	Surveying includes setting up survey equipment, taking measurements, and installing stakes
2	SDG&E Site preparation	Site Preparation	9/1/2016	10/31/2016	7	61	SDG&E Site preparation phase
3	SVC Site Grading	Grading	9/1/2016	9/30/2016	7	30	Site earthwork and grading.
4	Trenching	Trenching	9/1/2016	12/10/2016	7	101	Trench will be approximately 30" wide by 60" deep.
5	Set SVC Substation Foundations	Building Construction	10/1/2016	11/20/2016	7	51	Auguring holes, removing soil, and foundation forming.
6	Material delivery	Building Construction	10/7/2016	1/15/2017	7	101	Material haul, transporting material to the site.
7	Substation construction	Building Construction	10/31/2016	3/10/2017	7	131	Install equipment, structural steel and bus work.
8	Structure Erection	Building Construction	11/1/2016	12/31/2016	7	61	SDG&E Suncrest Substation Structure and Equipment erection
9	Install Vaults	Building Construction	12/11/2016	1/9/2017	7	30	Excavate hole for vault, install vault sections, backfill with concrete
10	Install Transmission line foundations	Building Construction	12/31/2016	1/15/2017	7	16	Foundation installation includes auguring holes, remove soil and foundation formation.
11	Install duct package	Building Construction	1/10/2017	2/28/2017	7	50	Install approximately 100 feet of duct/day
12	Wire Stringing	Building Construction	1/15/2017	1/27/2017	5	10	Wire Stringing into SDG&E Suncrest Substation
13	Transformer & SVC Delivery	Building Construction	1/16/2017	1/30/2017	7	15	Install transformer and SVC
14	Pull cable	Building Construction	3/1/2017	3/21/2017	7	21	6 pulls at 850feet each
15	Install cable splices	Building Construction	3/22/2017	4/22/2017	7	32	Install cable splice. Assume 16 hours/day
16	Right-of-way restoration and cleanup	Site Preparation	4/15/2017	6/15/2017	7	62	Restore back to natural state, removing culverts, restoring original grade, seeding area with native plants
17	Test cable splices	Building Construction	4/23/2017	4/24/2017	7	2	Test cable splices per accepted standards and techniques.

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0



**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Field Survey	Off-Highway Trucks	0	10.00	400	0.38
Field Survey	Rubber Tired Dozers	0	8.00	255	0.40
Field Survey	Tractors/Loaders/Backhoes	0	8.00	97	0.37
SDG&E Site preparation	Bore/Drill Rigs	1	5.00	205	0.50
SDG&E Site preparation	Cranes	1	2.50	226	0.29
SDG&E Site preparation	Excavators	1	7.00	162	0.38
SDG&E Site preparation	Off-Highway Trucks	2	10.00	400	0.38
SDG&E Site preparation	Off-Highway Trucks	2	3.00	400	0.38
SDG&E Site preparation	Rubber Tired Dozers	0	8.00	255	0.40
SDG&E Site preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
SVC Site Grading	Dumpers/Tenders	1	9.00	16	0.38
SVC Site Grading	Dumpers/Tenders	10	5.00	16	0.38
SVC Site Grading	Excavators	0	8.00	162	0.38
SVC Site Grading	Graders	1	9.00	174	0.41
SVC Site Grading	Off-Highway Trucks	1	10.00	400	0.38
SVC Site Grading	Rollers	2	5.00	80	0.38
SVC Site Grading	Rubber Tired Dozers	1	9.00	255	0.40
SVC Site Grading	Rubber Tired Loaders	1	9.00	199	0.36
SVC Site Grading	Scrapers	0	8.00	361	0.48
SVC Site Grading	Tractors/Loaders/Backhoes	1	9.00	97	0.37
Trenching	Dumpers/Tenders	1	10.00	16	0.38
Trenching	Off-Highway Trucks	1	10.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Trenching	Trenchers	1	10.00	80	0.50



Set SVC Substation Foundations	Bore/Drill Rigs	1	5.00	205	0.50
Set SVC Substation Foundations	Cranes	1	3.00	226	0.29
Set SVC Substation Foundations	Excavators	1	9.00	162	0.38
Set SVC Substation Foundations	Forklifts	0	8.00	89	0.20
Set SVC Substation Foundations	Generator Sets	1	8.00	84	0.74
Set SVC Substation Foundations	Off-Highway Trucks	1	10.00	400	0.38
Set SVC Substation Foundations	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Set SVC Substation Foundations	Welders	0	8.00	46	0.45
Material delivery	Cranes	2	5.00	226	0.29
Material delivery	Forklifts	1	5.00	89	0.20
Material delivery	Generator Sets	0	8.00	84	0.74
Material delivery	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Material delivery	Welders	0	8.00	46	0.45
Substation construction	Cranes	1	7.50	226	0.29
Substation construction	Forklifts	0	8.00	89	0.20
Substation construction	Generator Sets	1	8.00	84	0.74
Substation construction	Off-Highway Trucks	2	10.00	400	0.38
Substation construction	Off-Highway Trucks	2	5.00	400	0.38
Substation construction	Tractors/Loaders/Backhoes	1	2.50	97	0.37
Substation construction	Welders	0	8.00	46	0.45
Structure Erection	Cranes	2	5.00	226	0.29
Structure Erection	Forklifts	0	8.00	89	0.20
Structure Erection	Generator Sets	1	8.00	84	0.74
Structure Erection	Off-Highway Trucks	5	10.00	400	0.38
Structure Erection	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Structure Erection	Welders	0	8.00	46	0.45
Install Vaults	Cranes	0	7.00	226	0.29
Install Vaults	Forklifts	0	8.00	89	0.20



Install Vaults	Generator Sets	1	8.00	84	0.74
Install Vaults	Off-Highway Trucks	3	10.00	400	0.38
Install Vaults	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Install Vaults	Welders	0	8.00	46	0.45
Install Transmission line foundations	Bore/Drill Rigs	1	5.00	205	0.50
Install Transmission line foundations	Cranes	1	2.50	226	0.29
Install Transmission line foundations	Excavators	1	7.00	162	0.38
Install Transmission line foundations	Forklifts	0	8.00	89	0.20
Install Transmission line foundations	Generator Sets	1	8.00	84	0.74
Install Transmission line foundations	Off-Highway Trucks	2	10.00	400	0.38
Install Transmission line foundations	Off-Highway Trucks	2	3.00	400	0.38
Install Transmission line foundations	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install Transmission line foundations	Welders	0	8.00	46	0.45
Install duct package	Cranes	0	7.00	226	0.29
Install duct package	Forklifts	0	8.00	89	0.20
Install duct package	Generator Sets	1	8.00	84	0.74
Install duct package	Off-Highway Trucks	2	7.50	400	0.38
Install duct package	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install duct package	Welders	0	8.00	46	0.45
Wire Stringing	Cranes	1	1.00	226	0.29
Wire Stringing	Forklifts	0	8.00	89	0.20
Wire Stringing	Generator Sets	0	8.00	84	0.74
Wire Stringing	Off-Highway Trucks	3	10.00	400	0.38
Wire Stringing	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Wire Stringing	Welders	0	8.00	46	0.45
Transformer & SVC Delivery	Cranes	1	2.50	226	0.29
Transformer & SVC Delivery	Forklifts	0	8.00	89	0.20
Transformer & SVC Delivery	Generator Sets	0	8.00	84	0.74



Transformer & SVC Delivery	Tractors/Loaders/Backhoes	1	2.50	97	0.37
Transformer & SVC Delivery	Welders	0	8.00	46	0.45
Pull cable	Cranes	0	7.00	226	0.29
Pull cable	Forklifts	0	8.00	89	0.20
Pull cable	Generator Sets	0	8.00	84	0.74
Pull cable	Off-Highway Trucks	1	10.00	400	0.38
Pull cable	Other General Industrial Equipment	3	10.00	87	0.34
Pull cable	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Pull cable	Welders	0	8.00	46	0.45
Install cable splices	Cranes	0	7.00	226	0.29
Install cable splices	Forklifts	0	8.00	89	0.20
Install cable splices	Generator Sets	0	8.00	84	0.74
Install cable splices	Other Material Handling Equipment	1	16.00	167	0.40
Install cable splices	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Install cable splices	Welders	0	8.00	46	0.45
Right-of-way restoration and cleanup	Excavators	1	5.00	162	0.38
Right-of-way restoration and cleanup	Graders	1	5.00	174	0.41
Right-of-way restoration and cleanup	Off-Highway Trucks	1	10.00	400	0.38
Right-of-way restoration and cleanup	Off-Highway Trucks	1	10.00	400	0.38
Right-of-way restoration and cleanup	Rubber Tired Dozers	0	8.00	255	0.40
Right-of-way restoration and cleanup	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Test cable splices	Cranes	0	7.00	226	0.29
Test cable splices	Forklifts	0	8.00	89	0.20
Test cable splices	Generator Sets	0	8.00	84	0.74
Test cable splices	Other General Industrial Equipment	1	10.00	87	0.34
Test cable splices	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Test cable splices	Welders	0	8.00	46	0.45



**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Field Survey	0	3.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
SDG&E Site preparation	7	9.00	5.00	0.00	65.00	91.00	65.00	LD_Mix	HDT_Mix	HHDT
SVC Site Grading	18	18.00	12.00	438.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Set SVC Substation Foundations	5	6.00	2.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Material delivery	4	3.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Substation construction	7	8.00	6.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Structure Erection	9	8.00	9.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install Vaults	5	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install Transmission line foundations	8	5.00	5.00	0.00	65.00	143.00	65.00	LD_Mix	HDT_Mix	HHDT
Install duct package	3	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Wire Stringing	5	15.00	6.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Transformer & SVC Delivery	2	5.00	1.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Pull cable	4	10.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Install cable splices	1	5.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Right-of-way restoration and cleanup	4	6.00	3.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT
Test cable splices	1	3.00	0.00	0.00	65.00	65.00	65.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads



### 3.2 Field Survey - 2016

#### 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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0410	0.7007	0.3290	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.0304	198.0304	1.3800e-003		198.0594
Worker	0.0267	0.0746	0.6540	1.7200e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		143.7966	143.7966	7.3000e-003		143.9499
<b>Total</b>	<b>0.0677</b>	<b>0.7753</b>	<b>0.9830</b>	<b>3.6900e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>341.8270</b>	<b>341.8270</b>	<b>8.6800e-003</b>		<b>342.0093</b>



### 3.2 Field Survey - 2016

#### 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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0410	0.7007	0.3290	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.0304	198.0304	1.3800e-003		198.0594
Worker	0.0267	0.0746	0.6540	1.7200e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		143.7966	143.7966	7.3000e-003		143.9499
<b>Total</b>	<b>0.0677</b>	<b>0.7753</b>	<b>0.9830</b>	<b>3.6900e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>341.8270</b>	<b>341.8270</b>	<b>8.6800e-003</b>		<b>342.0093</b>



**3.3 SDG&E Site preparation - 2016****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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	3.8435	45.0908	21.6382	0.0546		1.7386	1.7386		1.5995	1.5995		5,673.960 3	5,673.960 3	1.7115		5,709.901 1
<b>Total</b>	<b>3.8435</b>	<b>45.0908</b>	<b>21.6382</b>	<b>0.0546</b>	<b>0.0000</b>	<b>1.7386</b>	<b>1.7386</b>	<b>0.0000</b>	<b>1.5995</b>	<b>1.5995</b>		<b>5,673.960 3</b>	<b>5,673.960 3</b>	<b>1.7115</b>		<b>5,709.901 1</b>

**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	lb/day										lb/day					
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
Vendor	0.2705	4.8634	2.0488	0.0137	0.4123	0.0859	0.4982	0.1175	0.0791	0.1965		1,382.978 5	1,382.978 5	9.5700e-003		1,383.179 4
Worker	0.0800	0.2238	1.9620	5.1600e-003	0.4445	2.9800e-003	0.4475	0.1179	2.7400e-003	0.1206		431.3899	431.3899	0.0219		431.8497
<b>Total</b>	<b>0.3505</b>	<b>5.0872</b>	<b>4.0108</b>	<b>0.0189</b>	<b>0.8568</b>	<b>0.0889</b>	<b>0.9457</b>	<b>0.2353</b>	<b>0.0818</b>	<b>0.3171</b>		<b>1,814.368 4</b>	<b>1,814.368 4</b>	<b>0.0315</b>		<b>1,815.029 1</b>



### 3.3 SDG&E Site preparation - 2016

#### 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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.4050	43.1706	30.0449	0.0546		1.0195	1.0195		1.0195	1.0195	0.0000	5,673.960 3	5,673.960 3	1.7115		5,709.901 1
<b>Total</b>	<b>1.4050</b>	<b>43.1706</b>	<b>30.0449</b>	<b>0.0546</b>	<b>0.0000</b>	<b>1.0195</b>	<b>1.0195</b>	<b>0.0000</b>	<b>1.0195</b>	<b>1.0195</b>	<b>0.0000</b>	<b>5,673.960 3</b>	<b>5,673.960 3</b>	<b>1.7115</b>		<b>5,709.901 1</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2705	4.8634	2.0488	0.0137	0.4123	0.0859	0.4982	0.1175	0.0791	0.1965		1,382.978 5	1,382.978 5	9.5700e-003		1,383.179 4
Worker	0.0800	0.2238	1.9620	5.1600e-003	0.4445	2.9800e-003	0.4475	0.1179	2.7400e-003	0.1206		431.3899	431.3899	0.0219		431.8497
<b>Total</b>	<b>0.3505</b>	<b>5.0872</b>	<b>4.0108</b>	<b>0.0189</b>	<b>0.8568</b>	<b>0.0889</b>	<b>0.9457</b>	<b>0.2353</b>	<b>0.0818</b>	<b>0.3171</b>		<b>1,814.368 4</b>	<b>1,814.368 4</b>	<b>0.0315</b>		<b>1,815.029 1</b>



**3.4 SVC Site Grading - 2016****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	lb/day										lb/day					
Fugitive Dust					7.3880	0.0000	7.3880	3.7909	0.0000	3.7909			0.0000			0.0000
Off-Road	5.6254	59.1329	32.8038	0.0527		2.8487	2.8487		2.6319	2.6319		5,348.089 3	5,348.089 3	1.5266		5,380.148 7
<b>Total</b>	<b>5.6254</b>	<b>59.1329</b>	<b>32.8038</b>	<b>0.0527</b>	<b>7.3880</b>	<b>2.8487</b>	<b>10.2366</b>	<b>3.7909</b>	<b>2.6319</b>	<b>6.4228</b>		<b>5,348.089 3</b>	<b>5,348.089 3</b>	<b>1.5266</b>		<b>5,380.148 7</b>

**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	lb/day										lb/day					
Hauling	0.6788	12.9841	5.9408	0.0348	0.8261	0.1802	1.0063	0.2261	0.1657	0.3919		3,513.827 2	3,513.827 2	0.0239		3,514.329 0
Vendor	0.4925	8.4082	3.9477	0.0236	0.7069	0.1476	0.8545	0.2014	0.1358	0.3372		2,376.365 0	2,376.365 0	0.0165		2,376.712 2
Worker	0.1600	0.4476	3.9241	0.0103	0.8890	5.9700e-003	0.8950	0.2357	5.4800e-003	0.2412		862.7798	862.7798	0.0438		863.6995
<b>Total</b>	<b>1.3312</b>	<b>21.8399</b>	<b>13.8126</b>	<b>0.0687</b>	<b>2.4220</b>	<b>0.3337</b>	<b>2.7557</b>	<b>0.6633</b>	<b>0.3070</b>	<b>0.9702</b>		<b>6,752.972 0</b>	<b>6,752.972 0</b>	<b>0.0842</b>		<b>6,754.740 6</b>



**3.4 SVC Site Grading - 2016****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	lb/day										lb/day					
Fugitive Dust					2.8813	0.0000	2.8813	1.4785	0.0000	1.4785			0.0000			0.0000
Off-Road	1.4024	39.4670	28.0224	0.0527		1.0447	1.0447		1.0447	1.0447	0.0000	5,348.089 3	5,348.089 3	1.5266		5,380.148 7
<b>Total</b>	<b>1.4024</b>	<b>39.4670</b>	<b>28.0224</b>	<b>0.0527</b>	<b>2.8813</b>	<b>1.0447</b>	<b>3.9260</b>	<b>1.4785</b>	<b>1.0447</b>	<b>2.5231</b>	<b>0.0000</b>	<b>5,348.089 3</b>	<b>5,348.089 3</b>	<b>1.5266</b>		<b>5,380.148 7</b>

**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	lb/day										lb/day					
Hauling	0.6788	12.9841	5.9408	0.0348	0.8261	0.1802	1.0063	0.2261	0.1657	0.3919		3,513.827 2	3,513.827 2	0.0239		3,514.329 0
Vendor	0.4925	8.4082	3.9477	0.0236	0.7069	0.1476	0.8545	0.2014	0.1358	0.3372		2,376.365 0	2,376.365 0	0.0165		2,376.712 2
Worker	0.1600	0.4476	3.9241	0.0103	0.8890	5.9700e-003	0.8950	0.2357	5.4800e-003	0.2412		862.7798	862.7798	0.0438		863.6995
<b>Total</b>	<b>1.3312</b>	<b>21.8399</b>	<b>13.8126</b>	<b>0.0687</b>	<b>2.4220</b>	<b>0.3337</b>	<b>2.7557</b>	<b>0.6633</b>	<b>0.3070</b>	<b>0.9702</b>		<b>6,752.972 0</b>	<b>6,752.972 0</b>	<b>0.0842</b>		<b>6,754.740 6</b>



**3.5 Trenching - 2016****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	lb/day										lb/day					
Off-Road	2.3905	24.3073	13.1642	0.0256		1.3259	1.3259		1.2217	1.2217		2,638.9849	2,638.9849	0.7813		2,655.3931
<b>Total</b>	<b>2.3905</b>	<b>24.3073</b>	<b>13.1642</b>	<b>0.0256</b>		<b>1.3259</b>	<b>1.3259</b>		<b>1.2217</b>	<b>1.2217</b>		<b>2,638.9849</b>	<b>2,638.9849</b>	<b>0.7813</b>		<b>2,655.3931</b>

**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	lb/day										lb/day					
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
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
Worker	0.0444	0.1243	1.0900	2.8700e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		239.6611	239.6611	0.0122		239.9165
<b>Total</b>	<b>0.0444</b>	<b>0.1243</b>	<b>1.0900</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>239.6611</b>	<b>239.6611</b>	<b>0.0122</b>		<b>239.9165</b>



**3.5 Trenching - 2016****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	lb/day										lb/day					
Off-Road	0.7869	20.6476	14.9031	0.0256		0.6161	0.6161		0.6161	0.6161	0.0000	2,638.9849	2,638.9849	0.7813		2,655.3931
<b>Total</b>	<b>0.7869</b>	<b>20.6476</b>	<b>14.9031</b>	<b>0.0256</b>		<b>0.6161</b>	<b>0.6161</b>		<b>0.6161</b>	<b>0.6161</b>	<b>0.0000</b>	<b>2,638.9849</b>	<b>2,638.9849</b>	<b>0.7813</b>		<b>2,655.3931</b>

**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	lb/day										lb/day					
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
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
Worker	0.0444	0.1243	1.0900	2.8700e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		239.6611	239.6611	0.0122		239.9165
<b>Total</b>	<b>0.0444</b>	<b>0.1243</b>	<b>1.0900</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>239.6611</b>	<b>239.6611</b>	<b>0.0122</b>		<b>239.9165</b>



### 3.6 Set SVC Substation Foundations - 2016

#### 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	lb/day										lb/day					
Off-Road	2.7408	29.8627	16.3770	0.0366		1.3372	1.3372		1.2573	1.2573		3,737.4250	3,737.4250	0.9964		3,758.3498
<b>Total</b>	<b>2.7408</b>	<b>29.8627</b>	<b>16.3770</b>	<b>0.0366</b>		<b>1.3372</b>	<b>1.3372</b>		<b>1.2573</b>	<b>1.2573</b>		<b>3,737.4250</b>	<b>3,737.4250</b>	<b>0.9964</b>		<b>3,758.3498</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0821	1.4014	0.6580	3.9300e-003	0.1178	0.0246	0.1424	0.0336	0.0226	0.0562		396.0608	396.0608	2.7600e-003		396.1187
Worker	0.0533	0.1492	1.3080	3.4400e-003	0.2964	1.9900e-003	0.2983	0.0786	1.8300e-003	0.0804		287.5933	287.5933	0.0146		287.8998
<b>Total</b>	<b>0.1354</b>	<b>1.5506</b>	<b>1.9660</b>	<b>7.3700e-003</b>	<b>0.4142</b>	<b>0.0266</b>	<b>0.4408</b>	<b>0.1121</b>	<b>0.0245</b>	<b>0.1366</b>		<b>683.6541</b>	<b>683.6541</b>	<b>0.0174</b>		<b>684.0185</b>



### 3.6 Set SVC Substation Foundations - 2016

#### 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	lb/day										lb/day					
Off-Road	1.0740	29.4892	21.3531	0.0366		0.7993	0.7993		0.7993	0.7993	0.0000	3,737.4250	3,737.4250	0.9964		3,758.3498
<b>Total</b>	<b>1.0740</b>	<b>29.4892</b>	<b>21.3531</b>	<b>0.0366</b>		<b>0.7993</b>	<b>0.7993</b>		<b>0.7993</b>	<b>0.7993</b>	<b>0.0000</b>	<b>3,737.4250</b>	<b>3,737.4250</b>	<b>0.9964</b>		<b>3,758.3498</b>

#### 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	lb/day										lb/day					
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
Vendor	0.0821	1.4014	0.6580	3.9300e-003	0.1178	0.0246	0.1424	0.0336	0.0226	0.0562		396.0608	396.0608	2.7600e-003		396.1187
Worker	0.0533	0.1492	1.3080	3.4400e-003	0.2964	1.9900e-003	0.2983	0.0786	1.8300e-003	0.0804		287.5933	287.5933	0.0146		287.8998
<b>Total</b>	<b>0.1354</b>	<b>1.5506</b>	<b>1.9660</b>	<b>7.3700e-003</b>	<b>0.4142</b>	<b>0.0266</b>	<b>0.4408</b>	<b>0.1121</b>	<b>0.0245</b>	<b>0.1366</b>		<b>683.6541</b>	<b>683.6541</b>	<b>0.0174</b>		<b>684.0185</b>



**3.7 Material delivery - 2016****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	lb/day										lb/day					
Off-Road	1.2547	13.9197	6.0283	9.9400e-003		0.7426	0.7426		0.6832	0.6832		1,034.2930	1,034.2930	0.3120		1,040.8445
<b>Total</b>	<b>1.2547</b>	<b>13.9197</b>	<b>6.0283</b>	<b>9.9400e-003</b>		<b>0.7426</b>	<b>0.7426</b>		<b>0.6832</b>	<b>0.6832</b>		<b>1,034.2930</b>	<b>1,034.2930</b>	<b>0.3120</b>		<b>1,040.8445</b>

**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	lb/day										lb/day					
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
Vendor	0.0410	0.7007	0.3290	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.0304	198.0304	1.3800e-003		198.0594
Worker	0.0267	0.0746	0.6540	1.7200e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		143.7966	143.7966	7.3000e-003		143.9499
<b>Total</b>	<b>0.0677</b>	<b>0.7753</b>	<b>0.9830</b>	<b>3.6900e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>341.8270</b>	<b>341.8270</b>	<b>8.6800e-003</b>		<b>342.0093</b>



**3.7 Material delivery - 2016****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	lb/day										lb/day					
Off-Road	0.3095	8.8076	5.9465	9.9400e-003		0.2408	0.2408		0.2408	0.2408	0.0000	1,034.2929	1,034.2929	0.3120		1,040.8445
<b>Total</b>	<b>0.3095</b>	<b>8.8076</b>	<b>5.9465</b>	<b>9.9400e-003</b>		<b>0.2408</b>	<b>0.2408</b>		<b>0.2408</b>	<b>0.2408</b>	<b>0.0000</b>	<b>1,034.2929</b>	<b>1,034.2929</b>	<b>0.3120</b>		<b>1,040.8445</b>

**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	lb/day										lb/day					
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
Vendor	0.0410	0.7007	0.3290	1.9700e-003	0.0589	0.0123	0.0712	0.0168	0.0113	0.0281		198.0304	198.0304	1.3800e-003		198.0594
Worker	0.0267	0.0746	0.6540	1.7200e-003	0.1482	9.9000e-004	0.1492	0.0393	9.1000e-004	0.0402		143.7966	143.7966	7.3000e-003		143.9499
<b>Total</b>	<b>0.0677</b>	<b>0.7753</b>	<b>0.9830</b>	<b>3.6900e-003</b>	<b>0.2071</b>	<b>0.0133</b>	<b>0.2204</b>	<b>0.0561</b>	<b>0.0122</b>	<b>0.0683</b>		<b>341.8270</b>	<b>341.8270</b>	<b>8.6800e-003</b>		<b>342.0093</b>



**3.7 Material delivery - 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	lb/day										lb/day					
Off-Road	1.1398	12.6602	5.7223	9.9500e-003		0.6660	0.6660		0.6127	0.6127		1,018.1223	1,018.1223	0.3120		1,024.6733
<b>Total</b>	<b>1.1398</b>	<b>12.6602</b>	<b>5.7223</b>	<b>9.9500e-003</b>		<b>0.6660</b>	<b>0.6660</b>		<b>0.6127</b>	<b>0.6127</b>		<b>1,018.1223</b>	<b>1,018.1223</b>	<b>0.3120</b>		<b>1,024.6733</b>

**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	lb/day										lb/day					
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
Vendor	0.0377	0.6180	0.3049	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8300e-003	0.0266		194.6782	194.6782	1.2900e-003		194.7052
Worker	0.0233	0.0679	0.5870	1.7200e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		138.2345	138.2345	6.7700e-003		138.3767
<b>Total</b>	<b>0.0610</b>	<b>0.6859</b>	<b>0.8920</b>	<b>3.6800e-003</b>	<b>0.2071</b>	<b>0.0116</b>	<b>0.2187</b>	<b>0.0561</b>	<b>0.0107</b>	<b>0.0668</b>		<b>332.9127</b>	<b>332.9127</b>	<b>8.0600e-003</b>		<b>333.0818</b>



**3.7 Material delivery - 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	lb/day										lb/day					
Off-Road	0.3095	8.8076	5.9465	9.9500e-003		0.2408	0.2408		0.2408	0.2408	0.0000	1,018.1223	1,018.1223	0.3120		1,024.6733
<b>Total</b>	<b>0.3095</b>	<b>8.8076</b>	<b>5.9465</b>	<b>9.9500e-003</b>		<b>0.2408</b>	<b>0.2408</b>		<b>0.2408</b>	<b>0.2408</b>	<b>0.0000</b>	<b>1,018.1223</b>	<b>1,018.1223</b>	<b>0.3120</b>		<b>1,024.6733</b>

**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	lb/day										lb/day					
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
Vendor	0.0377	0.6180	0.3049	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8300e-003	0.0266		194.6782	194.6782	1.2900e-003		194.7052
Worker	0.0233	0.0679	0.5870	1.7200e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		138.2345	138.2345	6.7700e-003		138.3767
<b>Total</b>	<b>0.0610</b>	<b>0.6859</b>	<b>0.8920</b>	<b>3.6800e-003</b>	<b>0.2071</b>	<b>0.0116</b>	<b>0.2187</b>	<b>0.0561</b>	<b>0.0107</b>	<b>0.0668</b>		<b>332.9127</b>	<b>332.9127</b>	<b>8.0600e-003</b>		<b>333.0818</b>



### 3.8 Substation construction - 2016

#### 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	lb/day										lb/day					
Off-Road	4.9529	54.5450	26.3078	0.0622		2.3153	2.3153		2.1572	2.1572		6,399.4458	6,399.4458	1.7994		6,437.2327
<b>Total</b>	<b>4.9529</b>	<b>54.5450</b>	<b>26.3078</b>	<b>0.0622</b>		<b>2.3153</b>	<b>2.3153</b>		<b>2.1572</b>	<b>2.1572</b>		<b>6,399.4458</b>	<b>6,399.4458</b>	<b>1.7994</b>		<b>6,437.2327</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2463	4.2041	1.9739	0.0118	0.3534	0.0738	0.4272	0.1007	0.0679	0.1686		1,188.1825	1,188.1825	8.2700e-003		1,188.3561
Worker	0.0711	0.1989	1.7440	4.5900e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		383.4577	383.4577	0.0195		383.8664
<b>Total</b>	<b>0.3173</b>	<b>4.4030</b>	<b>3.7179</b>	<b>0.0164</b>	<b>0.7486</b>	<b>0.0764</b>	<b>0.8250</b>	<b>0.2055</b>	<b>0.0703</b>	<b>0.2758</b>		<b>1,571.6402</b>	<b>1,571.6402</b>	<b>0.0277</b>		<b>1,572.2225</b>



### 3.8 Substation construction - 2016

#### 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	lb/day										lb/day					
Off-Road	1.6341	48.7455	33.7438	0.0622		1.2285	1.2285		1.2285	1.2285	0.0000	6,399.4458	6,399.4458	1.7994		6,437.2327
<b>Total</b>	<b>1.6341</b>	<b>48.7455</b>	<b>33.7438</b>	<b>0.0622</b>		<b>1.2285</b>	<b>1.2285</b>		<b>1.2285</b>	<b>1.2285</b>	<b>0.0000</b>	<b>6,399.4458</b>	<b>6,399.4458</b>	<b>1.7994</b>		<b>6,437.2327</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2463	4.2041	1.9739	0.0118	0.3534	0.0738	0.4272	0.1007	0.0679	0.1686		1,188.1825	1,188.1825	8.2700e-003		1,188.3561
Worker	0.0711	0.1989	1.7440	4.5900e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		383.4577	383.4577	0.0195		383.8664
<b>Total</b>	<b>0.3173</b>	<b>4.4030</b>	<b>3.7179</b>	<b>0.0164</b>	<b>0.7486</b>	<b>0.0764</b>	<b>0.8250</b>	<b>0.2055</b>	<b>0.0703</b>	<b>0.2758</b>		<b>1,571.6402</b>	<b>1,571.6402</b>	<b>0.0277</b>		<b>1,572.2225</b>



### 3.8 Substation 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	lb/day										lb/day					
Off-Road	4.5465	49.5064	24.6757	0.0621		2.0625	2.0625		1.9215	1.9215		6,304.6372	6,304.6372	1.7913		6,342.2537
<b>Total</b>	<b>4.5465</b>	<b>49.5064</b>	<b>24.6757</b>	<b>0.0621</b>		<b>2.0625</b>	<b>2.0625</b>		<b>1.9215</b>	<b>1.9215</b>		<b>6,304.6372</b>	<b>6,304.6372</b>	<b>1.7913</b>		<b>6,342.2537</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2263	3.7082	1.8295	0.0118	0.3535	0.0641	0.4176	0.1007	0.0590	0.1597		1,168.0690	1,168.0690	7.7100e-003		1,168.2309
Worker	0.0621	0.1810	1.5654	4.5900e-003	0.3951	2.5600e-003	0.3977	0.1048	2.3600e-003	0.1071		368.6254	368.6254	0.0181		369.0044
<b>Total</b>	<b>0.2883</b>	<b>3.8891</b>	<b>3.3949</b>	<b>0.0164</b>	<b>0.7486</b>	<b>0.0667</b>	<b>0.8153</b>	<b>0.2055</b>	<b>0.0613</b>	<b>0.2668</b>		<b>1,536.6944</b>	<b>1,536.6944</b>	<b>0.0258</b>		<b>1,537.2353</b>



### 3.8 Substation 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	lb/day										lb/day					
Off-Road	1.6341	48.7455	33.7438	0.0621		1.2285	1.2285		1.2285	1.2285	0.0000	6,304.6372	6,304.6372	1.7913		6,342.2537
<b>Total</b>	<b>1.6341</b>	<b>48.7455</b>	<b>33.7438</b>	<b>0.0621</b>		<b>1.2285</b>	<b>1.2285</b>		<b>1.2285</b>	<b>1.2285</b>	<b>0.0000</b>	<b>6,304.6372</b>	<b>6,304.6372</b>	<b>1.7913</b>		<b>6,342.2537</b>

#### 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	lb/day										lb/day					
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
Vendor	0.2263	3.7082	1.8295	0.0118	0.3535	0.0641	0.4176	0.1007	0.0590	0.1597		1,168.0690	1,168.0690	7.7100e-003		1,168.2309
Worker	0.0621	0.1810	1.5654	4.5900e-003	0.3951	2.5600e-003	0.3977	0.1048	2.3600e-003	0.1071		368.6254	368.6254	0.0181		369.0044
<b>Total</b>	<b>0.2883</b>	<b>3.8891</b>	<b>3.3949</b>	<b>0.0164</b>	<b>0.7486</b>	<b>0.0667</b>	<b>0.8153</b>	<b>0.2055</b>	<b>0.0613</b>	<b>0.2668</b>		<b>1,536.6944</b>	<b>1,536.6944</b>	<b>0.0258</b>		<b>1,537.2353</b>



**3.9 Structure Erection - 2016****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	lb/day										lb/day					
Off-Road	7.5114	84.1375	39.7247	0.0967		3.4441	3.4441		3.1957	3.1957		9,979.5256	9,979.5256	2.8793		10,039.9900
<b>Total</b>	<b>7.5114</b>	<b>84.1375</b>	<b>39.7247</b>	<b>0.0967</b>		<b>3.4441</b>	<b>3.4441</b>		<b>3.1957</b>	<b>3.1957</b>		<b>9,979.5256</b>	<b>9,979.5256</b>	<b>2.8793</b>		<b>10,039.9900</b>

**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	lb/day										lb/day					
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
Vendor	0.3694	6.3062	2.9608	0.0177	0.5302	0.1107	0.6408	0.1511	0.1018	0.2529		1,782.2737	1,782.2737	0.0124		1,782.5341
Worker	0.0711	0.1989	1.7440	4.5900e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		383.4577	383.4577	0.0195		383.8664
<b>Total</b>	<b>0.4405</b>	<b>6.5051</b>	<b>4.7048</b>	<b>0.0223</b>	<b>0.9253</b>	<b>0.1133</b>	<b>1.0386</b>	<b>0.2558</b>	<b>0.1043</b>	<b>0.3601</b>		<b>2,165.7314</b>	<b>2,165.7314</b>	<b>0.0319</b>		<b>2,166.4005</b>



**3.9 Structure Erection - 2016****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	lb/day										lb/day					
Off-Road	2.4726	75.4575	51.9620	0.0967		1.8425	1.8425		1.8425	1.8425	0.0000	9,979.5256	9,979.5256	2.8793		10,039.9900
<b>Total</b>	<b>2.4726</b>	<b>75.4575</b>	<b>51.9620</b>	<b>0.0967</b>		<b>1.8425</b>	<b>1.8425</b>		<b>1.8425</b>	<b>1.8425</b>	<b>0.0000</b>	<b>9,979.5256</b>	<b>9,979.5256</b>	<b>2.8793</b>		<b>10,039.9900</b>

**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	lb/day										lb/day					
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
Vendor	0.3694	6.3062	2.9608	0.0177	0.5302	0.1107	0.6408	0.1511	0.1018	0.2529		1,782.2737	1,782.2737	0.0124		1,782.5341
Worker	0.0711	0.1989	1.7440	4.5900e-003	0.3951	2.6500e-003	0.3978	0.1048	2.4400e-003	0.1072		383.4577	383.4577	0.0195		383.8664
<b>Total</b>	<b>0.4405</b>	<b>6.5051</b>	<b>4.7048</b>	<b>0.0223</b>	<b>0.9253</b>	<b>0.1133</b>	<b>1.0386</b>	<b>0.2558</b>	<b>0.1043</b>	<b>0.3601</b>		<b>2,165.7314</b>	<b>2,165.7314</b>	<b>0.0319</b>		<b>2,166.4005</b>



**3.10 Install Vaults - 2016****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	lb/day										lb/day					
Off-Road	4.5971	49.5983	25.7713	0.0598		2.1873	2.1873		2.0394	2.0394		6,153.298 1	6,153.298 1	1.7251		6,189.525 9
<b>Total</b>	<b>4.5971</b>	<b>49.5983</b>	<b>25.7713</b>	<b>0.0598</b>		<b>2.1873</b>	<b>2.1873</b>		<b>2.0394</b>	<b>2.0394</b>		<b>6,153.298 1</b>	<b>6,153.298 1</b>	<b>1.7251</b>		<b>6,189.525 9</b>

**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	lb/day										lb/day					
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
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
Worker	0.0444	0.1243	1.0900	2.8700e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		239.6611	239.6611	0.0122		239.9165
<b>Total</b>	<b>0.0444</b>	<b>0.1243</b>	<b>1.0900</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>239.6611</b>	<b>239.6611</b>	<b>0.0122</b>		<b>239.9165</b>



**3.10 Install Vaults - 2016****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	lb/day										lb/day					
Off-Road	1.6405	47.0671	33.1220	0.0598		1.2471	1.2471		1.2471	1.2471	0.0000	6,153.298 1	6,153.298 1	1.7251		6,189.525 9
<b>Total</b>	<b>1.6405</b>	<b>47.0671</b>	<b>33.1220</b>	<b>0.0598</b>		<b>1.2471</b>	<b>1.2471</b>		<b>1.2471</b>	<b>1.2471</b>	<b>0.0000</b>	<b>6,153.298 1</b>	<b>6,153.298 1</b>	<b>1.7251</b>		<b>6,189.525 9</b>

**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	lb/day										lb/day					
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
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
Worker	0.0444	0.1243	1.0900	2.8700e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		239.6611	239.6611	0.0122		239.9165
<b>Total</b>	<b>0.0444</b>	<b>0.1243</b>	<b>1.0900</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6600e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.5200e-003</b>	<b>0.0670</b>		<b>239.6611</b>	<b>239.6611</b>	<b>0.0122</b>		<b>239.9165</b>



**3.10 Install Vaults - 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	lb/day										lb/day					
Off-Road	4.2360	45.1478	24.3359	0.0598		1.9556	1.9556		1.8231	1.8231		6,061.849 9	6,061.849 9	1.7169		6,097.904 3
<b>Total</b>	<b>4.2360</b>	<b>45.1478</b>	<b>24.3359</b>	<b>0.0598</b>		<b>1.9556</b>	<b>1.9556</b>		<b>1.8231</b>	<b>1.8231</b>		<b>6,061.849 9</b>	<b>6,061.849 9</b>	<b>1.7169</b>		<b>6,097.904 3</b>

**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	lb/day										lb/day					
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
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
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0388</b>	<b>0.1131</b>	<b>0.9784</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>230.3909</b>	<b>230.3909</b>	<b>0.0113</b>		<b>230.6278</b>



**3.10 Install Vaults - 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	lb/day										lb/day					
Off-Road	1.6405	47.0671	33.1220	0.0598		1.2471	1.2471		1.2471	1.2471	0.0000	6,061.849 9	6,061.849 9	1.7169		6,097.904 3
<b>Total</b>	<b>1.6405</b>	<b>47.0671</b>	<b>33.1220</b>	<b>0.0598</b>		<b>1.2471</b>	<b>1.2471</b>		<b>1.2471</b>	<b>1.2471</b>	<b>0.0000</b>	<b>6,061.849 9</b>	<b>6,061.849 9</b>	<b>1.7169</b>		<b>6,097.904 3</b>

**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	lb/day										lb/day					
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
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
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0388</b>	<b>0.1131</b>	<b>0.9784</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>230.3909</b>	<b>230.3909</b>	<b>0.0113</b>		<b>230.6278</b>



**3.11 Install Transmission line foundations - 2016****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	lb/day										lb/day					
Off-Road	4.4827	49.9256	25.4413	0.0612		2.0773	2.0773		1.9383	1.9383		6,296.9948	6,296.9948	1.7685		6,334.1328
<b>Total</b>	<b>4.4827</b>	<b>49.9256</b>	<b>25.4413</b>	<b>0.0612</b>		<b>2.0773</b>	<b>2.0773</b>		<b>1.9383</b>	<b>1.9383</b>		<b>6,296.9948</b>	<b>6,296.9948</b>	<b>1.7685</b>		<b>6,334.1328</b>

**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	lb/day										lb/day					
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
Vendor	0.4011	7.5833	2.8566	0.0215	0.6478	0.1348	0.7827	0.1846	0.1240	0.3086		2,168.6313	2,168.6313	0.0149		2,168.9447
Worker	0.0444	0.1243	1.0900	2.8700e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		239.6611	239.6611	0.0122		239.9165
<b>Total</b>	<b>0.4455</b>	<b>7.7077</b>	<b>3.9466</b>	<b>0.0244</b>	<b>0.8948</b>	<b>0.1365</b>	<b>1.0313</b>	<b>0.2501</b>	<b>0.1256</b>	<b>0.3756</b>		<b>2,408.2924</b>	<b>2,408.2924</b>	<b>0.0271</b>		<b>2,408.8612</b>



**3.11 Install Transmission line foundations - 2016****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	lb/day										lb/day					
Off-Road	1.6571	48.3781	34.1012	0.0612		1.2300	1.2300		1.2300	1.2300	0.0000	6,296.9948	6,296.9948	1.7685		6,334.1328
<b>Total</b>	<b>1.6571</b>	<b>48.3781</b>	<b>34.1012</b>	<b>0.0612</b>		<b>1.2300</b>	<b>1.2300</b>		<b>1.2300</b>	<b>1.2300</b>	<b>0.0000</b>	<b>6,296.9948</b>	<b>6,296.9948</b>	<b>1.7685</b>		<b>6,334.1328</b>

**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	lb/day										lb/day					
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
Vendor	0.4011	7.5833	2.8566	0.0215	0.6478	0.1348	0.7827	0.1846	0.1240	0.3086		2,168.6313	2,168.6313	0.0149		2,168.9447
Worker	0.0444	0.1243	1.0900	2.8700e-003	0.2470	1.6600e-003	0.2486	0.0655	1.5200e-003	0.0670		239.6611	239.6611	0.0122		239.9165
<b>Total</b>	<b>0.4455</b>	<b>7.7077</b>	<b>3.9466</b>	<b>0.0244</b>	<b>0.8948</b>	<b>0.1365</b>	<b>1.0313</b>	<b>0.2501</b>	<b>0.1256</b>	<b>0.3756</b>		<b>2,408.2924</b>	<b>2,408.2924</b>	<b>0.0271</b>		<b>2,408.8612</b>



**3.11 Install Transmission line foundations - 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	lb/day										lb/day					
Off-Road	4.1195	45.1936	24.1009	0.0612		1.8489	1.8489		1.7250	1.7250		6,204.1899	6,204.1899	1.7605		6,241.1601
<b>Total</b>	<b>4.1195</b>	<b>45.1936</b>	<b>24.1009</b>	<b>0.0612</b>		<b>1.8489</b>	<b>1.8489</b>		<b>1.7250</b>	<b>1.7250</b>		<b>6,204.1899</b>	<b>6,204.1899</b>	<b>1.7605</b>		<b>6,241.1601</b>

**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	lb/day										lb/day					
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
Vendor	0.3690	6.6810	2.6271	0.0215	0.6479	0.1172	0.7650	0.1846	0.1078	0.2924		2,131.9191	2,131.9191	0.0139		2,132.2111
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.4077</b>	<b>6.7941</b>	<b>3.6055</b>	<b>0.0243</b>	<b>0.8948</b>	<b>0.1188</b>	<b>1.0136</b>	<b>0.2501</b>	<b>0.1093</b>	<b>0.3593</b>		<b>2,362.3100</b>	<b>2,362.3100</b>	<b>0.0252</b>		<b>2,362.8388</b>



**3.11 Install Transmission line foundations - 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	lb/day										lb/day					
Off-Road	1.6571	48.3781	34.1012	0.0612		1.2300	1.2300		1.2300	1.2300	0.0000	6,204.1899	6,204.1899	1.7605		6,241.1601
<b>Total</b>	<b>1.6571</b>	<b>48.3781</b>	<b>34.1012</b>	<b>0.0612</b>		<b>1.2300</b>	<b>1.2300</b>		<b>1.2300</b>	<b>1.2300</b>	<b>0.0000</b>	<b>6,204.1899</b>	<b>6,204.1899</b>	<b>1.7605</b>		<b>6,241.1601</b>

**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	lb/day										lb/day					
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
Vendor	0.3690	6.6810	2.6271	0.0215	0.6479	0.1172	0.7650	0.1846	0.1078	0.2924		2,131.9191	2,131.9191	0.0139		2,132.2111
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.4077</b>	<b>6.7941</b>	<b>3.6055</b>	<b>0.0243</b>	<b>0.8948</b>	<b>0.1188</b>	<b>1.0136</b>	<b>0.2501</b>	<b>0.1093</b>	<b>0.3593</b>		<b>2,362.3100</b>	<b>2,362.3100</b>	<b>0.0252</b>		<b>2,362.8388</b>



**3.12 Install duct package - 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	lb/day										lb/day					
Off-Road	2.2051	22.9036	12.5586	0.0312		0.9849	0.9849		0.9301	0.9301		3,143.5267	3,143.5267	0.8227		3,160.8035
<b>Total</b>	<b>2.2051</b>	<b>22.9036</b>	<b>12.5586</b>	<b>0.0312</b>		<b>0.9849</b>	<b>0.9849</b>		<b>0.9301</b>	<b>0.9301</b>		<b>3,143.5267</b>	<b>3,143.5267</b>	<b>0.8227</b>		<b>3,160.8035</b>

**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	lb/day										lb/day					
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
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
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0388</b>	<b>0.1131</b>	<b>0.9784</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>230.3909</b>	<b>230.3909</b>	<b>0.0113</b>		<b>230.6278</b>



**3.12 Install duct package - 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	lb/day										lb/day					
Off-Road	0.8553	24.2581	17.1254	0.0312		0.6528	0.6528		0.6528	0.6528	0.0000	3,143.5267	3,143.5267	0.8227		3,160.8035
<b>Total</b>	<b>0.8553</b>	<b>24.2581</b>	<b>17.1254</b>	<b>0.0312</b>		<b>0.6528</b>	<b>0.6528</b>		<b>0.6528</b>	<b>0.6528</b>	<b>0.0000</b>	<b>3,143.5267</b>	<b>3,143.5267</b>	<b>0.8227</b>		<b>3,160.8035</b>

**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	lb/day										lb/day					
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
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
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0388</b>	<b>0.1131</b>	<b>0.9784</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>230.3909</b>	<b>230.3909</b>	<b>0.0113</b>		<b>230.6278</b>



**3.13 Wire Stringing - 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	lb/day										lb/day					
Off-Road	3.7469	41.6453	20.9069	0.0539		1.6980	1.6980		1.5622	1.5622		5,510.970 1	5,510.970 1	1.6886		5,546.429 7
<b>Total</b>	<b>3.7469</b>	<b>41.6453</b>	<b>20.9069</b>	<b>0.0539</b>		<b>1.6980</b>	<b>1.6980</b>		<b>1.5622</b>	<b>1.5622</b>		<b>5,510.970 1</b>	<b>5,510.970 1</b>	<b>1.6886</b>		<b>5,546.429 7</b>

**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	lb/day										lb/day					
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
Vendor	0.2263	3.7082	1.8295	0.0118	0.3535	0.0641	0.4176	0.1007	0.0590	0.1597		1,168.069 0	1,168.069 0	7.7100e- 003		1,168.230 9
Worker	0.1164	0.3394	2.9352	8.6100e- 003	0.7409	4.8000e- 003	0.7457	0.1964	4.4300e- 003	0.2008		691.1726	691.1726	0.0338		691.8833
<b>Total</b>	<b>0.3426</b>	<b>4.0475</b>	<b>4.7647</b>	<b>0.0204</b>	<b>1.0943</b>	<b>0.0689</b>	<b>1.1632</b>	<b>0.2971</b>	<b>0.0634</b>	<b>0.3605</b>		<b>1,859.241 6</b>	<b>1,859.241 6</b>	<b>0.0416</b>		<b>1,860.114 2</b>



**3.13 Wire Stringing - 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	lb/day										lb/day					
Off-Road	1.4057	42.4592	29.4413	0.0539		1.0493	1.0493		1.0493	1.0493	0.0000	5,510.970 1	5,510.970 1	1.6886		5,546.429 7
<b>Total</b>	<b>1.4057</b>	<b>42.4592</b>	<b>29.4413</b>	<b>0.0539</b>		<b>1.0493</b>	<b>1.0493</b>		<b>1.0493</b>	<b>1.0493</b>	<b>0.0000</b>	<b>5,510.970 1</b>	<b>5,510.970 1</b>	<b>1.6886</b>		<b>5,546.429 7</b>

**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	lb/day										lb/day					
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
Vendor	0.2263	3.7082	1.8295	0.0118	0.3535	0.0641	0.4176	0.1007	0.0590	0.1597		1,168.069 0	1,168.069 0	7.7100e- 003		1,168.230 9
Worker	0.1164	0.3394	2.9352	8.6100e- 003	0.7409	4.8000e- 003	0.7457	0.1964	4.4300e- 003	0.2008		691.1726	691.1726	0.0338		691.8833
<b>Total</b>	<b>0.3426</b>	<b>4.0475</b>	<b>4.7647</b>	<b>0.0204</b>	<b>1.0943</b>	<b>0.0689</b>	<b>1.1632</b>	<b>0.2971</b>	<b>0.0634</b>	<b>0.3605</b>		<b>1,859.241 6</b>	<b>1,859.241 6</b>	<b>0.0416</b>		<b>1,860.114 2</b>



**3.14 Transformer & SVC Delivery - 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	lb/day										lb/day					
Off-Road	0.3015	3.3553	1.6094	2.7300e-003		0.1787	0.1787		0.1644	0.1644		279.8447	279.8447	0.0857		281.6453
<b>Total</b>	<b>0.3015</b>	<b>3.3553</b>	<b>1.6094</b>	<b>2.7300e-003</b>		<b>0.1787</b>	<b>0.1787</b>		<b>0.1644</b>	<b>0.1644</b>		<b>279.8447</b>	<b>279.8447</b>	<b>0.0857</b>		<b>281.6453</b>

**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	lb/day										lb/day					
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
Vendor	0.0377	0.6180	0.3049	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8300e-003	0.0266		194.6782	194.6782	1.2900e-003		194.7052
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0765</b>	<b>0.7312</b>	<b>1.2833</b>	<b>4.8300e-003</b>	<b>0.3059</b>	<b>0.0123</b>	<b>0.3182</b>	<b>0.0823</b>	<b>0.0113</b>	<b>0.0936</b>		<b>425.0690</b>	<b>425.0690</b>	<b>0.0126</b>		<b>425.3329</b>



**3.14 Transformer & SVC Delivery - 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	lb/day										lb/day					
Off-Road	0.0888	2.4387	1.6711	2.7300e-003		0.0698	0.0698		0.0698	0.0698	0.0000	279.8447	279.8447	0.0857		281.6453
<b>Total</b>	<b>0.0888</b>	<b>2.4387</b>	<b>1.6711</b>	<b>2.7300e-003</b>		<b>0.0698</b>	<b>0.0698</b>		<b>0.0698</b>	<b>0.0698</b>	<b>0.0000</b>	<b>279.8447</b>	<b>279.8447</b>	<b>0.0857</b>		<b>281.6453</b>

**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	lb/day										lb/day					
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
Vendor	0.0377	0.6180	0.3049	1.9600e-003	0.0589	0.0107	0.0696	0.0168	9.8300e-003	0.0266		194.6782	194.6782	1.2900e-003		194.7052
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0765</b>	<b>0.7312</b>	<b>1.2833</b>	<b>4.8300e-003</b>	<b>0.3059</b>	<b>0.0123</b>	<b>0.3182</b>	<b>0.0823</b>	<b>0.0113</b>	<b>0.0936</b>		<b>425.0690</b>	<b>425.0690</b>	<b>0.0126</b>		<b>425.3329</b>



**3.15 Pull cable - 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	lb/day										lb/day					
Off-Road	2.3812	23.4861	13.6785	0.0259		1.3768	1.3768		1.2666	1.2666		2,650.9105	2,650.9105	0.8122		2,667.9674
<b>Total</b>	<b>2.3812</b>	<b>23.4861</b>	<b>13.6785</b>	<b>0.0259</b>		<b>1.3768</b>	<b>1.3768</b>		<b>1.2666</b>	<b>1.2666</b>		<b>2,650.9105</b>	<b>2,650.9105</b>	<b>0.8122</b>		<b>2,667.9674</b>

**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	lb/day										lb/day					
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
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
Worker	0.0776	0.2262	1.9568	5.7400e-003	0.4939	3.2000e-003	0.4971	0.1309	2.9500e-003	0.1339		460.7817	460.7817	0.0226		461.2556
<b>Total</b>	<b>0.0776</b>	<b>0.2262</b>	<b>1.9568</b>	<b>5.7400e-003</b>	<b>0.4939</b>	<b>3.2000e-003</b>	<b>0.4971</b>	<b>0.1309</b>	<b>2.9500e-003</b>	<b>0.1339</b>		<b>460.7817</b>	<b>460.7817</b>	<b>0.0226</b>		<b>461.2556</b>



**3.15 Pull cable - 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	lb/day										lb/day					
Off-Road	0.8521	21.9932	15.9513	0.0259		0.6705	0.6705		0.6705	0.6705	0.0000	2,650.9105	2,650.9105	0.8122		2,667.9674
<b>Total</b>	<b>0.8521</b>	<b>21.9932</b>	<b>15.9513</b>	<b>0.0259</b>		<b>0.6705</b>	<b>0.6705</b>		<b>0.6705</b>	<b>0.6705</b>	<b>0.0000</b>	<b>2,650.9105</b>	<b>2,650.9105</b>	<b>0.8122</b>		<b>2,667.9674</b>

**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	lb/day										lb/day					
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
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
Worker	0.0776	0.2262	1.9568	5.7400e-003	0.4939	3.2000e-003	0.4971	0.1309	2.9500e-003	0.1339		460.7817	460.7817	0.0226		461.2556
<b>Total</b>	<b>0.0776</b>	<b>0.2262</b>	<b>1.9568</b>	<b>5.7400e-003</b>	<b>0.4939</b>	<b>3.2000e-003</b>	<b>0.4971</b>	<b>0.1309</b>	<b>2.9500e-003</b>	<b>0.1339</b>		<b>460.7817</b>	<b>460.7817</b>	<b>0.0226</b>		<b>461.2556</b>



**3.16 Install cable splices - 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	lb/day										lb/day					
Off-Road	1.0058	10.5753	7.8964	0.0115		0.5605	0.5605		0.5157	0.5157		1,174.5068	1,174.5068	0.3599		1,182.0640
<b>Total</b>	<b>1.0058</b>	<b>10.5753</b>	<b>7.8964</b>	<b>0.0115</b>		<b>0.5605</b>	<b>0.5605</b>		<b>0.5157</b>	<b>0.5157</b>		<b>1,174.5068</b>	<b>1,174.5068</b>	<b>0.3599</b>		<b>1,182.0640</b>

**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	lb/day										lb/day					
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
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
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0388</b>	<b>0.1131</b>	<b>0.9784</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>230.3909</b>	<b>230.3909</b>	<b>0.0113</b>		<b>230.6278</b>



**3.16 Install cable splices - 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	lb/day										lb/day					
Off-Road	0.4477	9.8258	8.7183	0.0115		0.3016	0.3016		0.3016	0.3016	0.0000	1,174.5068	1,174.5068	0.3599		1,182.0640
<b>Total</b>	<b>0.4477</b>	<b>9.8258</b>	<b>8.7183</b>	<b>0.0115</b>		<b>0.3016</b>	<b>0.3016</b>		<b>0.3016</b>	<b>0.3016</b>	<b>0.0000</b>	<b>1,174.5068</b>	<b>1,174.5068</b>	<b>0.3599</b>		<b>1,182.0640</b>

**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	lb/day										lb/day					
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
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
Worker	0.0388	0.1131	0.9784	2.8700e-003	0.2470	1.6000e-003	0.2486	0.0655	1.4800e-003	0.0670		230.3909	230.3909	0.0113		230.6278
<b>Total</b>	<b>0.0388</b>	<b>0.1131</b>	<b>0.9784</b>	<b>2.8700e-003</b>	<b>0.2470</b>	<b>1.6000e-003</b>	<b>0.2486</b>	<b>0.0655</b>	<b>1.4800e-003</b>	<b>0.0670</b>		<b>230.3909</b>	<b>230.3909</b>	<b>0.0113</b>		<b>230.6278</b>



**3.17 Right-of-way restoration and cleanup - 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	lb/day										lb/day					
Fugitive Dust					0.3315	0.0000	0.3315	0.0358	0.0000	0.0358			0.0000			0.0000
Off-Road	3.0017	33.1222	16.8754	0.0401		1.3747	1.3747		1.2647	1.2647		4,097.4456	4,097.4456	1.2555		4,123.8100
<b>Total</b>	<b>3.0017</b>	<b>33.1222</b>	<b>16.8754</b>	<b>0.0401</b>	<b>0.3315</b>	<b>1.3747</b>	<b>1.7062</b>	<b>0.0358</b>	<b>1.2647</b>	<b>1.3005</b>		<b>4,097.4456</b>	<b>4,097.4456</b>	<b>1.2555</b>		<b>4,123.8100</b>

**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	lb/day										lb/day					
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
Vendor	0.1131	1.8541	0.9148	5.8900e-003	0.1767	0.0321	0.2088	0.0504	0.0295	0.0799		584.0345	584.0345	3.8600e-003		584.1155
Worker	0.0465	0.1358	1.1741	3.4400e-003	0.2964	1.9200e-003	0.2983	0.0786	1.7700e-003	0.0803		276.4690	276.4690	0.0135		276.7533
<b>Total</b>	<b>0.1597</b>	<b>1.9898</b>	<b>2.0888</b>	<b>9.3300e-003</b>	<b>0.4731</b>	<b>0.0340</b>	<b>0.5071</b>	<b>0.1289</b>	<b>0.0313</b>	<b>0.1602</b>		<b>860.5035</b>	<b>860.5035</b>	<b>0.0174</b>		<b>860.8688</b>



**3.17 Right-of-way restoration and cleanup - 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	lb/day										lb/day					
Fugitive Dust					0.1293	0.0000	0.1293	0.0140	0.0000	0.0140			0.0000			0.0000
Off-Road	1.0826	31.5097	22.8457	0.0401		0.7773	0.7773		0.7773	0.7773	0.0000	4,097.4456	4,097.4456	1.2555		4,123.8100
<b>Total</b>	<b>1.0826</b>	<b>31.5097</b>	<b>22.8457</b>	<b>0.0401</b>	<b>0.1293</b>	<b>0.7773</b>	<b>0.9066</b>	<b>0.0140</b>	<b>0.7773</b>	<b>0.7913</b>	<b>0.0000</b>	<b>4,097.4456</b>	<b>4,097.4456</b>	<b>1.2555</b>		<b>4,123.8100</b>

**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	lb/day										lb/day					
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
Vendor	0.1131	1.8541	0.9148	5.8900e-003	0.1767	0.0321	0.2088	0.0504	0.0295	0.0799		584.0345	584.0345	3.8600e-003		584.1155
Worker	0.0465	0.1358	1.1741	3.4400e-003	0.2964	1.9200e-003	0.2983	0.0786	1.7700e-003	0.0803		276.4690	276.4690	0.0135		276.7533
<b>Total</b>	<b>0.1597</b>	<b>1.9898</b>	<b>2.0888</b>	<b>9.3300e-003</b>	<b>0.4731</b>	<b>0.0340</b>	<b>0.5071</b>	<b>0.1289</b>	<b>0.0313</b>	<b>0.1602</b>		<b>860.5035</b>	<b>860.5035</b>	<b>0.0174</b>		<b>860.8688</b>



**3.18 Test cable splices - 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	lb/day										lb/day					
Off-Road	0.4304	3.7311	2.6073	3.1600e-003		0.3068	0.3068		0.2823	0.2823		323.5275	323.5275	0.0991		325.6092
<b>Total</b>	<b>0.4304</b>	<b>3.7311</b>	<b>2.6073</b>	<b>3.1600e-003</b>		<b>0.3068</b>	<b>0.3068</b>		<b>0.2823</b>	<b>0.2823</b>		<b>323.5275</b>	<b>323.5275</b>	<b>0.0991</b>		<b>325.6092</b>

**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	lb/day										lb/day					
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
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
Worker	0.0233	0.0679	0.5870	1.7200e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		138.2345	138.2345	6.7700e-003		138.3767
<b>Total</b>	<b>0.0233</b>	<b>0.0679</b>	<b>0.5870</b>	<b>1.7200e-003</b>	<b>0.1482</b>	<b>9.6000e-004</b>	<b>0.1491</b>	<b>0.0393</b>	<b>8.9000e-004</b>	<b>0.0402</b>		<b>138.2345</b>	<b>138.2345</b>	<b>6.7700e-003</b>		<b>138.3767</b>



**3.18 Test cable splices - 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	lb/day										lb/day					
Off-Road	0.1500	3.0976	2.4129	3.1600e-003		0.1252	0.1252		0.1252	0.1252	0.0000	323.5275	323.5275	0.0991		325.6092
<b>Total</b>	<b>0.1500</b>	<b>3.0976</b>	<b>2.4129</b>	<b>3.1600e-003</b>		<b>0.1252</b>	<b>0.1252</b>		<b>0.1252</b>	<b>0.1252</b>	<b>0.0000</b>	<b>323.5275</b>	<b>323.5275</b>	<b>0.0991</b>		<b>325.6092</b>

**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	lb/day										lb/day					
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
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
Worker	0.0233	0.0679	0.5870	1.7200e-003	0.1482	9.6000e-004	0.1491	0.0393	8.9000e-004	0.0402		138.2345	138.2345	6.7700e-003		138.3767
<b>Total</b>	<b>0.0233</b>	<b>0.0679</b>	<b>0.5870</b>	<b>1.7200e-003</b>	<b>0.1482</b>	<b>9.6000e-004</b>	<b>0.1491</b>	<b>0.0393</b>	<b>8.9000e-004</b>	<b>0.0402</b>		<b>138.2345</b>	<b>138.2345</b>	<b>6.7700e-003</b>		<b>138.3767</b>

**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	lb/day										lb/day					
Mitigated	0.3210	0.7249	3.2982	7.8300e-003	0.5560	9.6600e-003	0.5656	0.1484	8.9000e-003	0.1573		640.4780	640.4780	0.0260		641.0234
Unmitigated	0.3210	0.7249	3.2982	7.8300e-003	0.5560	9.6600e-003	0.5656	0.1484	8.9000e-003	0.1573		640.4780	640.4780	0.0260		641.0234

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	90.00	90.00	90.00	262,756	262,756
Total	90.00	90.00	90.00	262,756	262,756

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

#### 5.0 Energy Detail

##### 4.4 Fleet Mix

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	lb/day										lb/day					
NaturalGas Mitigated	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
NaturalGas Unmitigated	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960

## 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	lb/day										lb/day					
General Light Industry	2907.12	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
<b>Total</b>		<b>0.0314</b>	<b>0.2850</b>	<b>0.2394</b>	<b>1.7100e-003</b>		<b>0.0217</b>	<b>0.0217</b>		<b>0.0217</b>	<b>0.0217</b>		<b>342.0145</b>	<b>342.0145</b>	<b>6.5600e-003</b>	<b>6.2700e-003</b>	<b>344.0960</b>



## 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	lb/day										lb/day					
General Light Industry	2.90712	0.0314	0.2850	0.2394	1.7100e-003		0.0217	0.0217		0.0217	0.0217		342.0145	342.0145	6.5600e-003	6.2700e-003	344.0960
<b>Total</b>		<b>0.0314</b>	<b>0.2850</b>	<b>0.2394</b>	<b>1.7100e-003</b>		<b>0.0217</b>	<b>0.0217</b>		<b>0.0217</b>	<b>0.0217</b>		<b>342.0145</b>	<b>342.0145</b>	<b>6.5600e-003</b>	<b>6.2700e-003</b>	<b>344.0960</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
Unmitigated	2.4983	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208



## 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	lb/day										lb/day					
Architectural Coating	0.5714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9260					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.9000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
<b>Total</b>	<b>2.4983</b>	<b>9.0000e-005</b>	<b>9.3200e-003</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>0.0197</b>	<b>0.0197</b>	<b>5.0000e-005</b>		<b>0.0208</b>

### 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	lb/day										lb/day					
Architectural Coating	0.5714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9260					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.9000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0197	0.0197	5.0000e-005		0.0208
<b>Total</b>	<b>2.4983</b>	<b>9.0000e-005</b>	<b>9.3200e-003</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>0.0197</b>	<b>0.0197</b>	<b>5.0000e-005</b>		<b>0.0208</b>

## 7.0 Water Detail



**7.1 Mitigation Measures Water****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

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## Suncrest Reactive Power Support Project

### San Diego County, Mitigation Report

#### Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Field Survey	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Install cable splices	0.54	0.07	-0.09	0.00	0.46	0.41	0.00	0.00	0.00	0.00	0.00	0.00
Install duct package	0.60	-0.06	-0.34	0.00	0.34	0.30	0.00	0.00	0.00	0.00	0.00	0.00
Install Transmission line foundations	0.55	-0.06	-0.36	0.00	0.32	0.28	0.00	0.00	0.00	0.00	0.00	0.00
Install Vaults	0.63	0.02	-0.29	0.00	0.41	0.37	0.00	0.00	0.00	0.00	0.00	0.00
Material delivery	0.71	0.34	0.01	0.00	0.66	0.63	0.00	0.00	0.00	0.00	0.00	0.00
Pull cable	0.62	0.06	-0.15	0.00	0.51	0.47	0.00	0.00	0.00	0.00	0.00	0.00
Right-of-way restoration and cleanup	0.61	0.05	-0.32	0.00	0.42	0.38	0.00	0.00	0.00	0.00	0.00	0.00
SDG&E Site preparation	0.58	0.04	-0.33	0.00	0.39	0.34	0.00	0.00	0.00	0.00	0.00	0.00
Set SVC Substation Foundations	0.58	0.01	-0.27	0.00	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00
Structure Erection	0.63	0.10	-0.28	0.00	0.45	0.41	0.00	0.00	0.00	0.00	0.00	0.00
Substation construction	0.62	0.06	-0.29	0.00	0.42	0.38	0.00	0.00	0.00	0.00	0.00	0.00
SVC Site Grading	0.61	0.24	0.10	0.00	0.57	0.54	0.00	0.00	0.00	0.00	0.00	0.00
Test cable splices	0.62	0.17	0.06	0.00	0.58	0.54	0.00	0.00	0.00	0.00	0.00	0.00
Transformer & SVC Delivery	0.56	0.22	-0.02	0.00	0.57	0.54	0.00	0.00	0.00	0.00	0.00	0.00
Trenching	0.66	0.15	-0.12	0.00	0.53	0.50	0.00	0.00	0.00	0.00	0.00	0.00
Wire Stringing	0.57	-0.02	-0.33	0.00	0.37	0.32	0.00	0.00	0.00	0.00	0.00	0.00



**OFFROAD Equipment Mitigation**

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Bore/Drill Rigs	Diesel	Tier 2	3	3	No Change	0.00
Cranes	Diesel	Tier 2	10	10	No Change	0.00
Dumpers/Tenders	Diesel	Tier 2	12	12	No Change	0.00
Excavators	Diesel	Tier 2	4	4	No Change	0.00
Forklifts	Diesel	Tier 2	1	1	No Change	0.00
Generator Sets	Diesel	Tier 2	6	6	No Change	0.00
Graders	Diesel	Tier 2	2	2	No Change	0.00
Off-Highway Trucks	Diesel	Tier 2	31	31	No Change	0.00
Other General Industrial Equipment	Diesel	Tier 2	4	4	No Change	0.00
Other Material Handling Equipment	Diesel	Tier 2	1	1	No Change	0.00
Rollers	Diesel	Tier 2	2	2	No Change	0.00
Rubber Tired Dozers	Diesel	Tier 2	1	1	No Change	0.00
Rubber Tired Loaders	Diesel	Tier 2	1	1	No Change	0.00
Scrapers	Diesel	Tier 2	0	0	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	Tier 2	8	8	No Change	0.00
Trenchers	Diesel	Tier 2	1	1	No Change	0.00
Welders	Diesel	Tier 2	0	0	No Change	0.00



[illegible]



[illegible]



Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Bore/Drill Rigs	3.69186E-001	-4.52306E-001	-1.30207E+000	0.00000E+000	-5.12397E-002	-1.41831E-001	0.00000E+000	1.21661E-006	1.21661E-006	0.00000E+000	0.00000E+000	1.20894E-006
Cranes	8.02374E-001	4.23487E-001	-2.66389E-002	0.00000E+000	7.29545E-001	7.06037E-001	0.00000E+000	1.20988E-006	1.20988E-006	0.00000E+000	0.00000E+000	1.20223E-006
Dumpers/Tenders	1.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	1.04106E-006	1.04106E-006	0.00000E+000	0.00000E+000	1.03868E-006
Excavators	4.57180E-001	-5.30329E-002	-1.72558E-001	0.00000E+000	3.42973E-001	2.85984E-001	0.00000E+000	1.23215E-006	1.23215E-006	0.00000E+000	0.00000E+000	9.79483E-007
Forklifts	6.78420E-001	2.29119E-001	7.88945E-002	0.00000E+000	6.27451E-001	5.94883E-001	0.00000E+000	2.20546E-006	2.20546E-006	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	5.86654E-001	-1.13077E-001	-7.01001E-002	0.00000E+000	3.47476E-001	3.47476E-001	0.00000E+000	1.14819E-006	1.14819E-006	0.00000E+000	0.00000E+000	1.14610E-006
Graders	7.56802E-001	4.74528E-001	4.59608E-002	0.00000E+000	7.12740E-001	6.87867E-001	0.00000E+000	9.45692E-007	9.45692E-007	0.00000E+000	0.00000E+000	1.40953E-006
Off-Highway Trucks	6.48865E-001	3.02457E-002	-4.17204E-001	0.00000E+000	3.99845E-001	3.47664E-001	0.00000E+000	1.18836E-006	1.18836E-006	0.00000E+000	0.00000E+000	1.18992E-006
Other General Industrial Equipment	6.51894E-001	1.69800E-001	7.45811E-002	0.00000E+000	5.91775E-001	5.56161E-001	0.00000E+000	1.04836E-006	1.04836E-006	0.00000E+000	0.00000E+000	1.04166E-006
Other Material Handling Equipment	5.55003E-001	7.08629E-002	-1.04084E-001	0.00000E+000	4.61538E-001	4.14545E-001	0.00000E+000	1.17316E-006	1.17316E-006	0.00000E+000	0.00000E+000	1.16566E-006
Rollers	6.34494E-001	1.81803E-001	1.45695E-002	0.00000E+000	5.51163E-001	5.11392E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.14402E-006
Rubber Tired Dozers	8.25837E-001	4.61785E-001	5.53891E-001	0.00000E+000	7.54821E-001	7.33533E-001	0.00000E+000	7.07385E-007	7.07385E-007	0.00000E+000	0.00000E+000	1.40586E-006
Rubber Tired Loaders	6.94511E-001	1.88612E-001	-7.90698E-001	0.00000E+000	4.94624E-001	4.50292E-001	0.00000E+000	1.02647E-006	1.02647E-006	0.00000E+000	0.00000E+000	1.02001E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Balkhoes	5.67207E-001	6.55277E-002	2.79110E-002	0.00000E+000	5.07401E-001	4.64521E-001	0.00000E+000	1.02268E-006	1.02268E-006	0.00000E+000	0.00000E+000	1.21947E-006
Trenchers	7.08179E-001	3.11829E-001	7.22932E-002	0.00000E+000	6.45375E-001	6.14518E-001	0.00000E+000	9.70870E-007	9.70870E-007	0.00000E+000	0.00000E+000	1.44714E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

## Fugitive Dust Mitigation

Yes/No    Mitigation Measure    Mitigation Input    Mitigation Input    Mitigation Input

No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
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No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	61.00	PM2.5 Reduction	61.00	Frequency (per day)	3.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Field Survey	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Field Survey	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Install cable splices	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Install cable splices	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Install duct package	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Install duct package	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Install Transmission line foundations	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Install Transmission line foundations	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Install Vaults	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Install Vaults	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Material delivery	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Material delivery	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Pull cable	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Pull cable	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Right-of-way restoration and cleanup	Fugitive Dust	0.01	0.00	0.00	0.00	0.61	0.61
Right-of-way restoration and cleanup	Roads	0.01	0.00	0.01	0.00	0.00	0.00



SDG&E Site preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
SDG&E Site preparation	Roads	0.03	0.01	0.03	0.01	0.00	0.00
Set SVC Substation Foundations	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Set SVC Substation Foundations	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Structure Erection	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Structure Erection	Roads	0.03	0.01	0.03	0.01	0.00	0.00
Substation construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Substation construction	Roads	0.05	0.01	0.05	0.01	0.00	0.00
SVC Site Grading	Fugitive Dust	0.11	0.06	0.04	0.02	0.61	0.61
SVC Site Grading	Roads	0.04	0.01	0.04	0.01	0.00	0.00
Test cable splices	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Test cable splices	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Transformer & SVC Delivery	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Transformer & SVC Delivery	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Trenching	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Trenching	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Wire Stringing	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Wire Stringing	Roads	0.01	0.00	0.01	0.00	0.00	0.00

## Operational Percent Reduction Summary



Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## Operational Mobile Mitigation

Project Setting:

Mitigation Measure	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			



No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		



No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	50.00
No	Use Low VOC Paint (Residential Exterior)	50.00
No	Use Low VOC Paint (Non-residential Interior)	50.00
No	Use Low VOC Paint (Non-residential Exterior)	50.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00



DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	



Item	Pounds of SF <sub>6</sub>	Allowable Manufacturer Leakage Limit (%/Year)	Anticipated SF <sub>6</sub> Emission Rate (Pounds/Year)	Anticipated SF <sub>6</sub> Emission Rate (MT/Year)	SF <sub>6</sub> GWP	MT/CO <sub>2</sub> eq /Year
230 kV 50a 3-Cycle Breaker	162	0.005	0.81	0.00036693	22,800	8.366004

MT: Metric Tons  
CO<sub>2</sub>eq: Carbon Dioxide Emission Equivalent  
GWP: Global Warming Potential  
1: EPA Overview Of Greenhouse Gases <http://epa.gov/climatechange/ghgemissions/gases/fgases.html>  
Example Equation:  
Pounds of SF<sub>6</sub> x Allowable Manufacturer Leakage Limit %/Year = Anticipated SF<sub>6</sub> Emission Rate In Pounds/Year  
Anticipated SF<sub>6</sub> Emission Rate In Pounds/Year x 0.00045359237 MT/Lb. = Anticipated SF<sub>6</sub> Emission Rate In MT/Year  
MT/CO<sub>2</sub>eq /Year = Anticipated SF<sub>6</sub> Emission Rate In MT/Year x SF<sub>6</sub> GWP



**Table 4.3-12. Construction-Related Daily Maximum Emissions Resulting from the Proposed Project**

Emissions Source	Pollutant (Pounds/Day)					
	VOCs	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Unmitigated Emissions	24.11	271.64	137.72	0.36	17.25	11.16
Mitigated Emissions	8.13	223.17	155.99	0.32	8.9	6.33
SDAPCD Thresholds	75	250	550	250	100	55
Is Threshold Exceeded?	No	No	No	No	No	No

Note: Emissions were calculated using CalEEMod version 2013.2.2 and are presented for maximum emitting day per pollutant. The reductions for construction emission mitigations are based on mitigation included in the CalEEMod computer model. See Appendix X for detailed report.

**Table 4.3-13. Construction-Related Annual Emissions Resulting from the Proposed Project**

Emissions Source	Pollutant (Tons/Year)					
	VOCs	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Unmitigated Emissions	1.39	15.45	8.27	0.02	0.99	0.72
Mitigated Emissions	0.48	12.73	9.14	0.02	0.58	0.4
SDAPCD Thresholds	13.7	40	100	40	15	10
Is Threshold Exceeded?	No	No	No	No	No	No

Note: Emissions were calculated using CalEEMod version 2013.2.2 and are presented for maximum emitting year per pollutant. The reductions for construction emission mitigations are based on mitigation included in the CalEEMod computer model. See Appendix X for detailed report.

**Table 4.3-14. Operation- and Maintenance-Related Daily Maximum Emissions Resulting from the Proposed Project**

Emissions Source	Pollutant (Pounds/Day)					
	VOCs	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Unmitigated Emissions	2.85	1.01	3.55	0.01	0.59	0.18
Mitigated Emissions	2.85	1.01	3.55	0.01	0.59	0.18
SDAPCD Thresholds	75	250	550	250	100	55
Is Threshold Exceeded?	No	No	No	No	No	No

Note: Emissions were calculated using CalEEMod version 2013.2.2. See Appendix X for detailed report.

**Table 4.3-15. Operation- and Maintenance-Related Annual Emissions Resulting from the Proposed Project**

Emissions Source	Pollutant (Tons/Year)					
	VOCs	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Unmitigated Emissions	0.52	0.18	0.63	0.001	0.1	0.03
Mitigated Emissions	0.52	0.18	0.63	0.001	0.1	0.03
SDAPCD Thresholds	13.7	40	100	40	15	10
Is Threshold Exceeded?	No	No	No	No	No	No

Note: Emissions were calculated using CalEEMod version 2013.2.2. See Appendix X for detailed report.



**Table 4.3-16. Total Estimated Greenhouse Gas Construction Emissions**

<b>Emissions Source</b>	<b>Total (MTCO<sub>2</sub>eq/Year)</b>
Unmitigated Emissions	2138
Mitigated Emissions	1924
Greenhouse Gas Threshold (MTCO <sub>2</sub> eq/Year) <sup>1</sup>	10,000
Is Threshold Exceeded?	No
<b>Mitigated Emissions, amortized over 30 years</b>	<b>64.13</b>

Note: Emissions were calculated using CalEEMod version 2013.2.2 and are presented for maximum emitting year. See Appendix X for detailed report.

<sup>1</sup> GHG emissions threshold is based on the County of San Diego Land Use and Environment Group Nov. 2013.

MTCO<sub>2</sub>eq/Year = Metric Tons CO<sub>2</sub> Equivalent per Year

**Table 4.3-17. Total Estimated Greenhouse Gas Operation & Maintenance Emissions**

<b>Emissions Source</b>	<b>Total (MTCO<sub>2</sub>eq/Year)</b>
Mobile Source	117
Circuit Breaker	8.2
Energy Use	322
Unmitigated Total	447.2
Mitigated Total	447.2
Greenhouse Gas Threshold (MTCO <sub>2</sub> eq/Yr) <sup>1</sup>	10,000
Is Threshold Exceeded?	No

Note: Emissions were calculated using CalEEMod version 2013.2.2. See Appendix X for detailed report.


<sup>1</sup> GHG emissions threshold is based on The County of San Diego Land Use and Environment Group Nov. 2013.

MTCO<sub>2</sub>eq/Year = Metric Tons CO<sub>2</sub> Equivalent per Year



**Appendix D:**  
**Biological Resources Technical Report**





# SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

August 2015

## SUBMITTED TO

NextEra Energy Transmission, West LLC  
700 Universe Boulevard  
Juno Beach, Florida 33408

## SUBMITTED BY

SWCA Environmental Consultants  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019



**Suncrest Dynamic Reactive Power Support Project  
Biological Resources Technical Report  
San Diego County, California**

Prepared for

**NextEra Energy Transmission, West LLC**  
700 Universe Boulevard  
Juno Beach, Florida 33408  
Attn: Andy Flajole

Prepared by

**SWCA Environmental Consultants**  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019  
(650) 440-4160  
[www.swca.com](http://www.swca.com)

SWCA Project No. 32001

August 5, 2015



## **EXECUTIVE SUMMARY**

NextEra Energy Transmission West, LLC. (NEET West) retained SWCA Environmental Consultants (SWCA) to conduct a biological resources study in support of the proposed Suncrest Dynamic Reactive Power (Static Var Compensator or SVC) Support Project (Proposed Project). To document the biological resources at the Proposed Project, SWCA conducted a literature review of existing biological information and field surveys, both of which are described in this biological resources technical report.

The Proposed Project is located in an unincorporated area of San Diego County, California, approximately 29 miles east of San Diego and 3.36 miles southeast of the community of Alpine. The Proposed Project consists of the SVC location, underground electrical transmission line, riser pole, vault structures, and an overhead transmission line connecting the transmission line to the Suncrest Substation. Construction of the SVC will occur on an approximately 6-acre privately owned parcel comprising the SVC facility, stormwater drainage and conveyance system, and associated site improvements. Once complete, the SVC will be contained within a fenced area of up to approximately 112,000 square feet (2.58 acres). The approximately 1-mile 230 kilovolt (kV) single-circuit underground transmission line will be located on approximately 1.4 acres of private and San Diego Gas and Electric land under Bell Bluff Truck Trail. At the terminus of the underground transmission line, a riser pole will connect an approximately 300-foot-long overhead span into the existing Suncrest Substation's 230 kV bus.

This report is intended to identify biological resources within the Proposed Project and analyze impacts to biological resources that may occur as a result of the implementation of the Proposed Project. Biological resources considered for this report include sensitive and common plants and animals, habitats and sensitive natural communities, wildlife movement corridors, and water features subject to state or federal jurisdiction. Methodologies used to assess the biological resources known to, or known to potentially occur at the Proposed Project, assessments of potential impacts to these resources based on the project design, and avoidance, minimization, and mitigation measures to reduce these potential impacts are outlined in this report. With the implementation of the mitigation measures described herein, it is anticipated that impacts to biological resources would be less than significant as defined in the California Environmental Quality Act.

No species listed pursuant to the federal Endangered Species Act or California Endangered Species Act were identified as present or likely to occur at the Proposed Project based on the literature review or field studies. Sensitive biological resources identified in and around the Proposed Project include: 1) jurisdictional waters; 2) felt-leaved monardella, a rare plant; 3) nesting birds, including a previously occupied golden eagle nesting territory; 4) red-diamond rattlesnake; 5) coast horned lizard; and 6) San Diego desert woodrat.

The Proposed Project has been designed to avoid impacts to jurisdictional waters, and to any populations of felt-leaved monardella to the maximum extent practicable. Up to 0.3 acre of Engelmann Oak/Coast Live Oak/Poison Oak/Grass Association, a sensitive natural community, may be impacted; however, this area has been subject to repeated disturbance dating back more than 20+ years which has diminished its habitat value. Applicant-proposed measures are recommended to avoid and minimize impacts to mobile wildlife. Due to the relative scarcity of occurrences of sensitive biological resources at the Proposed Project, the limited number of special-status species that could occur, and the small footprint of the project in relation to local and global ranges and populations of these species, impacts to biological resources are anticipated to be less than significant. Implementation of applicant-proposed measures will further minimize impacts to biological resources.



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# 1 INTRODUCTION

NextEra Energy Transmission West, LLC (NEET West) proposes to construct the Suncrest Dynamic Reactive Power (Static Var Compensator or SVC) Support Project (Proposed Project) in San Diego County, California, to support the existing San Diego Gas and Electric (SDG&E) Suncrest Substation. This biological resources technical report was prepared to document the existing biological resources in the Proposed Project, and to analyze impacts to biological resources that may occur as a result of the implementation of the Proposed Project. Biological resources considered include sensitive and common plants and animals, habitats and sensitive natural communities, wildlife movement corridors, and water features subject to State or federal jurisdiction. This report describes the methodologies used to assess the biological resources known to occur and potentially occurring at the Proposed Project, assesses potential impacts to these resources based on the project design, and presents avoidance and minimization measures to further reduce these potential impacts.

## 1.1 Project Location

The Proposed Project is located in unincorporated San Diego County, on private land adjacent to the Cleveland National Forest, west of Japatul Valley Road and south of Interstate 8 (Figure 1). Nearby unincorporated communities include Descanso, approximately 3.78 miles to the northeast, and downtown Alpine, approximately 5.75 miles to the west. The city of El Cajon is approximately 13.36 miles west of the Proposed Project. The SVC facility will be constructed on part of a parcel that is privately owned, and immediately east of and adjacent to the Cleveland National Forest. The Proposed Project will cross privately owned parcels, including two owned by SDG&E. The Proposed Project components and locations under consideration for development are shown in Figure 2, Proposed Project Location Map.

## 1.2 Project Description

The Proposed Project has two primary components, the Dynamic Reactive Power Support Facility (SVC), and a 230 kilovolt (kV) single-circuit underground transmission line connecting the SVC to the existing Suncrest Substation, which is owned and operated by SDG&E. The Suncrest Substation was constructed in 2012, and is located at the western terminus of the proposed transmission line, approximately 1 mile west of the proposed SVC. An approximately 300-foot-long overhead span will connect into the existing Suncrest Substation's 230 kV bus. Once interconnected to the Suncrest Substation, the SVC will provide continuous reactive power response, improving the reliability of the transmission grid and increasing the amount of renewable power delivered to the San Diego Area.

In addition to the two primary components, the Proposed Project will also include:

- Construction of two new access driveways to facilitate construction, operation, and maintenance of the SVC;
- Installation of fiber optic cable within the same underground duct bank as the 230 kV cable to provide communications for line relaying, supervisory control and data acquisition (SCADA), and other devices as required;
- Installation of approximately five splice vaults to facilitate installation of the new underground cable and operation and maintenance of the underground transmission line; and,
- Installation of a 12 kV underground electrical distribution feed to the SVC.



Figure 1. General Vicinity Map

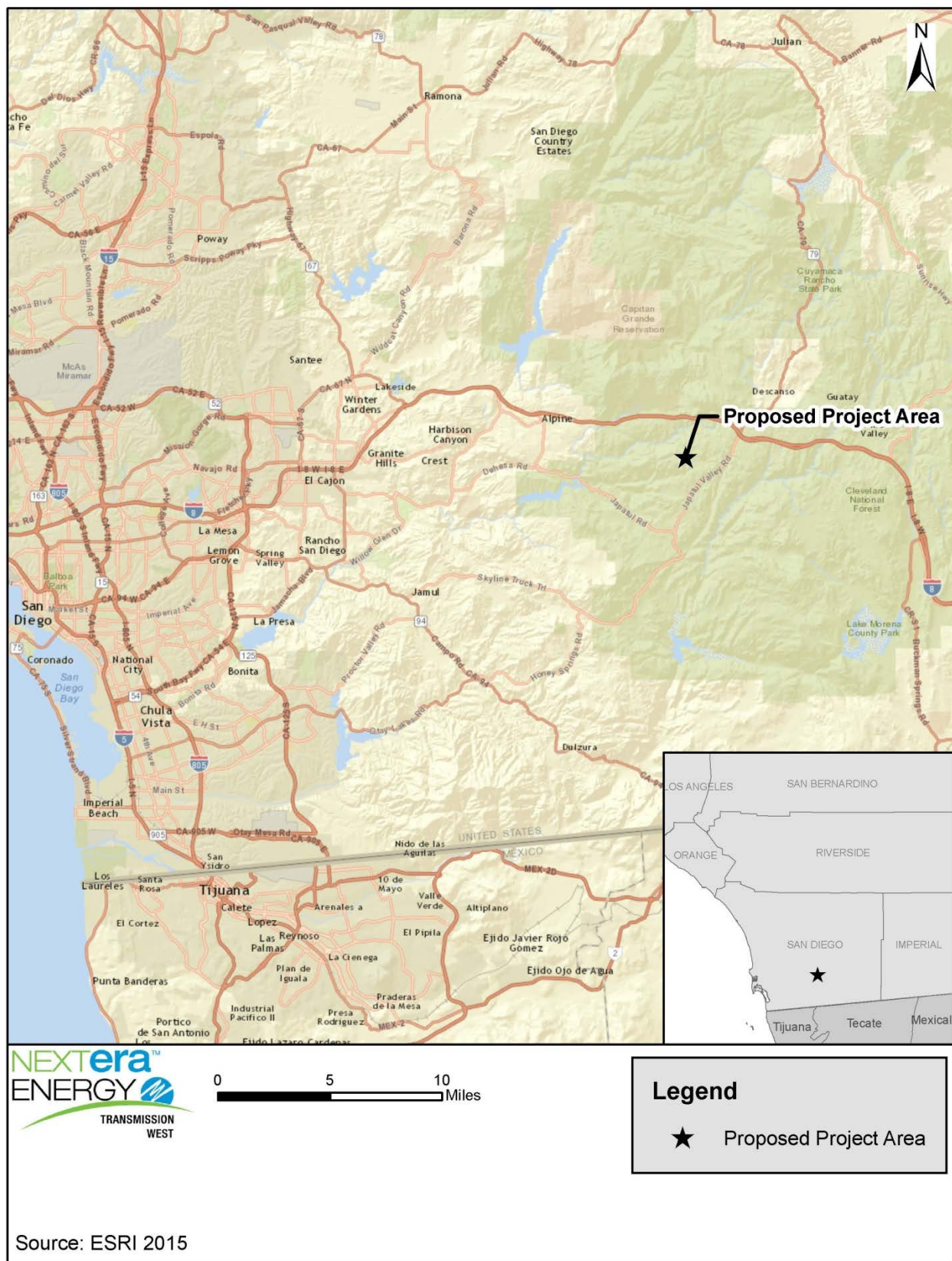
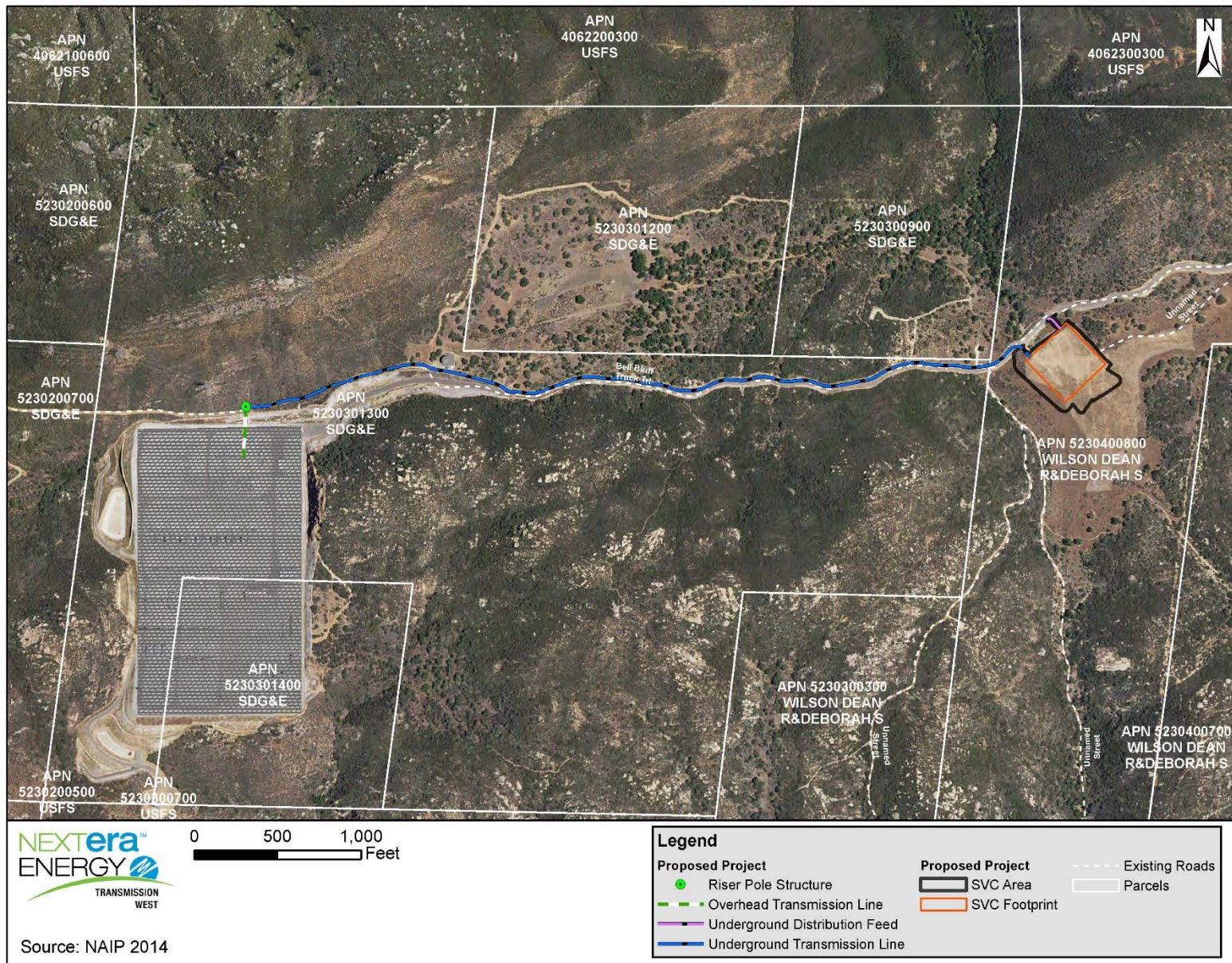




Figure 2. Proposed Project Location Map





The proposed SVC will be constructed immediately south of Bell Bluff Truck Trail (an existing paved private road), in an area that was previously used as a laydown area for the Sunrise Powerlink Transmission Project (Sunrise Powerlink). The proposed underground transmission line will exit the SVC on the north side and then turn westward along the north side of Bell Bluff Truck Trail for approximately 1 mile to a point where the transmission line will transition to a riser pole structure. The riser pole structure will serve as the change of ownership pole between NEET West and SDG&E. SDG&E will then string the conductor overhead with a single, approximately 300-foot-long overhead span to enter the Suncrest Substation and make the interconnection.

With the exception of the riser pole structure and some temporary work areas (to facilitate installation of the vault structures), the majority of the proposed underground transmission line will be located within the paved roadbed of Bell Bluff Truck Trail. Duct bank installation and equipment and material staging will be limited to either the north or south side of the road centerline, depending on the location of other utilities in the roadway, to maintain an unobstructed single lane of travel on the 30-foot-wide road section so as not to impede access to Suncrest Substation. A laydown area to the west of the riser pole, for a length of approximately 150 feet along Bell Bluff Trail, is also included in the project footprint. Approximately five splice vaults will be installed underground along the transmission line alignment approximately every 900 feet to facilitate installation of the underground cable and operation and maintenance of the transmission line following construction. The number of vaults may be reduced based on the final design specifications of the underground transmission line. Access to the proposed SVC area will be immediately off of Bell Bluff Truck Trail via two new approximately 20-foot-wide by 95-foot-long access drives. The roadway aprons of these access drives will be paved while the remainder of the access drives will be graveled.

Construction of the SVC (e.g., limit of grading and associated site improvements based on current information) will occupy a total area of approximately 6 acres. The SVC will be contained within a fenced area of up to approximately 2.58 acres. During construction, a 2.56-acre staging area will be used to support construction activities and restored once the construction is complete. Total land requirements for the underground transmission line and riser pole total 3.62 acres; including 3.13 acres of temporary disturbance and 0.49 acres of permanent disturbance.

## **2 REGULATORY BACKGROUND**

### **2.1 Federal**

#### **2.1.1 Federal Endangered Species Act**

The Proposed Project does not have a federal nexus and, therefore, reference to the Endangered Species Act (ESA) and other federal laws is provided here for informational purposes only.

The U.S. Congress passed the Endangered Species Act (ESA) in 1973 to protect endangered species and species threatened with extinction (federally listed species). The ESA operates in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

Section 9 of the ESA prohibits the “take” of endangered or threatened wildlife species. The legal definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 United States Code [U.S.C.] 1532(19)). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (Code of Federal Regulations [CFR] Title 50, Section 17.3). Harassment is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR 17.3). Actions that result in take can result in civil or criminal penalties.



In addition to listing species and distinct population segments, the ESA defines critical habitat as habitat deemed essential to the survival of a federally listed species. Under Section 7, all federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat. Critical habitat requirements do not apply to activities on private land that do not involve a federal nexus.

Actions that result in take of listed species typically require authorization from the USFWS under either Section 7 or Section 10 of the ESA. The Proposed Project is not expected to result in any impacts to ESA-listed species or critical habitat.

### **2.1.2 Migratory Bird Treaty Act**

The federal Migratory Bird Treaty Act (MBTA), first enacted in 1918, prohibits any person, unless permitted by regulations, to:

*“...pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention ... for the protection of migratory birds ... or any part, nest, or egg of any such bird.” (16 U.S.C. 703)*

The list of migratory birds includes nearly all bird species native to the United States. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under MBTA to directly kill, or destroy a nest of, nearly any native bird species, not just endangered species. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA. Removal of unoccupied nests, and bird mortality resulting indirectly from disturbance activities, are not considered violations of the MBTA.

### **2.1.3 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668–668c), enacted in 1940, and amended several times since, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles (*Haliaeetus leucocephalus*), including their parts, nests, or eggs. In 1962, Congress amended the act to also cover golden eagles (*Aquila chrysaetos*).

The act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle . . . [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

On November 10, 2009, the USFWS implemented new rules under the existing Bald and Golden Eagle Act, requiring all activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity to receive permits from the USFWS.

Under USFWS rules (16 U.S.C. 22.3; 72 Federal Register 31,132, June 5, 2007), “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 interfering with normal breeding, feeding, or sheltering behavior.” In addition to immediate impacts, this definition



also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

### **2.1.4 Clean Water Act**

The Proposed Project will not result in impacts to “waters of the United States” and, therefore, reference to the Clean Water Act (CWA) is provided here for informational purposes only. The Clean Water Act (CWA) (33 U.S.C. 1251 et seq.) is the primary federal legislation that addresses water quality, pollution, and protection of the chemical, physical, and biological integrity of most waters in the United States. The CWA chiefly addresses the quality of surface waters, while groundwater contamination is addressed by other legislation, including the Resource Conservation and Recovery Act (RCRA).

On June 29, 2015, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) published Federal Register Volume 79, Number 76 (April 21, 2014), a final rule (Clean Water Rule) defining the scope of waters protected under the Clean Water Act (CWA), in light of the U.S. Supreme Court cases in *U.S. v. Riverside Bayview*, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC)*, and *Rapanos*. The new rule will enhance protection for the nation's public health and aquatic resources, and increase CWA program predictability and consistency by increasing clarity as to the scope of “waters of the United States” protected under the CWA. The final rule becomes effective as of August 28, 2015, and the USACE and the EPA will make similar changes in the CWA Rule at 33 CFR 328.3 and 40 CFR 110.0, 112.2, 116.3, 117.1, 122.2, 232.2, 300.5, part 300 App. E, 302.3, and 401.11.

In this final rule, the agencies clarify the definition of “waters of the United States” to include eight categories of jurisdictional waters. The first three types of jurisdictional waters—traditional navigable waters, interstate waters, and the territorial seas—are jurisdictional by rule in all cases. The fourth type, impoundments of jurisdictional waters, is also jurisdictional by rule. The next two types of waters, “tributaries” and “adjacent” waters, are jurisdictional by rule, as defined, because the science confirms that they have a significant nexus to traditional navigable waters, interstate waters, or territorial seas. For waters that are jurisdictional by rule, no additional analysis is required.

The final two types of jurisdictional waters are those waters found after a case-specific analysis to have a significant nexus to traditional navigable waters, interstate waters, or the territorial seas, either alone or in combination with similarly situated waters in the region. Justice Kennedy acknowledged the agencies could establish more specific regulations or establish a significant nexus on a case-by-case basis, *Rapanos* at 782, and for these waters the agencies will continue to assess significant nexus on a case-specific basis.

#### **2.1.4.1 CLEAN WATER ACT SECTION 303 AND 304**

Pursuant to Section 303 of the CWA, states are required to adopt water quality standards applicable to all Waters of the U.S. (33 U.S.C. 1313). When adopting water quality standards, the states are required to consider the designated uses of the waters involved and the associated water quality criteria based upon those uses. Such standards are established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and their use and value for navigation. Standards are also required to protect the public health or welfare, and enhance the quality of water. Preferably, adopted water quality standards consist of specific numerical criteria; however, non-numeric criteria (e.g., narrative criteria, species depended criteria, ecological criteria) based on bioassessment or monitoring may be utilized where numeric criteria are not available.



Under CWA Section 303(d) states, territories, and authorized tribes are required to develop lists of “impaired waters” identifying those waters where pollution controls are not sufficient to meet designated water quality standards resulting in the impairment of beneficial uses. In making such designations it is required that the jurisdiction establish a priority ranking system accounting for the severity of the pollution. This prioritization system is used in the development of Total Maximum Daily Loads (TMDLs) for these waters to address water quality issues and the restoration of beneficial uses.

Section CWA 304(a) requires that EPA develop criteria for water quality that reflects the latest scientific knowledge based on data and scientific judgments on pollutant concentrations and environmental or human health effects. Criteria are grouped into six categories: aquatic life, biological, nutrients, human health, microbial (pathogen), and recreational.

Implementation of Section 303 of the CWA (i.e., adoption of water quality standards, identification of beneficial uses, and identification of impaired waters) in California is performed by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The Proposed Project is within the jurisdiction of the San Diego RWQCB (SDRWQCB).

#### **2.1.4.2 CLEAN WATER ACT SECTION 401**

Section 401 of the CWA provides states and authorized tribes the opportunity to protect water quality by requiring that any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the state in which the discharge originates (33 U.S.C. 1341). This authority ensures that federally permitted activities comply with the CWA and State water quality laws. Section 401 is implemented through a review process that is conducted by the RWQCB, or in the case of when multiple jurisdictions have authority from the SWRCB. The Proposed Project is within the jurisdiction of the SDRWQCB.

#### **2.1.4.3 CLEAN WATER ACT SECTION 402**

The National Pollutant Discharge Elimination System (NPDES) program, established in 1972 as part of the Federal Water Pollution Control Act, controls water pollution through regulation of point source pollutants discharging to waters of the United States (33 U.S.C. 1342). Under the NPDES program all facilities discharging pollutants from any point source into waters of the United States are required to obtain a NPDES permit. Though broadly defined, pollutants typically include any type of industrial, municipal, and agricultural waste and for regulatory purposes have been grouped into three categories: conventional (Section 304(a)(4) of the CWA), toxic (Section 307(a)(1) of the CWA), and non-conventional (pollutants not otherwise defined including many nutrient or water quality parameters). The primary focus of the federal NPDES permitting program has historically been municipal and non-municipal (industrial) discharges.

In 1987, with the issuance of the 1987 Water Quality Act, Section 402 of the CWA was amended, requiring regulation of additional stormwater dischargers (NPDES Storm Water Program). Phase I of the NPDES Storm Water Program addresses five categories of dischargers (Phase I Facilities) including certain industrial activities, municipal separate storm drain systems (MS4s), and facilities considered to be significant contributors of pollutants. The Phase I industrial stormwater program regulations include provisions requiring construction sites disturbing greater than 5 acres to obtain NPDES permits. Phase II regulations of the NPDES Storm Water Program, issued in 1999, address additional dischargers not covered by Phase I regulations. The Phase II regulations expand permitting requirements to small MS4s, construction sites of 1 to 5 acres, and certain previously exempt industrial facilities.



The EPA is the primary authority to implement NPDES although the CWA authorizes states to implement the system in lieu of the EPA. The CWA is implemented on a state and local level in California primarily by the SWRCB and nine RWQCBs, collectively. Whereas the federal NPDES program mostly deals with point source control, current focus and regulation is shifting to non-point source pollution control under the authority of the RWQCBs.

On August 19, 1999, the SWRCB reissued the General Construction Storm Water Permit (Water Quality Order 99-08-DWQ) later amending it to apply to sites as small as 1 acre. On September 2, 2009, the SWRCB adopted Order No. 2009-0009-DWQ which reissued Water Quality Order 99-08-DWQ. Order No. 2009-0009-DWQ has subsequently been amended by Order No. 2010-0014-DWQ and most recently by Order No. 2012-0006-DWQ on July 17, 2012 (Construction General Permit).

The Construction General Permit authorizes discharges of stormwater and regulates discharges of pollutants in stormwater associated with construction activities from construction sites that disturb 1 or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than 1 acre of land surface where the rainfall erosivity waiver does not apply. The Construction General Permit requires proposed dischargers to file a public Notice of Intent (NOI) prior to beginning regulated activities. Applicability of the Construction General Permit is contingent on meeting all order conditions and requirements including the implementation of a Storm Water Pollution Prevention Plan (SWPPP). In accordance with Order No. 2010-0014-DWQ, the SWPPP must be prepared and certified by a Qualified SWPPP Developer and include information to conclude:

- All pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled;
- Where not otherwise required to be under a RWQCB permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;
- Site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology Economically Achievable (BAT)/Best Conventional Pollutant Control Technology (BCT) standard;
- Calculations and design details as well as BMP controls for site run-on are complete and correct; and,
- Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

#### **2.1.4.4 CLEAN WATER ACT SECTION 404**

Section 404 of the CWA prohibits the discharge of dredged or fill material into “waters of the United States” without a permit from the USACE. The term “waters of the United States” as defined in the Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) includes:

1. All waters which are currently used, 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;
2. All interstate waters including interstate wetlands (Wetlands are defined by the federal government [33 CFR 328.3(b), 1991] 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.);



3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (1) through (4);
6. Territorial seas; and,
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6).
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA (33 CFR 328.3[a][8] added 58 CFR 45035, August 25, 1993).

The EPA also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions.

### **2.1.5 Executive Order 11990 Protection of Wetlands**

Executive Order Number 11990 was issued in May 1977 as a furtherance of NEPA, providing protection of wetlands. Pursuant to the Executive Order, all new construction should be designed to the greatest extent possible to avoid long- and short-term adverse impacts that would lead to the destruction or the modification of wetlands, in order to preserve and enhance the natural and beneficial values of wetlands.

## **2.2 State**

### **2.2.1 California Endangered Species Act**

The Proposed Project will not result in take of species protected under the California Endangered Species Act and, therefore, a discussion of this law is provided here for informational purposes only. The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA), which prohibits the “taking” of listed species except as otherwise provided in state law. Section 86 of the Fish and Game Code defines “take” as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Under certain circumstances, the CESA applies these take prohibitions to species petitioned for listing (state candidates). Pursuant to the requirements of the CESA, State lead agencies (as defined under CEQA PRC Section 21067) are required to consult with the CDFW to ensure that any action or project is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat. Additionally, the CDFW encourages informal consultation on any proposed project that may impact a candidate species. The CESA requires the CDFW to maintain a list of threatened and endangered species. The CDFW also maintains a list of candidates for listing under the CESA and of species of special concern (or watch list species).

### **2.2.2 California Fully Protected Species**

The California Fish and Game Code provides protection from take for a variety of species, referred to as fully protected species. Section 5050 lists protected amphibians and reptiles, and Section 3515 prohibits take of fully protected fish species. Eggs and nests of fully protected birds are under Section 3511.



Migratory nongame birds are protected under Section 3800, and mammals are protected under Section 4700. Except for take related to scientific research, all take of fully protected species is prohibited.

### **2.2.3 Nesting Birds and Raptors**

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 provides protection for all birds of prey, including their eggs and nests.

### **2.2.4 Migratory Bird Protection**

Take or possession any migratory non-game bird as designated in the MBTA is prohibited by Section 3513 of the Fish and Game Code.

### **2.2.5 Native Plant Protection Act**

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code Section 1900-1913) directed the California Department of Fish and Game (now known as CDFW) to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protected endangered and rare plants from take. The NPPA thus includes measures to preserve, protect, and enhance rare and endangered native plants.

CESA has largely superseded NPPA for all plants designated as endangered by the NPPA. The NPPA nevertheless provides limitations on take of rare and endangered species as follows: "...no person will import into this state, or take, possess, or sell within this State" any rare or endangered native plant, except in compliance with provisions of the CESA. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

### **2.2.6 Inventory of Rare and Endangered Plants**

Operating under a Memorandum of Understanding with the CDFW, the California Native Plant Society (CNPS) maintains an inventory of plants believed or known to be rare in the State of California. This list includes species not protected under federal or state endangered species legislation (CNPS 2015). Plants in the inventory are assigned a California Rare Plant Ranking (CRPR). The major categories of plants under the CNPS scheme are:

- List 1A – Plants presumed extinct.
- List 1B – Plants rare, threatened, or endangered in California and elsewhere.
- List 2 – Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3 – A review list of plants for which the CNPS requires more information.
- List 4 – A watch list of plants of limited distribution.

Plants on CNPS List 1 or 2 generally meet the CEQA Section 15380 definitions of rare or endangered. These plants also all meet the definitions of CESA, and are eligible for state listing.

### **2.2.7 California Desert Native Plants Act**

The California Desert Native Plants Act (CDNPA) protects non-listed California desert native plants from unlawful harvesting on public and private lands in Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties (California Food and Agriculture Code, Sections 80001-80006,



Division 23). A number of desert plants are protected under this act, including all species in the agave and cactus families. Harvest, transport, sale, or possession of specific native desert plants is prohibited unless a person has a valid permit, or wood receipt, and the required tags and seals.

This provision excludes any plant that is declared to be a rare, endangered, or threatened species by federal or state law or regulations, including, but not limited to, the California Food and Agriculture Code. The fee for the permit to remove any of these plants will not be less than \$1 per plant, except for Joshua trees (*Yucca brevifolia*), which will not be less than \$2 per plant.

The CDNPA was taken into consideration in this evaluation due to the presence of yuccas, which are in the agave family, at the Proposed Project and to provide guidance to NEET West with regard to the removal of yuccas during implementation of the Proposed Project.

### **2.2.8 Porter-Cologne Water Quality Control Act**

The Proposed Project will not result in impacts to “waters of State” and, therefore, reference to the Porter-Cologne Water Quality Control Act is provided here for informational purposes only. The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) provides guidance for the protection of water quality and beneficial uses of water throughout the state and, along with the CWA, provides the overarching legislation governing the SWRCB and RWQCBs. Waters of the State are defined as any surface water or groundwater, including saline waters, which are within the boundaries of the state (California Codes: PRC Section 71200). This differs from the CWA definition of waters of the United States by its inclusion of groundwater and waters outside the ordinary high water mark (OHWM) in its jurisdiction.

The Act requires that each regional board adopt a water quality control plan (basin plan) for their region. Pursuant to Porter-Cologne, these basin plans become part of the California Water Plan, when such plans have been reported to the Legislature (Section 13141, California Water Code). The Proposed Project is located within the jurisdiction of the SDRWQCB (Region 9) and is, therefore, subject to the SDRWQCB’s Basin Plan.

In 1972, amendments to the Porter-Cologne Act gave California the authority and ability to operate the federal NPDES permits program. Before a permit may be issued, Section 401 of the CWA requires that the local RWQCB, or in the case of when multiple jurisdictions have authority the SWRCB, certify that the discharge will comply with applicable water quality standards. In addition, under Porter-Cologne, the RWQCB or SWRCB may also issue waste discharge requirements, that set conditions on the discharge of a waste. These requirements must be consistent with the water quality control plan for the body of water that receives the waste discharge, as well as protect the beneficial uses of those receiving waters.

The SWRCB and RWQCBs also implement Section 402 of the CWA, which allows the State to issue a single discharge permit for stormwater runoff for the purposes of both State and federal law, as well as Section 303(d) of the CWA pursuant to the authority of the Porter-Cologne Act.

### **2.2.9 California Fish and Game Code (Sections 1601-1607)**

The Proposed Project will not result in alteration or substantial disturbance of any lake or streambed and, therefore, reference to the California Fish and Game Code, Sections 1601-1607) is provided here for informational purposes only. These code sections prohibit alteration of any lake or streambed under CDFW jurisdiction, including intermittent and seasonal channels and many artificial channels, without execution of a Lake and Streambed Alteration Agreement through the CDFW. This applies to any channel modifications that would be required to meet drainage, transportation, or flood control objectives of the project.



Sections 1601 through 1607 of the California Fish and Game Code require that “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake” be subject to a Lake and Streambed Alteration Agreement with CDFW. CDFW reviews the proposed actions and, if necessary, submits to the Applicant a proposal for measures to protect affected fish and wildlife resources. This applies to any channel modifications that would be required to meet drainage, transportation, or flood control objectives of the project.

## 2.3 Local

Because the California Public Utilities Commission (CPUC) regulates and authorizes the construction of investor-owned public utility facilities, the CPUC has exclusive jurisdiction over the siting and design of the Proposed Project. As such, projects, including the Proposed Project, are exempt from local land use and zoning regulations and discretionary permitting. However, CPUC General Order 131-D (planning and construction of facilities for the generation of electricity and certain electric transmission facilities), Section III.C requires “the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any non-discretionary local permits.” As such, NEET West has taken into consideration all State and local land use plans and policies, as well as local land use priorities and concerns as they relate to biological resources. Although the County of San Diego (County) and other local policies are provided below, they are provided for disclosure purposes only.

### 2.3.1 San Diego County General Plan

The San Diego County General Plan includes a Conservation and Open Space Element which addresses habitats and species diversity within the county, as well as wildlife corridors and habitat linkages. To that end, the General Plan includes the following goals, and policies within those goals, that are applicable to biological resources.

#### 2.3.1.1 GOAL COS-1: INTER-CONNECTED PRESERVE SYSTEM

- **COS-1.1, Coordinated Preserve System:** Identify and develop a coordinated biological preserve system that includes Pre-Approved Mitigation Areas, Biological Resource Core Areas, wildlife corridors, and linkages to allow wildlife to travel throughout their habitat ranges.
- **COS-1.2, Minimize Impacts:** Prohibit private development within established preserves. Minimize impacts within established preserves when the construction of public infrastructure is unavoidable.
- **COS-1.3, Management:** Monitor, manage, and maintain the regional preserve system facilitating the survival of native species and the preservation of healthy populations of rare, threatened, or endangered species.
- **COS-1.4, Collaboration with Other Jurisdictions:** Collaborate with other jurisdictions and trustee agencies to achieve well-defined common resource preservation and management goals.
- **COS-1.5, Regional Funding:** Collaborate with other jurisdictions and federal, state, and local agencies to identify regional, long-term funding mechanisms that achieve common resource management goals.



- **COS-1.6, Assemblage of Preserve Systems:** Support the proactive assemblage of biological preserve systems to protect biological resources and to facilitate development through mitigation banking opportunities.
- **COS-1.7, Preserve System Funding:** Provide adequate funding for assemblage, management, maintenance, and monitoring through coordination with other jurisdictions and agencies.
- **COS-1.8, Multiple-Resource Preservation Areas:** Support the acquisition of large tracts of land that have multiple resource preservation benefits, such as biology, hydrology, cultural, aesthetics, and community character. Establish funding mechanisms to serve as an alternative when mitigation requirements would not result in the acquisition of large tracts of land.
- **COS-1.9, Invasive Species:** Require new development adjacent to biological preserves to use non-invasive plants in landscaping. Encourage the removal of invasive plants within preserves.
- **COS-1.10, Public Involvement:** Ensure an open, transparent, and inclusive decision-making process by involving the public throughout the course of planning and implementation of habitat conservation plans and resource management plans.
- **COS-1.11, Volunteer Preserve Monitor:** Encourage the formation of volunteer preserve managers that are incorporated into each community planning group to supplement professional enforcement staff.

### 2.3.1.2 GOAL COS-2: SUSTAINABILITY OF THE NATURAL ENVIRONMENT

- **COS-2.1, Protection, Restoration, and Enhancement:** Protect and enhance natural wildlife habitat outside of preserves as development occurs according to the underlying land use designation. Limit the degradation of regionally important natural habitats within the Semi-Rural and Rural Lands regional categories, as well as within Village lands where appropriate.
- **COS-2.2, Habitat Protection through Site Design:** Require development to be sited in the least biologically sensitive areas and minimize the loss of natural habitat through site design.

### 2.3.1.3 GOAL COS-3: PROTECTION AND ENHANCEMENT OF WETLANDS

- **COS-3.1, Wetland Protection:** Require development to preserve existing natural wetland areas and associated transitional riparian and upland buffers and retain opportunities for enhancement.
- **COS-3.2, Minimize Impacts of Development:** Require development projects to:
  - 1) Mitigate any unavoidable losses of wetlands, including its habitat functions and values; and,
  - 2) Protect wetlands, including vernal pools, from a variety of discharges and activities, such as dredging or adding fill material, exposure to pollutants such as nutrients, hydromodification, land and vegetation clearing, and the introduction of invasive species.

### 2.3.2 San Diego County Multiple Species Conservation Program

Approved in 1997, the San Diego Multiple Species Conservation Program (MSCP) is an agreement between the County, USFWS, and CDFW. The MSCP preserves a network of habitat and open space throughout



San Diego County and covers locally sensitive plant and animal species in each subarea as identified in the applicable list of covered species. The MSCP has established a Mitigation Banking Policy, a Biological Mitigation Ordinance (BMO), and Design Criteria for Linkages and Corridors. Compliance with the BMO allows the County to issue Incidental Take Permits for projects that impact sensitive habitats. Projects that are exempt from the BMO include activities that are exempt from CEQA and other categories.

As of May 2015, the MSCP has been implemented for southwestern San Diego County. The area east of the community Alpine, including the Proposed Project location, has not been incorporated into the MSCP at this time, although preliminary planning documents have been drafted. While this program is currently not applicable to the Proposed Project, provisions regarding MSCP-covered species have been evaluated for consistency.

### 3 METHODS

SWCA Environmental Consultants (SWCA) conducted a biological resources study using a combination of literature review and field surveys to document the biological resources at the Proposed Project.

#### 3.1 Literature and Records Review

SWCA biologists reviewed available regional and local natural resources information including published and unpublished documents, publicly available data sets, and herbarium records. Database searches included the nine U.S. Geological Survey (USGS) 7.5-minute quadrangles at and surrounding the Proposed Project: El Cajon Mountain, Tule Springs, Cuyamaca Peak, Alpine, Viejas Mountain, Descanso, Dulzura, Barrett Lake, and Morena Reservoir. Site-specific information reviewed included, but was not limited to, the following sources:

- CDFW California Natural Diversity Database (CNDDDB) (CDFW 2015a).
- CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Available at: <http://www.rareplants.cnps.org>.
- eBird. 2012. eBird: An online database of bird distribution and abundance [web application]. As updated 2015. eBird, Ithaca, New York. Available at: <http://www.ebird.org>.
- Soil Survey Staff, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Web Soil Survey. Available at: <http://websoilsurvey.nrcs.usda.gov/>.
- Chambers Group, Inc. 2009. *Final Sunrise Powerlink Project 2009 California Gnatcatcher Report*.
- Chambers Group, Inc. 2011. *Final Sunrise Powerlink Project 2010 California Gnatcatcher Report*.
- Chambers Group, Inc. September 2010. *Quino Checkerspot Butterfly (Euphydryas editha quino) Focused Survey Report for the San Diego Gas & Electric Cleveland National Forest Project San Diego County, California*.
- RECON Environmental, Inc. 2009. *Riparian Bird Survey Report for the SDG&E Sunrise Powerlink Project*.
- RECON Environmental, Inc. 2010. *2010 Arroyo Toad Survey Report for the SDG&E Sunrise Powerlink Project*.



- RECON Environmental, Inc. 2010. *2010 Rare Plant Survey Report for the SDG&E Sunrise Powerlink Project.*
- RECON Environmental, Inc. 2010. *Rare Plant and Invasive Weed Report for Alpine Construction Yard 18 and Alpine Regional Field Offices Yard 18A in Alpine, California, for the proposed Environmentally Superior Southern Route (ESSR) of the San Diego Gas & Electric (SDG&E) Sunrise Powerlink Project.*
- 2010 Report on Acoustic Bat Surveys Conducted Along the Sunrise Powerlink in San Diego and Imperial Counties, California.
- September 2010 Amendment to *Report on Bat Surveys Conducted Along the San Diego Gas & Electric Sunrise Powerlink Transmission Line, San Diego and Imperial counties, California 2009.*
- SJM Biological Consultants, Inc. and Chambers Group, Inc. 2010. *Summary of Field Searches for the Federally Endangered Stephens' Kangaroo Rat (Dipodomys stephensi) In and Near U.S. Forest Service Lands Along the Proposed Southern Route of the SDG&E Sunrise Powerlink Project in San Diego County, California.*
- SJM Biological Consultants, Inc. and Chambers Group, Inc. 2010. *Summary of Field Searches for the Federally Endangered Stephens' Kangaroo Rat (Dipodomys stephensi) Along and Adjacent to the Proposed Southern Route of the SDG&E Sunrise Powerlink Project, San Diego County, California.*
- Wildlife Research Institute, Inc. 2010. *Final Report Golden Eagle Surveys Surrounding Sunrise Powerlink Project Area in San Diego and Imperial Counties, California.*
- USFWS Critical Habitat Portal, Available at: <http://criticalhabitat.fws.gov/>.
- National Wetland Inventory (NWI), Geographic Information Systems (GIS) Layers Available at: <http://atlas.ca.gov/>.
- USGS 7.5-minute series topographic quadrangle maps.
- Aerial imagery of the Proposed Project.

Biological resources geospatial data were collected from a variety of sources to develop a project-specific GIS database. This was the first analysis level and it provided reviewers with essential sensitive species location data, preliminary habitat information, potential drainages, and other jurisdictional waters, and designated critical habitat for federally listed species. The data were compiled in ArcGIS Desktop 10 and were subsequently uploaded to a Trimble® handheld global positioning system (GPS) unit for field verification.

Many biological surveys were conducted at and around the Proposed Project as part of the studies completed for SDG&E's Sunrise Powerlink. Almost all of the Proposed Project lies within the construction footprint of the Sunrise Powerlink. Components of the Sunrise Powerlink that overlap with the Proposed Project are 1) the Suncrest Substation; 2) the Wilson Laydown Area, which served as a materials and equipment stockpiling and organizational area; and 3) Bell Bluff Truck Trail, which was paved and widened. The results of many of the surveys conducted for Sunrise Powerlink were reviewed during consideration of the biological resources at the Proposed Project.



## 3.2 Sensitive Biological Resources

For the purposes of this study, sensitive plants and animals were defined to include species, subspecies, varieties, and populations recognized by CDFW or USFWS, and which have been classified into one or more of the following categories:

- Species, subspecies, and populations listed or proposed for listing as threatened or endangered pursuant to the federal ESA, and species that are candidates for such listing.
- Species and subspecies listed or proposed for listing by the State of California as threatened or endangered pursuant to the CESA.
- Plants included in the Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2015b).
- Plants assigned California Rare Plant Ranks (CRPRs) 1 or 2 by CNPS.
- Animals listed on the California Special Animals List as Species of Special Concern, Fully Protected, or Watchlist, and for invertebrates, all species regardless of the reason for inclusion.

In addition, natural communities recognized by the CDFW as being of special concern were considered, along with riparian habitats and water bodies under the jurisdiction of the CDFW, USACE, and/or RWQCB.

Throughout this document, species, subspecies, varieties, and populations are broadly referred to throughout this document as “species,” a term which is used here to indicate whichever pertinent taxonomic levels are recognized by the state and federal authorities with jurisdiction over plants and animals.

Species occurrences from the CDFW CNDDDB RareFind5 (CDFW 2015a) and the CNPS Online Inventory of Rare and Endangered Plants (CNPS 2015) were queried for project relevant sensitive species data. Records of sensitive plants, animals, and natural communities from the nine USGS topographic 7.5-minute quadrangles including and adjacent to the Proposed Project were queried from both the CNDDDB and CNPS databases. The results of the records search was used as the basis of the list of species considered for having the potential to occur at the Proposed Project, as informed by the professional judgment of SWCA biologists. This list was then reviewed to determine whether habitat for the species occurs at the Proposed Project, and to identify each species’ likelihood of occurrence.

## 3.3 Field Surveys

SWCA biologists Michael Cady, Andrea Haller, Harrison Kirner, Ricardo Montijo, Pauline Roberts, and Rico Ramirez conducted the field surveys. An initial site reconnaissance was conducted on May 2, 2014, by Mr. Cady and Mr. Montijo. Additional field studies to document existing plant, wildlife, and wetlands were performed by the biologists on February 24 and 25, March 25 and 26, May 1 and 13, and June 25, 2015. SWCA biologists spent approximately 120 hours conducting the field surveys. The surveys included plant and wildlife inventories, vegetation mapping, and a delineation of waters, wetlands, and riparian areas potentially subject to the jurisdiction of the USACE, CDFW, and/or RWQCB. Surveyors noted and recorded all wildlife species encountered directly through direct observation, sign (scat, remains, or tracks), and for birds, by their species-specific vocalizations. The use of binoculars also facilitated wildlife identification. Similarly, surveyors recorded plant species encountered in the field, although, in some instances, plants were collected and subsequently identified using dichotomous keys.



### 3.4 Vegetation, Cover Types, and Jurisdictional Waters

Mapping and location data were collected using ESRI ArcPad 8.0 software installed on Trimble® GPS units with sub-meter accuracy. The software allowed biologists to superimpose the Proposed Project alignment on aerial imagery and create vegetation polygons in the field. Vegetation types were mapped in the vicinity of the Proposed Project based on the combined aerial maps as adjusted by the biologists who conducted field surveys. Then, using the field-verified vegetation maps, the vegetation alliances were extrapolated to the larger vicinity of the Proposed Project based on comparison with aerial and infrared (Normalized Difference Vegetation Index [NDVI]) imagery. Vegetation alliances were mapped based on *A Manual of California Vegetation* (Sawyer, Keeler-Wolf and Evens 2009), as further modified for the County of San Diego (Evens and San 2005; AECOM et al. 2011). It is important to note that vegetation types usually intergrade from one to another without abrupt edges. Mapping vegetation communities in the field relies on the biologist's professional experience to identify the boundaries. The minimum mapping unit used in creating these maps was 0.1 acre.

Potential jurisdictional waters were preliminarily mapped in-house using available data from NWI and USGS topographic maps and aerial photographs. Reconnaissance-level field verification was conducted in the spring of 2015 to refine the maps, and to determine what features met the criteria for jurisdiction by the USACE, CDFW, and/or RWQCB. A formal jurisdictional delineation report has not been prepared because the Proposed Project has been designed to avoid impacts to all jurisdictional features that were identified. Currently, the Proposed Project is designed to avoid impacts to drainages by utilizing horizontal drilling under the culverts for installation of the underground transmission line. However, if subsequent technical reports (i.e., geotechnical reports) indicate that culverts will need to be impacted, then a CDFW streambed alteration agreement may be needed, as well as additional protection measures. At this time, no protection measures for temporary and permanent impacts of culverts is necessary. Based on the current design, the connectivity of the waters conveyed by the culverts will remain unchanged during implementation of the Proposed Project.

### 3.5 Nomenclature Conventions

Vegetation alliance nomenclature follows *A Manual of California Vegetation* (Sawyer, Keeler-Wolf and Evens 2009), as further modified for San Diego County (Evens and San 2005; AECOM et al. 2011). Taxonomic conventions follow *The Jepson Manual: Higher Plants of California* (Baldwin et al. 2012) for plants, the American Ornithologists' Union (AOU) *Checklist of North and Middle American Birds* (AOU 2015) for avifauna, a *Complete List of Amphibian, Reptile, Bird and Mammal Species in California* (CDFG 2008) for other vertebrate wildlife, and the CDFW Special Animals List for invertebrates.

## 4 EXISTING CONDITIONS

The Proposed Project is located approximately 30 miles from the Pacific Ocean, and situated in the Laguna Mountains of the Peninsular Ranges. Topography in the vicinity of the Proposed Project is undulating, with steep hills interspersed by narrow valleys and deep canyons with steeply incised drainage corridors. Elevations in the vicinity of the Proposed Project range between approximately 3,000 and 3,200 feet above mean sea level.

San Diego County has a Mediterranean climate with warm to hot, dry summers, and mild to cool, wet winters. The coastal climate is generally mild with average temperatures of 65 degrees Fahrenheit (°F). Inland temperatures are typically cooler with an average temperature of 57°F in the Laguna Mountain Area. Mean monthly temperatures in the vicinity of the Proposed Project range from a low of 54°F in December to a high of 76°F in August. Precipitation in the region also varies spatially and temporally, with increasing precipitation typically occurring from the coast landward toward the western rim of the Peninsular Range. Average annual rainfall in the vicinity of the Proposed Project is 14.7 inches with approximately 90% of



the rain falling between November and April. Average monthly rainfall drops substantially during summer months with less than 0.7 inches per month between May and October. Temperature and precipitation data is based on mean monthly data from the NOAA Alpine, California climate station (GHCND:USC00040136) located approximately 6.7 miles west of the Proposed Project for the period between 1953-2014 (NOAA 2015).

## 4.1 Soils

Soil types in the Proposed Project include primarily sandy loams (Figure 3):

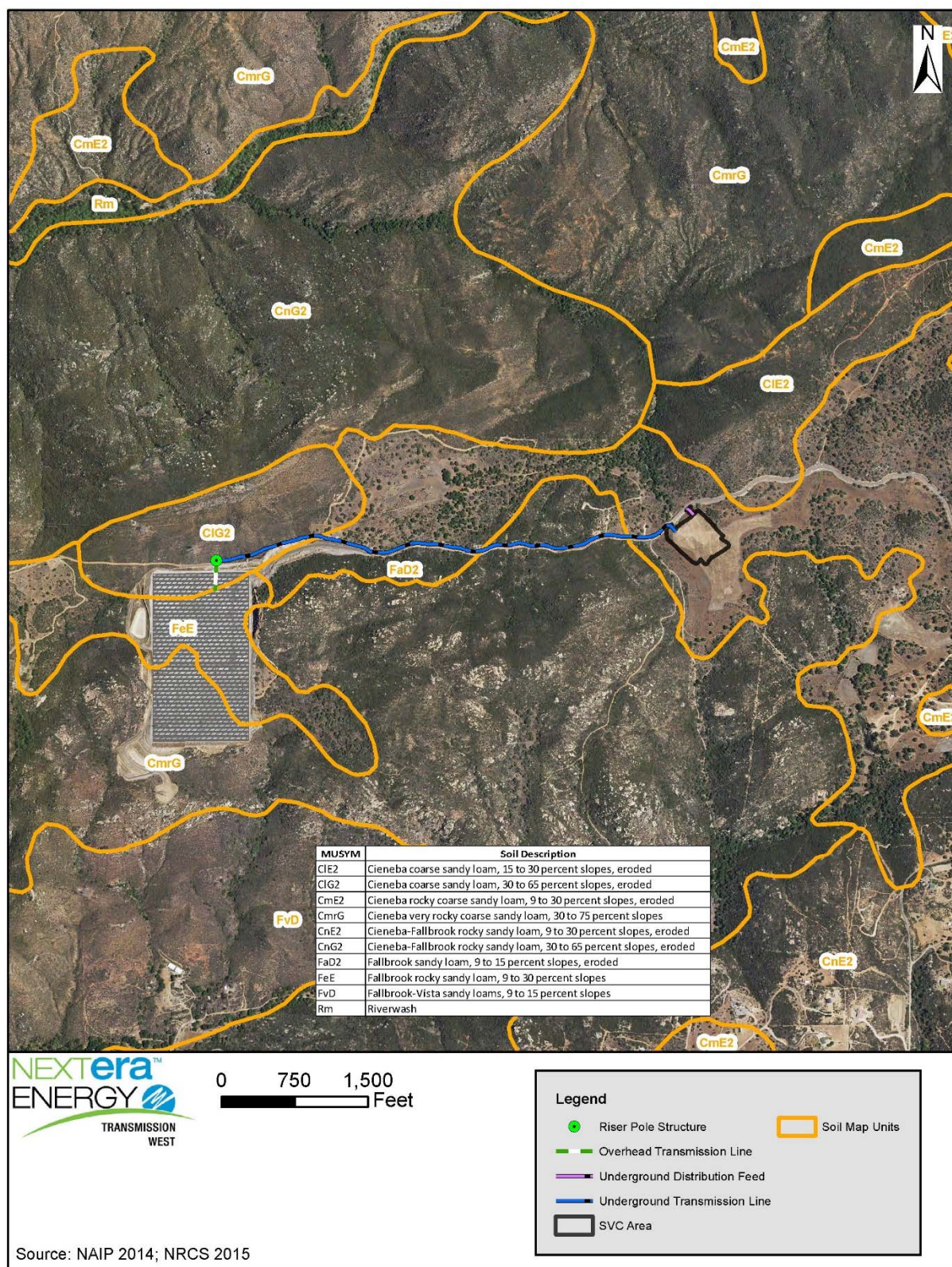
- Cieneba coarse sandy loam, 15 to 30 percent slopes, eroded
- Cieneba coarse sandy loam, 30 to 65 percent slopes, eroded
- Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes
- Cieneba-Fallbrook rocky sandy loams, 30 to 65 percent slopes, eroded
- Fallbrook sandy loam, 9 to 15 percent slopes, eroded
- Fallbrook rocky sandy loam, 9 to 30 percent slopes

Cieneba soils are shallow to very shallow (depth to paralithic contact is 4 to 6 inches), excessively drained soils that formed from weathered granitic rock. They are found on hills and mountains at elevations from approximately 500 to 4,000 feet, on slopes ranging from 9 to 85 percent. Cieneba soils have runoff that ranges from low to high, and have moderately rapid soil permeability. Vegetation communities on these soils are typically chaparral and chamise, also sparse pine or oak woodlands. Cieneba soils are not classified as hydric by the NRCS.

Fallbrook soils are deep (depth to paralithic contact is 40 to 60 inches), well-drained soils that formed from weathered granitic rocks. They are found on rolling hills at elevations of 200 to 3,500 feet, on slopes ranging from 5 to 75 percent. Rock outcrops are common in some areas. Fallbrook soils have medium to very rapid runoff, and moderately slow permeability. Vegetation communities on these soils are mainly annual grasses and forbs; chaparrals, chamise, California buckwheat, and other shrubs are common in the overstory. Many areas with Fallbrook soils are used for grazing and irrigated agriculture. Fallbrook soils are not classified as hydric by the NRCS.



Figure 3. Soil Units Map





## 4.2 Habitats and Natural Communities

### 4.2.1 Wildlife Corridors

Broad continuous expanses of vegetation facilitate free dispersal of species between local areas and at larger scales between regions. Natural processes, such as wildlife movement and plant dispersal, have formed and dynamically reshaped global floras and faunas for as long as species have been able to disperse. Certain species extinctions have been the result of geographic and other forms of isolation. Prior to accelerated human population growth and expansion, these processes generally happened over millennia or longer. In many instances, population shifts, isolation, and extinction resulted in speciation (evolution of new species). Expanding human populations into previously undisturbed areas are fragmenting continuous expanses of vegetation and associated habitat at increasing rates. Habitat fragmentation is widely regarded as a major threat to wildlife population viability and plant community integrity (Rolstad 1991; Wiens 1995). Isolated populations are then more vulnerable to local extinction because of stochastic events and gene flow problems, such as bottlenecks and inbreeding depression. These effects are often dramatic in urbanized and urbanizing areas, prompting conservation biologists to develop strategies for maintaining habitat connectivity to allow free movement of populations between otherwise isolated habitat patches.

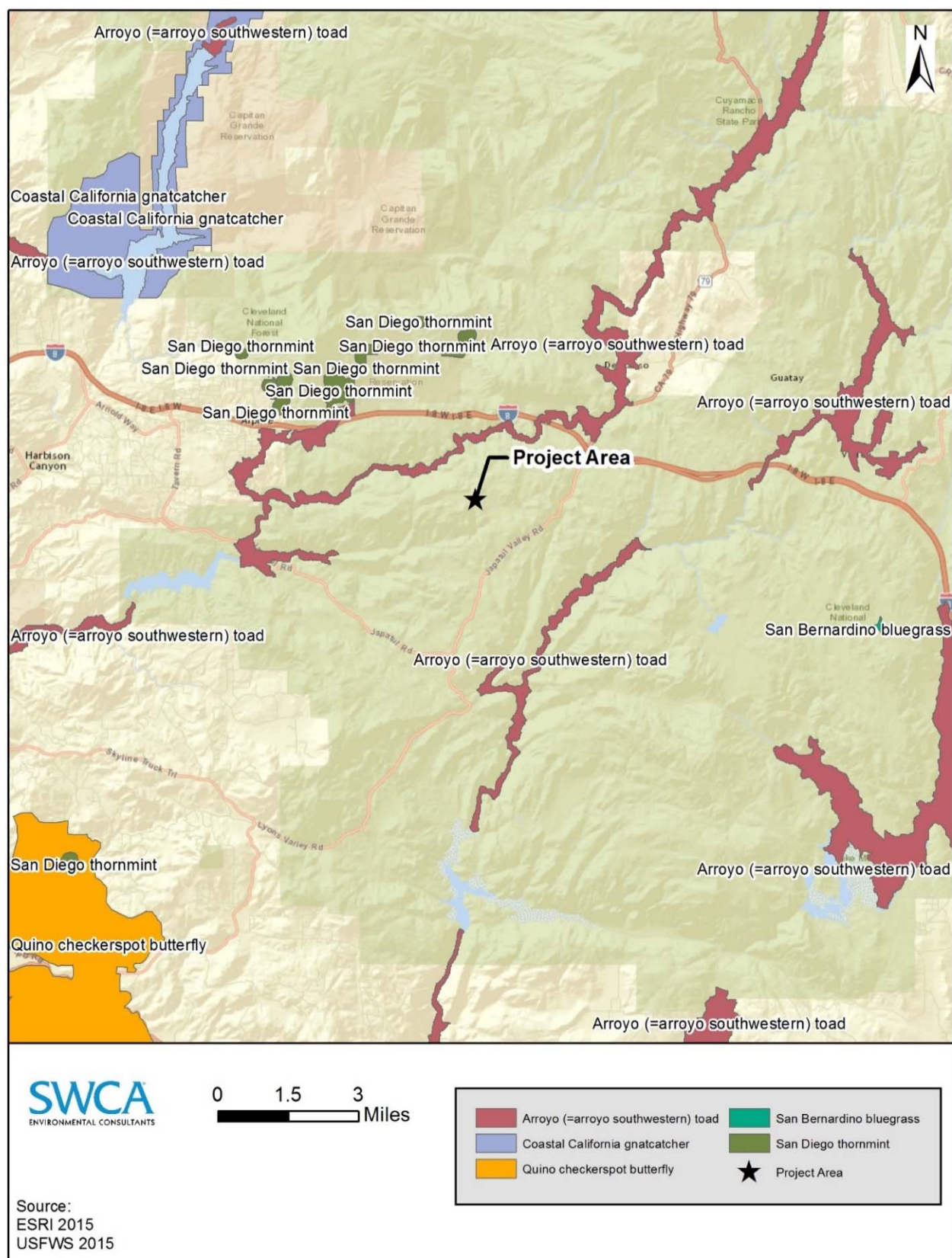
The Proposed Project is located in the Laguna Mountains of the Peninsular Ranges, which is primarily open space with small, widely-spaced residential areas. Although no specific wildlife corridors have been mapped in the immediate vicinity of the Proposed Project, natural open space and low-density development in the survey area is contiguous with off-site habitats to the north and south, providing free movement for wildlife in the area. Open space adjacent to the Proposed Project provides opportunities for movement of mammals with large home ranges, such as mule deer (*Odocoileus hemionus*), bobcat (*Lynx rufus*), and mountain lion (*Puma concolor*). The Peninsular Ranges serve on a large scale as a connection between the Transverse Ranges to the north and the Baja Peninsula to the south, and thus the region serves as an important wildlife connectivity area, although no corridors have been mapped within more than 15 miles of the Proposed Project (Spencer et al. 2010; South Coast Wildlands 2008). The Proposed Project does not include any major streams, rivers, or canyons that would serve as a conduit for wildlife traveling long distances, and therefore concentrations of wildlife movement are not expected within the Proposed Project.

### 4.2.2 Critical Habitat

There is no federally designated critical habitat for ESA-listed species within or immediately adjacent to the Proposed Project. The nearest critical habitat, which is designated for arroyo toad (*Anaxyrus californicus*), is located 0.5 mile north of the Proposed Project along Sweetwater River.

Within 10 miles of the Proposed Project, there is federally designated critical habitat for a total of five species: San Diego thornmint (*Acanthomintha ilicifolia*), arroyo toad, Quino checkerspot butterfly (*Euphydryas editha quino*), coastal California gnatcatcher (*Polioptila californica californica*), and Laguna Mountain skipper (*Pyrgus ruralis lagunae*) (Figure 4).



**Figure 4. Federally Designated Critical Habitat near the Proposed Project**



### 4.2.3 Vegetation and Cover Types

The footprint of the Proposed Project and the surrounding habitats consist of undeveloped chaparral scrub and oak woodlands, with pockets of disturbance dominated by non-native grasses and forbs. Table 1 provides acreages of land cover and vegetation types in the study area, while the sections that follow provide descriptions of these classifications. Figure 5 illustrates the vegetation types traversed by the project. Of the vegetation types present, only one (Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association) is considered a sensitive natural community by CDFW.

A substantial portion of the Proposed Project area immediately south of Bell Bluff Truck Trail (where the SVC facility would be sited) has been subject to repeated human-caused disturbance since at least 1994, based on examination of aerial photographs. Specifically, this area has been disked several times and appears to have been used for grazing. These types of disturbances limit the growth of trees and long-lived woody shrubs, and generally favor fast-growing species and grasses. Portions of the *Quercus engelmannii*-*Q. agrifolia*/*Toxicodendron diversilobum* Association, the *Eriogonum fasciculatum* Association, the Non-native grasslands, and the Ruderal cover type, are included in these disturbed areas.

In addition to the long-standing disturbance, a subsection of this same area was heavily disturbed in 2012 to support the construction of Sunrise Powerlink. The site was stripped of vegetation and topsoil, and then graded, and the site is now an active restoration project. Portions of the *Eriogonum fasciculatum* Association and the Non-native grasslands are included in this recently disturbed area. More recently, a 1.7 acre area on the northwest side of the SVC was recently bladed by the property owner and has been mapped as a ruderal cover type.

#### 4.2.3.1 ENGELMANN OAK-COAST LIVE OAK/POISON OAK/GRASS ASSOCIATION (*QUERCUS ENGELMANNII* – *Q. AGRIFOLIA*)/*TOXICODENDRON DIVERSILOBUM* ASSOCIATION)

Stands of Engelmann oak (*Quercus engelmannii*) and coast live oak (*Q. agrifolia*) occupy the north central and eastern portions of the study area, particularly along streams or in moist declivities. Engelmann and coast live oak woodlands are generally a late successional or climax community in terms of ecological succession. If disturbance is frequent, this plant community is generally excluded. Engelmann and coast live oak trees occur as co-dominants forming a sometimes closed tree canopy with poison oak (*Toxicodendron diversilobum*) in the shrub canopy, and grasses and other herbs forming the herbaceous understory. Common grasses in this association include the non-native slender wild oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), cheatgrass (*B. tectorum*), red brome (*B. madritensis* ssp. *rubens*), and ripgut brome (*B. diandrus*); native grasses include purple needlegrass (*Stipa pulchra*) and muhly grasses (*Muhlenbergia* spp.). Subdominant shrubs vary by location, and often include coastal sage scrub species such as black sage (*Salvia mellifera*), white sage (*S. apiana*), California sagebrush (*Artemisia californica*), laurel sumac (*Malosma laurina*), and bush monkey flower (*Mimulus aurantiacus*).

This association is considered a sensitive plant community. However, the portions of this plant community located immediately south of Bell Bluff Truck Trail (where the SVC facility would be sited) have been subject to repeated disturbance since at least 1994. The understory of the woodland at the eastern edge of the SVC facility location is not fully developed and not typical of this association; it more closely matches the neighboring California Buckwheat Association.



Table 1. Land Cover/Vegetation Types in the Project Area (Acres)\*

Project Components	Land Cover / Vegetation Types**						
	Engelmann Oak-Coast Live Oak/ Poison Oak/ Grass Association ( <i>Quercus engelmannii</i> - <i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> / Grass Association)***	Chamise Chaparral ( <i>Adenostoma fasciculatum</i> Alliance)	California Buckwheat Scrub *** ( <i>Eriogonum fasciculatum</i> Association)	Bigberry Manzanita – Chamise Chaparral Association ( <i>Arctostaphylos glauca</i> – <i>Adenostoma fasciculatum</i> Association)	Non-native Grassland***	Ruderal***	Urban Developed***
SVC Facility and Access Driveways	0.3	--	4.5	--	1.1	1.7	0.1
Underground Transmission Line and Vaults	< 0.1	< 0.1	< 0.1	--	--	--	3.1
Riser Pole Area and Tie-in	--	0.4	--	--	--	--	0.1

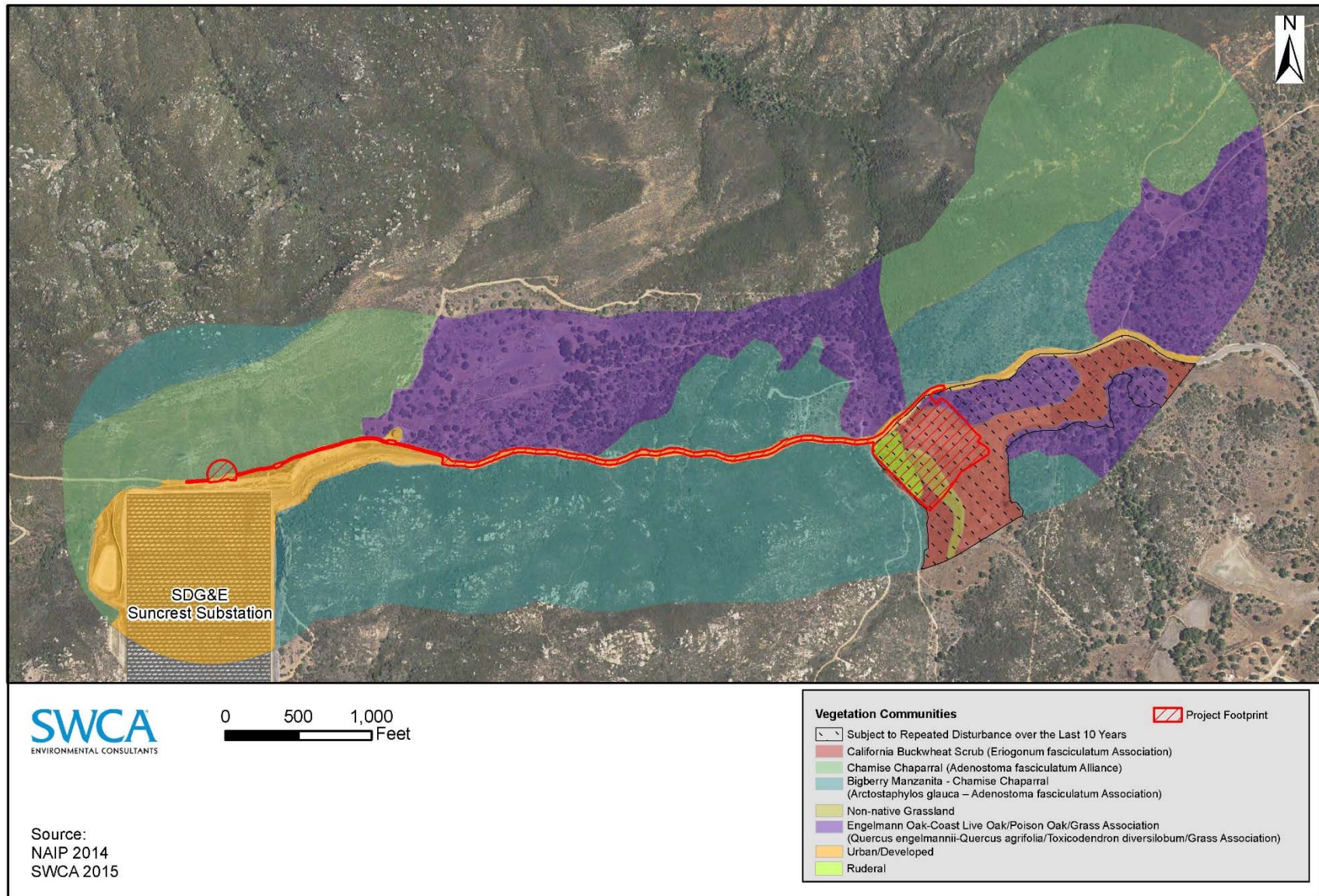
\*Acreage includes both temporary and permanent impacts

\*\* Vegetation types follow the California Manual of Vegetation (Sawyer, Keeler-Wolf and Evens 2009) as modified for San Diego County (Evens and San 2005, AECOM et al. 2011)

\*\*\* These land cover and vegetation types within the Proposed Project have been subject to repeated disturbance over the past two decades.



Figure 5. Vegetation Communities and Cover Types at the Proposed Project





#### 4.2.3.2 CHAMISE CHAPARRAL (*ADENOSTOMA FASCICULATUM* ALLIANCE)

The *Adenostoma fasciculatum* Alliance (chamise chaparral) occurs in the northwestern and northeastern study area limits within the footprint of the Proposed Project. Chamise chaparral is dominated by sometimes monotypic (single species) stands of the dominant species chamise (*Adenostoma fasciculatum*). This is the dominant dark green scrub of dry slopes, where soils occur over bedrock, forming a dense canopy layer up to 12 feet tall. Generally devoid of an herbaceous layer, other shrubs that typically grow in this alliance include manzanitas (*Arctostaphylos* spp.), chaparral yucca (*Hesperoyucca whipplei*), white sage, laurel sumac, black sage, Mexican elderberry (*Sambucus nigra* ssp. *caerulea*), California buckwheat (*Eriogonum fasciculatum*), and deerweed (*Acmispon glaber*). This association is not a sensitive natural community.

#### 4.2.3.3 CALIFORNIA BUCKWHEAT SCRUB (*ERIOGONUM FASCICULATUM* ASSOCIATION)

There is a stand of California buckwheat south of Bell Bluff Truck Trail that consists of a mix of occasionally disturbed and highly disturbed/planted scrub species heavily dominated by California buckwheat (*Eriogonum fasciculatum*). The planted species are for restoration of a laydown yard used during construction of the SDG&E Sunrise Powerlink. The planting area is located within the Proposed Project. California buckwheat always accounts for at least 50 percent of the absolute shrub cover in this association, but other perennial species such as California sagebrush, deerweed, black sage, and white sage also typically occur, with location variations in shrub species composition.

The highly disturbed area of California buckwheat scrub that was used as a laydown yard is currently actively managed as part of the restoration to exclude non-native species, such as slender wild oats, soft chess, cheatgrass, red brome, ripgut brome, short-pod mustard, and black mustard (*Brassica nigra*). It does not meet the definition of a Diegan or Riversidean coastal sage scrub (which are sensitive communities) due to the almost complete absence of California sagebrush (*Artemisia californica*). The *Eriogonum fasciculatum* Association has a state sensitivity ranking of S4 on a scale of 1 to 6, with communities ranked 1, 2, and 3 considered sensitive. Therefore, this association is not considered a sensitive natural community.

#### 4.2.3.4 BIGBERRY MANZANITA – CHAMISE CHAPARRAL (*ARCTOSTAPHYLOS GLAUCA* – *ADENOSTOMA FASCICULATUM* ASSOCIATION)

On granitic slopes within the study area, chamise sometimes associates with bigberry manzanita (*Arctostaphylos glandulosa*) to form dense, closed canopy, scrub. Scrub oak (*Quercus berberidifolia*), chaparral yucca, and ceanothus species (*Ceanothus* spp.) also grow as subdominant shrubs in this association. Herbaceous layers are uncommon in chamise-dominated scrub, except following fires. The association is not within the Proposed Project footprint, but it is included here because it is immediately adjacent. This association is not a sensitive natural community.

#### 4.2.3.5 NON-NATIVE GRASSLAND

Non-native Grasslands are annual grasslands once dominated by a host of native species, that now form continuous herbaceous layers dominated by non-native grasses and herbs including, slender wild oats, soft chess, cheatgrass, red brome, ripgut brome, red-stemmed filaree (*Erodium cicutarium*), and short-pod mustard (*Hirschfeldia incana*). Native species may include western ragweed (*Ambrosia psilostachya*), lupines (*Lupinus* spp.), doveweed (*Croton setigerus*), and Parish's bluecurls (*Trichostema parishii*).

Within the study area, Non-native Grassland occurs in small patches where past disturbance created favorable conditions for the associated invasive non-native and tolerant native species; a large patch of Non-native Grassland occurs in the laydown yard used during construction of the SDG&E Sunrise Powerlink, where the SVC facility would be located. This area is being actively managed to promote native vegetation growth. This association is not a sensitive natural community.



#### **4.2.3.6 RUDERAL**

Ruderal areas are highly disturbed areas, usually defined as occurring along road edges. Ruderal areas are typically dominated by species that have high rates of seed dispersal, fast growth, and are able to quickly colonize disturbed areas. These areas are usually dominated by non-native species, but a few native species also can survive and thrive. In the vicinity of the Proposed Project, non-native grasses would typically quickly colonize ruderal areas. Bare earth and ruderal land occurs on the northwest side of the SVC site where vegetation has been cleared and the area graded by the property owner for the installation of a temporary water tank.

#### **4.2.3.7 URBAN DEVELOPED**

The Urban Developed category is reserved for portions of the study area no longer covered by vegetation. It includes roads, permanent facilities, and other sites paved or built upon that exclude plants. This cover type occurs along the paved road (Bell Bluff Truck Trail) between the SVC facility and the SDG&E Suncrest Substation.

### **4.3 Drainages and Water Features**

The Proposed Project is located within the San Diego Bay watershed. Within this watershed, the Sweetwater River is the central drainage feature. The river flows from east to west through the Sweetwater and Loveland Reservoirs before discharging into San Diego Bay approximately 38 miles west of the Proposed Project.

Localized drainages in the immediate vicinity of the Proposed Project flow toward several high-gradient ephemeral drainages along valley or canyon bottomlands that eventually flow to the Sweetwater River. Due to the Proposed Project's siting along a ridgeline, waters from the area drain both northward and southward from the Proposed Project. Surface waters flowing northward join unnamed streams that eventually flow into the Sweetwater River. Surface waters flowing southward flow into Taylor Creek and several unnamed drainages to the south, all of which eventually flow into the Sweetwater River.

#### **4.3.1 Jurisdictional Waters**

In the vicinity of the Proposed Project, three natural drainages, as well as manmade ditches and culverts were identified during reconnaissance-level field assessments (Figure 6). A formal jurisdictional delineation report has not been prepared because the Proposed Project has been designed to avoid impacts to all potentially jurisdictional water features; therefore, no impacts would result from the Proposed Project and no permitting for jurisdictional waters is required.

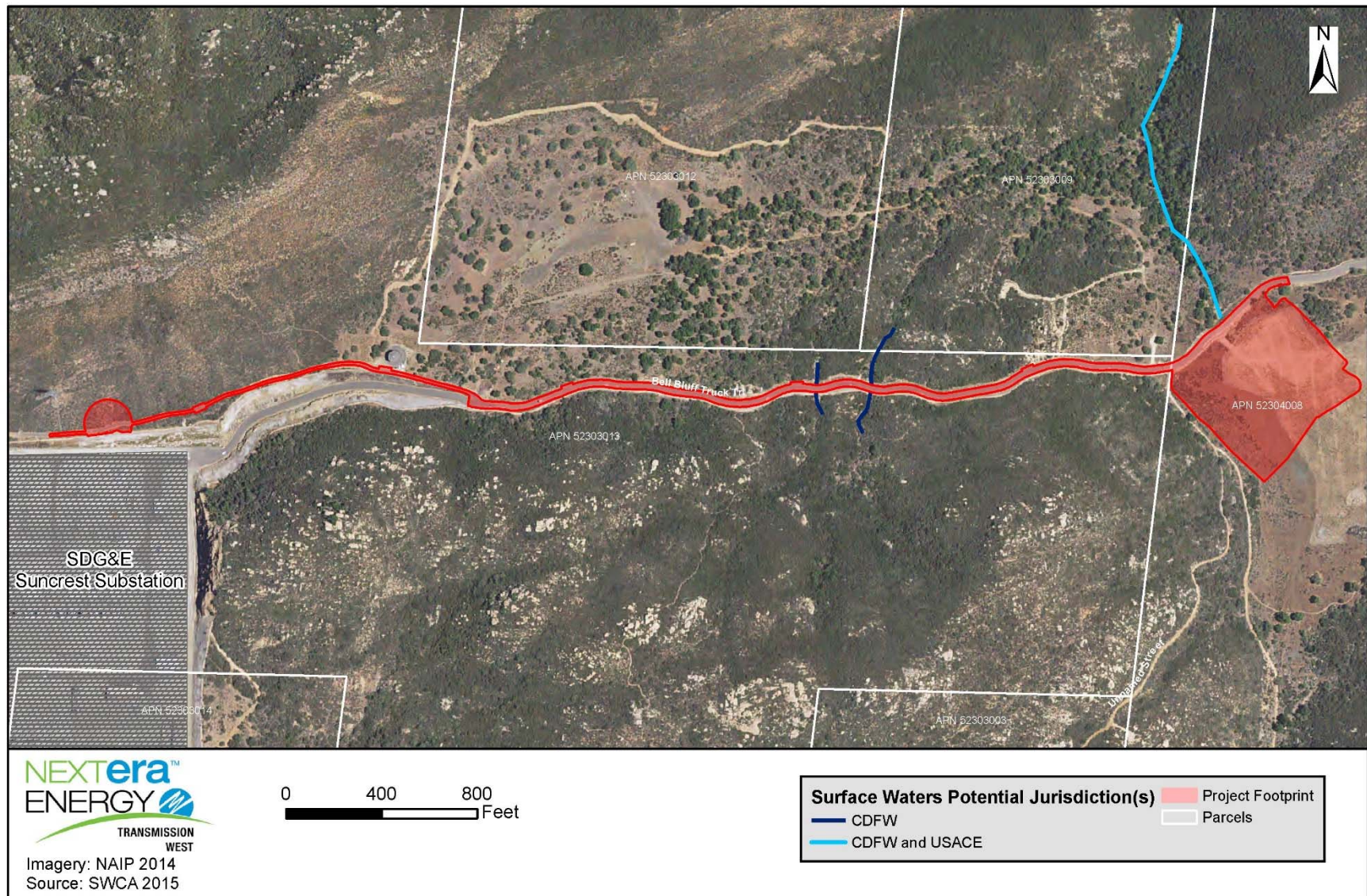
##### **4.3.1.1 USACE JURISDICTIONAL WATERS**

One unnamed ephemeral drainage, which flows north from Bell Bluff Truck Trail, may be subject to USACE jurisdiction (Figure 6). This seasonal stream flows north, then west, and eventually into the Sweetwater River. An OHWM is apparent. The Proposed Project would avoid this feature. Other natural drainage features observed in the vicinity of the Proposed Project either: a) did not exhibit an OHWM, or b) did not have an apparent connection to downstream waters of the United States, and are therefore are not generally considered jurisdictional by the USACE.

Field verifications were conducted in the spring of 2015 to refine the water feature maps, and to determine if any features met the criteria for jurisdiction by the USACE, CDFW, and/or RWQCB. Potential wetlands were investigated based on aerial imagery and literature research. Based on the soils and vegetation observed during field verifications, no wetlands are present within the Proposed Project.



Figure 6. Potentially Jurisdictional Waters near the Proposed Project





The manmade ditches are located along the Bell Bluff Truck Trail and Avenida de los Arboles, and serve to convey runoff from along the roads. They are all concrete lined, and are wholly excavated in uplands. Because of these characteristics, they are not considered waters of the United States by the USACE.

#### **4.3.1.2 CDFW JURISDICTIONAL WATERS AND RIPARIAN HABITATS**

Along with the unnamed stream north of the Proposed Project that may be subject to the jurisdiction of the USACE, the two other natural drainages on either side of the paved Bell Bluff Truck Trail, under which the transmission line will be placed, are likely subject to CDFW jurisdiction, along with the riparian-influenced habitats along these drainages. Excavation for the underground transmission line will occur under these culverts and no impacts to natural bed, bank, or riparian vegetation will occur. The culverts will be shored and left undisturbed if possible. If culverts need to be temporarily removed (e.g., in the event blasting was required at the culvert location), work will not occur within 48 hours of a forecasted rain event of 0.5 inches or greater and temporary piping will be onsite to maintain any unexpected water flow. Based on the current design, the connectivity of the waters conveyed by the culverts will remain unchanged during implementation of the Proposed Project.

### **4.4 Common and Special-status Species**

#### **4.4.1 Common Wildlife**

Biologists conducting surveys at the Proposed Project recorded all vertebrate wildlife encountered, and did not observe any sensitive animals. A complete list of species observed is located in Appendix B, Faunal Compendium.

Reptiles observed at the Proposed Project included side-blotched lizard (*Uta stansburiana*) and southwestern speckled rattlesnake (*Crotalus mitchellii pyrrhus*).

More than 20 species of birds were recorded, none of which were sensitive. These included year-round residents such as common raven (*Corvus corax*), bushtit (*Psaltiriparus minimus*), California thrasher (*Toxostoma redivivum*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), oak titmouse (*Baeolophus inornatus*), wrentit (*Chamaea fasciata*), and western scrub-jay (*Aphelocoma californica*). Neotropical migrants that breed in summer at the Proposed Project include ash-throated flycatcher (*Myiarchus cinerascens*), black-headed grosbeak (*Pheucticus melanocephalus*), house wren (*Troglodytes aedon*), lesser goldfinch (*Spinus psaltria*), Anna's hummingbird (*Calypte anna*), and western kingbird (*Tyrannus verticalis*). Migrating species could include a wide array of species for short- and long-distance migratory travel such as raptors and passerines.

Common mammal species observed, detected through sign (burrows, dens, tracks, or scat) or observed directly include coyote (*Canis latrans*), mule deer, and California ground squirrel (*Spermophilus beecheyi*).

#### **4.4.2 Sensitive Species**

SWCA biologists reviewed the species with recorded occurrences in the records search area, and evaluated their potential for occurrence at the Proposed Project.

##### **4.4.2.1 SPECIAL-STATUS PLANTS**

No special-status plants were detected during biological surveys conducted in 2014 or 2015 (Appendix A, Floral Compendium). Of 91 special-status plants with occurrence records within the nine USGS 7.5-minute topographic quadrangles at and surrounding the Proposed Project, 19 have overlapping ranges with and suitable habitat at the Proposed Project (Table 2, Figure 7).



**Table 2. Sensitive Plant Species Potential for Occurrence at the Proposed Project**

<b>Common Name Scientific Name</b>	<b>Status Federal / State / CRPR</b>	<b>Habitat Associations</b>	<b>Likelihood to Occur in Proposed Project</b>
San Diego thorn-mint <i>Acanthomintha ilicifolia</i>	FT / SE / 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Endemic to active vertisol clay soils of mesas & valleys. Usually on clay lenses within grassland or chaparral communities. ~30–3150 feet. Annual herb.	None
San Diego ambrosia <i>Ambrosia pumila</i>	FE /--/1B.1	Chaparral, coastal scrub, valley and foothill grassland. Sandy loam or clay soil. In valleys; persists where disturbance has been superficial. Sometimes on margins or near vernal pools. ~65–1,360 feet. Perennial herb.	None
singlewhorl burrobush <i>Ambrosia monogyra</i>	--/--/ 2B.2	Chaparral, Sonoran desert scrub. Sandy soils. ~30–1640 feet. Shrub or small tree.	None
Otay manzanita <i>Arctostaphylos otayensis</i>	--/--/ 1B.2	Chaparral, cismontane woodland. Metavolcanic soils with other chaparral associates. ~902–5,580 feet. Erect shrub to small tree.	None
San Diego sagewort <i>Artemisia palmeri</i>	--/--/ 4.2	Coastal scrub, chaparral, riparian forest, riparian woodland, riparian scrub. In drainages and riparian areas in sandy soil within chaparral and other habitats. ~50–3,000 feet. Biennial to perennial herb.	None
Dean's milk-vetch <i>Astragalus deanei</i>	--/--/ 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian forest. Open, brushy south-facing slopes in Diegan coastal sage, sometimes on recently burned-over hillsides. ~245–2,280 feet. Perennial herb.	None
Jacumba milk-vetch <i>Astragalus douglasii</i> var. <i>perstrictus</i>	--/--/ 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, pinyon and juniper woodland, riparian scrub. Stony hillsides and gravelly or sandy flats in open oak woodland. ~2,950–4,500 feet. Perennial herb.	Moderate potential
San Diego milk-vetch <i>Astragalus oocarpus</i>	--/--/ 1B.2	Chaparral, cismontane woodland. Openings in chaparral or on gravelly flats and slopes in thin oak woodland. ~1,000–5,000 feet. Perennial herb.	High potential
South coast saltscare <i>Atriplex pacifica</i>	--/--/ 1B.2	Coastal scrub, coastal bluff scrub, playas, chenopod scrub. Alkali soils. ~3–1,640 feet. Mat like annual.	None
California ayenia <i>Ayenia compacta</i>	--/--/2.3	Mojavean desert scrub and Sonoran desert scrub. Perennial herb to subshrub.	None
Encinitas baccharis <i>Baccharis vanessae</i>	FT / SE / 1B.1	Chaparral. On sandstone soils in steep, open, rocky areas with chaparral associates. ~195–2,360 feet. Shrub.	None



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
San Diego goldenstar <i>Bloomeria clevelandii</i>	--/--/ 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Mesa grasslands, scrub edges; clay soils. Often on mounds between vernal pools in fine, sandy loam. ~165–1,525 feet. Perennial herb from corm.	None
Hirshberg's rockcress <i>Boechera hirshbergiae</i>	--/--/ 1B.2	Pebble (or pavement) plains. ~4,600–4,640 feet. Perennial herb.	None
Orcutt's brodiaea <i>Brodiaea orcuttii</i>	--/--/ 1B.1	Vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, meadows and seeps. Mesic, clay habitats; sometimes serpentine; usually in vernal pools and small drainages. ~100–5,560 feet. Perennial herb from corm.	None
Round-leaved filaree <i>California macrophylla</i>	--/--/ 1B.1	Cismontane woodland, valley and foothill grassland. Clay soils. ~50–3,930 feet. Annual, biennial herb.	None
Dunn's mariposa-lily <i>Calochortus dunnii</i>	--/ SR / 1B.2	Closed-cone coniferous forest, chaparral, valley and foothill grassland. On gabbro or metavolcanic soils; also known from sandstone; often associated with chaparral. ~600–6,000 feet. Perennial herb from membranous bulb	None
San Luis Obispo sedge <i>Carex obispoensis</i>	--/--/ 1B.2	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Usually in transition zone on sand, clay, or serpentine; in seeps. ~33–2,690 feet. Perennial herb	None
Payson's jewelflower <i>Caulanthus simulans</i>	--/--/ 4.2	Chaparral, coastal scrub. Frequently in burned areas, or in disturbed sites such as streambeds; also on rocky, steep slopes. Sandy, granitic soils. ~295–7,220 feet. Annual herb.	None
Lakeside ceanothus <i>Ceanothus cyaneus</i>	--/--/ 1B.2	Closed-cone coniferous forest, chaparral. ~770–2,470 feet. Shrub, ascending to erect.	None
Otay Mountain ceanothus <i>Ceanothus otayensis</i>	--/--/ 1B.2	Chaparral. Metavolcanic or gabbroic soils. ~1,965–3,610 feet. Shrub, erect.	None
Wart-stemmed ceanothus <i>Ceanothus verrucosus</i>	--/--/ 2.2	Chaparral. ~3–1,250 feet. Shrub.	None
Parish's chaenactis <i>Chaenactis parishii</i>	--/--/ 1B.3	Chaparral. Rocky sites. ~4,265–8,202 feet. Subshrub.	None
Long-spined spineflower <i>Chorizanthe polygonoides</i> var. <i>longispina</i>	--/--/ 1B.2	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Gabbroic clay. ~100–5,020 feet. Annual to perennial herb.	Low potential
Delicate clarkia <i>Clarkia delicata</i>	--/--/ 1B.2	Cismontane woodland, chaparral. Often on gabbro soils. ~770–3,280 feet. Annual herb.	Low potential



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
San Miguel savory <i>Clinopodium chandleri</i>	--/--/ 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Rocky, gabbroic or metavolcanic substrate. ~390–3,300 feet. Shrub.	None
Summer holly <i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	--/--/ 1B.2	Chaparral, cismontane woodland. Often in mixed chaparral in California, sometimes post-burn. ~100–2,600 feet. Shrub to small tree.	None
Snake cholla <i>Cylindropuntia californica</i> var. <i>californica</i>	--/--/ 1B.1	Chaparral, coastal scrub. ~100–500 feet. Shrub, fleshy.	None
Otay tarplant <i>Deinandra conjugens</i>	FT / SE / 1B.1	Coastal scrub, valley and foothill grassland. Coastal plains, mesas, and river bottoms; often in open, disturbed areas; clay soils. ~80–1,000 feet. Annual herb.	None
Tecate tarplant <i>Deinandra floribunda</i>	--/--/ 1B.2	Chaparral, coastal scrub. Often in little drainages or disturbed areas. ~230–4,000 feet. Annual herb.	Moderate potential
Cuyamaca larkspur <i>Delphinium hesperium</i> ssp. <i>cuyamacae</i>	--/ SR / 1B.2	Lower montane coniferous forest, meadows and seeps, vernal pools. On dried edge of grassy meadows, also described as in mesic sites. ~4,000–5,350 feet. Perennial herb.	None
Cuyamaca Lake downingia <i>Downingia concolor</i> var. <i>brevior</i>	--/ SE / 1B.1	Meadows (mesic), vernal pools. In vernal seeps, lakes and pools, and on mudflats, with <i>Orthocarpus</i> , <i>Limnanthes</i> , <i>Collinsia</i> . ~4,600–4,950 feet. Annual herb.	None
Variegated dudleya <i>Dudleya variegata</i>	--/--/ 1B.2	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland. In rocky or clay soils; sometimes associated with vernal pool margins. ~10–1,900 feet. Perennial herb, fleshy.	None
Laguna Mountains goldenbush <i>Ericameria cuneata</i> var. <i>macrocephala</i>	--/--/ 1B.3	Chaparral. Endemic to the Laguna Mountains. Among boulders; in crevices in granitic outcrops and in rocky soil. ~3,920–6,070 feet. Subshrub to shrub.	None
Palmer's goldenbush <i>Ericameria palmeri</i> var. <i>palmeri</i>	--/--/ 1B.1	Coastal scrub, chaparral. On granitic soils, on steep hillsides. Mesic sites. ~100–2,000 feet. Stout shrub.	None
Vanishing wild buckwheat <i>Eriogonum evanidum</i>	--/--/ 1B.1	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland. Sandy sites. ~3,610–7,300 feet. Annual herb.	None
Abrams' spurge <i>Euphorbia abramsiana</i>	--/--/ 2B.2	Mojavean desert scrub, Sonoran desert scrub. Sandy sites. ~16–3,000 feet. Annual herb.	None



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
San Diego barrel cactus <i>Ferocactus viridescens</i>	--/--/ 2B.1	Chaparral, Diegan coastal scrub, valley and foothill grassland. Often on exposed, level or south-sloping areas; often in coastal scrub near crest of slopes. ~10–1,500 feet. Perennial herb, fleshy.	None
Chaparral ash <i>Fraxinus parryi</i>	--/--/ 2B.2	Chaparral. Open mixed chaparral and in the chaparral-sage scrub interface in California. ~700–2,035 feet. Shrub to tree.	None
Mexican flannelbush <i>Fremontodendron mexicanum</i>	FE / SR / 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland. Usually scattered along the borders of creeks or in dry canyons; found on gabbro, serpentine, or metavolcanics. ~33–2,350 feet. Shrub to small tree.	None
Sticky geraea <i>Geraea viscida</i>	--/--/ 2B.3	Chaparral. Loamy coarse sand to gravelly sand soils; often in post burned areas and in bulldozed areas. ~1,475–5,580 feet. Annual, perennial herb.	None
Mission Canyon bluecup <i>Githopsis diffusa</i> ssp. <i>filicaulis</i>	--/--/ 3.1	Chaparral. Probably in open, grassy places and mesic, disturbed areas; much overlooked. ~1,475–2,300 feet. Annual herb.	None
San Diego gumplant <i>Grindelia hallii</i>	--/--/ 1B.2	Meadows, valley and foothill grassland, chaparral, lower montane coniferous forest. Frequently occurs in low moist areas in meadows; associated genera commonly include <i>Wyethia</i> , <i>Ranunculus</i> , and <i>Sidalcea</i> . ~610–5,725 feet. Perennial herb	Moderate potential
Palmer's grapplinghook <i>Harpagonella palmeri</i>	--/--/ 4.2	Chaparral, coastal scrub, valley and foothill grassland. Clay soils; open grassy areas within shrubland. ~65–3,135 feet. Annual herb.	None
Tecate cypress <i>Hesperocyparis forbesii</i>	--/--/ 1B.1	Closed-cone coniferous forest, chaparral. Primarily on north-facing slopes; groves often associated with chaparral. On clay or gabbro. ~260–4,930 feet. Shrub to tree.	None
Cuyamaca cypress <i>Hesperocyparis stephensonii</i>	--/--/ 1B.1	Closed-cone coniferous forest, chaparral, chaparral, cismontane woodland, riparian forest. Restricted to the southwest slopes of Cuyamaca Peak, on gabbroic rock. ~3,400–5,600 feet. Tree.	None
Laguna Mountains alumroot <i>Heuchera brevistaminea</i>	--/--/ 1B.3	Broadleaved upland forest, chaparral, cismontane woodland, riparian forest. Steep, rocky slopes. ~4,500–6,560 feet. Perennial herb.	None
San Diego County alumroot <i>Heuchera rubescens</i> var. <i>versicolor</i>	--/--/ 3.3	Chaparral, lower montane coniferous forest. Rocky outcrops. ~5,000–13,125 feet. Perennial herb from caudex or rhizome.	None



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
Ramona horkelia <i>Horkelia truncata</i>	--/--/ 1B.3	Chaparral, cismontane woodland. Habitats in California include: mixed chaparral, vernal streams, and disturbed areas near roads. Clay soil; at least sometimes on gabbro. ~1,320–4,300 feet. Perennial herb.	None
San Diego hulsea <i>Hulsea californica</i>	--/--/ 1B.3	Lower montane coniferous forest, upper montane coniferous forest, and chaparral. Coarse to fine sandy loam in disturbed chaparral openings at high elevations. ~3,000–9,565 feet. Perennial herb	None
Decumbent goldenbush <i>Isocoma menziesii</i> var. <i>decumbens</i>	--/--/ 1B.2	Coastal scrub, chaparral. Sandy soils; often in disturbed sites. ~33–445 feet. Subshrub.	None
San Diego marsh-elder <i>Iva hayesiana</i>	--/--/ 2B.2	Marshes and swamps, playas. River washes. ~33–1,640 feet. Perennial herb to subshrub	None
Santa Lucia dwarf rush <i>Juncus luciensis</i>	--/--/ 1B.2	Vernal pools, meadows, lower montane coniferous forest, chaparral, and Great Basin scrub. Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. ~985–6,700 feet. Annual herb.	None
Gander's pitcher sage <i>Lepechinia ganderi</i>	--/--/ 1B.3	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland. Usually found in chaparral or coastal scrub; sometimes in Tecate cypress woodland. Gabbro or metavolcanic substrate. ~1,000–3,300 feet. Perennial herb.	None
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	--/--/ 4.3	Chaparral, coastal scrub. Dry soils, shrubland. ~3–2,900 feet. Annual herb.	None
Short-sepaled lewisia <i>Lewisia brachycalyx</i>	--/--/ 2B.2	Lower montane coniferous forest, meadows. Dry to moist meadows in rich loam. ~4,595–7,545 feet. Perennial herb	None
Lemon lily <i>Lilium parryi</i>	--/--/ 1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest. Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows & seeps. ~4,000–9,000 feet. Perennial herb from membranous bulb.	None
Parish's meadowfoam <i>Limnanthes alba</i> ssp. <i>parishii</i>	--/ SE / 1B.2	Meadows and seeps, vernal pools. Vernally moist areas and temporary seeps of highland meadows and plateaus; often bordering lakes and streams. ~1,970–5,775 feet. Annual herb.	None
Desert beauty <i>Linanthus bellus</i>	--/--/ 2B.1	Chaparral. Dry slopes and flats; open sandy spots in chaparral, mostly in loamy coarse sandy dg soil types. ~3,280–4,600 feet. Annual herb.	None



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
Orcutt's linanthus <i>Linanthus orcuttii</i>	--/--/ 1B.3	Chaparral, lower montane coniferous forest. Sometimes in disturbed areas; often in gravelly clearings. ~3,480–6,560 feet. Annual herb.	None
Felt-leaved monardella <i>Monardella hypoleuca</i> ssp. <i>lanata</i>	--/--/ 1B.2	Chaparral, cismontane woodland. Occurs in understory in mixed chaparral, chamise chaparral, and southern oak woodland; sandy soil. ~985–5,170 feet. Subshrub.	High potential
San Felipe monardella <i>Monardella nana</i> ssp. <i>leptosiphon</i>	--/--/ 1B.2	Chaparral, lower montane coniferous forest. Sometimes in openings and fuel breaks or in the understory of forest or chaparral. ~3,940–6,100 feet. Subshrub.	None
Hall's monardella <i>Monardella macrantha</i> ssp. <i>hallii</i>	--/--/ 1B.3	Broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. ~2,400–7,200 feet. Subshrub.	Moderate potential
little mousetail <i>Myosurus minimus</i> ssp. <i>apus</i>	--/--/ 3.1	Vernal pools, valley and foothill grassland. This subspecies has taxonomic problems; distinguishing between this and <i>M. sessilis</i> is difficult. Alkaline soils. ~65–2,100 feet. Annual herb.	None
Baja navarretia <i>Navarretia peninsularis</i>	--/--/ 1B.2	Lower montane coniferous forest, chaparral. Wet areas in open forest. ~4,920–7,960 feet. Annual herb	None
Chaparral nolina <i>Nolina cismontana</i>	--/--/ 1B.2	Chaparral, coastal scrub. Primarily on sandstone and shale substrates; also known from gabbro. ~460–4,185 feet. Perennial herb to shrub.	Low potential
Dehesa nolina <i>Nolina interrata</i>	--/ SE / 1B.1	Chaparral. Typically on rocky hillsides or ravines on ultramafic soils (gabbro or metavolcanic). ~590–2,805 feet. Perennial herb to shrub.	None
Gander's ragwort <i>Packera ganderi</i>	--/ SR / 1B.2	Chaparral. Recently burned sites and gabbro outcrops. ~1,312–3,940 feet. Perennial herb.	None
San Bernardino blue grass <i>Poa atropurpurea</i>	FE /--/ 1B.2	Meadows and seeps. Mesic meadows of open pine forests and grassy slopes, loamy alluvial to sandy loam soil. ~4,465–8,055 feet. Perennial herb from rhizomes.	None
Nuttall's scrub oak <i>Quercus dumosa</i>	--/--/ 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub. Generally on sandy soils near the coast; sometimes on clay loam. ~50–1,312 feet. Shrub.	None
Moreno currant <i>Ribes canthariforme</i>	--/--/ 1B.3	Chaparral, riparian scrub. Among boulders in oak-manzanita thickets; shaded or partially shaded sites. ~1,115–3,940 feet. Shrub.	High potential adjacent to the Proposed Project
Cuyamaca raspberry <i>Rubus glaucifolius</i> var. <i>ganderi</i>	--/--/ 3.1	Lower montane coniferous forest. Open, moist forest; gabbro soils. ~3,940–5,495 feet. Shrub.	None



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
Munz's sage <i>Salvia munzii</i>	--/--/ 2B.2	Coastal scrub, chaparral. Rolling hills and slopes, in rocky soil. ~377–3,495 feet. Shrub.	Moderate potential
Southern mountains skullcap <i>Scutellaria bolanderi austromontana</i>	--/--/ 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. In gravelly soils on streambanks or in mesic sites in oak or pine woodland. ~1,395–6,562 feet. Perennial herb or shrub	None
Desert spike-moss <i>Selaginella eremophila</i>	--/--/ 2B.2	Sonoran desert scrub, chaparral. Shaded sites, gravelly soils; crevices or among rocks. 656–2,953 feet. Fern, mat like.	None
Cove's cassia <i>Senna covesii</i>	--/--/ 2B.2	Sonoran desert scrub. Dry, sandy desert washes, slopes. 1,000–3,510 feet. Subshrub.	None
Hammitt's clay-cress <i>Sibaropsis hammittii</i>	--/--/ 1B.2	Valley and foothill grassland, chaparral. Mesic microsites in open areas on clay soils in Stipa grassland. Often surrounded by Adenostoma chaparral. 2,362–3,494 feet. Annual herb.	None
Salt Spring checkerbloom <i>Sidalcea neomexicana</i>	--/--/ 2B.2	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub. Alkali springs and marshes. ~0–5,020 feet. Perennial herb.	None
Prairie wedge grass <i>Sphenopholis obtusata</i>	--/--/ 2B.2	Cismontane woodland, meadows and seeps. Open moist sites, along rivers and springs, alkaline desert seeps. ~985–6,562 feet. Perennial herb.	None
Purple stemodia <i>Stemodia durantifolia</i>	--/--/ 2B.1	Sonoran desert scrub. Sandy soils; mesic sites. ~590–985 feet. Perennial herb.	None
Laguna Mountains jewelflower <i>Streptanthus bernardinus</i>	--/--/ 4.3	Chaparral, lower montane coniferous forest. Clay or decomposed granite soils; sometimes in disturbed areas such as streamsides or road cuts. ~4,593–8,202 feet. Perennial herb.	None
Southern jewelflower <i>Streptanthus campestris</i>	--/--/ 1B.3	Chaparral, lower montane coniferous forest, pinyon-juniper woodland. Open, rocky areas. ~2,953–7,546 feet. Perennial herb.	None
San Bernardino aster <i>Symphyotrichum defoliatum</i>	--/--/ 1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland. Vernal mesic grassland or near ditches, streams and springs; disturbed areas. ~7–6,693 feet. Perennial herb.	None
Parry's tetraococcus <i>Tetraococcus dioicus</i>	--/--/ 1B.2	Chaparral, coastal scrub. Stony, decomposed gabbro soil. ~541–3,280 feet. Shrub.	Moderate potential



Common Name Scientific Name	Status Federal / State / CRPR	Habitat Associations	Likelihood to Occur in Proposed Project
Velvety false lupine <i>Thermopsis californica</i> var. <i>semota</i>	--/--/ 1B.2	Lower montane coniferous forest, meadows and seeps, cismontane woodland, valley and foothill grassland. Pine forests and meadow edges, on rocky slopes and outcrops, and along roadsides. ~3,280–6,135 feet. Perennial herb from rhizome.	None

## Status Codes:

-- = No status

Federal: FE = Federal Endangered; FT = Federal Threatened;

State: SE = State Endangered; ST = State Threatened; SC = State Candidate; SR = State Rare

California Rare Plant Ranks:

1B = Rare, Threatened or Endangered in California and elsewhere

2 = Rare, Threatened or Endangered in California, but more common elsewhere

3 = Plants about which we need more information – a review list

4 = Plants of limited distribution - a watch list

.1 = seriously threatened in California

.2 = fairly threatened in California

.3 = not very threatened in California

## Jacumba Milk-Vetch

Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*) occurs in chaparral, cismontane woodland, valley and foothill grassland, pinyon and juniper woodland, and riparian scrub. It is often associated with stony hillsides and gravelly or sandy flats in open oak woodland from approximately 2,950–4,170 feet. Although rare plants surveys have not detected this species at the Proposed Project, there is suitable habitat for this species, and the species has moderate potential to occur.

## San Diego Milk-Vetch

San Diego milk-vetch (*Astragalus oocarpus*) occurs in chaparral and cismontane woodland. It is often associated with openings in chaparral or on gravelly flats and slopes in thin oak woodland from approximately 1,000–5,000 feet. Rare plants surveys have not detected this species. There is suitable habitat for this species at the Proposed Project, and this species has a high potential to occur.

## Long-Spined Spineflower

Long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*) occurs in chaparral, coastal scrub, meadows/seeps, valley and foothill grassland, and vernal pools. It is often associated with clay soil from approximately 100–5,020 feet. Rare plants surveys have not detected this species. There is marginally suitable habitat for this species at the Proposed Project and the species has low potential to occur.

## Delicate Clarkia

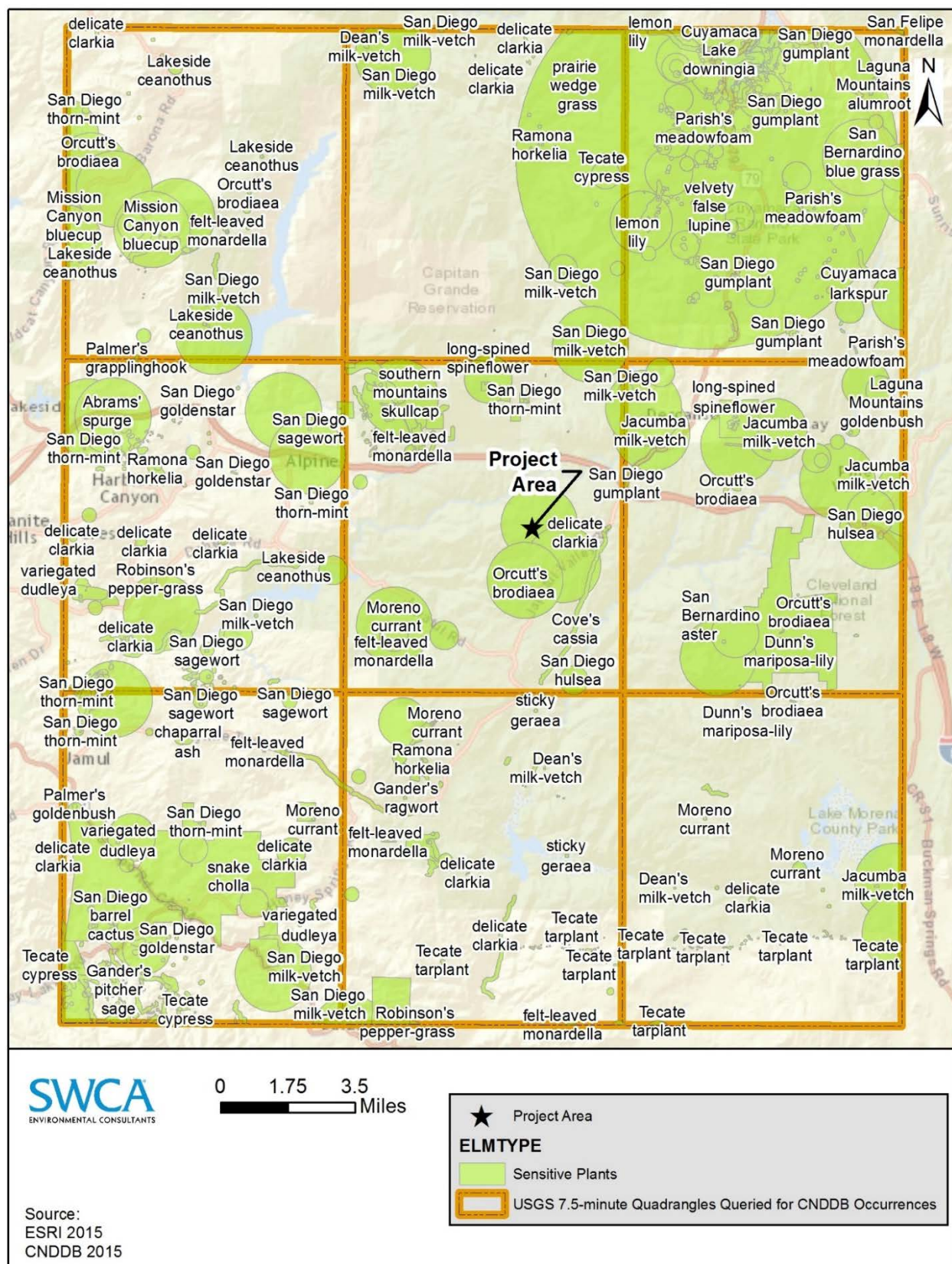
Delicate clarkia (*Clarkia delicata*) occurs in cismontane woodland and chaparral. It is often associated with gabbro soil from approximately 770–3,280 feet. Rare plants surveys have not detected this species. Although Figure 7 shows a potential for delicate clarkia habitat, surveys indicate that there is marginally suitable habitat for this species at the Proposed Project; therefore, the species has low potential to occur.

## Tecate Tarplant

Tecate tarplant (*Deinandra floribunda*) occurs in chaparral and coastal scrub from approximately 230–4,000 feet. Although rare plants surveys have not detected this species, there is suitable habitat for this species at the Proposed Project, and the species has moderate potential to occur.



**Figure 7. CNDDDB Records of Sensitive Plants in the Proposed Project Vicinity**





### San Diego Gumplant

San Diego gumplant (*Grindelia hallii*) occurs in chaparral, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland from approximately 600–5,725 feet. Although rare plants surveys have not detected this species at the Proposed Project, there is suitable habitat present. This species has moderate potential to occur at the Proposed Project.

### Felt-leaved Monardella

Felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*) occurs in chaparral and cismontane woodland. It is often associated with sandy soil in the understory of mixed chaparral, chamise chaparral, and southern oak woodland from approximately 985–5,167 feet. Rare plant surveys conducted in 2010 detected this species at the Proposed Project prior to the construction of the Sunrise Powerlink transmission line and Suncrest Substation (Recon Environmental, Inc. 2010b). Rare plant surveys conducted on June 25, 2015, detected a single population of approximately 25 felt-leaved monardella plants adjacent to Bell Bluff Truck Trail in an area outside of the Proposed Project footprint. Figure 8 shows the locations of the historical and observed monardella plants. There is suitable habitat for this species at the Proposed Project, and this species has been determined to be present adjacent to the Proposed Project.

### Hall's Monardella

Hall's monardella (*Monardella macrantha* ssp. *hallii*) occurs in broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland from approximately 2,400–7,200 feet. Although rare plants surveys have not detected this species, there is suitable habitat for this species at the Proposed Project, and the species has moderate potential to occur.

### Chaparral Nolina

Chaparral nolina (*Nolina cismontana*) occurs in chaparral and coastal scrub. It is often associated with sandstone and shale substrates and gabbro soil from approximately 460–4,200 feet. Rare plants surveys have not detected this species. There is marginally suitable habitat for this species at the Proposed Project, and the species has low potential to occur.

### Moreno Currant

Moreno currant (*Ribes canthariforme*) occurs in chaparral and riparian scrub. It is often found among boulders in oak-manzanita thickets or in shaded or partially shaded sites from approximately 1,100–4,000 feet. Rare plants surveys have not detected this species. There is suitable habitat for this species adjacent to the Proposed Project, and this species has a high potential to occur on the north-facing slopes along Bell Bluff Truck Trail.

### Munz's Sage

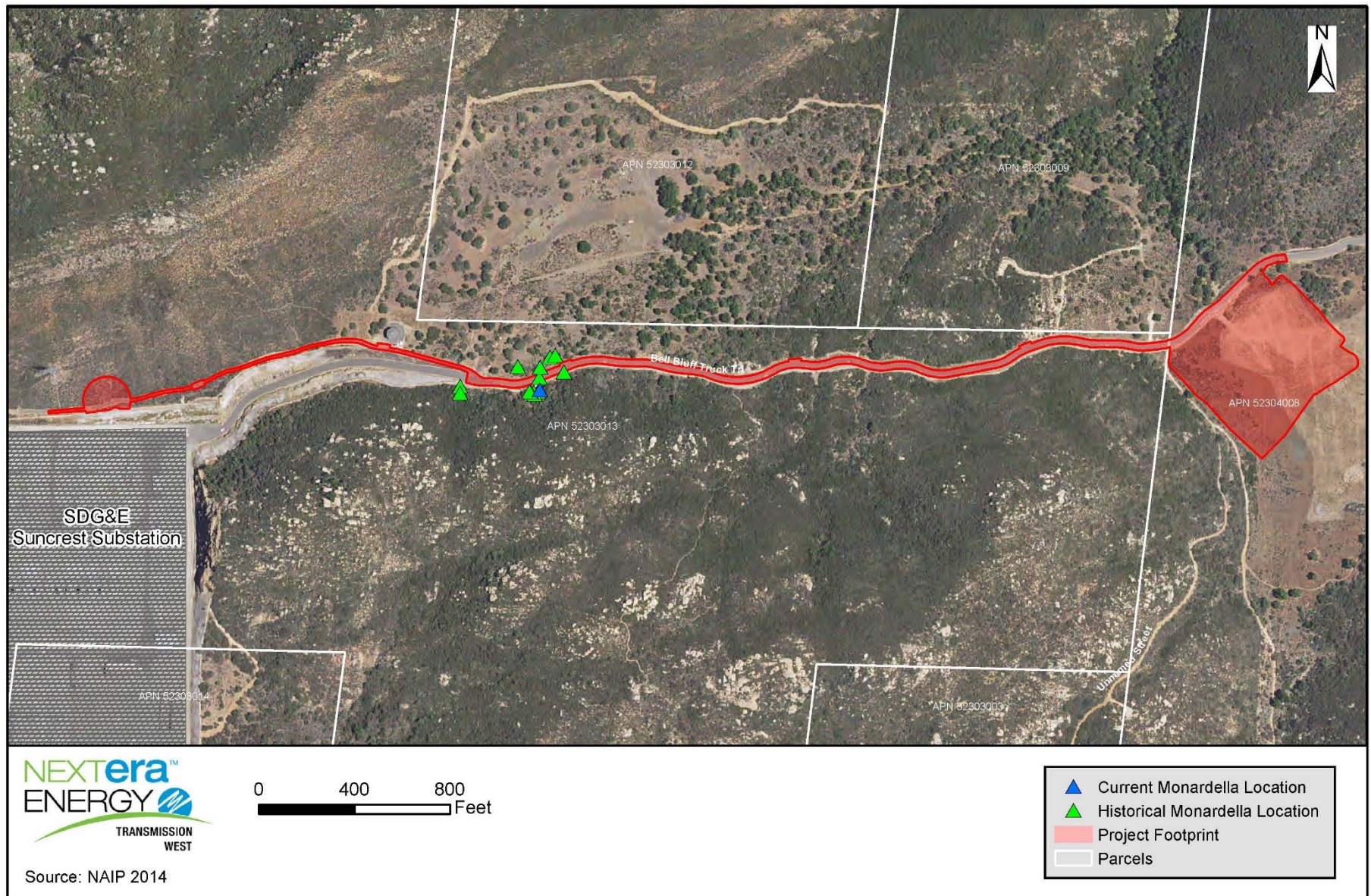
Munz's sage (*Salvia munzii*) occurs in chaparral and coastal scrub from approximately 370–3,500 feet. Although rare plants surveys have not detected this species at the Proposed Project, there is suitable habitat. This species has moderate potential to occur.

### Parry's Tetracoccus

Parry's tetracoccus (*Tetracoccus dioicus*) occurs in chaparral and coastal scrub from approximately 540–3,280 feet. Although rare plants surveys have not detected this species at the Proposed Project, there is suitable habitat. This species has moderate potential to occur at the Proposed Project.



Figure 8. Felt-leaved Monardella Populations in the Proposed Project Vicinity





#### 4.4.2.2 SPECIAL-STATUS ANIMALS

Based on the literature and database search, a total of 35 special-status animals were determined to have recorded occurrences in the area around the Proposed Project, specifically within one or more of the nine USGS 7.5-minute topographic quadrangles surrounding the Proposed Project (Figure 9). These included five invertebrates, three amphibians, eight reptiles, nine birds, and 10 mammals. Each of these species was evaluated for its potential to occur at the Proposed Project (Table 3).

**Table 3. Sensitive Wildlife Species Potential for Occurrence at the Proposed Project**

Common Name Scientific Name	Status Federal/State	Habitat Associations	Likelihood of Occurrence
<b>Invertebrates</b>			
Quino checkerspot butterfly <i>Euphydryas editha quino</i>	FE/--	Chaparral, coastal scrub. Dependent on high densities of food plants, including selected <i>Plantago</i> spp., <i>Castilleja exserta</i> , <i>Cordylanthus rigidus</i> , <i>Antirrhinum coulterianum</i> , and <i>Collinsia concolor</i> . Occurs in sunny openings.	None. Concentrations of food plants are lacking; surveys in 2010 were negative (Chambers Group, Inc. 2010).
Thorne's hairstreak <i>Caliphrys thornei</i>	--/--	Only occurs in association with tecate cypress ( <i>Cupressus forbesii</i> ).	None. No tecate cypress are present.
Harmonious halictid bee <i>Halictus harmonius</i>	--/--	Known only from the foothills of the San Bernardino Mts., possibly also the San Jacinto Mts.	None
Hermes copper butterfly <i>Lycaena hermes</i>	FC/--	Chaparral, coastal scrub. Dependent on spiny redberry ( <i>Rhamnus crocea</i> ), which is common in cismontane California coastal sage scrub and chaparral vegetation communities.	Moderate potential
Peak shoulderband <i>Helminthoglypta milleri</i>	--/--	This species is known only from the type locality at Cuyamaca Peak in San Diego County, which was located in chaparral habitat.	None
<b>Amphibians</b>			
Arroyo toad <i>Anaxyrus californicus</i>	FE/CSC	Inhabits washes, arroyos, sandy riverbanks, riparian areas with willows, sycamores, oaks, cottonwoods. Extremely specialized habitat needs, including exposed sandy streambanks with stable terraces for burrowing with scattered vegetation for shelter, and areas of quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding. Sea level to 3,000 ft. (900 m.)	None
Western spadefoot <i>Spea hammondi</i>	--/CSC	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools, and wetlands. Requires vernal pools for breeding.	None



Common Name Scientific Name	Status Federal/State	Habitat Associations	Likelihood of Occurrence
Coast range newt <i>Taricha torosa</i>	--/CSC	Occurs in coastal drainages from Mendocino County to San Diego County. Requires still or slow-moving water for breeding.	None
<b>Reptiles</b>			
Orange-throated whiptail <i>Aspidocelis hyperythrya</i>	--/CSC	Occurs in chaparral, cismontane woodland, and coastal scrub habitats. Generally prefers washes and sandy areas.	Moderate potential
Red-diamond rattlesnake <i>Crotalus ruber</i>	--/CSC	Chaparral, woodland, grassland, & desert areas from coastal San Diego County to the eastern slopes of the mountains. Occurs in rocky areas & dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	High potential
Coast horned lizard <i>Phrynosoma blainvillii</i>	--/CSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects. Found at elevations from sea level to 8,000 ft.	High potential
Western pond turtle <i>Emys marmorata</i>	--/CSC	Flowing waters with basking sites, generally with aquatic vegetation.	None
California mountain kingsnake (San Diego population) <i>Lampropeltis zonata (pulchra)</i>	--/CSC	Chaparral, cismontane woodland, meadows and seeps, riparian forest, riparian woodland, upper montane coniferous forest, wetlands. Restricted to the San Gabriel and San Jacinto Mts.	None
Coronado Island skink <i>Plestiodon skiltonianus interparietalis</i>	--/CSC	Grassland, chaparral, pinyon-juniper & juniper sage woodland, pine-oak & pine forests in Coast Ranges of Southern California. Prefers early successional stages or open areas. Found in rocky areas close to streams and on dry hillsides. From sea level up to around 8,300 ft.	Moderate potential
Coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	--/CSC	Brushy or shrubby vegetation in coastal Southern California. Require small mammal burrows for refuge and overwintering sites. Occurs at elevations from below sea level to around 7,000 ft.	Moderate potential
Two-striped garter snake <i>Thamnophis hammondi</i>	--/CSC	Marsh and swamp, riparian scrub, riparian woodland, wetlands.	None
<b>Birds</b>			
Tricolored blackbird <i>Agelaius tricolor</i>	--/CE	Nests in dense vegetation near water, typically marshes, agricultural fields (e.g., rice, alfalfa), and riparian woodlands.	None



Common Name Scientific Name	Status Federal/State	Habitat Associations	Likelihood of Occurrence
Golden eagle <i>Aquila chrysaetos</i>	BGEPA/FP	Grasslands, deserts, savannas, and early successional stages of forest and shrub habitats. Broad expanses of open country are required for foraging while nesting is primarily restricted to rugged mountainous areas with large trees or on cliffs.	Moderate potential for foraging; Low potential for breeding
Swainson's hawk <i>Buteo swainsoni</i>	--/CE	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or rows of trees.	Low potential during migration, none during breeding
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	FE/CE	Riparian woodlands with dense vegetation.	None
Coastal California gnatcatcher <i>Poliophtila californica</i>	FT/--	Coastal sage scrub below 2,500 feet.	None
Least Bell's vireo <i>Vireo bellii pusillus</i>	FE/CE	Lowland riparian woodlands with dense vegetation.	None
<b>Mammals</b>			
Pallid bat <i>Antrozous pallidus</i>	--/CSC	Chaparral, coastal scrub, desert wash, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, valley and foothill grassland	Low potential for foraging; Not Expected for roosting
Dulzura pocket mouse <i>Chaetodipus californicus femoralis</i>	--/CSC	Variety of habitats including coastal scrub, chaparral & grassland in San Diego Co. Tends to occur in grass-chaparral edges.	Moderate potential
Northwestern San Diego pocket mouse <i>Chaetodipus fallax</i>	--/CSC	Chaparral, coastal scrub, grasslands, sagebrush, and other habitats in western San Diego County, from sea level to 6,000 feet. Typically in areas with rocks or coarse gravel.	Low potential
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	--/SC and CSC	Broadleaved upland forest, chaparral, chenopod scrub, Joshua tree woodland, lower montane coniferous forest, meadow and seep, Mojavean desert scrub, riparian forest, riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, upper montane coniferous forest, valley and foothill grassland	Low potential for foraging; Not Expected for roosting
Western mastiff bat <i>Eumops perotis californicus</i>	--/CSC	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	Low potential for foraging; Not Expected for roosting
Western red bat <i>Lasiurus blossevillii</i>	--/CSC	Cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodlands. Strongly associated with riparian areas.	Low potential for foraging; Not Expected for roosting



Common Name Scientific Name	Status Federal/State	Habitat Associations	Likelihood of Occurrence
California leaf-nosed bat <i>Macrotus californicus</i>	--/CSC	Desert riparian scrub, Sonoran desert scrub. Day roosts in deep caves or tunnels, occasionally in buildings or bridges, where humidity is at least 50 percent. In California, occurs at elevations up to 600 feet.	None
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	--/CSC	Coastal scrub with moderate to dense canopies.	High potential
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	--/CSC	Joshua tree woodland, pinyon and juniper woodlands, riparian scrub, Sonoran desert scrub	Low potential for foraging; Not Expected for roosting
American badger <i>Taxidea taxus</i>	--/CSC	Occurs at low density in many natural and agricultural habitats where soils are friable for digging; in forested areas requires openings or meadows.	Low potential

**Status Codes:**

-- = No status

**Federal:** FE = Federal Endangered; FT = Federal Threatened; MBTA = Protected by Migratory Bird Treaty Act; BGEPA = Bald and Golden Eagle Protection Act.**State:** SE = State Endangered; ST = State Threatened; SC = State Candidate; CSC = California Species of Special Concern; FP = Fully Protected.

Based on an assessment of the habitat requirements of the sensitive species with recorded occurrences in the larger vicinity, a total of 17 sensitive animals were determined to have the potential to be present at the Proposed Project. These included one invertebrate, five reptiles, two birds, and nine mammals. Each of these species is discussed individually below.

No special-status wildlife species were positively identified during biological surveys conducted in 2014 or 2015. However, there are CNDDDB records of red-diamond rattlesnake (*Crotalus ruber*) at the Proposed Project. In addition, woodrat houses were observed approximately 820 feet north of Bell Bluff Truck Trail (well outside the area that may be directly impacted by the Proposed Project), which could belong to either the special-status San Diego desert woodrat (*Neotoma lepida intermedia*) or the dusky-footed woodrat (*Neotoma fuscipes*), which does not have any special status; these are discussed below.

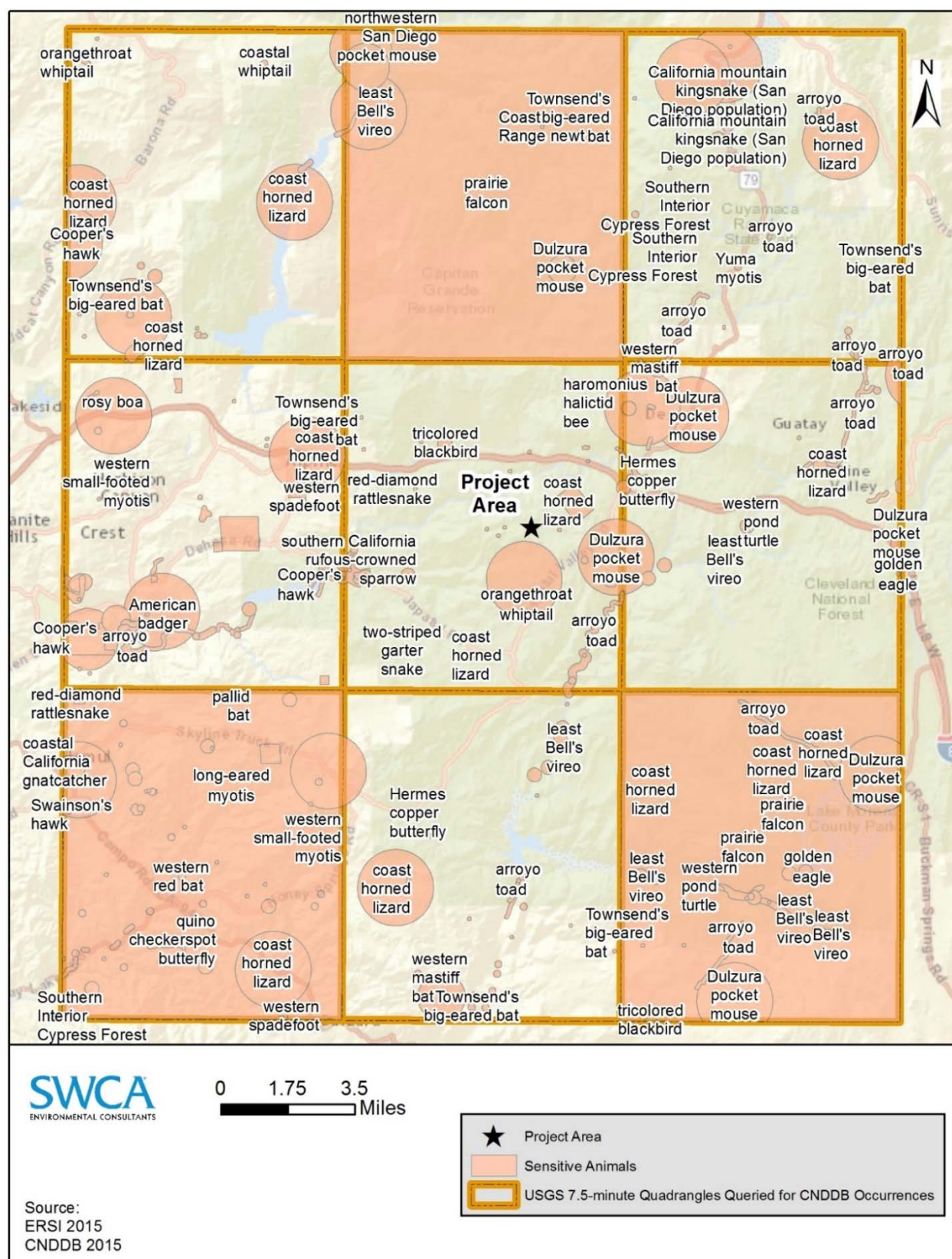
## Invertebrates

### *Hermes Copper Butterfly*

Hermes copper butterfly (*Lycaena hermes*) occurs in chaparral and coastal scrub. Larvae are dependent on spiny redberry (*Rhamnus crocea*), a plant species common in cismontane California coastal sage scrub and chaparral vegetation communities, and which is present at the Proposed Project. The historical range of Hermes copper butterfly is limited to San Diego County, California, south to Santo Tomas, in Baja California Norte, Mexico. Today, the butterfly is known to occur primarily in the southwest portion of San Diego County. The CNDDDB includes records of reports adults and juveniles within two miles of the Proposed Project from 2008. Although biological surveys have not detected this species, the Proposed Project provides suitable habitat for this species, and the species has moderate potential to occur at the Proposed Project.



**Figure 9. CNDDDB Records of Sensitive Animals in the Proposed Project Vicinity**





## Reptiles and Amphibians

### **Orange-throated Whiptail**

The orange-throated whiptail (*Aspidocelis hyperythra*) occurs in coastal scrub, chamise chaparral, mixed chaparral, and valley-foothill hardwood habitats, usually where there is sandy soil, at elevations up to 3,400 feet. This species' U.S. range includes western San Diego and Riverside Counties, and southern Orange County. Most of the range is in Mexico, extending along the entire Baja California peninsula. The orange-throated whiptail is very active, preying on a wide range of invertebrates, especially termites. The Proposed Project provides suitable habitat for this species, although it has not been observed to date. This species has moderate potential to occur at the Proposed Project.

### **Red-diamond Rattlesnake**

The red-diamond rattlesnake (*Crotalus ruber*) inhabits open scrub, chaparral, woodland, and grassland vegetation types. This species ranges from approximately Orange and San Bernardino Counties south to Baja California, Mexico, at elevations from sea level to about 5,000 feet. Multiple CNDDDB records of red-diamond rattlesnake indicate this species is present in the vicinity of the Proposed Project. The project site provides potentially suitable habitat for the red-diamond snake and this species has a high potential to occur.

### **Coast Horned Lizard**

The coast (San Diego) horned lizard (*Phrynosoma blainvillii*) occurs in open or sparse scrub and chaparral communities and prefers loose soils for burrowing at elevations from sea level to approximately 8,000 feet. It forages mainly on native ant species, and has declined, at least in part, because of introduction of non-native ants, competition from which has resulted in declines in native ant populations. Collecting, development, and off-road vehicle use have also contributed to this species' decline. Multiple CNDDDB records of coast horned lizard are present for the past 2 decades with the most recent observation being closest to the Proposed Project, approximately 1.5 miles to the north. Suitable habitat occurs at the Proposed Project, and this species has a high potential to occur.

### **Coronado Island Skink**

The Coronado Island skink (*Plestiodon skiltonianus interparietalis*) inhabits grassland, chaparral, pinyon-juniper and juniper sage woodland, pine-oak, and pine forests in the Coast Ranges of Southern California. This species prefers early successional stages or open areas. It is commonly found in rocky areas close to streams and on dry hillsides from sea level up to approximately 8,300 feet. A single CNDDDB record from 1995-1999 data describes an occurrence of this species 3 miles south of the Proposed Project. The Proposed Project provides potentially suitable habitat for the Coronado Island skink and it has a moderate potential to occur at the Proposed Project.

### **Coast Patch-Nosed Snake**

The coast patch-nosed snake (*Salvadora hexalepis virgulata*) inhabits open sandy areas and rocky outcrops in scrub, chaparral, grassland, and woodland vegetation types from sea level to about 7,000 feet. This species ranges along the coast of California from San Luis Obispo County south into Baja California, Mexico. A single CNDDDB record from 1996 describes an occurrence of this species 4 miles west of the Proposed Project at Loveland Reservoir. The Proposed Project provides a limited amount of potentially suitable habitat for the coast patch-nosed snake and it has a moderate potential to occur at the Proposed Project.



## Birds

### Golden Eagle

Golden eagles (*Aquila chrysaetos*) occur throughout California in a variety of habitats including grasslands, open scrublands, and woodlands. This species typically nests on cliff faces or in large trees or tall artificial structures such as electrical transmission towers. High-quality nest sites with appropriate temperature regimes and winds to provide lift are often a limited resource. Golden eagles are highly site faithful, and typically maintain one or more nests within a territory, often switching between nests from year to year. Active and inactive nests can persist for many years, even decades. Golden eagles typically prey on small to mid-sized mammals, birds, and reptiles. eBird records have documented this species in the area since 1982 and as recently as March 2015 approximately 4 miles northeast of Suncrest Substation. Suitable foraging habitat exists for this species throughout the undeveloped areas at the Proposed Project. No nesting habitat occurs within the Proposed Project. Focused surveys conducted in 2010 and 2011 identified occupied golden eagle nests located approximately 5 miles and approximately 15 miles from the Proposed Project (Wildlife Research Institute 2010, 2011). Another territory has been previously recorded with breeding activity within 1 mile of the Proposed Project, but the nests at the site are believed to have been destroyed at least 8 years ago in wildfires; no nests have been detected in recent surveys of the area despite focused effort (Wildlife Research Institute 2010, 2011).

If golden eagles were to construct a new nest at Bell Bluff, the most suitable sites would be ledges on north-facing rocky outcrops or cliffs. The most likely nest sites have been identified based on inspection of aerial imagery and topographic maps; all are more than 4,000 feet from the Proposed Project (Figure 10). Given that the Suncrest Substation was constructed in 2011 and 2012, vehicle traffic and human activity at the substation and along Bell Bluff Truck Trail are now increased due to security and maintenance needs associated with the substation. Therefore, any golden eagle nests constructed since the last survey would presumably be associated with golden eagles that are acclimated to the current level of normal activity in the area.

This species has a moderate potential to occur for foraging, and has a low potential to occur for nesting.

### Swainson's hawk

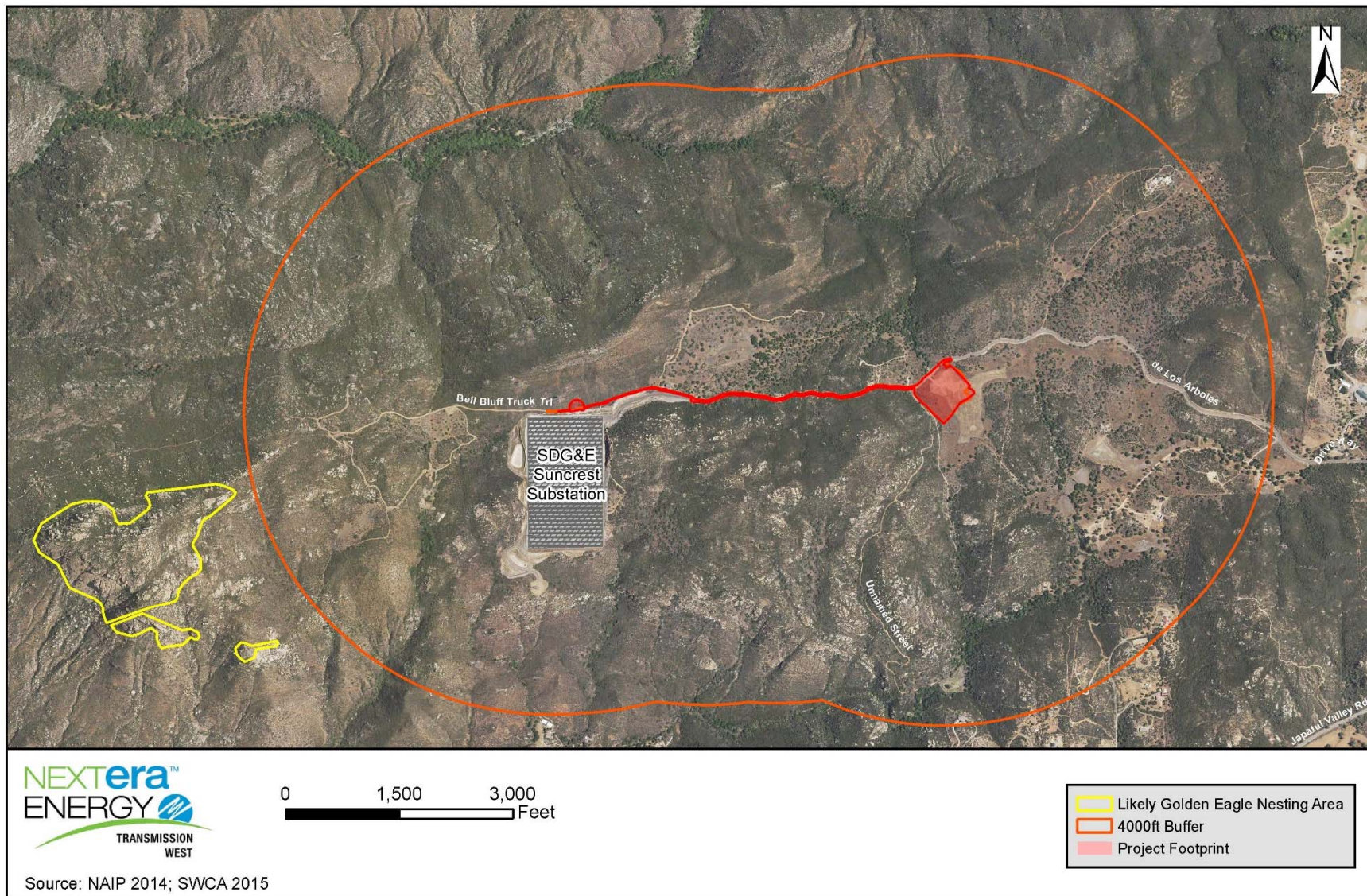
Swainson's hawk (*Buteo swainsoni*) breeds in a wide range of open habitats with low vegetation throughout the western U.S., including grasslands, riparian areas, savannahs, and agricultural and ranch lands. In California, Swainson's hawks breed primarily in the Central Valley, from Kern County northward, and no breeding has been recorded in San Diego County. Swainson's hawks migrate to South America for the winter season, and therefore migrants may occur transiently in many habitats in the western U.S. The Proposed Project is outside this species' nesting range, and it is not expected to occur. However, migratory individuals could occur at any location, and therefore there is low potential for migrating Swainson's hawks to occur at the Proposed Project.

## Mammals

### Pallid Bat

The pallid bat (*Antrozous pallidus*), a California Species of Special Concern (CSC), most commonly occurs in mixed oak and grassland habitats. This large bat roosts in rock crevices and in cavities of trees, especially oaks. This species occurs throughout California except for the high Sierra Nevada from Shasta to Kern Counties and in the northwestern portion of the state (Zeiner et al. 1990). Pallid bat is very sensitive to disturbance at its roosting sites. A single CDNNB record reports this species 2 miles northeast of the Proposed Project. The Proposed Project provides potentially suitable foraging habitat but no suitable roosting habitat for the pallid bat. Therefore, it may occur only on the project site for foraging but is not expected to roost at the Proposed Project.



**Figure 10. Potential Golden Eagle Nesting Habitat**



**Dulzura Pocket Mouse**

Dulzura pocket mouse (*Chaetodipus californicus femoralis*), a CSC, occurs in a variety of habitats including coastal scrub, chaparral, and grassland in San Diego County. This species is commonly attracted to grass-chaparral edges. During focused trapping surveys for Stephens' kangaroo rat (*Dipodomys stephensi*), Dulzura kangaroo rat was captured as close as 12 miles south of the Proposed Project (SJM 2010a, 2010b). The Proposed Project provides potentially suitable habitat for Dulzura kangaroo rat, and this species has a moderate potential to occur at the Proposed Project.

**Northwestern San Diego Pocket Mouse**

The northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), a CSC, inhabits a variety of habitats with sandy areas with herbaceous vegetation and moderate canopy cover, at elevations up to 6,000 feet. Vegetation communities occupied include coastal scrub, chamise chaparral, mixed chaparral, sagebrush, pinyon-juniper woodlands, annual grasslands, and several desert habitat types. In San Diego County, this species is typically found in arid coastal and desert border areas. There is suitable habitat at the Proposed Project for the northwestern San Diego pocket mouse, and the species has a low potential to occur.

**Townsend's Big-Eared Bat**

Townsend's big-eared bat (*Corynorhinus townsendii*), a CSC and candidate for CESA listing, occurs in a variety of habitats throughout California, but it is most commonly associated with desert scrub, mixed conifer forest, and pinyon-juniper or pine forest habitat. Townsend's big-eared bats hibernate throughout their range during winter months when cold temperatures prevail. Records of the species exist from throughout the state, but specific details on its distribution are poorly understood. Suitable foraging but no suitable roosting habitat for this species occurs throughout the Proposed Project. This species has a low potential to occur at the Proposed Project for foraging and is not expected for roosting.

**Western Mastiff Bat**

Western mastiff bat (*Eumops perotis californicus*), a CSC, is found in many open semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban. The western mastiff bat is a very wide-ranging and high-flying insectivore that typically forages in open areas with high cliffs. This species roosts in small colonies in crevices on cliff faces. It occurs in the southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through southern California, and from the coast eastward to the Colorado Desert. Western mastiff bat has been detected as close as 10 miles south of the Proposed Project in Hauser Canyon (MSCP). The Proposed Project site provides potentially suitable foraging habitat, but no suitable roosting habitat for the western mastiff bat. The western mastiff bat has low potential to forage but is not expected to roost at the Proposed Project.

**Western Red Bat**

The western red bat (*Lasiurus blossevillei*), a CSC, occurs throughout most of the non-desert areas of California. It breeds primarily in association with riparian areas, especially in the Central Valley. This species roosts in trees, usually near suitable open foraging areas. The oak woodlands at the Proposed Project are suitable roosting and foraging habitat for this species, although the potential for occurrence is considered low due to the lack of riparian habitats.

**San Diego Desert Woodrat**

The San Diego desert woodrat (*Neotoma lepida intermedia*), a CSC, occurs throughout coastal and desert areas of southern California. This species occurs in woodlands, chaparral, sagebrush, and desert habitats at elevations up to 8,500 feet. Houses are usually built against a rock crevice, at the base of a large plant, or in the lower branches of trees. The range of the dusky-footed woodrat, which is not a special-status species, also overlaps with the Proposed Project. Three woodrat houses, constructed of twigs and sticks, were observed in the oak woodlands approximately 820 feet north of Bell Bluff Truck Trail in May 2015. Both



species build these houses, and the species present therefore could not be identified with certainty. The Proposed Project provides suitable habitat for both woodrat species, and there is high potential for occurrence of the San Diego desert woodrat.

#### ***Pocketed Free-Tailed Bat***

Pocketed free-tailed bat (*Nyctinomops femorosaccus*) occurs primarily in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases. It primarily roosts in crevices in rugged cliffs, slopes, and tall rocky outcrops. This species is known to occur in areas with ponds, streams, or arid deserts that provide suitable foraging habitats for this species. This bat occurs in the southwestern U.S. to south-central Mexico. Pocketed free-tailed bat has been detected as close as 10 miles south of the Proposed Project in Hauser Canyon (MSCP). The project site provides limited potentially suitable foraging habitat, but no suitable roosting habitat for this species; therefore, pocketed free-tailed bat has low potential to occur for foraging but is not expected to roost at the Proposed Project.

#### ***American Badger***

American badger (*Taxidea taxus*), a CDFW species of special concern, is found in open woodlands, desert scrub, grasslands, and open communities generally. Agricultural fields are also suitable, if there is a small mammal prey base. Badgers require friable soils for digging out their small mammal prey, and for constructing dens. This species is widespread but uncommon throughout North America. There is limited suitable habitat at the Proposed Project for American badger, and this species' potential for occurrence is low.

## **5 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS**

### **5.1 Significance Criteria**

Appendix G of the State CEQA Guidelines provides thresholds to evaluate whether impacts are considered significant. Based upon these guidelines, impacts to biological resources would be considered significant if the project:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the CDFW or USFWS;
- Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites; or
- Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.



An evaluation of whether an impact to biological resources would be significant must consider both the resource itself and how that resource fits into a regional or local context. Significant impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with federal, state, or local resource conservation plans, goals, or regulations. The evaluation of impacts considers direct impacts, indirect impacts, and cumulative impacts, as well as temporary and permanent impacts.

## 5.2 Recommended Applicant-Proposed Measures

The following recommended applicant-proposed measures (APMs) will meet existing regulations and/or requirements or standard practices to avoid, minimize, or reduce potential less than significant impacts on biological resources (Table 4).

**Table 4. Recommended Applicant Proposed Measures**

APM No.	Description
<b>BIOLOGICAL RESOURCES</b>	
APM-BIO-0	<b>Worker Environmental Awareness Program.</b> Prior to construction, all NEET, contractor, and subcontractor Project personnel will receive training regarding the appropriate work practices necessary to effectively implement the biological mitigation measures and to comply with the applicable environmental laws and regulations including appropriate wildlife avoidance and impact minimization procedures, the importance of these resources and the purpose and necessity of protecting them, and methods for protecting sensitive biological resources.
APM-BIO-1	<b>Biological Monitor.</b> A qualified biologist or environmental inspector who is familiar with the biological resources and issues at the Proposed Project will conduct monitoring during all construction-related ground disturbing activities that may impact sensitive biological resources, including but not necessarily limited to: initial clearing and vegetation removal; perimeter fence installation and excavation; and movement of construction equipment and other activities outside of fenced/paved areas within wildlife habitat. The biological monitor/environmental inspector will flag or otherwise clearly mark environmentally sensitive areas (ESAs) with appropriate buffers, within which construction is not allowed. The monitor/inspector will have the authority to stop work activities upon the discovery of sensitive biological resources, and allow construction to proceed after the identification and implementation of steps required to avoid or minimize impacts to sensitive resources.
APM-BIO-2	<b>Vehicle Use of Existing Roads.</b> Except when not feasible due to physical or safety constraints, all Project vehicle movement will be restricted to existing roads as a part of the project. When it is not feasible to keep vehicles on existing access roads or avoid construction of access driveways during the nesting, breeding, or migration season, the Project Sponsor will perform a site survey, or more as appropriate, in the area where the work is to occur. This survey will be performed to determine presence or absence of special-status nesting birds, or other special-status species in the work area. Parking or driving on unpaved areas underneath oak trees will not be allowed in order to protect root structures. In addition, a 15-mile-per-hour speed limit will be observed on dirt access roads to reduce dust and allow reptiles and small mammals to disperse.
APM-BIO-3	<b>Debris and Litter Removal.</b> Littering will not be allowed in the project area. Project personnel will deposit all debris and litter into covered garbage containers which will be disposed of when full. Garbage containers will not be allowed to overflow and lids will be secured to prevent wildlife from removing garbage from containers. No food or waste will be left on the ground in the project area, and no biodegradable or non-biodegradable debris will remain in the right-of-way following completion of construction.



**Table 4. Recommended Applicant Proposed Measures**

APM No.	Description
APM-BIO-4	<p><b>Delineating Sensitive Plant Populations.</b> The Proposed Project does not directly impact any sensitive plant populations, although felt-leaved monardella has been observed immediately adjacent to the Proposed Project. To ensure proper protection of these plants on or near the project alignment, a qualified botanist will flag plant populations to be protected and avoided prior to project implementation. The flagging will remain in place until work has ceased and the potential for impacts to the populations has abated. Flagging and demarcation will be updated as necessary. The botanist will also map populations using GPS/GNSS to update project designs for avoidance in the field. If any sensitive plants are encountered during construction, buffers will be established for avoidance. A minimum of 50 feet buffer from an identified special status plant species will be established unless consultation with a qualified biologist determines a reduced buffer would suffice to avoid impacts to the species. If plants cannot be avoided, seed will be collected and used during revegetation efforts following construction.</p>
APM-BIO-5	<p><b>Vegetation Trimming and Removal.</b> Vegetation trimming and removal will not be conducted during the bird breeding season (February through August) without a pre-activity survey for vegetation containing active nests, burrows, or dens. The pre-activity survey performed by the onsite biological resource monitor will ensure that the vegetation to be cleared contains no active migratory bird nests, burrows, or active dens prior to clearing. If occupied migratory bird nests are present, tree removal/trimming or brush clearing work would be avoided within a buffer determined by the onsite biologist. If no nests are observed, clearing may proceed. Where burrows or dens are identified in the reconnaissance-level survey, soil in the vegetation trimming or removal area would be sufficiently dry before clearing activities occur to prevent mechanical damage to burrows that may be present.</p> <p>Whenever feasible, trees in ESAs, such as areas of riparian or native scrub vegetation, will be scheduled for trimming during non-sensitive (i.e., outside breeding or nesting) times. Where trees cannot be trimmed during non-sensitive times, the Project Sponsor will perform a site survey, or more as appropriate, to determine presence or absence of nesting bird species in riparian or native scrub vegetation. Only the minimum amount of vegetation necessary for the construction of structures and facilities will be removed.</p> <p><b>Nesting Bird Buffers and Management Plan.</b> If active nests of non-special status species birds or common raptors are found, a suitable buffer shall be established around active nests and no construction within the buffer allowed until a qualified biologist has determined that the nest is no longer active (e.g. the nestlings have fledged and are no longer reliant on the nest). Encroachment into the buffer may occur at the discretion of a qualified biologist. If bird nesting is initiated during active construction, the birds will be assumed acclimated to the disturbance and no buffer will be applied; however, direct impacts to active nests will be avoided.</p> <p>Prior to construction, the Project Sponsor shall prepare a Nesting Bird Management Plan. The plan shall include at a minimum: the types of birds that may occur in the Project area; the proposed management strategy for nesting birds; the proposed buffer distances for nesting birds; monitoring, field survey requirements and reporting standards; and nest deterrence strategies.</p>
APM-BIO-6	<p><b>Harming or Feeding Wildlife.</b> No wildlife, including rattlesnakes, will be harmed except to protect life and limb. Firearms and pets will be prohibited in all Project areas. In addition, feeding of wildlife will not be allowed. This includes keeping trash bins covered and secured at all times until the trash bins are removed from the Project site.</p>
APM-BIO-7	<p><b>Inspect Excavations for Trapped Wildlife.</b> All steep-walled trenches or excavations used during construction will be inspected twice daily (early morning and evening) to protect against wildlife entrapment. If wildlife is located in a trench or excavation, the onsite biological resource monitor will be contacted immediately to remove them if they cannot escape unimpeded. If the biological resource monitor is not qualified to remove the entrapped wildlife, a recognized wildlife rescue agency may be employed to remove the wildlife and transport them safely to other suitable habitats.</p>



**Table 4. Recommended Applicant Proposed Measures**

APM No.	Description
	Steep-walled trenches and excavations will be fenced and/or covered at the end of each workday to the extent practicable, to prevent wildlife from becoming entrapped and for safety purposes. Alternatively, escape ramps will be installed in trenches or excavation to allow wildlife to exit on their own volition.
APM-BIO-8	<b>Emergency Repairs.</b> Emergency repairs may be required during the construction and maintenance of the project to address situations (e.g., slides, slumps, major subsidence, etc.) that potentially or immediately threaten the integrity of the project facilities. During emergency repairs, APMs will be followed to the fullest extent practicable.
APM-BIO-9	<b>Structures Constructed to Minimize Impacts to Raptors.</b> Structures shall be constructed to conform to “Suggested Practices for Raptor Protection on Power Lines” (Raptor Research Foundation, Inc. 1981) to minimize impacts to raptors. The Project Sponsor will construct all aboveground power transmission lines to the Avian Power Line Interaction Committee (APLIC) Guidelines recommendations: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006, and Reducing Avian Collisions with Power Lines: State of the Art in 2012.
APM-BIO-10	<b>Restoration and Revegetation.</b> NEET West will develop a Restoration and Revegetation Plan to guide restoration activities on the Proposed Project that promotes locally appropriate native plant growth and eliminates non-native and invasive species. The Restoration Plan will identify measures and success criteria specific to each impacted plant community at the Project. The total area to be planted, and species composition, will be tailored for each impacted plant community based on existing standards and precedents. The Restoration Plan will identify success criteria for each habitat type and develop monitoring measures to ensure that success criteria will be met.  Disturbed soils will be revegetated with an appropriate weed-free, native seed mix. All areas designated for temporary impacts will be revegetated with a seed blend that includes native grasses, forbs, and shrub species characteristic of the plant community receiving the temporary impact. Revegetation activities will be undertaken as soon as construction activities have been completed to minimize colonization by non-native weedy species and to ensure compliance with the Proposed Project’s SWPPP. Herbicides, if required, will be applied using hand-held applicators for spot-treatment and will not be used within 100 feet of drainages or sensitive plant populations.
APM-BIO-11	<b>Night Lighting.</b> The Project Sponsor will minimize construction night lighting on adjacent habitats. Exterior lighting within the project area adjacent to habitat will be the lowest illumination allowed for human safety and security, selectively placed, shielded, and directed downward to the maximum extent practicable. Vehicle traffic associated with project activities will be kept to a minimum volume and speed to prevent mortality of nocturnal wildlife species moving about.
APM-BIO-12	<b>Implementation of Best Management Practices.</b> The plans and specifications for the project will require the construction contractor to comply with the project’s SWPPP and reduce the transport of fugitive dust particles related to construction activities through the use of soil stabilization, watering, or implementation of comparable measures. In addition, construction materials and stockpiled soils will be covered or treated in accordance with the SWPPP to ensure that they do not become a source of fugitive dust or sediment. Fugitive dust management areas, including stockpiled soils, will be inspected weekly by the on-site biologist to ensure that they are adequately managed to prevent the generation of fugitive dust.  Erosion controls that comply with county, state, and federal standards will be applied, including the implementation of best management practices. Practices such as installation of silt fences, straw wattles, and check dams will be implemented near disturbed areas to minimize and control erosion and sedimentation. Erosion management areas will be inspected and maintained regularly in accordance with the project’s SWPPP.  To minimize potential impacts to the environment from accidental fuel spills, the plans and specifications for the project will specify that all refueling occur in a designated fueling area that includes a temporary berm to limit the spread of any spill; drip pans will be used during refueling



**Table 4. Recommended Applicant Proposed Measures**

APM No.	Description
	to contain accidental releases, and drip pans will be used under the fuel pump and valve mechanisms of any bulk fueling vehicles parked at the construction site; spills will be immediately addressed per the appropriate spill management plan, and soil cleanup and soil removal initiated if needed.
APM-BIO-13	<p><b>Preconstruction Sweeps for Biological Resources.</b> Prior to initial vegetation clearance, grubbing, and ground-disturbing activities, a qualified biologist will conduct preconstruction sweeps of the project site for special-status wildlife and plants. During these surveys, the biologist will:</p> <ul style="list-style-type: none"> <li>a) Ensure that potential habitats become inaccessible to wildlife (e.g., burrows are removed that would otherwise provide temporary refuge); and,</li> <li>b) In the event of an unanticipated discovery of a special-status ground-dwelling animal, a biologist holding the appropriate state and/or federal permits will recover and relocate the animal to adjacent suitable habitat within the project site at least 200 feet from the limits of grading.</li> <li>c) In the event of the discovery of a previously unknown special-status plant, the area will be marked as an ESA, and avoided to the maximum extent practicable. If avoidance is not possible, the Project Sponsor will consult with USFWS and/or CDFW as appropriate given the species' status.</li> </ul>
APM-BIO-14	<p><b>Nesting Bird Surveys.</b> If construction is scheduled to commence during the non-nesting season (September 1 to January 31), no preconstruction surveys or additional measures with regard to nesting birds and other raptors are required. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site, and within a 150-foot buffer if access allows, for project activities that are initiated during the breeding season (February 1 to August 31). The survey for special-status raptors shall focus on potential nest sites on-site and within a 500-foot buffer around the site. Surveys shall 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.</p>
APM-BIO-15	<p><b>Dead or Injured Special-Status Wildlife.</b> If any dead or injured special-status wildlife and birds protected by the MBTA that are discovered at the Proposed Project during construction, the Project Sponsor will stop work in the immediate vicinity. The Project Sponsor will notify the CPUC, the on-call biologist, and the appropriate resource agency (USFWS and/or CDFW) before construction is allowed to resume.</p>

## 5.3 Potential Impacts

Potential project impacts on biological resources were evaluated against the CEQA significance criteria and are discussed in further detail in the following paragraphs. Table 1 outlines the impacted acreages of vegetation communities anticipated by the implementation of the Proposed Project.

The impact analysis includes both temporary and permanent impacts associated with Proposed Project construction. Permanent impacts associated with Proposed Project construction will include the following components:

- A new 300-megavar (Mvar) SVC facility and two new access driveways (20 feet by 95 feet), which will disturb approximately 6 acres;



- An underground 230 kV single-circuit electric transmission line which will be constructed under the existing Bell Bluff Truck Trail roadway (approximately 1 mile);
- A riser pole with an overhead interconnection transmission span between the underground transmission line and the Suncrest Substation (approximately 300 feet); and,
- Up to five underground splice vaults located within the curb line of Bell Bluff Truck Trail. Each vault will be approximately 30 feet long by 7 feet wide by 8 feet deep.

Temporary and short-term impacts associated with project construction will include the following components:

- Temporary work areas needed to facilitate installation of the underground transmission line and underground splice vaults; and,
- The construction footprint surrounding the permanent fenced SVC facility and staging area.

### **5.3.1 Impacts to Sensitive Species**

#### **5.3.1.1 SENSITIVE PLANTS**

Three special-status plants have high potential to occur in the Proposed Project: San Diego milk-vetch (CRPR 1B.2), felt-leaved monardella (CRPR 1B.2), and Moreno current (CRPR 1B.3). Six special-status plants have moderate potential to occur in the Proposed Project: Jacumba milk-vetch (CRPR 1B.2), Tecate tarplant (CRPR 1B.2), San Diego gumplant (CRPR 1B.2), Hall's monardella (CRPR 1B.3), Munz's sage (CRPR 2B.2), and Parry's tetradlea (CRPR 1B.2). Three special-status plant species have low potential to occur in the Proposed Project: long-spined spineflower (CRPR 1B.2), delicate clarkia (CRPR 1B.2), and chaparral nolana (CRPR 1B.2).

To date, no special-status plants have been observed within the Proposed Project during surveys conducted between February and June 2015. A CNPS listed 1B.2 plant population of felt-leaved monardella, a small herbaceous plant that blooms between June and August, has been previously recorded along Bell Bluff Truck Trail (adjacent to the Proposed Project). Additional surveys conducted in June 2015 observed a single population of approximately 25 felt-leaved monardella plants. However, due to access restrictions on SDG&E property, the botanists were unable to survey more than 10 feet from the Bell Bluff Truck Trail, and therefore unable to confirm the full extent of this particular population.

The underground transmission line will primarily be installed within the paved roadbed of Bell Bluff Truck Trail. Work areas outside the roadbed have been designed to avoid any populations of felt-leaved monardella to the maximum extent practicable. Therefore, no impacts to this or any other sensitive plants are anticipated.

If the design of the underground transmission line changes and the loss of a population/stand of felt-leaved monardella is unavoidable, seed will be collected for use during restoration of temporary impact areas. Restoration of this sensitive plant will occur within the Proposed Project if possible. Plant establishment may be feasible for felt-leaved monardella because monardellas are normally easily propagated from seeds and other perennial monardella species have been successfully restored when they are restored to their native parent soil and are carefully maintained in nurseries (Fiedler and Howald 1991; Schmidt 1980). To ensure successful propagation of the species, the following measures will be implemented:



- Seeds of the felt-leaved monardella will be collected from the project impact area during the appropriate developmental stage of the plants (June to August primarily) and broadcast in areas to be restored.
- Some of the seeds will be stored/germinated and grown for seed production in a nursery familiar with growing native plants, such as Rancho Santa Ana Botanical Garden.
- A Sensitive Plant Mitigation and Monitoring Plan will be developed to provide for the long-term protection of felt-leaved monardella populations established within the Proposed Project. The plan shall define procedures and provide guaranteed funding for seed collection, transplanting, and monitoring and achieving success criteria. Annual monitoring will occur for a minimum of 5 years.
- Contingency measures will be included in the plan to ensure plant establishment and success.

In addition, impacts to special-status plants newly discovered prior to or during construction will be avoided and minimized by the implementation of APM BIO-5. Plants can be damaged or destroyed as a result of vegetation removal or trimming activities before construction, by project vehicles traveling on access roads, by staging project vehicles and equipment in work areas and pull sites, and/or by drilling and pouring of foundations for new tubular steel poles. Such impacts will be reduced and avoided by the avoiding special-status plants, by identifying any during preconstruction sweeps and flagging and avoiding them (APM BIO-13), as overseen by the biological monitor during construction (APM BIO-1), and through worker education and training (APM BIO-0).

Special-status plants also can be indirectly affected by soil compaction and the spread of nonnative invasive species from project vehicle and equipment travel and staging. These impacts will be avoided and minimized through worker awareness of the plants' locations (APMs BIO-0, BIO-1, and BIO-13). In addition, impacts to root systems of oak trees will be avoided by prohibiting parking underneath such trees (APM BIO-2).

Applicant-proposed measures that benefit both common and special-status plants include minimization of impacts to vegetation (APM BIO-10) and revegetation of temporary impact areas (APM BIO-12).

### **5.3.1.2 SPECIAL-STATUS ANIMALS**

No special-status wildlife was recorded at the Proposed Project as a result of the directed surveys conducted in 2015. However, several special-status animals do have some potential to occur, and the red-diamond rattlesnake, a CSC, has been recorded close to the Proposed Project and has a high potential to occur. Two additional species have a high potential to occur at the Proposed Project: coast horned lizard and San Diego desert woodrat; both are CSCs. Six special-status animals have a moderate potential to occur: Hermes copper butterfly (federal candidate for ESA listing), orange-throated whiptail (CSC), Coronado Island skink (CSC), Coast patch-nosed snake (CSC), golden eagle when foraging (protected by BGEPA and State Fully Protected), and the Dulzura pocket mouse (CSC). Species with a low potential to occur at the Proposed Project include Swainson's hawk (State Endangered), pallid bat (CSC), northwestern San Diego pocket mouse (CSC), Townsend's big-eared bat (State Candidate and CSC), western mastiff bat (CSC), western red bat (CSC), pocketed free-tailed bat (CSC), and American badger (CSC).

Due to the lack of observations of special-status animals at the Proposed Project during surveys conducted in 2015, the limited number of special-status species that could occur, and the small footprint of the project in relation to local and global ranges and populations of these species, impacts to special-status animals are anticipated to be less than significant.



Permanent effects to these species, except for the bats, could include mortality from construction traffic, vegetation removal/clearing, and soil grading and contouring. These will be avoided through awareness and avoidance of the locations of special-status animals, should they occur (APMs BIO-0, BIO-1, BIO-13, BIO-5, and BIO-15). Avoiding these locations (APMs BIO-1, BIO-13, BIO-5, and BIO-14) will avoid impacts. In addition, vegetation removal will be minimized to further reduce the potential for impacts (APM BIO-10).

Temporary impacts could include harm or injury during construction resulting from vehicles, litter, wildlife feeding, domestic pets, entrapment in excavations, all of which will be avoided (APMs BIO-0, BIO-1, BIO-2, BIO-7, BIO-8, and BIO-15). Temporary effects also include ground disturbance and night lighting which may affect the species' daily activity patterns, which will be minimized by APM BIO-11. Fugitive dust could impact habitat quality; this will be minimized by APM BIO-12. Vegetation removal could provide increased opportunity for predation of special-status insects and small mammals; this will be minimized by APM BIO-10. No permanent effects are anticipated for bat species. Temporary effects include night lighting and vegetation removal which might affect foraging opportunities, these will be minimized by APMs BIO-5 and BIO-11.

Dulzura pocket mouse (a CSC) has moderate potential to occur in the Proposed Project. Permanent effects include loss of habitat, which will be reduced by minimization of disturbance areas (APMs BIO-3 and BIO-5), site restoration (APM BIO-10). The chances of mortality from construction activity will be minimized by APMs BIO-0, BIO-1, BIO-2, BIO-8, BIO-13, and BIO-15. The effects of night lighting, which could affect the species' daily activity patterns will be minimized by implementation of APM BIO-11.

### **5.3.1.3 COMMON BIRDS**

The Proposed Project region is known to support a variety of State or federally protected bird species and suitable habitat for many birds protected under the MBTA and California Fish and Game Code Section 3503. Golden eagle (protected by the Bald and Golden Eagle Protection Act, and Fully Protected by the State) may forage in the area, but is not expected to breed in the vicinity of the Proposed Project. Swainson's hawk (State Endangered) has a low potential to occur occasionally during migration, but the Proposed Project is outside the species' breeding and wintering ranges. The Proposed Project is anticipated to have impacts to nesting and breeding birds that are less than significant.

Golden eagles are known to occur in the region and have been observed foraging near the Proposed Project. These birds can have extremely large home ranges (i.e., over 160 square miles) and would be expected to prey on many of the small mammal species that occur in the vicinity of the Proposed Project. SWCA biologists did not identify golden eagles in the vicinity of the Proposed Project during surveys. The Proposed Project site does not support suitable nesting habitat for this species. Potential foraging habitat occurs throughout the Proposed Project, although foraging opportunities are limited at the substation expansion site and pole replacement area due to the proximity of development and human activity.

The project has the potential to permanently impact these species through loss of habitat. Permanent impacts will be decreased by minimizing vegetation disturbance during construction (APMs BIO-3 and BIO-5), and restoration (APM BIO-10). In addition, permanent electrocution and collision hazards that can be posed by transmission infrastructure will be minimized through design elements (APM BIO-9).

Temporary direct impacts to nesting birds include ground-disturbing activities associated with construction of the Proposed Project, including the dynamic reactive power support facility, construction of the tie-line, improvements of the access road, and other areas from vehicle traffic, increased noise levels from heavy equipment, increased human presence, nest destruction or removal during vegetation removal or trimming, and exposure to fugitive dust. Construction during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. Adult birds can leave the Proposed Project to avoid



direct harm, but active nests could be impacted. Impacts to nests will be avoided and minimized by APMs BIO-0, BIO-1, BIO-2, BIO-5, BIO-14, and BIO-15.

### **5.3.2 Impacts to Riparian Habitats and Sensitive Natural Communities**

To minimize environmental impacts, the proposed SVC has been sited in an area that was previously used as a staging area during construction of Sunrise Powerlink. The staging area, also called the Wilson Laydown Area, was highly disturbed and completely graded at that time. In addition to the recent grading of the Wilson Laydown Area, all of the lands south of the Bell Bluff Truck Trail, including the Wilson Laydown Area, have been subject to repeated disturbance dating back to at least 1994, prior to Sunrise Powerlink. Figure 2 depicts the extent of disturbance from a review of historic aerial photography.

The proposed SVC will impact up to 0.3 acre of previously-disturbed Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association that is adjacent to the WLA and immediately adjacent to, and south of, Bell Bluff Truck Trail which was widened and paved as part of Sunrise Powerlink. This association is classified as a sensitive natural community. However, as stated earlier, the area where impacts are planned has been subject to occasional disturbance (mowing and disking) since at least 1994 and the understory at this location is not fully developed and not typical of this associated, more closely matching the neighboring California Buckwheat Association. Additionally with regard to mitigation for impacts, the Sunrise Powerlink Final EIR/EIS states on page E.4.2-5:

*“Impacts to non-native vegetation, developed areas, and disturbed habitat would be adverse but less than significant (Class III), and no mitigation is required.” (CPUC 2008)*

As a result of this area’s repeated disturbance, impacts to this vegetation community within the northeast portion of the SVC site will be less than significant.

Two streams that are potentially subject to CDFW jurisdiction are present on either side of Bell Bluff Truck Trail with culverts located under the road where the transmission line will be installed. It is anticipated that the underground transmission line will be installed underneath these culverts, with the culverts left in place and shored. However, in the unlikely event that blasting is required at the culvert location, temporary culvert removal may occur. Based on preliminary geotechnical analysis, localized, low-energy blasting may be required for transmission line and splice vault excavations on less than 10% of the transmission line. If culverts need to be temporarily removed, work would not take place within 48 hours of a forecasted rain event of 0.5 inches or greater, temporary piping would be maintained onsite as a backup precaution to maintain any unexpected flows, and no work would take place in the potentially jurisdictional features on either side of the road. Based on the current design, the connectivity of the waters conveyed by the culverts will remain unchanged during implementation of the Proposed Project and impacts will be less than significant.

### **5.3.3 Impacts to Federal Wetlands and Waters**

The Proposed Project has been designed to completely avoid impacts to waterways and wetlands. There is one ephemeral stream that is likely USACE jurisdictional on the north side of Bell Bluff Truck Trail (Feature 3); the Proposed Project would avoid this area completely. Therefore, there will be no impact.

### **5.3.4 Impacts to Wildlife Movements and Migratory Corridors**

The Proposed Project is located adjacent to existing roads and structures and outside of any established migratory corridors. Terrestrial animals, such as mule deer and coyote, may use the Proposed Project for local migratory activity. Temporary disturbance of any local migratory activity may occur during project



construction as a result of increased vehicular traffic, noise, and human presence. Permanent disturbance of local migratory activity will be limited to occasional operation and maintenance of the Proposed Project. Maintenance of the SVC facility will not go beyond what is already occurring to operate and maintain the nearby existing SDG&E Suncrest Substation. Therefore, the project will not interfere substantially with the movement of any native resident wildlife species, nor impede the use of any wildlife nursery sites. The project will not include any in-water construction and, therefore, will not interfere with the movement of migratory fish. Therefore, impacts are anticipated to be less than significant.

### 5.3.5 **Conflicts with Local Policies or Ordinances**

The San Diego County General Plan provides several policies related to preservation of habitat and resource protection. Applicable policies are provided below.

- **COS-2.1, Protection, Restoration and Enhancement:** Protect and enhance natural wildlife habitat outside of preserves as development occurs according to the underlying land use designation. Limit the degradation of regionally important natural habitats within the Semi-Rural and Rural Lands regional categories, as well as within Village lands where appropriate.
- **COS-2.2, Habitat Protection through Site Design:** Require development to be sited in the least biologically sensitive areas and minimize the loss of natural habitat through site design.
- **COS-1.9, Invasive Species:** Require new development adjacent to biological preserves to use non-invasive plants in landscaping. Encourage the removal of invasive plants within preserves.
- **COS-3.1, Wetland Protection:** Require development to preserve existing natural wetland areas and associated transitional riparian and upland buffers and retain opportunities for enhancement.
- **COS-3.2, Minimize Impacts of Development:** Require development projects to:
  - 1) mitigate any unavoidable losses of wetlands, including its habitat functions and values; and,
  - 2) Protect wetlands, including vernal pools, from a variety of discharges and activities, such as dredging or adding fill material, exposure to pollutants such as nutrients, hydro-modification, land and vegetation clearing, and the introduction of invasive species.

Environmental factors have been considered and incorporated into the siting and design of the Proposed Project. To avoid new resource impacts, The Proposed Project has been co-located in areas that have been subject to prior disturbance to the extent possible. In addition, the size of the SVC facility and associated access roads have been minimized to minimize loss of natural habitat, which will also be promoted by the implementation of APM BIO-10. Following construction, any temporary work areas will be returned to pre-construction conditions and native seed mixes appropriate for the site-specific project area will be utilized to revegetate disturbed areas and minimize the potential for invasive species (APM BIO-11). Impacts to wetlands, streams, lakes, and riparian areas have been completely avoided by project design.

Overall, implementation of the Proposed Project is anticipated to have no conflict with local policies or ordinances relating to biological resources, and therefore no impacts are anticipated.

### 5.3.6 **Conflicts with an Approved Habitat Conservation Plan**

There are no adopted plans applicable to the Proposed Project. The Proposed Project is located within the San Diego County MSCP area, but the MSCP has not been implemented for eastern San Diego County;



however is in the planning stages. No special-status species were observed in the Project Area during 2015 surveys, including MSCP-covered species. In addition, APMs would further reduce impacts to wildlife and their habitats. Therefore, no conflicts with the MSCP are anticipated.

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## **Appendix A. Floral Compendium**







Table A-1. Plant Compendium

Common Name	Scientific Name
<b>Angiospermae – Flowering Plants</b>	
<b>Dicotyledones</b>	
<b>Adoxaceae – Muskroot Family</b>	
blue elderberry	<i>Sambucus nigra</i>
<b>Anacardiaceae – Sumac Family</b>	
laurel sumac	<i>Malosma laurina</i>
skunkbush	<i>Rhus aromatica</i>
sugar bush	<i>Rhus ovata</i>
western poison oak	<i>Toxicodendron diversilobum</i>
<b>Apiaceae – Carrot Family</b>	
southern umbelwort	<i>Tauschia arguta</i>
<b>Apocynaceae – Dogbane Family</b>	
milkweed	<i>Asclepias fascicularis</i>
Indian milkweed	<i>Asclepias eriocarpa</i>
<b>Asteraceae (Compositae) – Sunflower Family</b>	
common yarrow	<i>Achillea millefolium</i>
common Fiddleneck	<i>Amsinckia intermedia</i>
California sagebrush	<i>Artemisia californica</i>
tarragon	<i>Artemisia dracunculus</i>
mule fat	<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>
clustered tarplant	<i>Deinandra fasciculata</i>
daisy sp.	<i>Erigeron</i> sp.
golden yarrow	<i>Eriophyllum confertifolium</i> var. <i>confertiflorum</i>
California matchweed	<i>Gutierrezia californica</i>
telegraphweed	<i>Heterotheca grandiflora</i>
smooth cat's ear**(moderate)	<i>Hypochaeris glabra</i>
Menzies' goldenbush	<i>Isocoma menziesii</i>
California goldfields	<i>Lasthenia californica</i>
prickly lettuce*	<i>Lactuca serriola</i>
scale-broom	<i>Lepidospartum squamatum</i>
pineapple weed*	<i>Matricaria discoidea</i>
California everlasting	<i>Pseudognaphalium californicum</i>
common dandelion*	<i>Taraxacum officinale</i>
<b>Boraginaceae – Borage Family</b>	
fiddleneck	<i>Amsinckia</i> sp.
prickly cryptantha	<i>Cryptantha muricata</i>
popcorn flower	<i>Cryptantha</i> sp.



Table A-1. Plant Compendium

Common Name	Scientific Name
distant phacelia	<i>Phacelia distans</i>
<b>Caprifoliaceae – Honeysuckle Family</b>	
Southern honeysuckle	<i>Lonicera subspicata</i> var. <i>denudata</i>
<b>Convolvulaceae – Morning-Glory Family</b>	
dodder	<i>Cuscuta</i> sp.
<b>Cucurbitaceae – Gourd Family</b>	
wild cucumber	<i>Marah macrocarpus</i>
<b>Ericaceae – Heath Family</b>	
Bigberry manzanita	<i>Arctostaphylos glauca</i>
<b>Euphorbiaceae – Spurge Family</b>	
doveweed	<i>Eremocarpus setigerus</i>
<b>Fabaceae (Leguminosae) – Legume Family</b>	
deerweed	<i>Acmispon glaber</i> [ <i>Lotus scoparius</i> var. <i>scoparius</i> ]
lupine	<i>Lupinus</i> sp.
California burclover**(Limited)	<i>Medicago polymorpha</i>
annual yellow sweet clover*	<i>Melilotus indica</i>
rose clover*	<i>Trifolium hirtum</i>
<b>Facaceae – Oak / Beech Family</b>	
coast live oak	<i>Quercus agrifolia</i>
California scrub oak	<i>Quercus berberidifolia</i>
Muller's oak	<i>Quercus cornelius-mulleri</i>
Engelmann oak	<i>Quercus engelmannii</i>
<b>Geraniaceae – Geranium Family</b>	
red-stemmed filaree**(limited)	<i>Erodium cicutarium</i>
<b>Grossulariaceae – Gooseberry Family</b>	
currant	<i>Ribes</i> sp.
<b>Lamiaceae (Labiatae) – Mint Family</b>	
Felt-leaved monardella	<i>Monardella hypoleuca</i> ssp. <i>lanata</i>
white sage	<i>Salvia apiana</i>
Cleveland sage	<i>Salvia clevelandii</i>
chia	<i>Salvia columbariae</i>
black sage	<i>Salvia mellifera</i>
Danny's skullcap	<i>Scutellaria tuberosa</i>
mountain blue-curls	<i>Trichostema parishii</i>
<b>Montiaceae – Montia Family</b>	
Narrow-leaved miner's lettuce	<i>Claytonia parviflora</i> ssp. <i>parviflora</i>



Table A-1. Plant Compendium

Common Name	Scientific Name
<b>Myrsinaceae – Myrsine Family</b>	
scarlet pimpernel*	<i>Anagallis arenensis</i>
<b>Onagraceae – Evening Primrose Family</b>	
California sun cup	<i>Camissoniopsis bistorta</i>
fireweed	<i>Epilobium angustifolium</i>
<b>Orobanchaceae – Broomrape Family</b>	
bristly birds beak	<i>Cordylanthus rigidus</i> ssp. <i>Setigerus</i>
<b>Paeoniaceae – Peony Family</b>	
California peony	<i>Paeonia californica</i>
<b>Papaveraceae – Poppy Family</b>	
California poppy	<i>Eschscholzia californica</i>
<b>Plantaginaceae – Plantain Family</b>	
purple Chinese houses	<i>Collinsia heterophylla</i>
Climbing penstemon	<i>Keckiella cordifolia</i>
<b>Polemoniaceae – Phlox Family</b>	
holly leaved pincushion plant	<i>Navarretia atractyloides</i>
<b>Polygonaceae – Buckwheat Family</b>	
California buckwheat	<i>Eriogonum fasciculatum</i>
California dock	<i>Rumex californicus</i>
<b>Ranunculaceae – Buttercup Family</b>	
foothill larkspur	<i>Delphinium hesperium</i> ssp. <i>hesperium</i>
<b>Rhamnaceae – Buckthorn Family</b>	
buck brush	<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>
chaparral whitethorn	<i>Ceanothus leucodermis</i>
spiny redberry	<i>Rhamnus crocea</i>
<b>Rosaceae – Rose Family</b>	
chamise	<i>Adenostoma fasciculatum</i>
Birch leaf mountain mahogany	<i>Cercocarpus betuloides</i> var. <i>betuloides</i>
toyon / Christmas berry	<i>Heteromeles arbutifolia</i>
<b>Rubiaceae – Madder Family</b>	
three petal beardstraw	<i>Galium trifidum</i> var. <i>pacificum</i>
<b>Monocotyledones – Monocots</b>	
<b>Agavaceae – Century Plant Family</b>	
small flowered soap root	<i>Chlorogalum parviflorum</i>
our Lord's candle	<i>Hesperoyucca whipplei</i> [ <i>Yucca whipplei</i> ]



Table A-1. Plant Compendium

Common Name	Scientific Name
<b>Liliaceae – Lily Family</b>	
splendid mariposa lily	<i>Calochortus splendens</i>
<b>Poaceae [Gramineae] – Grass Family</b>	
slender oat**(moderate)	<i>Avena barbata</i>
soft chess**(limited)	<i>Bromus hordeaceus</i>
red brome**(high)	<i>Bromus madritensis</i> ssp. <i>rubens</i>
cheatgrass**(high)	<i>Bromus tectorum</i>
littleseed canary grass*	<i>Phalaris minor</i>
nodding needle grass	<i>Stipa cernua</i>
<b>Themidaceae – Brodiaea Family</b>	
wild hyacinth	<i>dichelostemma capitatum</i>

\*Introduced species

\*\* Cal-IPC inventoried plant (risk)



## **Appendix B. Faunal Compendium**







Table B-1. Wildlife Compendium

Common Name	Scientific Name
<b>Reptiles</b>	
<b>Phrynosomatidae</b>	
side-blotched lizard	<i>Uta stansburiana</i>
<b>Birds</b>	
<b>Odontophoridae</b>	
mountain quail	<i>Oreortyx pictus</i>
<b>Cathartidae</b>	
turkey vulture	<i>Cathartes aura</i>
<b>Accipitridae</b>	
red-tailed hawk	<i>Buteo jamaicensis</i>
<b>Columbidae</b>	
mourning dove	<i>Zenaidura macroura</i>
<b>Trochilidae</b>	
Anna's hummingbird	<i>Calypte anna</i>
Costa's hummingbird	<i>Calypte costae</i>
<b>Picidae</b>	
northern flicker	<i>Colaptes auratus</i>
<b>Tyrannidae</b>	
Say's phoebe	<i>Sayornis saya</i>
ash-throated flycatcher	<i>Myiarchus cinerascens</i>
western kingbird	<i>Tyrannus verticalis</i>
<b>Corvidae</b>	
western scrub-jay	<i>Aphelocoma californica</i>
common raven	<i>Corvus corax</i>
<b>Hirundinidae</b>	
cliff swallow	<i>Petrochelidon pyrrhonota</i>
<b>Paridae</b>	
oak titmouse	<i>Baeolophus inornatus</i>
<b>Aegithalidae</b>	
bushtit	<i>Psaltiriparus minimus</i>
<b>Troglodytidae</b>	
house wren	<i>Troglodytes aedon</i>
<b>Poliophtilidae</b>	
blue-gray gnatcatcher	<i>Poliophtila caerulea</i>
<b>Sylviidae</b>	
wrentit	<i>Chamaea fasciata</i>



Table B-1. Wildlife Compendium

Common Name	Scientific Name
<b>Turdidae</b>	
western bluebird	<i>Sialia mexicana</i>
<b>Mimidae</b>	
California thrasher	<i>Toxostoma redivivum</i>
<b>Sturnidae</b>	
European starling*	<i>Sturnus vulgaris</i>
<b>Ptilonotidae</b>	
Phainopepla	<i>Phainopepla nitens</i>
<b>Emberizidae</b>	
spotted towhee	<i>Pipilo maculatus</i>
black-chinned sparrow	<i>Spizella atrogularis</i>
lark sparrow	<i>Chondestes grammacus</i>
<b>Cardinalidae</b>	
black-headed grosbeak	<i>Pheucticus melanocephalus</i>
<b>Icteridae</b>	
red-winged blackbird	<i>Agelaius phoeniceus</i>
<b>Fringillidae</b>	
house finch	<i>Haemorhous mexicanus</i>
lesser goldfinch	<i>Spinus psaltria</i>
<b>Mammals</b>	
<b>Sciuridae</b>	
California ground squirrel	<i>Otospermophilus beecheyi</i>

\*Introduced species



## **Appendix C. Photo Documentation**









**PHOTO 1:**

View of Engelmann Oak-Coast Live Oak/ Poison Oak/ Grass Association (*Quercus engelmannii*-*Quercus agrifolia*/ *Toxicodendron diversilobum*/ Grass Association) at the Proposed Project.

Photo taken on March 26, 2015.



**PHOTO 2:**

View of Chamise Chaparral (*Adenostoma fasciculatum* Alliance) at the Proposed Project.

Photo taken on March 26, 2015.





**PHOTO 3:**

View of California Buckwheat Scrub (*Eriogonum fasciculatum* Association) at the Proposed Project.

Photo taken on March 27, 2015.



**PHOTO 4:**

View of Bigberry Manzanita – Chamise Chaparral Association (*Arctostaphylos glauca* – *Adenostoma fasciculatum* Association) at the Proposed Project.

Photo taken on March 26, 2015.





**PHOTO 5:**

View of Non-native Grassland at the Proposed Project.

Photo taken on March 27, 2015.



**PHOTO 6:**

View of Developed area.

Photo taken on March 26, 2015.





**PHOTO 7:**


View of a typical  
drainage ditch.

Photo taken on  
March 27, 2015.



**Appendix E:**  
**Cultural Resources Technical Report**





# SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT CULTURAL RESOURCES TECHNICAL REPORT

August 2015

## **SUBMITTED TO**

NextEra Energy Transmission, West LLC  
700 Universe Boulevard  
Juno Beach, Florida 33408

## **SUBMITTED BY**

SWCA Environmental Consultants  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019



**Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of archaeological sites that should not be disclosed to the general public or unauthorized persons.**

**Information regarding the location, character, or ownership of a cultural resource is exempt from the Freedom of Information Act pursuant to 16 United States Code (U.S.C.) 470w-3 (National Historic Preservation Act) and 16 U.S.C. Section 470(h) (Archaeological Resources Protections Act).**



**Suncrest Dynamic Reactive Power Support Project  
Cultural Resources Technical Report  
Alpine, San Diego County, California**

Prepared for

**NextEra Energy Resources, LLC**  
700 Universe Boulevard  
Juno Beach, Florida 33408  
Attn: Andy Flajole

Prepared by

Laura Hoffman, M.A., RPA,  
Steven Treffers, M.A.

Contact: Megan Peterson, Project Manager

**SWCA Environmental Consultants**  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019  
(650) 440-4160  
www.swca.com

U.S. Geological Survey 7.5-Minute Quadrangle: Viejas Mountain, California

SWCA Project No. 32001  
SWCA Cultural Resources Report No. 15-188

August 24, 2015

Keywords: CEQA; cultural resources survey; positive survey results; three isolated prehistoric artifacts; two isolated historical artifacts; six prehistoric archaeological sites; two built environment resources; ineligible; CA-SDI-19307; CA-SDI-20166; CA-SDI-20984; SUN-S-1004; SUN-S-1005; SUN-S-1012; SUN-BSO-1002/Bell Bluff Truck Trail; SUN-BSO-1011; Alpine; San Diego County; Viejas Mountain quadrangle; Section 34, Township 15 South, Range 3 East; Sections 3 and 4, Township 16 South, Range 3 East; San Bernardino Base and Meridian



## EXECUTIVE SUMMARY

**Purpose and Scope:** NextEra Energy Transmission West, LLC (NEET West) retained SWCA Environmental Consultants (SWCA) to conduct a cultural resources study that includes a cultural resource records search and literature review, Native American coordination, a cultural resource survey, and preparation of a cultural resources technical report in support of the proposed Suncrest Dynamic Reactive Power (Static Var Compensator [SVC]) Support Project (Proposed Project) in an unincorporated area of San Diego County, California. This study is intended to identify and describe cultural resources that could be affected by ground-disturbing activities associated with the Proposed Project. This study was completed in compliance with and in satisfaction of the California Environmental Quality Act (CEQA). California Public Resources Code (PRC) Section 5024.1, California Code of Regulations (CCR) Title 14, Section 15064.5 of the State CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were also used as the basic guidelines for the cultural resources study (Governor's Office of Planning and Research 1998).

The Proposed Project is located in an unincorporated area of San Diego County, California, approximately 29 miles east of San Diego and 3.36 miles southeast of the community of Alpine. The Proposed Project consists of the SVC location, underground electrical transmission line (SVC tie-line), riser pole, and a 300-foot-long overhead transmission span connecting the SVC tie-line to the Suncrest Substation. Construction of the SVC will occur on an approximately 6-acre, privately owned parcel comprising the SVC facility, temporary laydown yard, stormwater drainage and conveyance system, and associated site improvements. Once complete, the SVC will be contained within a fenced area of up to approximately 112,000 square feet (2.58 acres). The approximately 1-mile-long 230-kilovolt (kV) SVC tie-line will be located on two privately owned parcels, one of which is owned by San Diego Gas and Electric (SDG&E). At the terminus of the SVC tie-line, a riser pole will connect an approximately 300-foot-long overhead span into the existing Suncrest Substation's 230 kV bus. Because the cultural resources study was conducted prior to finalization of project plans, SWCA surveyed a larger "Cultural Resources Survey Area" comprising approximately 65.2 acres that consisted of all land under consideration for the Proposed Project at the time of the survey; the 12.21-acre Proposed Project Area, which includes the entire Proposed Project Footprint, including temporary and permanent disturbance areas, is located entirely within the Cultural Resources Survey Area. This report documents the results of these efforts.

**Dates of Investigation:** SWCA requested a California Historical Resources Information System (CHRIS) records search of the Records Search Area, consisting of the Proposed Project Area plus approximately a 1-mile buffer, on February 13, 2015, from the South Coastal Information Center (SCIC), located at San Diego State University; SCIC provided the results to SWCA on February 18, 2015. On March 16, 2015, SWCA requested a search of the Sacred Lands Files (SLF) from the Native American Heritage Commission (NAHC) and received a response letter by fax on April 20, 2015. SWCA requested a supplemental SLF search from the NAHC on July 1, 2015, that covered an expanded area of interest in case of future changes to the Proposed Project, and received a response letter by email on August 18, 2015. NEET West initiated coordination with Native American groups on June 22, 2015. As of August 21, 2015, NEET West has received two responses—the first requesting a site visit and a copy of the cultural resources survey report when it is publicly available, and the second requesting to review the cultural resources technical report and recommending the Viejas Band of Kumeyaay Indians provide Native American monitoring for the Proposed Project. SWCA archaeologists conducted an intensive pedestrian survey of the Proposed Project Area on five occasions between February 24 and August 13, 2015. This report was completed in August 2015.

**Summary of Findings:** The SCIC records search identified 21 previously conducted cultural resources studies within the Records Search Area (approximately a 1-mile radius around the Proposed Project Area), five of which occurred within the Proposed Project Area. The SCIC records search also identified



21 previously recorded cultural resources within the Records Search Area. Of these, three prehistoric archaeological sites (CA-SDI-20166/P-37-031744, CA-SDI-19307/P-37-030375, and CA-SDI-20984/P-37-033363), all bedrock milling stations, are located in the Cultural Resources Survey Area. Archaeological site CA-SDI-20166 is located within the Proposed Project Area. SWCA revisited and updated all three previously recorded sites during the cultural resources survey. In addition, SWCA identified and recorded three prehistoric archaeological sites, two historic built environment resources, three prehistoric isolated artifacts, and two historic isolated artifacts within the Cultural Resources Survey Area. Of these, archaeological site SUN-S-1012, a prehistoric lithic scatter, and built environment SUN-BSO-1002, the historic Bell Bluff Truck Trail, are located in the Proposed Project Area.

**Investigation Constraints:** Most of the Cultural Resources Survey Area is covered in dense vegetation, and ground visibility is variable though generally very poor, ranging from less than 10 percent in undisturbed, highly vegetated areas to over 70 percent in disturbed areas that have been cleared of brush. However, visibility within the Proposed Project Area is generally good to excellent (over 70 percent), and no areas of poor visibility were located within the Proposed Project Area.

**Conclusions:** One previously recorded prehistoric archaeological site, CA-SDI-20166, and one newly identified prehistoric archaeological site, SUN-S-1012, are located within the Proposed Project Area. Site CA-SDI-20166 was previously found ineligible for listing on the California Register of Historical Resources (CRHR) by the California Public Utilities Commission (CPUC) and the Bureau of Land Management (Kyle and Williams 2013); SWCA finds the site remains ineligible and no further cultural resources work is recommended for this resource. SWCA finds site SUN-S-1012 ineligible for listing on the CRHR and no further cultural resources work is recommended for this resource. One newly identified built environment resource, SUN-BSO-1002, is located within the Proposed Project Area; SWCA finds SUN-BSO-1002 ineligible for listing on the CRHR and no further cultural resources work is recommended for this resource.

Archival research indicates that there is a moderate to high potential to encounter prehistoric resources in the Cultural Resources Survey Area, and ground visibility during the pedestrian survey was very poor in portions of the Cultural Resources Survey Area. However, visibility within the Proposed Project Area is generally good to excellent, and nearly all sediments within the Proposed Project Area have been highly disturbed from construction activities associated with the Sunrise Powerlink, including road construction, the use of the proposed SVC site as a materials storage and laydown area (Wilson Laydown Area), and habitat restoration efforts. Based on survey results and the highly disturbed context of sediments within the Proposed Project Area, it is unlikely that previously unidentified cultural resources, including intact buried archaeological deposits, occur within the Proposed Project Area.

The following applicant-proposed measures have been developed to ensure that significant impacts to cultural resources are avoided or reduced to less-than-significant during Proposed Project implementation: retain a qualified principal investigator to carry out all applicant-proposed measures related to archaeological and historical resources; conduct periodic spot-checking of construction activities by a qualified archaeological monitor; stop work within a 15-meter (m; 50-foot) radius if unanticipated cultural deposits or human remains are discovered and treat newly identified resources appropriately; and comply with existing regulations. The duration and timing of the monitoring shall be determined by the principal investigator in consultation with the CPUC. If, in consultation with the CPUC, the principal investigator determines that monitoring is no longer warranted, he or she may recommend that monitoring cease entirely. In addition, if, in consultation with the CPUC, the principal investigator determines that full-time monitoring is required, he or she may recommend continued monitoring of ground-disturbing activities.

**Disposition of Data:** The final cultural resources survey report and any subsequent related reports will be filed with NEET West, the CPUC, the SCIC, and SWCA's Half Moon Bay, California, office. All field



notes, photographs, and records related to the current study are on file at the SWCA Half Moon Bay office.



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## Appendices

Appendix A. Confidential Cultural Resources Survey Results Map
Appendix B. South Coastal Information Center Records Search Results Letter
Appendix C. Native American Coordination Documentation
Appendix D. Confidential California Department of Parks and Recreation 523 Series Forms



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# 1 INTRODUCTION

NextEra Energy Transmission West, LLC (NEET West) retained SWCA Environmental Consultants (SWCA) to conduct a cultural resources study that includes a cultural resource records search and literature review, Native American coordination, a cultural resource survey, and preparation of a cultural resources technical report in support of the Suncrest Dynamic Reactive Power (Static Var Compensator [SVC]) Support Project (Proposed Project) in an unincorporated area of San Diego County, California (Figures 1 and 2). The Proposed Project Area measures approximately 12.21 acres and consists of an approximately 6-acre SVC location on private land, which comprises the SVC facility, temporary laydown yard, and stormwater drainage and conveyance system; a 2.56-acre temporary staging area; plus approximately 3.6 acres located on both private and San Diego Gas and Electric (SDG&E) land consisting of the remaining project components, including the 1-mile 230-kilovolt (kV) SVC-Suncrest Substation single-circuit underground electrical transmission line (SVC tie-line), riser pole, and 300-foot-long overhead span that will connect into the existing Suncrest Substation.

Because the cultural resources study was conducted prior to finalization of project plans, SWCA surveyed a larger Cultural Resources Survey Area comprising approximately 65.2 acres, herein called the “Cultural Resources Survey Area” or “Survey Area,” that consisted of all land under consideration for the Proposed Project at the time of the survey; the 12.21-acre Proposed Project Area is included in the Survey Area (Figures 3 and 4).

SWCA refers to several different areas associated with the Proposed Project, as defined below and shown on Figure 3:

- **Proposed Project Area:** An approximately 12.21-acre area comprising the entire Proposed Project Footprint, including temporary and permanent disturbance areas.
- **Cultural Resources Survey Area:** An approximately 65.2-acre area that was surveyed for cultural resources and encompasses the entire Proposed Project Area.
- **Records Search Area:** An approximately 1-mile radius around the Proposed Project Area for which a California Historical Resources Information System (CHRIS) records search was conducted.

This study was completed in compliance with and in satisfaction of the California Environmental Quality Act (CEQA). California Public Resources Code (PRC) Section 5024.1, California Code of Regulations (CCR) Title 14, Section 15064.5 of the State CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were also used as the basic guidelines for the cultural resources study (Governor’s Office of Planning and Research 1998).

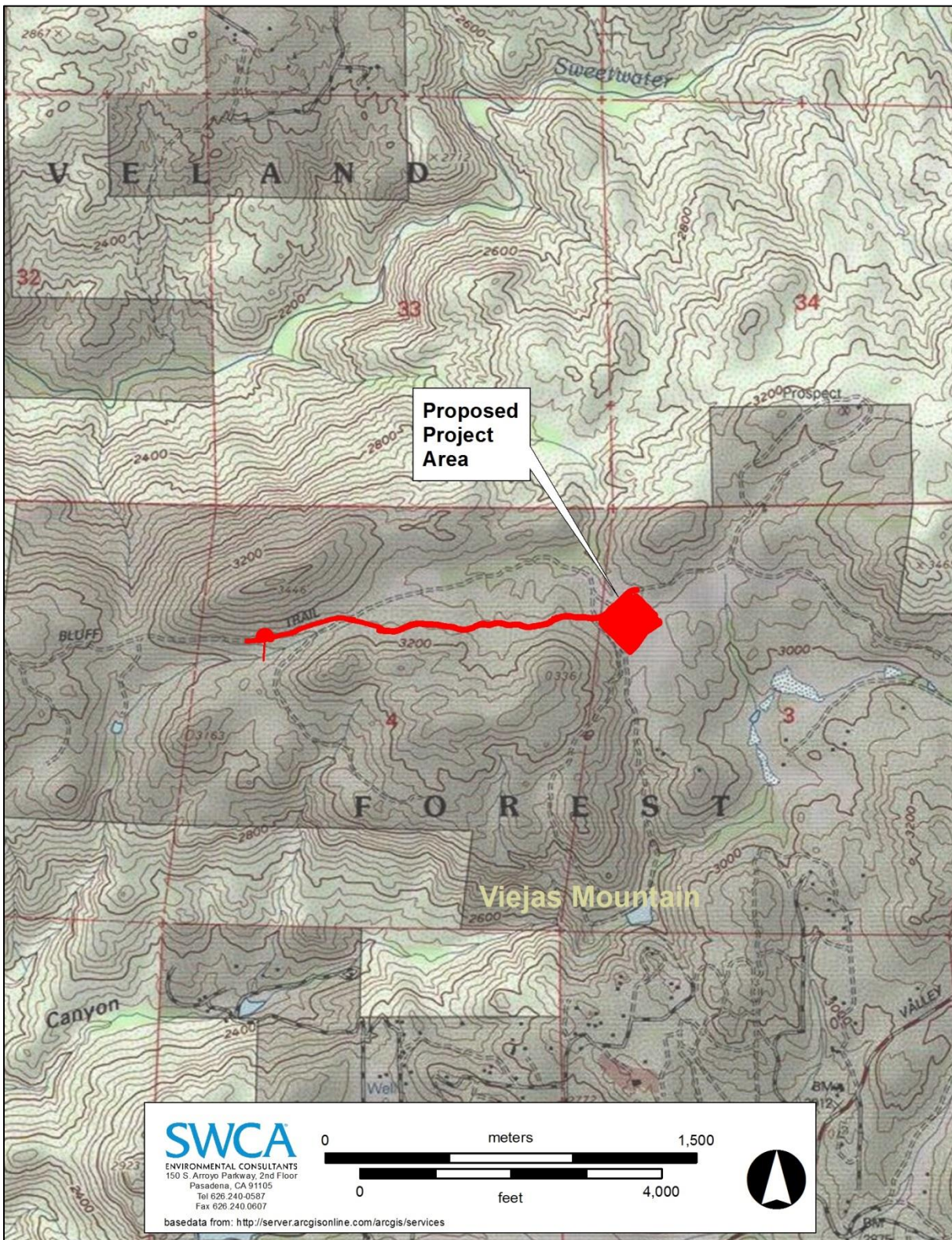
The format used in this report follows *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (California Office of Historic Preservation [OHP] 1990), and includes four appendices: Confidential Cultural Resources Survey Results Map (Appendix A), the South Coastal Information Center (SCIC) Records Search Results Letter (Appendix B), Native American Coordination Documentation (Appendix C), and California Department of Parks and Recreation (DPR) 523 Series Forms (Appendix D). Cultural Resource Project Manager Laura Hoffman, M.A., Registered Professional Archaeologist (RPA), managed the study, conducted the field survey, prepared all the figures, and coauthored the report. Architectural Historian Steven Treffers, M.A., coauthored the report. Principal Investigator Heather Gibson, Ph.D., RPA, reviewed this report for quality assurance and quality control. Principal Investigator John Dietler, Ph.D., RPA, conducted the field survey and provided quality assurance and quality control. Archaeologists Aaron Elzinga, M.A., RPA; Rebekka Knierim, B.A.; and Erica Nicolay, B.A., conducted the field survey. Technical Editor Jaimie Jones edited the report.



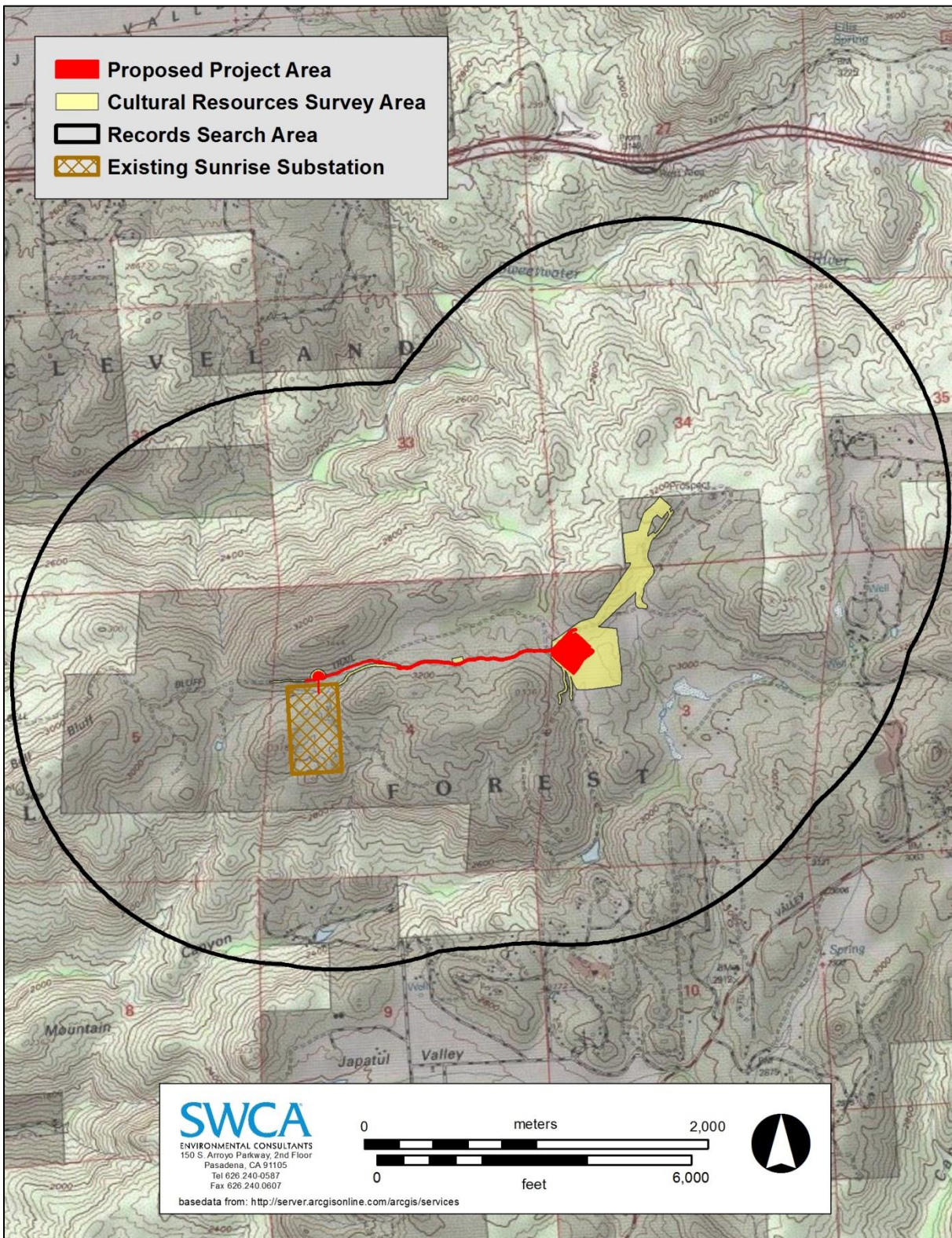
### Figure 1. Project Vicinity Map



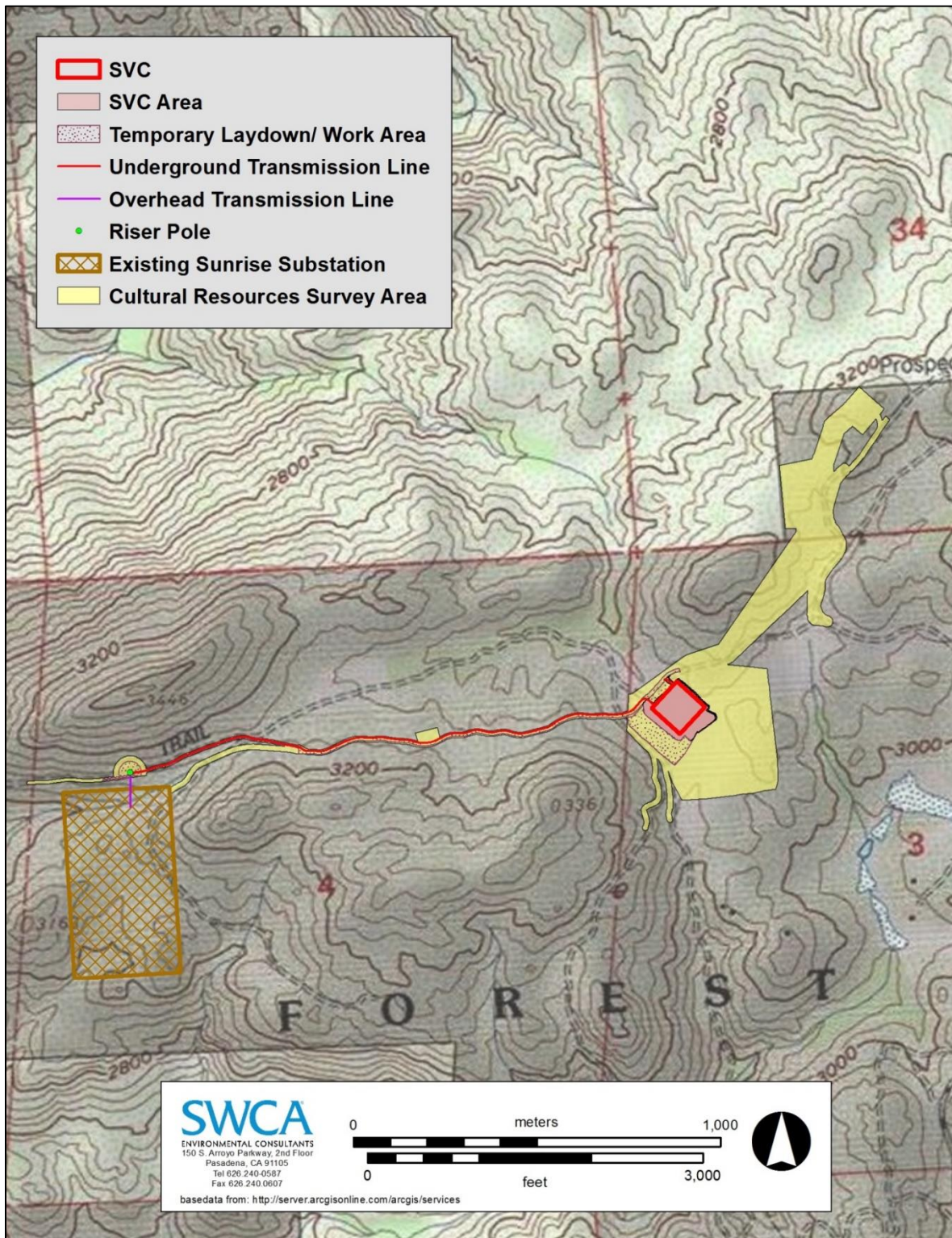


**Figure 2.** Project Location Map



**Figure 3.** Proposed Project Area, Cultural Resources Survey Area, and Records Search Area



**Figure 4.** Major Proposed Project Components and Cultural Resources Survey Area



## 2 PROJECT DESCRIPTION

### 2.1 Project Location

The Proposed Project is located in an unincorporated area of San Diego County approximately 29 miles east of San Diego and 3.36 miles southeast of the community of Alpine (see Figure 1). Interstate 8 is approximately 1.75 miles to the north, and California Highway 79/Japatul Valley Road is approximately 1.66 miles to the east. The SDG&E 500/230 kV Suncrest Substation (Suncrest Substation), constructed ca. 2012 as part of the SDG&E Sunrise Powerlink Transmission Project (Sunrise Powerlink), is located at the western terminus of the Proposed Project Area. Specifically, the Proposed Project Area is in Section 34, Township 15 South, Range 3 East, and Sections 3 and 4, Township 16 South, Range 3 East, San Bernardino Base and Meridian, as shown on the Viejas Mountain, California, U.S. Geological Survey (USGS) 7.5-minute quadrangle (see Figure 2).

### 2.2 Proposed Project Work

The Proposed Project has two primary components, the SVC and an approximately 1-mile-long 230 kV single-circuit underground transmission line connecting the SVC to the existing Suncrest Substation, which is owned and operated by SDG&E. An approximately 300-foot-long overhead span will connect to the existing Suncrest Substation's 230-kV bus.

In addition to the two primary components, the Proposed Project will also include the following:

- Construction of two new access drives to facilitate construction, operation, and maintenance of the SVC;
- installation of fiber optic cable within the same underground duct bank as the 230 kV cable to provide communications for line relaying, Supervisory Control and Data Acquisition (SCADA), and other devices as required;
- installation of up to five splice vaults to facilitate installation of the new underground cable and operation and maintenance of the transmission line; and
- installation of a 12 kV underground electrical distribution feed to the SVC.

Construction of the SVC will occur on an approximately 6-acre, privately owned parcel comprising the SVC facility, temporary laydown yard, stormwater drainage and conveyance system, and associated site improvements. Once complete, the SVC will be contained within a fenced area of up to approximately 112,000 square feet (2.58 acres). The approximately 1-mile-long, 230 kV SVC tie-line will be located on two privately owned parcels, one of which is owned by SDG&E. The proposed SVC will be constructed immediately south of Bell Bluff Truck Trail (an existing paved private road that is approximately 30 feet wide curb-to-curb near the SVC site, and 12 feet wide curb-to-curb closer to the Suncrest Substation), in an area that was previously used as a materials storage and laydown area for the Sunrise Powerlink. The proposed underground transmission line will exit the SVC on the north side and then turn westward along the north side of Bell Bluff Truck Trail for approximately 1 mile to a point where the transmission line will transition to a riser pole structure. The riser pole structure will serve as the change of ownership pole between NEET West and SDG&E. SDG&E will then string the conductor overhead with a single, approximately 300-foot-long overhead span to enter the Suncrest Substation and make the interconnection.

With the exception of the riser pole structure and some temporary work areas (to facilitate installation of the vault structures), the majority of the proposed underground transmission line will be located within the paved roadbed of Bell Bluff Truck Trail. Duct bank installation and equipment and material staging



will be limited to either the north or south side of the road centerline, depending on the location of other utilities in the roadway, to maintain an unobstructed single lane of travel on the 30-foot-wide road section so as not to impede access to Suncrest Substation. Up to five splice vaults will be installed underground along the transmission line alignment approximately every 900 feet to facilitate installation of the underground cable and operation as well as maintenance of the transmission line following construction. Blasting may occur during excavation for approximately 15 to 20 percent of the proposed underground transmission line and SVC. Blasting will be limited to areas where standard excavation methods are not feasible, such as within bedrock, and will occur after other sediments have been mechanically removed with standard excavation methods. In addition, blasting will be minimized to localize disturbance. Access to the proposed SVC area will be immediately off Bell Bluff Truck Trail via two new approximately 20-foot-wide by 95-foot-long access drives. The roadway aprons of these access drives will be paved while the remainder of the access drives will be graveled.

Construction of the SVC (e.g., limit of grading and associated site improvements based on current information) will occupy a total area of approximately 261,360 square feet (6.00 acres). The SVC will be contained within a fenced area of up to approximately 112,000 square feet (2.58 acres). An approximately 12-foot-wide permanent easement will be obtained from SDG&E and the private landowner to operate and maintain the underground transmission line on their respective properties. New temporary disturbance associated with the underground transmission line will be approximately 0.48 acre. The remaining 3.13-acre temporary work area will be within the paved portion of Bell Bluff Truck Trail. Permanent disturbance totals 0.01 acre as the majority of the underground line will be installed within the existing roadway.

Construction of the Proposed Project will follow a typical sequence beginning with pre-construction surveys and survey staking; then site preparation and grading for the SVC pad, transmission structure work areas, and access road construction; followed by installation of SVC structures, transmission structure foundations, pole installation, and laying of conductor; and, lastly, installing and testing of electrical equipment, energization, and site restoration. Site preparation will involve clearing, grubbing, and grading of the SVC footprint, transmission structure work areas, and access roads, as well as installing security fencing. Underground equipment, if necessary, will be installed in trenches, and backfilled with suitable material (e.g., excavated soil or clean fill). SVC equipment will be installed on concrete foundations. After clearing and grading, transmission line and SVC construction activities will occur simultaneously. Construction is targeted to start September 1, 2016, and is expected to be complete March 11, 2017, at a total of approximately 6.5 months from initial site disturbance until the SVC is ready for testing. Testing and commissioning of the Proposed Project will take approximately 2.5 months between March 11, 2017, and May 30, 2017, at which point the SVC will be fully operational and ready for energization. Restoration and cleanup will take another 2 months following energization.

## **3 REGULATORY FRAMEWORK**

### **3.1 Federal**

#### **3.1.1 *National Historic Preservation Act of 1966***

The Proposed Project does not have a federal nexus and, therefore, compliance with reference to the NHPA and other federal laws is provided here for informational purposes only. Projects that involve federal funding or permitting (i.e., have a federal nexus) must comply with the provisions of the National Historic Preservation Act of 1966 (NHPA), as amended (16 United States Code [U.S.C.] 470f). Cultural resources are considered during federal undertakings chiefly under Section 106 of the NHPA through one of its implementing regulations, 36 Code of Federal Regulations (CFR) 800 (Protection of Historic Properties), as well as the National Environmental Policy Act (NEPA). Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of the NHPA.



Other relevant federal laws include the Archaeological Data Preservation Act of 1974, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act of 1979, and Native American Graves Protection and Repatriation Act of 1989.

Section 106 requires federal agencies to take into account the effects of their undertakings on any district, site, building, structure, or object that is included in or eligible for the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (36 CFR 800.1). Under Section 106, cultural resources must be identified and evaluated; effects to historic properties are reduced to acceptable levels through mitigation measures or agreements among consulting and interested parties. Historic properties are those resources listed in or are eligible for the NRHP per the criteria listed below (36 CFR 60.4; Advisory Council on Historic Preservation 2000).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting these criteria, a property must retain historic integrity, which is defined in *National Register Bulletin 15* as the “ability of a property to convey its significance” (National Park Service [NPS] 1990). In order to assess integrity, the NPS recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, which are defined in the following manner in National Register Bulletin 15:

1. **Location:** the place where the historic property was constructed or the place where the historic event occurred;
2. **Design:** the combination of elements that create the form, plan, space, structure, and style of a property;
3. **Setting:** the physical environment of a historic property;
4. **Materials:** the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
5. **Workmanship:** the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
6. **Feeling:** a property’s expression of the aesthetic or historic sense of a particular period of time; and
7. **Association:** the direct link between an important historic event or person and a historic property.



Impacts of an undertaking that affect contributing elements of a historic property are considered a significant effect on the environment. Under 36 CFR 800.5(a)(2), adverse effects on historic properties include, but are not limited to:

- (i) Physical destruction of or damage to all or part of the property;
- (ii) Alteration of a property;
- (iii) Removal of the property from its historic location;
- (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- (vi) Neglect of a property which causes its deterioration;
- (vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

### **3.1.2 Cleveland National Forest**

The *Cleveland National Forest (CNF) Land Management Plan* includes goals and objectives regarding cultural resources, including Native American traditional use of resources. The Plan discusses the importance of balancing the protection of cultural resources and Native American concerns with managing the CNF. The CNF aims to promote conservation education as well as provide heritage site protection, and to maintain the national forest in a condition so that Native Americans can exercise and retain traditional connections to the land and to foster both traditional and contemporary cultural uses of the national forests.

## **3.2 State**

The policies of the NHPA are implemented at the state level by the California Office of Historic Preservation (OHP), a division of the DPR. The OHP is also tasked with carrying out the duties described in the California Public Resources Code and maintaining the California Historic Resources Inventory and California Register of Historical Resources (CRHR). The State-level regulatory framework also includes CEQA, which requires the identification and mitigation of substantial adverse impacts that may affect the significance of eligible historical and archaeological resources.

### **3.2.1 California Environmental Quality Act**

CEQA requires a lead agency to analyze whether historic and/or archaeological resources may be adversely impacted by a proposed project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (California PRC Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the proposed project involves cultural resources; second, if cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.



### 3.2.1.1 HISTORICAL RESOURCES

According to State CEQA Guidelines, Section 15064.5, for the purposes of CEQA, historical resources are:

- A resource listed in, or formally determined eligible for listing in, the CRHR (PRC Section 5024.1; 14 CCR, Section 4850 et seq.);
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significance in a historic resources survey meeting the requirements of PRC Section 5024.1(g); and,
- Any building, structure, object, site, or district that the lead agency determines eligible for national, state, or local landmark listing; generally, a resource shall be considered by the lead agency to be historically significant (and therefore a historic resource under CEQA) if the resource meets the criteria for listing on the CRHR (as defined in PRC 5024.1; 14 CCR 4852).

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity (as defined in previous section) does not meet NRHP criteria may still be eligible for listing in the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude the lead agency from determining that the resource may be an historical resource (PRC Section 5024.1). Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (State CEQA Guidelines Section 15064.5(b)).

#### **Substantial Adverse Change and Indirect Impacts to Historical Resources**

The State CEQA Guidelines specify that “substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (State CEQA Guidelines Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes “those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion” or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to State CEQA Guidelines Section 15126.2, the “direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects.”

Pursuant to the State CEQA Guidelines (Section 15378), study of a project under CEQA requires consideration of “the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.” The State CEQA Guidelines (Section 15064d) further define direct and indirect impacts as follows:

1. A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project.
2. An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.



3. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

### **3.2.1.2 ARCHAEOLOGICAL RESOURCES**

Archaeological resources can be historical resources as defined above; in addition, unique archaeological resources must also be considered by a lead agency under the State CEQA Guidelines. PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it 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; or,
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a proposed project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a], [b], and [c]). CEQA notes that if an archaeological resource is neither a unique archaeological resource nor an historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment (State CEQA Guidelines Section 15064.5(c)(4)).

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code Section 7050.5. More specifically, remains suspected to be Native American are treated under CEQA in CCR Section 15064.5, which cites language found in PRC Section 5097.98 that illustrates the process to be followed in the event that remains are discovered. Further, if human remains are discovered during the construction of the Proposed Project, no further disturbance to the site shall occur, and the San Diego County Coroner must be notified (PRC Sections 15064.5 and 5097.98). If the County Coroner determines the remains to be Native American, the coroner shall notify the Native American Heritage Commission (NAHC) within 48 hours. The NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) of the deceased, and the MLD may then make recommendations as to the disposition of the remains.

### **3.2.1.3 ASSEMBLY BILL 52**

This study complies with CEQA, including Assembly Bill 52 of 2014 (AB 52), which amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

### **Consultation with Native Americans**

AB 52 formalizes the lead agency – tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. As the lead agency, the CPUC Energy Division is required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.



## Tribal Cultural Resources

Section 4 of AB 52 adds Sections 21074 (a) and (b) to the PRC, which address tribal cultural resources and cultural landscapes. Section 21074 (a) defines tribal cultural resources as one of the following:

- (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
  - (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
- (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1 (a)(9) of AB 52 establishes that “a substantial adverse change to a tribal cultural resource has a significant effect on the environment.” Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures “capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource.” Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

### 3.2.1.4 CALIFORNIA REGISTER OF HISTORICAL RESOURCES

Created in 1992 and implemented in 1998, the CRHR is “an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Sections 21083.2 and 21084.1). PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR.

According to PRC Section 5024.1(c), a resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it 1) retains “substantial integrity,” and 2) meets one or more of the following criteria, which are modeled on NRHP criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
2. It is associated with the lives of persons important in our past;



3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4. It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity does not meet NRHP criteria may still be eligible for listing in the CRHR.

### **3.3 Local**

Because the CPUC regulates and authorizes the construction of investor-owned public utility facilities, it has exclusive jurisdiction over the siting and design of the Proposed Project. As such, projects, including the Proposed Project, are exempt from local land use and zoning regulations and discretionary permitting. However, Section III.C of CPUC General Order 131-D (planning and construction of facilities for the generation of electricity and certain electric transmission facilities) requires “the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any non-discretionary local permits.” As such, NEET West has taken into consideration all State and local land use plans and policies, as well as local land use priorities and concerns as they relate to cultural resources. Although County and other local policies are provided below, they are provided for disclosure purposes only.

#### **3.3.1 County of San Diego Municipal Code**

The County Municipal Code, Section 396.7 (San Diego County Local Register of Historical Resources) provides guidelines for the application, enforcement, and public awareness of the County’s historic preservation regulations, as enforced by the County Planning and Development Services department. The purpose of the historic preservation ordinance is stated as follows: “The Local Register is an authoritative listing and guide to be used by local agencies, private groups, and citizens in identifying historical resources within the County. In addition, the listing shall also be used as a management tool for planning, and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (Subsection B).

Subsection E(2) of Section 396.7 of the Municipal Code provides the following criteria for the designation of historical resources in San Diego County:

- A. Is associated with events that have made a significant contribution to the broad patterns of San Diego County’s history and cultural heritage;
- B. Is associated with the lives of persons important to the history of San Diego County or its communities;
- C. Embodies the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
- D. Has yielded, or may be likely to yield, information important in prehistory or history.

#### **3.3.2 County of San Diego General Plan**

Chapter 5, Conservation and Open Space Element, of the *San Diego County General Plan* (County of San Diego 2011a) includes goals and policies regarding cultural resources to ensure their protection and



preservation. The goals and policies are intended to supplement NEPA, the NHPA, and CEQA, and are listed below.

- **Goal COS-7, Protection and Preservation of Archaeological Resources:** Protection and preservation of the County's important archeological resources for their cultural importance to local communities, as well as their research and educational potential.
  - **Policy COS-7.1, Archaeological Protection:** Preserve important archaeological resources from loss or destruction and require development to include appropriate mitigation to protect the quality and integrity of these resources.
  - **Policy COS-7.2, Open Space Easements:** Require development to avoid archeological resources whenever possible. If complete avoidance is not possible, require development to fully mitigate impacts to archaeological resources.
  - **Policy COS-7.3, Archaeological Collections:** Require the appropriate treatment and preservation of archaeological collections in a culturally appropriate manner.
  - **Policy COS-7.4, Consultation with Affected Communities:** Require consultation with affected communities, including local tribes, to determine the appropriate treatment of cultural resources.
  - **Policy COS-7.5, Treatment of Human Remains:** Require human remains be treated with the utmost dignity and respect, and that the disposition and handling of human remains will be done in consultation with the MLD and under the requirements of federal, State, and County regulations.
  - **Policy COS-7.6, Cultural Resource Data Management:** Coordinate with public agencies, tribes, and institutions to build and maintain a central database that includes a notation whether collections from each site are being curated, and, if so, where, along with the nature and location of cultural resources throughout San Diego County.
- **Goal COS-8, Protection and Conservation of the Historical Built Environment:** Protection, conservation, use, and enjoyment of the County's important historic resources.
  - **Policy COS-8.1, Preservation and Adaptive Reuse:** Encourage the preservation and/or adaptive reuse of historic sites, structures, and landscapes as a means of protecting important historic resources as part of the discretionary application process, and encourage the preservation of historic structures identified during the ministerial application process.
  - **Policy COS-8.2, Education and Interpretation:** Encourage and promote the development of educational and interpretive programs that focus on the rich multicultural heritage of San Diego County.

### 3.3.2.1 ALPINE COMMUNITY PLAN

The *Alpine Community Plan* was developed as a part of and in conjunction with the *San Diego County General Plan* to provide guidance for decisions regarding land use in the Alpine Planning Area. Chapter 9, Conservation, addresses cultural resources—Goal 1 is to “promote the well-planned management of all valuable resources, natural and man-made, and prevent the destruction and wasteful exploitation of natural resources, where feasible.” The chapter discusses Resource Conservation Areas (RCAs), localities



identified as worthy of special efforts to protect resources, and it includes policies and recommendations to help meet conservation goals; those listed below pertain to cultural resources.

## Conservation

- **Policies and Recommendations 1:** Encourage the protection and conservation of unique resources in the Alpine Planning Area.
- **Policies and Recommendations 2:** Important plant, animal, mineral, water, cultural and aesthetic resources in the *Alpine Community Plan* area shall be protected through utilization of the Resource Conservation Area designations and appropriate land usage.
- **Policies and Recommendations 3:** Agencies regulating environmental reports and analyses required by CEQA may require supplemental studies for projects with land located in RCAs, if necessary.
- **Policies and Recommendations 4:** Promote conservation education in the community and schools.
- **Policies and Recommendations 26:** Support the preparation of an adequate inventory of significant historical landmarks in Alpine.
- **Policies and Recommendations 27:** Encourage cooperation with other jurisdictions for trading and otherwise negotiating land transfers to consolidate holdings for historical preservation.

### 3.3.2.2 CENTRAL MOUNTAIN SUBREGIONAL PLAN

The *Central Mountain Subregional Plan* (County of San Diego 2011c) was developed as a part of and in conjunction with the San Diego County General Plan to provide guidance for decisions regarding land use in the Central Mountain Area. The Proposed Project Area is west of the boundary of the Central Mountain Subregional Plan, but within several hundred feet of that Plan's coverage area. Therefore, given the Proposed Project site's proximity to the area formally addressed by the Plan, the Plan's policies are considered in this analysis. Chapter 8, Conservation, is the primary section that addresses cultural resources and discusses RCAs. The goals and policies specific to cultural resources are listed below.

## Conservation

### Goals

- **Goal 1:** The preservation of known historical and archaeological resources, and the provision of adequate protection for new sites as they are discovered.
- **Goal 2:** The preservation of archaeological and historical resources through the identification of resources and regulatory review of development projects.

### Policies

- **Policy 1:** Appropriate historical resources shall be nominated to the State and/or National Register of Historic Resources.
- **Policy 2:** Significant historic and prehistoric sites located within the Subregion shall be evaluated for Historic Landmark Status under Ordinance 7105 and if qualified shall be designated and rezoned in accordance with Section 7550 and regulated under Section 5700 of The Zoning Ordinance.



- **Policy 3:** Encourage public agencies and private property owners to make significant archaeological and historic resources available to the public for educational purposes.
- **Policy 4:** Create RCAs to protect unique or otherwise scientifically valuable archaeological sites that are identified in CEQA studies, scientific investigations, or from institutional records.
- **Policy 5:** Create management plans to protect archaeological sites from future land development and vandalism.

## 4 PROJECT SETTING

### 4.1 Environmental Setting

The Proposed Project is located on the west side of the Peninsular Range approximately 3.36 miles southeast of the community of Alpine. The topography of the region is characterized by steep hills interspersed by narrow valleys and deep canyons with incised high gradient drainage corridors that are home to waterways and ephemeral streams. The Sweetwater River is approximately 0.7 mile northwest, Japatul Valley approximately 1.3 miles south, and Bell Bluff approximately 0.7 mile southwest. The vicinity is largely undeveloped, consisting of unpopulated open space, with the notable exception of the SDG&E Suncrest Substation and associated infrastructure.

Nearly all of the Proposed Project Area is disturbed, most notably by recent improvements to Bell Bluff Truck Trail and the former Wilson Laydown Area, a temporary laydown yard area for construction associated with Sunrise Powerlink that is currently the site of biological habitat restoration and is proposed as the site for the SVC. The segment of Bell Bluff Truck Trail located within the Proposed Project area was widened, graded, and paved during construction associated with the Sunrise Powerlink. Within the former Wilson Laydown Area, construction activities associated with site preparation included brush clearing and grading in 2011–2012; removed native vegetation was incorporated into the topsoil, and topsoil salvage to a depth of 6 inches (15.24 cm) was conducted (AECOM and RECON 2012). After the location was no longer used as a materials storage and laydown area in late 2012, restoration efforts included re-contouring the land and mechanically ripping the ground, resulting in substantial movement of sediments. The yard was ripped and cross-ripped to a depth of 18 to 24 inches (46 to 61 cm) prior to being re-contoured to the original topography, and the salvaged topsoil was then re-distributed over the site and seeded (SDG&E 2015). Biological habitat restoration efforts, including restoration maintenance activities, weed control, and monitoring, are currently ongoing (SDG&E 2015).

The elevation in the Proposed Project Area varies between 3,000 to 3,200 feet above mean sea level. The local climate is mild, with an annual mean temperature of 63.4 degrees Fahrenheit (°F) (IDcide 2015). Summers are warm, with average maximum temperatures peaking at 76°F in August, and winters are cool, reaching the lowest average minimum temperatures in December at 54°F. The average annual precipitation in Alpine is 14.7 inches, with most of the rainfall occurring in the winter and spring (NOAA 2015). Vegetation in the vicinity consists of a mixture of chaparral scrub and oak woodlands, with pockets of disturbance dominated by non-native grasses and forbs. Dominant species include chamise (*Adenostoma fasciculatum*) and several varieties of live oak (*Quercus* spp.), along with smaller shrubs and various grasses, including manzanita (*Arctostaphylos manzanita*), red brome (*Bromus madritensis*), and buckwheat (*Fagopyrum esculentum*).



## 4.2 Cultural Setting

### 4.2.1 Prehistoric Overview

The prehistory of coastal and inland southern California is varied and rich, with occupations extending from at least 12,000 years ago to historic contact. Numerous chronological sequences have been devised to assess cultural changes within various areas of southern California in the past 75 years or more (Byrd and Raab 2007:215–227; Moratto 1984;). The framework used here is divided into three major periods: the Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C.–A.D. 500), and Late Prehistoric Period (A.D. 500–Historic Contact). Within these lengthy periods are refined ecological and chronological subdivisions (e.g., Sutton et al. 2007:229–245). These subdivisions help us better understand the dynamism and diversity of the archaeological record—the presence over time of a variety of technological features, economy and exchange systems, and social organization and complexity—as well as the timing of and responses to environmental shifts present within the southern coastal region (Orange, western Riverside, and San Diego Counties).

#### 4.2.1.1 PALEOINDIAN PERIOD (~9000–6000 B.C. [11,500–8000/7500 B.P.])

Discovery of the earliest human presence in the Americas, and for that matter coastal and interior southern California, continues to be of interest to archaeologists and the general public. Although occupation in California began as early as 8,000 to 11,000 years ago, evidence for the presence of humans prior to about 6000 B.C. (or 8,000 years before present [B.P.]) is relatively sparse and scattered throughout the state. The earliest accepted dates for human occupation of southern California come from sites along the coast, particularly from two of the Northern Channel Islands situated off the coast of Santa Barbara, and form part of a Paleo-Coastal Tradition dependent on marine resources (e.g., Jones 1991; Jones et al. 2002). However, an increasing frequency of radiocarbon dates show occupation of the Southern Channel Islands as well as the coastal areas of Orange and San Diego Counties as early as 7000 to 8000 cal. B.C. (or 9,000 to 10,000 years B.P.) (Byrd and Raab 2007:219). Away from the coast in California were Western Pluvial Lakes Tradition (WPLT) Paleoindians, who practiced a diverse mixture of hunting and gathering, but who were not dependent on large Pleistocene megafauna as in other parts of North America at the time. A major occupational emphasis by WPLT peoples was on Pleistocene lakeshores in the now-arid areas of southern California, the western Great Basin, and along the Cascade–Sierra Nevada uplift that forms California’s eastern border (see Moratto 1984:90–92).

#### 4.2.1.2 PALEO-COASTAL TRADITION

The pattern of early Holocene, and in some cases late Pleistocene, sites along the coast is generally subsumed within the Paleo-Coastal Tradition. The Paleo-Coastal Tradition was originally proposed more than three decades ago by Davis et al. (1969), and recently brought to the forefront again by new finds from the southern California coastal region (e.g., Jones et al. 2002; Mason and Peterson 1994:57–58; Moratto 1984:104). The Paleo-Coastal Tradition has recently been reconsidered as a spatially and temporally coherent archaeological and adaptive pattern, reflecting broad similarities in organizational strategies, knowledge, and practices related to the exploitation of both marine and terrestrial resources under certain environmental and social conditions (Elzinga 2011:41; see also Davis 2011). The two Northern Channel Islands with the earliest accepted dates for human habitation within southern California are San Miguel and Santa Rosa. Daisy Cave (CA-SMI-261), situated on San Miguel Island, has evidence for a short-term camp as early as 11,500 B.P., with several other occupations dating before 8800 B.P. (Erlandson 1991:105; Erlandson et al. 2007:57). The Arlington Springs site (CA-SRI-173) on Santa Rosa Island has human remains dating to between 8,600 and 13,000 B.P. (Johnson et al. 2002).



#### **4.2.1.3 WESTERN PLUVIAL LAKES TRADITION**

Paleoindian Period sites located on or near the shores of former pluvial lakes and marshes or along old stream channels form part of the WPLT as first defined by Bedwell (1970). Moratto (1984:92) subsumed numerous local California patterns (e.g., San Dieguito Complex, Lake Mojave Period) under the overarching WPLT to reduce terminological confusion, but the literature on California prehistory typically references the Paleoindian Period, Early Man Period, or San Dieguito Complex, rather than the WPLT. With the onset of the early Holocene around 10,000 years ago, significant warming and drying occurred in the environment, and hunter-gatherers subsequently adapted their subsistence economy to the changing resource structure along the coast and interior deserts of California. Lakes and streams within the interior desert regions gradually dried and shrank compared with late Pleistocene times. The WPLT way of life, which emphasized adaptations to lakes and marshes, gradually disappeared by 8000 to 7000 B.P. as the environment warmed during the Altithermal (Byrd and Raab 2007:217–218; Moratto 1984:91). Localized studies, however, indicate that the complete disappearance of a WPLT (i.e., San Dieguito) adaptation was not necessarily uniform across all regions; in San Diego County, for example, archaeological sites representing substantial residential bases have been documented adjacent to coastal lagoons, marshes, and river valleys well into the Archaic Period (Noah and Gallegos 2006:1–14).

#### **4.2.1.4 ARCHAIC PERIOD (6000 B.C.–A.D. 500 [8000–1500 B.P.]**

Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted about 3,000 years (Antevs 1955). Greater emphasis was placed on plant foods and smaller animals during this time and into the subsequent Late Prehistoric Period. Compared with the preceding Paleoindian Period, subsistence practices were more diversified but focused on gathering activities in interior ecological areas, with a continued emphasis on a maritime economy in coastal areas (Erlandson 1997:4). According to Maxon et al. (2004:4), researchers have referred to the presence of the San Dieguito culture as marking the start of the Archaic Period. The Archaic Period generally is characterized by an ecological adaptation to collecting, which resulted in an increased frequency of ground stone implements. The Early Archaic Period in southern California is generally referred to as the Milling Stone Period (Wallace 1955, 1978); this period is also sometimes designated as the La Jolla Complex, with sites common in the southern California coastal region between Santa Barbara and San Diego, and at many near-coastal and inland locations (Jordan 2006:4).

A distinction is made between coastal (La Jolla complex) and inland (Pauma complex) culture within San Diego County during the entirety of the Archaic Period (Moriarty 1966; Rogers 1939, 1945; True 1958). The La Jolla complex is characterized by shell midden sites near the coast, and is usually distinguished from inland Pauma complex sites that lack shell middens. Recent research indicates that inland Pauma complex sites potentially represent a seasonal component of the subsistence round used by coastal La Jolla complex populations (Smith et al. 1996; True and Pankey 1985). Considerable debate exists as to the relationship between the San Dieguito, La Jolla, and Pauma complexes within the San Diego County subregion. Gallegos et al. (1987), for example, suggest that these cultural complexes represent adaptations by related peoples between 8,500 and 3,500 years ago (see also Jordan 2006:5). In contrast, Smith (1987) argues that the La Jolla complex replaced the San Dieguito complex. Regardless of the San Dieguito debate, archaeological evidence from both inland and coastal sites in San Diego County indicates a long period of cultural continuity during the entire span of the Archaic Period (Noah and Gallegos 2006:1–15).

Within the inland portion of northern San Diego County, Phase I of the San Luis Rey complex (Meighan 1954; True et al. 1974) appears by approximately 1000 B.C. during the Late Archaic Period. True and Waugh (1982) proposed that San Luis Rey I phase peoples frequently resided in small camps and were residually mobile throughout the year. San Luis Rey I sites are distinguished from San Luis Rey II sites of the Late Prehistoric Period by a lack of ceramics. Noah and Gallegos report that cultural configurations in northern San Diego County, including the San Luis Rey complex, display seasonal settlement and



subsistence patterns marked by semi-sedentary winter settlements with stored resources at lower elevations and use of mountain settlements during the summer and fall months (Noah and Gallegos 2007:1–16). This pattern apparently continued into the Late Prehistoric Period, albeit with populations becoming increasingly sedentary around major water resources.

#### **4.2.1.5 LATE PREHISTORIC PERIOD (A.D. 500–HISTORIC CONTACT [1500 B.P.–HISTORIC CONTACT])**

The Late Prehistoric Period in southern California is characterized by a number of changes in subsistence, foraging, and land use patterns, which begins to reflect the use pattern known from ethnographic and Historic Period Native American groups. Hallmarks of the Late Prehistoric Period include the dominance of small projectile points, signifying introduction and use of the bow and arrow, and, with the exception of the rudimentary ceramic industry found during the Early Archaic/Milling Stone Period in Orange and Riverside Counties, pottery (i.e., Patayan III/Colorado Buff) occurs in southern California sites for the first time (Noah and Gallegos 2006:1–17). The period also witnessed an increased emphasis on plant collecting and processing, population size and settlement growth, permanent villages, expansion of trade networks, the practice of cremation in lieu of flexed burials, and rock art in some areas (Jordan 2006:5). The changes most likely reflect in situ cultural adaptations in response to shifts in environmental conditions, as well as influences from outside the area.

Two cultural complexes have been defined for San Diego County during the Late Prehistoric Period: the San Luis Rey II complex in the north and the Cuyamaca complex in the south (Meighan 1954; True et al. 1974; see also Noah and Gallegos 2007:1-16 through 1-19). The San Luis Rey II complex likely represents the forebears of the Takic-speaking Luiseño/Juaneño, who inhabited what is present-day northern San Diego County during the Ethnohistoric Period. The forebears of the Yuman-speaking Kumeyaay (Ipai and Tipai geographic divisions) of ethnographic and modern times may be represented by the Cuyamaca complex.

San Luis Rey II began as early as A.D. 1200 and lasted during the Contact period, until approximately 100 years ago. San Luis Rey II phase sites differ from San Luis Rey I sites in that they have ceramic cooking and storage vessels, cremation urns, and polychrome pictographs (Meighan 1954; True et al. 1974). Subsistence probably focused on the utilization of acorns, a storable species that allowed for relative sedentism and increased population. As evidenced by the presence of bedrock milling stations, acorns and other nuts were exploited at the highland summer camps. San Luis Rey II peoples in lower elevation areas of the drainage system likely lived in sedentary villages, and were at least partially dependent on marine resources (True 1993:17).

The Cuyamaca complex in southern San Diego County centered on the Cuyamaca Mountain area (True 1966, 1970; True et al. 1974, 1991). True (1970:53–54) indicates that the Cuyamaca complex, although generally similar to the San Luis Rey complex, differs in important ways. It is represented by a wider range of ceramic forms (bow pipes, effigy forms, rattles); a steatite industry; cremation ashes placed in urns away from habitation areas; grave markers; scrapers and scraper planes; a higher dependence on grinding implements; and the production and placement of mortuary goods (Maxon et al. 2004:5). These characteristics suggest a definite influence from the cultures along the Colorado River and of Numic speakers from the north (Maxon et al. 2004:5). In addition, as noted, the Cuyamaca complex may represent the culture of the forbearers of ethnohistoric Yuman-speaking Kumeyaay (Ipai and Tipai geographic divisions).



## 4.2.2 Ethnographic Overview

### 4.2.2.1 DIEGUEÑO/KUMEYAAY

At the time of European contact, most of present-day Imperial and San Diego Counties were populated with Yuman-speaking peoples, who are collectively referred to today as the Kumeyaay. Termed the Diegueño by the Spanish (Kroeber 1925; Luomala 1978), this diverse geographic Native American group inhabited the region along the Pacific coast from central San Diego County southward into the Baja California region past Ensenada, and eastward into the Yuha and Anza-Borrego Deserts to the Sand Hills. The Diegueño/Kumeyaay language is recognized as a member of the California–Delta Yuman division of the Yuman-Cochimi language family (Mithun 2004:304, 577). Diegueño consists of three main dialects: ‘Iipay, Kumeyaay, and Tiipay (the first and third terms from the word meaning “people”) (Mithun 2004:577).

Geographic divisions of the three Diegueño dialects have been commonly referred to as Ipai, Kamia (also Kumeyaay), and Tipai (California Indian Assistance Program [CIAP] 2003:56; Gifford 1918:156; Loumala 1978:607–608; Kroeber 1925:710). The Ipai (formerly Northern or Western) inhabited the central portion of San Diego County, whereas the Kamia (formerly Eastern) occupied the remaining southern part of San Diego County and eastward into Imperial County and the California portion of the Colorado Desert. Tipai (formerly Southern) territory included Jamul in San Diego County, extending southward deep into Baja California. Some recent ethnographers combine Tipai and Kamia/Kumeyaay as a continuous social group (the Tipai) (Loumala 1978). The Yuman-language-speaking Kumeyaay thus have been variously referred to as Tipai-Ipai, Kamia, Northern and Southern Diegueño, or by clan name, such as Kwaaymii. Today, many local groups have banded together as the Kumeyaay Nation or Kumeyaay-Diegueño Nation (Kumeyaay Information 2015). The preference for use of the name Kumeyaay was established more than 30 years ago (e.g., Hedges 1975:77).

Kumeyaay territory was divided among bands that generally controlled 10 to 30 miles within a drainage system (Shipek 1982:297). Each band had five to 15 kinship groups (sibs or shiimul) (Kroeber 1925:719; Shipek 1987:8), some of which were divided among more than one band. The entire band aggregated in winter villages, which were placed in sheltered valleys near reliable sources of water (Luomala 1978:597). Dwellings in these villages were semi-subterranean and roughly circular, with a wooden pole framework covered with brush thatch. Other structures in winter villages included family-owned platform granaries, a village-owned brush ceremonial enclosure, and sweat lodges. Granaries and more permanent housing were sometimes constructed within frequently visited oak groves. All of the Ipai and many of the Tipai camped in coastal valleys during certain times of the year when they gathered coastal resources. Land resources generally belonged to individual bands, with few areas considered “tribal” or open to anyone (Shipek 1982:301).

The religious conversion and physical removal of the Kumeyaay from their territory (through the *reduccion* process) began after establishment by the Spanish of the presidio at San Diego and the Mission San Diego de Alcalá in A.D. 1769. The loss of freedom and land by the Kumeyaay negatively affected their traditional subsistence strategies and overall lifeways (Carrico 1987). Many of the Kumeyaay eventually worked for the mission, though there was a feeling of nationality among the Kumeyaay that resulted in a level of federation not seen among other southern California native groups (Shipek 1987:5). Many Native American neophytes left the mission grounds when freed from mission control by the Mexican government in 1825. When the missions were fully secularized from 1834 to 1836, even more Native Americans left to find work on the large cattle ranchos created from prior mission lands.

California officially became part of the United States in 1848 with the signing of the Treaty of Guadalupe Hidalgo, and several reservations were formed after the mid-1870s. These include Barona Ranch, Campo, Cuyapaipa, Inaja and Cosmit, Los Coyotes (shared with Mountain Cahuilla), Manzanita, Mesa Grande,



Santa Ysabel, Sycuan, and Viejas (CIAP 2003). In the four decades following U.S. control, many of the ranchos became small farms and towns. The Kumeyaay who remained at or around the mission grounds usually tended to cattle and sheep, and maintained personal subsistence gardens. In the 1920s, many Kumeyaay became members of the Mission Indian Federation, which was organized to fight for self-rule on southern California reservations.

### **4.2.3 Historic Overview**

Post-Contact history for California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and signing of the Treaty of Guadalupe Hidalgo in 1848, which ended the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

#### **4.2.3.1 SPANISH PERIOD (1769–1822)**

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríguez Cabrillo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrillo explored the shorelines of present Catalina Island, and San Pedro and Santa Monica Bays. Much of the present-day California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island, and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1886:96–99; Gumprecht 1999:35).

Inland exploration and colonization of Alta California by Spain was not a priority for more than 200 years. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's "Historic Period," occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July 1769, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

To establish overland connections with California from Mexico's interior, Captain Juan Bautista de Anza set out in 1774 from Sonora and crossed the Colorado River into present-day Imperial Valley with a party of 34 padres, soldiers, and servants. Fr. Francisco Garcés, who had charted much of this route in 1770, guided the caravan through present-day Imperial County along the Alamo River drainage west and then north (Imperial County 2007; NPS 2004; Trimble 1977). The Spaniards continued their trek northwest to Monterey Bay, marching into present-day Riverside County through the Cahuilla Valley, tracing the Santa Rosa Mountains, continuing through Coyote Canyon, marching through San Jacinto Valley by way of Bautista Creek, and possibly passing through lands that now constitute March Air Reserve Base (Brown 1985). De Anza called the San Jacinto plain "Paradise Valley," and considered it to have good potential for future ranching and agriculture (Greenwood et al. 1993:10). De Anza returned to California in 1775 along the same route with a larger group of 240—including permanent settlers—pushed to San Francisco Bay, then retraced his trail to Sonora through present-day Riverside, San Diego, and Imperial counties in 1776 (Guerrero 2006).



Garcés returned in 1779 to the Yuma area, where he established Mission La Purísima Concepción de la Virgén Santísima on the north bank (California side) of the Colorado River. The mission was administered as part of the Arizona missions, and so was not part of the California series. The settlement included soldiers, settlers, and missionaries, but lasted only 6 months. To retaliate for the loss of their lands and crops, the local Native American population, the Quechan (formerly known as the Yuma) attacked and destroyed the settlement in 1781, killing the missionaries and nearly a hundred others (Weber 1992:257). With the Spanish expelled, this land route between northern Mexico and California settlements remained closed for decades.

Soon after the de Anza expeditions, seven additional missions were established in the 1770s as far north as present-day San Francisco. In southern California, these included Missions San Juan Capistrano and San Gabriel Arcángel in today's Orange and Los Angeles counties, respectively. A second mission in San Diego County, Mission San Luis Rey de Francia, was not founded until 1798.

The 21 missions were situated paralleling California coastline between San Diego and Sonoma. Near-coastal locations were preferred by the Spaniards for colonization because they were easier to defend and supply from ships, and were also bordered by populous Native American villages with potential converts. Approximately 30 miles or a day's ride by horseback typically separated the missions. The connecting roadway became known as "El Camino Real." Today's Interstate 5 between San Diego and Los Angeles and Highway 101 between Los Angeles and Petaluma generally follow "the King's Highway."

Only three fortified outposts besides the Presidio of San Diego were established by the Spanish government in Alta California. The northernmost was founded with the Mission San Francisco de Asís in 1776. The other two presidios were spaced in between these northern and southern arms of the mission system. The Presidio of Monterey and accompanying mission (San Carlos de Monterey) were established in 1770; in 1782, Spain built its last presidio in Alta California at Santa Bárbara.

All the missions contained churches, workshops, storehouses, soldiers' barracks, and quarters for Native American neophytes. These new converts were used as labor, establishing and nurturing the mission orchards, gardens, vineyards, and pastures. In San Diego, for example, 1,400 Native Americans were associated with the mission by 1797. Initially, cattle and horses were raised on the pastures adjacent to that first mission. Sheep, goats, and pigs were later added to the repertoire of animals raised on mission lands. These animals ultimately provided meat, wool, tallow for candles and soap, and leather for clothing, among other uses. Ranching eventually expanded to other areas and missions within San Diego County and beyond.

At all the missions, padres exercised strict control over the Native American neophytes, and oversaw all economic activities of Spanish California, particularly directing agricultural activities, including slaughter of cattle, pigs, and sheep, and nearly all related commercial activity (Dallas 1955:3–4). Chapman (1921:387) described the unique role of the padres as "[s]omething more than teachers of religion. The wide power of their administration made them virtual owners and managers of a vast economic plant. They were farmers, cattlemen, manufacturers, traders, and, in a sense, bankers and innkeepers, as well as preachers."

Although the areas within present-day Riverside and San Bernardino counties did not formally host Spanish missions, they remained connected to the California presidio and mission system through the Franciscan establishment of *estancias* (ranchos) and *asistencias* (submissions with a chapel but without a resident priest). Riverside was considered a part of the San Diego district, a military designation associated with the presidio; however, most of the territory fell under the authority of the Mission San Luis Rey de Francia, near present-day Oceanside in San Diego County. The most populous of California's 21 missions, San Luis Rey was founded in 1798. A series of mission *estancias* and *asistencias* were established in what is now Riverside County, including Santa Margarita, Las Flores, San



Mateo, San Juan, Pala, San Marcos, Agua Hedionda, Buena Vista, and the northernmost, San Jacinto (Greenwood et al. 1993:10; Tetra Tech 1999:7).

In 1818, Mission San Diego de Alcalá initiated a plan for a chain of inland branches, the first of which was Asistencia de Santa Ysabel, located in the mountains east of San Diego near the Native American village of *Elcuanan*. By 1821, the *asistencia* boasted a chapel, granary, cemetery, and adobe houses, and a population of 600 Native Americans (Quinn 1964). Two other inland substations were established by the powerful and populous Mission San Luis Rey. Asistencia de San Antonio de Pala was founded ca. 1816 approximately 20 miles inland from San Luis Rey. The second substation, the Los Flores Estancia, was constructed ca. 1823 between Missions San Luis Rey and San Juan Capistrano on the San Pedro Rancho, later called Rancho Santa Margarita y Los Flores, and now the Marine Corps Base at Camp Pendleton in northern San Diego County.

#### **4.2.3.2 MEXICAN PERIOD (1822–1848)**

A major emphasis during the Spanish Period in California was to build missions and associated presidios to integrate the Native American population into Christianity and communal enterprise. Inducements were also made to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period, only two of which were successful and are now major California cities (San José and Los Angeles). The threat of foreign invasion, political dissatisfaction, demands for land by civilian settlers and retiring soldiers, and unrest among the indigenous population kept growth within Alta California to a minimum. After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports, including San Diego, open to foreign merchants (Dallas 1955:14).

With Mexican independence, the new government attempted in 1823 to reopen the de Anza Trail and established Fort Romauldo Pacheco at Laguna Chapala on New River, about 20 miles northwest of present Calexico. The Quechan in 1826 once again expelled these intruders, whose survivors fell back to San Diego. Despite these efforts, the de Anza Trail eventually found a new purpose and accommodated tremendous traffic after the 1840s (von Werlhof 1992).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population away from the more settled coastal areas where the Spanish had concentrated their colonization efforts. At the same time, the influence of the California missions waned in the late 1820s through the early 1830s. This decline resulted from a combination of outside events and pressures, including increasing hostilities between missionaries and local civilians who demanded mission lands, decimation of the Native American population by introduced diseases, and the influence of private traders in the hide and tallow industry.

Following adoption of the Secularization Act of 1833, the Mexican government privatized most Franciscan lands, including holdings of their California missions. By 1836, this sweeping process effectively reduced the California missions to parish churches and released their vast landholdings. Although earlier secularization schemes had called for redistribution of lands to Native American neophytes who were responsible for construction of the mission empire, the vast mission lands and livestock holdings were instead redistributed by the Mexican government through several hundred land grants to private, non-Native American ranchers (Langum 1987:15–18). The private Mexican citizens who received the land and their holdings subsequently used local Native Americans expelled from the missions for cheap, protracted labor, and in some instances expelled them from their grant holdings.

During the Mexican Period, the large ranchos became important economic and social centers. These included Cuyamaca Rancho, San Felipe Rancho, and Santa Ysabel Rancho, which together comprised



about 63,000 acres in today's central San Diego County. Nearly 48,000 acres were awarded as part of the Santa Rosa land grant in the southwestern corner of today's Riverside County, with an additional 27,000 acres as the Temecula Rancho to the east in Temecula and Murrieta Valleys. The Santa Rosa Rancho was located northeast of Rancho Santa Margarita y Los Flores, comprising more than 133,000 acres, and is now the Marine Corps Base at Camp Pendleton in northwestern San Diego County. The adjacent lands of Rancho Mission Viejo (also known as La Paz) in southeastern Orange County comprised more than 43,000 acres.

San Diego was organized under Mexico's laws as a pueblo (town) in 1834, bringing development of its own growing non-native population beyond the walls of the presidio in the area now known as Old Town (Pourade 1964). The lands of the Mission San Diego de Alcalá were sold to Santiago Arguella in 1845, although in 1862 the Catholic Church claimed the 22 acres of the rancho that included the mission buildings, graveyard, and church.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The non-native population of California increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population unfortunately contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities. Large numbers of native peoples in the Central Valley, for example, died from disease between 1830 and 1833, and disease exterminated whole tribes along the American, Merced, Tuolumne, and Yuba Rivers. The Central Valley was hit by a second epidemic in 1837, which further decimated indigenous Californians (Cook 1955).

#### **4.2.3.3 AMERICAN PERIOD (1848–PRESENT)**

War in 1846 between Mexico and the United States brought U.S. Colonel Stephen Watts Kearny and part of his Army of the West from Kansas to California through present-day Imperial Valley. Lt. Colonel Philip St. George Cooke and the Mormon Battalion, following Kearny west to map a strategic wagon road through the territory, likewise moved through Imperial Valley. The Mexican-American War ended with the Treaty of Guadalupe Hidalgo signed in 1848, ushering California into its American Period.

Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through the first decade of the Gold Rush beginning in 1848. California became one of the United States with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories. San Diego County, at first stretching from the bay east to the Colorado River, was designated upon statehood and formally organized in 1852, followed in 1853 by San Bernardino County to the northeast (Greenwood et al. 1993:14). Later, portions of San Diego County were carved out to create part of Riverside County in 1893 and Imperial County in 1907. Orange County, created in 1889, includes former Los Angeles County lands. Riverside County was also formed from parts of Los Angeles and San Bernardino counties.

During the Gold Rush, thousands of people traveled the Gila Trail or Southern Overland Trail from Texas to Arizona, then crossed the Colorado River at present-day Yuma, Arizona, into California and proceeded across the Colorado Desert to the San José Valley. The main trail continued from that point northward to Temecula and Los Angeles. Many left the main trail and traveled southward to San Diego, where they then journeyed via ship to San Francisco or took the inland coastal route to Los Angeles, rejoining the main trail to the gold fields.

With the influx of people seeking gold, cattle were no longer desired mainly for their hides, but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from



southern to northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains where available. The cattle boom ended for southern California as neighbor states and territories drove herds to northern California at reduced prices, as operation of the huge ranchos became increasingly difficult, and as droughts severely reduced their productivity.

American politics and the need for a mild-winter route to the West favored a southerly thoroughfare from the eastern United States to California in the 1850s. The U.S. Gadsden Purchase of 1854 secured more land from Mexico for this route, and by 1857 surveys established the current international boundary from New Mexico west to California (Walker and Bufkin 1986). In 1857 the government awarded to James E. Birch a 1,475-mile mail contract from San Antonio, Texas, to San Diego. The contractor's "Jackass Mail" passed through the Imperial Valley on its 2-month-long roundtrips. In 1858, the federal contract passed to the Butterfield Overland Mail Company. With the start of the Civil War in 1861 and departure of Southern representatives from Congress, the U.S. government cancelled Butterfield's contract and suspended talks on a southern transcontinental rail route.

With the disruption of the Civil War and other factors, rancho ownerships changed hands often, and patróns subdivided some larger holdings into smaller parcels. The winters of 1862–1863 and 1863–1864 produced almost no rainfall in southern California, and by the time rains came in February 1864, thousands of livestock had perished from hunger and/or thirst. Devastation brought about by severe droughts and the changing economy ruined many surviving rancho families and resulted in the refocusing of grazing activities in southern California upon sheep (Beattie and Beattie 1939; Brown 1985; Ingersoll 1904).

Following the Civil War, overland stage services to and from southern California resumed in 1868 with the Holladay and Wells Fargo operations (Nevin 1974; Stein 1994). The pre-Civil War national initiative for a southern transcontinental railroad route resumed during the 1870s, as the Texas and Pacific (T&P) Railway Company in 1871 received a federal charter and conducted transcontinental surveys to pursue the initiative. In 1873, however, the T&P's westerly construction stalled in north-central Texas. The resulting delay was critical, allowing San Francisco investors to extend their own Southern Pacific Railroad (SPRR) through Imperial Valley to the Colorado River in 1877, bridging the river at Yuma into Arizona along the T&P survey in 1878 (Yenne 1985).

The California Southern Railroad (a subsidiary of the Santa Fe Railway system) connected the Los Angeles area through Oceanside with San Diego in 1885 (Davidson 1955). Arrival of the Southern Pacific, Santa Fe, and connecting lines throughout southern California in the 1870s and 1880s brought economic opportunity and exponentially increased the state's population, a combined economic and cultural phenomenon widely identified as the Boom of the Eighties (Dumke 1944).

Agricultural development of the Imperial Valley around 1900 brought regional rail service deeper into its fertile lands, beginning with a SPRR branch in 1903 between Niland and Imperial, eventually connecting to Calexico in 1904. The town of El Centro was linked directly with San Diego in 1919 with construction of the San Diego and Arizona (SD&A) Railway, which penetrated part of the rough Jacumba Mountains by meandering south into Mexico through its San Ysidro and Tecate Valleys (Imperial County 2007; Wee and Ferrell 2000).

#### **4.2.3.4 SAN DIEGO COUNTY**

Successful Gold Rush merchant and land speculator Alonzo E. Horton moved from San Francisco to San Diego in 1867, purchased 960 acres adjacent to the bay south of Old Town, and laid out an "addition" for San Diego's new town site. The fast-growing city was re-incorporated in 1872, and within a few years San Diego became the largest California city south of Los Angeles, aided significantly by completion of



the Atchison, Topeka, and Santa Fe Railway (as its California Southern Railroad subsidiary) connection to its transcontinental line northeast of Los Angeles in 1885 (Dumke 1944).

Beginning in the 1870s, many residents of San Diego County commonly lived on farmsteads, often forming rural communities with clusters of other nearby farmsteads. Many of these farmsteads were built on land surrounding Horton's Addition, while his "South San Diego" rapidly developed into the new downtown San Diego and the Hillcrest area. The county's farming communities included El Cajon, Jamacha, Mission, and Otay, supplying urban San Diego with food and developing strong local markets and businesses. Wheat was an important cash crop early on, but in the 1870s and 1880s, farmers increasingly cultivated tree or vine sustenance crops such as apricots, cherries, grapes, lemons, olives, oranges, peaches, and plums. Fruit trees grew best on hillsides and mesas, while barley, corn, oats, and wheat grew well in the valleys (Davidson 1955).

The discovery of gold-bearing quartz during the winter of 1869–1870 was San Diego County's first and only gold rush. A thriving mining district located in the Cuyamaca Range about 50 miles east of San Diego grew around the town of Julian, the district's social and commercial center (Anonymous 1890; Hoover et al. 2002). With over 60 mining locations, the hard rock mines, particularly the better-known George Washington, Cuyamaca, Golden Chariot, and Stonewall Jackson, yielded some \$5 million in gold ore. Oak and pine timber for the mines, camps, quartz mill furnaces, and towns was obtained in the mountains around the mines; dim traces of "skid roads" remain visible in the area. As gold production declined over the ensuing decade, most of the hard rock mines at Julian and its sister community of Banner were played out by 1880.

San Diego Bay first harbored U.S. Navy ships in 1898, and San Diego County thereafter hosted several major naval installations, accelerating after construction of the Pacific fleet's coaling station in 1907. San Diego in the late 1910s experienced another major urban boom highlighted by the Panama-California Exposition of 1915–1916, celebrating completion of the Panama Canal. Starting in the 1910s, aircraft enthusiasts and builders found San Diego weather attractive; the Navy added its first Naval Air Station on North Island in 1917, and in 1927 Charles Lindbergh prepared his Ryan monoplane in San Diego for its record-setting trans-Atlantic flight. San Diego's mild climate and strong military presence attracted other aircraft manufacturers in the 1930s, and during World War II the city and bay became a major center of the aircraft industry and naval aviation. At the northwestern extent of the county, Marine Corps Base Camp Pendleton was established on the coast in 1942 to train Marines for the war. After the war, many personnel that had been stationed in San Diego County returned to the area with their families to create the next population and housing boom (Davidson 1955).

Yet another transportation event strongly affected southern California in the 1910s, as national automobile clubs sought to stitch the country together with a highway network for their members who were discovering the freedom and economics of gasoline-powered vehicles. Promoters of the "Ocean-to-Ocean Highway," including Alabama Senator John H. Bankhead, first drew lines on maps to connect Washington, D.C. (through Alabama) with California. While the Ocean-to-Ocean Highway crossed into California at Yuma, by 1912 its members decided to connect with Los Angeles. Another association promoting the "Dixie Overland Trail" projected a connection west to San Diego and eventually sponsored the infamous "Old Plank Road" through Imperial Valley as part of its route. Through the 1920s, City, County, and State road departments with some federal assistance pieced together a paved series of roads for this San Diego transcontinental connection, now called the "Broadway of America" and "Bankhead Highway" for its loudest promoter after his death in 1920. In 1926, a federal committee designated the route in Arizona and California U.S. Highway 80, eventually improved as a 2,500-mile "critical, primary road" passing through eight states from the Atlantic seaboard through Imperial Valley to the Pacific Ocean at San Diego. By 1972, completion of Interstate Highway 8 largely replaced U.S. 80 in California, but many sections of the old highway, regularly improved through the 1960s, still carry traffic in San Diego and Imperial counties (Weingroff 2008; Finley 1997).



Outside the City of San Diego, the earliest farmers and farming communities owned the most productive land and prospered well into the 1920s. Unfortunately, latecomers who purchased less productive land often struggled to maintain farms they frequently sold within 10 years. Many of the county's smaller agricultural tracts disappeared in the 1920s and 1930s, and some were incorporated into a few large agricultural tracts. The associated decline in cattle ranching was further exacerbated by the creation of the CNF in 1908. Developed to protect the San Diego, Orange, and Riverside County watershed, the U.S. Forest Service placed strict guidelines on the number of cattle permitted to graze the forest lands and on burning vegetation to improve forage quality. Still, beef production remained one of the more important agricultural industries in San Diego throughout the 1930s and 1940s.

According to the San Diego Regional Chamber of Commerce (1998–2008), the key industries in the county include agriculture, the military and homeland defense industry, high technology (biomedical, software, telecommunications), international trade, manufacturing, and tourism. Of these, manufacturing, including shipbuilding and repair, production of toys and sporting goods, computers, metals, and industrial machinery, contributed the most to the county's gross national product in 2002. Agricultural production in the county now focuses on specialized crops (e.g., avocados, exotic flowers, and nursery and decorative plants). The county has the second largest number of farms and is the twentieth largest agriculture producer in the United States; nursery plants and flowers constitute two-thirds of the value of crops produced.

## 5 NATIVE AMERICAN COORDINATION

On March 16, 2015, SWCA requested a search of the Sacred Lands Files (SLFs) from the NAHC. SWCA received a response letter by facsimile from the NAHC on April 20, 2015, stating that the results of the SLF search indicate that no Native American cultural resources are known in the immediate vicinity of the Proposed Project Area. The NAHC provided a list of 15 Native American groups and individuals who may have knowledge of cultural resources in the Proposed Project Area. On June 22, 2015, Carolyn Stewart, Director of Tribal Relations for NEET West, sent letters to each of the contacts listed by the NAHC, plus four additional contacts NEET West identified independently, identifying an area of interest in which the Proposed Project will be located and requesting input by email or by U.S. mail. Table 1 summarizes NEET's coordination efforts with each Native American contact. As of August 21, 2015, NEET West has received two responses: Julie Hagen of the Viejas Band of Kumeyaay Indians requested a site visit and a copy of the cultural resources technical report when it is publicly available, and Carmen Lucas of the Kwaaymii Laguna Band of Mission Indians requested to review the cultural resources technical report and recommended that the Viejas Band of Kumeyaay Indians provide Native American monitoring for the Proposed Project. NEET West responded to Hagen and Lucas, and arranged a site visit on August 4, 2015. Copies of the cultural resources technical report will be provided to the two groups upon filing the PEA with the CPUC.

On July 1, 2015, SWCA requested a supplemental SLF search from the NAHC, which covered an expanded area of interest in case of future changes to the Proposed Project. SWCA received a response letter by email from the NAHC on August 18, 2015, stating that the results of the SLF search indicate that no Native American cultural resources are known in the immediate vicinity of the expanded area of interest. The NAHC provided a list of Native American groups and individuals who may have knowledge of cultural resources in the Proposed Project Area; the list was identical to the list provided in response to the initial request. Documentation of coordination with Native American groups and individuals is provided in Appendix C.



Table 1. Native American Coordination Summary

Native American Contact	Letter Sent	Follow-Ups	Results
Ewiiapaay Tribal Office Robert Pinto Sr., Chairperson 4054 Willows Road Alpine, CA 91901 <a href="mailto:wmicklin@leaningrock.net">wmicklin@leaningrock.net</a> (619) 445-6315 (619) 445-9126 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Jamul Indian Village Raymond Hunter, Chairperson P.O. Box 612 Jamul, CA 91935 <a href="mailto:Rhunter1948@yahoo.com">Rhunter1948@yahoo.com</a> (619) 669-4785	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Sycuan Band of the Kumeyaay Nation Cody J. Martinez, Chairperson 1 Kwaaypaay Court El Cajon, CA 92019 <a href="mailto:ssilva@sycuan-nsn.gov">ssilva@sycuan-nsn.gov</a> (619) 445-2613 (619) 445-1927 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Kwaaymii Laguna Band of Mission Indians Carmen Lucas P.O. Box 775 Pine Valley, CA 91962 (619) 709-4207	06/22/2015: via U.S. Mail		07/06/2015: Letter received via U.S. Mail requesting a copy of the cultural resources technical report and recommending that the Viejas Band of Kumeyaay Indians provide Native American monitoring for the Proposed Project. A site visit was conducted on August 4, 2015, and the cultural resources technical report will be provided once the PEA is filed with CPUC.
Viejas Band of Kumeyaay Indians Anthony R. Pico, Chairperson P.O. Box 908 Alpine, CA 91903 <a href="mailto:ihagen@viejas-nsn.gov">ihagen@viejas-nsn.gov</a> (619) 445-3810 (619) 445-5337 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Kumeyaay Cultural Repatriation Committee Steve Banegas, Spokesperson 1095 Barona Road Lakeside, CA 92040 <a href="mailto:sbanegas50@gmail.com">sbanegas50@gmail.com</a> (619) 742-5587 (619) 443-0681 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015



**Table 1. Native American Coordination Summary**

<b>Native American Contact</b>	<b>Letter Sent</b>	<b>Follow-Ups</b>	<b>Results</b>
Kumeyaay Cultural Historic Committee Ron Christman 56 Viejas Grade Road Alpine, CA 91901 (619) 445-0385	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Viejas Band of Kumeyaay Indians Julie Hagen, Cultural Resources P.O. Box 908 Alpine, CA 91903 <a href="mailto:jhagen@viejas-nsn.gov">jhagen@viejas-nsn.gov</a> (619) 445-3810 (619) 445-5337	06/22/2015: via U.S. Mail		06/29/2015: Letter received from Hagen via email requesting a copy of the cultural resources technical report and a site visit. Stewart responded informing Hagen that she would be in touch regarding her requests. Subsequently, a site visit was conducted on August 4, 2015. The cultural resources technical report will be provided once the PEA is filed with CPUC.
Ewiiapaayp Tribal Office Will Micklin, Executive Director 4054 Willows Road Alpine, CA 91901 <a href="mailto:wmicklin@leaningrock.net">wmicklin@leaningrock.net</a> (619) 445-6315 (619) 445-9126 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Inter-Tribal Cultural Resource Protection Council Frank Brown, Coordinator 240 Brown Road Alpine, CA 91901 <a href="mailto:frbrown@viejas-nsn.gov">frbrown@viejas-nsn.gov</a> (619) 884-6437	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Iipay Nation of Santa Ysabel Clint Linton, Director of Cultural Resources P.O. Box 507 Santa Ysabel, CA 92070 <a href="mailto:cjlinton73@aol.com">cjlinton73@aol.com</a> (760) 803-5694	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Kumeyaay Cultural Repatriation Committee Bernice Paipa, Vice Spokesperson P.O. Box 937 Boulevard, CA 91905 <a href="mailto:bernicepaipa@gmail.com">bernicepaipa@gmail.com</a>	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Sycuan Band of the Kumeyaay Nation Lisa Haws, Cultural Resource Manager 1 Kwaaypaay Court El Cajon, CA 92019 (619) 445-4564	06/22/2015: via U.S. Mail		No response as of 8/21/2015



**Table 1. Native American Coordination Summary**

<b>Native American Contact</b>	<b>Letter Sent</b>	<b>Follow-Ups</b>	<b>Results</b>
lipay Nation of Santa Ysabel Virgil Perez, Chairperson P.O. Box 130 Santa Ysabel, CA 92070 (760) 765-0845 (760) 765-0320 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Kumeyaay Diegueno Land Conservancy Kim Bactad, Executive Director 2 Kwaaypaay Court El Cajon, CA 92019 <a href="mailto:kimbactad@gmail.com">kimbactad@gmail.com</a> (619) 659 1008 (619) 445-0238 (fax)	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Barona Band of Mission Indians Mr. Adam Reyes, Councilman 1095 Barona Road Lakeside, CA 92040	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Barona Band of Mission Indians Mr. Clifford LaChappa, Chairman 1095 Barona Road Lakeside, CA 92040	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Campo Kumeyaay Nation Mr. Ralph Goff, Chairman 36190 Church Road, Suite 1 Campo, CA 91906	06/22/2015: via U.S. Mail		No response as of 8/21/2015
Campo Kumeyaay Nation Mr. Steven Cuero, Committee Member 36190 Church Road, Suite 1 Campo, CA 91906	06/22/2015: via U.S. Mail		No response as of 8/21/2015

## 6 METHODS

### 6.1 Records Search

On February 13, 2015, SWCA requested a search of the California Historical Resources Information System (CHRIS) from the SCIC, located at San Diego State University; SCIC provided the results to SWCA on February 18, 2015. The search included any previously recorded cultural resources and investigations within the Records Search Area, defined as approximately a 1-mile radius around the Proposed Project Area (see Figure 3). Both the Survey Area and the Proposed Project Area are within Records Search Area. The CHRIS search also included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, the Historic Properties Directory, and the California State Historic Resources Inventory. The letter from the SCIC summarizing the results of the records search is provided in Appendix B.



## 6.2 Cultural Resources Survey

SWCA conducted cultural resources surveys on February 24, March 25, May 1, May 11–14, and August 13, 2015. An intensive-level survey of the Cultural Resources Survey Area was conducted. The intensive-level survey consisted of systematic surface inspection with transects walked at 15-m (50-foot) intervals or less to ensure that all surface-exposed artifacts, sites, and built environment resources in the Survey Area could be identified. SWCA examined the ground surface for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historical artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, roads and trails, and depressions and other features that might indicate the former presence of structures or buildings (e.g., post holes, foundations).

Whenever cultural materials were encountered, SWCA collected all data necessary to complete the appropriate DPR 523 series forms (Appendix D). Resources were mapped with a handheld mapping-grade Trimble GeoXT global positioning system (GPS) unit with sub-meter accuracy and differential correction. Field GPS data for sites were post-processed using ArcGIS ArcPad software and projected into Universal Transverse Mercator, Zone 11 North, North American Datum 1983 coordinates. All GPS data were exported into geographic information systems (GIS) geodatabases and plotted onto the associated geo-referenced USGS 7.5-minute quadrangle to ensure accuracy and to produce location maps of all resources. In addition to mapping, SWCA documented all resources with overview photographs. No artifacts were collected during the surveys. SWCA assigned temporary field numbers using the prefix “SUN” (Suncrest) and the designation “S” for site, “BSO” for built environment resources, and “ISO” for isolate. All field notes, photographs, and records related to the current study are on file at the SWCA Half Moon Bay, California, office.

## 7 RESULTS

### 7.1 Records Search

#### 7.1.1 Previously Conducted Cultural Resource Studies

Results of the cultural resources records search indicate that 21 previous cultural resource studies have been conducted within the Records Search Area, which is defined as approximately a 1-mile radius around the Proposed Project Area (see Figure 3); five of these were conducted within the Proposed Project Area. Details pertaining to these investigations are presented in Table 2.

**Table 2. Prior Cultural Resource Studies within the Records Search Area**

<b>Report Number</b>	<b>Author</b>	<b>Year</b>	<b>Study Title</b>	<b>Proximity to Survey Area</b>	<b>Proximity to Proposed Project Area</b>
SD-00293	Carrico, Richard	Unknown	<i>Archaeological Investigation of TPM 13476 Willows Road Alpine, California</i>	Outside	Outside
SD-00614	Fink, Gary R.	1974	<i>Archaeological Survey for the Proposed Descanso Landfill, Descanso, California, Project No. UJ0112</i>	Outside	Outside
SD-00617	Fink, Gary R.	1973	<i>Archaeological Survey of the Descanso Landfill Site</i>	Outside	Outside



**Table 2. Prior Cultural Resource Studies within the Records Search Area**

<b>Report Number</b>	<b>Author</b>	<b>Year</b>	<b>Study Title</b>	<b>Proximity to Survey Area</b>	<b>Proximity to Proposed Project Area</b>
SD-01261	Isham, Dana	1974	<i>An Archaeological Survey of Some Rock Circles in the Japatul Valley, San Diego County, California.</i>	Outside	Outside
SD-01551	Swenson, James D., and Phillip J. Wilke	1980	<i>An Assessment of Cultural Resources Located on the Viejas Indian Reservation, San Diego County, California</i>	Outside	Outside
SD-01648	Welch, Patrick	1977	<i>Archaeological Reconnaissance of the Proposed Alpine Recreational Vehicle Park</i>	Outside	Outside
SD-02116	TMI Environmental Services	1989	<i>Draft Environmental Impact Report Tully General Plan Amendment Alpine Community Plan Update (GPA 89-03)</i>	Outside	Outside
SD-04221	Crouthamel, Steven J.	1994	<i>An Archaeological Survey of the Viejas Indian Reservation of 10 Scattered Housing Sites, CA 80-60, in the Viejas Mtn, Quad (7.5 minute)</i>	Outside	Outside
SD-05851	Crouthamel, Steven J.	1991	<i>Archaeological Site Survey of the Viejas Indian Reservation, San Diego County, California, Proposed House Sites CA 80-56</i>	Outside	Outside
SD-06425	Carrico, Richard	1990	<i>Historic Resources Inventory Sweetwater Valley</i>	Within	Within
SD-07107	Welch, Pat	1977	<i>An Archaeological Survey of the Claus Property, Escondido</i>	Outside	Outside
SD-07825	Nighabhlain, Sinead, and Drew Pallette	2000	<i>Archaeology Survey for the Viejas Water Distribution System Improvement Project Viejas Indian Reservation, California</i>	Outside	Outside
SD-07827	Nighabhlain, Sinead, and Drew Pallette	2000	<i>Cultural Resource Survey of Four Properties for the Viejas Fee-To-Trust Transfer Application, Alpine, California</i>	Outside	Outside
SD-10217	Rosen, Martin D., and Lori Harrington	2005	<i>Qwest Viejas Relocation Project Historic Property Survey Report and Negative Archaeological Survey Report</i>	Outside	Outside
SD-10476	Carrico, Richard L.	1974	<i>Archaeological Reconnaissance of Rezone Request R74-53</i>	Outside	Outside



**Table 2. Prior Cultural Resource Studies within the Records Search Area**

<b>Report Number</b>	<b>Author</b>	<b>Year</b>	<b>Study Title</b>	<b>Proximity to Survey Area</b>	<b>Proximity to Proposed Project Area</b>
SD-10551	Arrington, Cindy	2006	<i>Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California</i>	Outside	Outside
SD-10997	Carrico, Richard L., Theodore G. Cooley, and Laura J. Barrie	2003	<i>Final Archaeological Overview for the Cleveland National Forest, California</i>	Within	Within
SD-11977	SWCA Environmental Consultants	2008	<i>Final Cultural Resources Survey of Alternatives for the Sunrise Powerlink Project in Imperial, Orange, Riverside, and San Diego Counties, California</i>	Within	Within
SD-12046	Noah, Anna C.	2008	<i>Cultural Resources Study of the Modified Route D Substation and Access Road for the SDG&amp;E Sunrise Powerlink Project, San Diego County, California</i>	Within	Within
SD-12181	Mitchell, Patricia	2009	<i>Sunrise Powerlink Incident Report of Findings</i>	Outside	Outside
SD-12711	Garcia-Herbst, Arleen, David Iversen, Don Laylander, and Brian Williams	2010	<i>Final Inventory Report of the Cultural Resources Within the Approved San Diego Gas &amp; Electric Sunrise Powerlink Final Environmentally Superior Southern Route, San Diego and Imperial Counties, California</i>	Within	Within

### **7.1.2 Previously Recorded Cultural Resources**

The SCIC records search results identify 21 previously recorded cultural resources within the Records Search Area, which is defined as approximately a 1-mile radius around the Proposed Project Area (see Figure 3). Of these, one is within the Proposed Project Area: prehistoric site P-37-031744/CA-SDI-20166, a prehistoric bedrock milling station. Details pertaining to these sites are presented in Table 3.



**Table 3. Previously Recorded Cultural Resources within the Records Search Area**

<b>Primary Number</b>	<b>Trinomial</b>	<b>Type</b>	<b>Resource Description</b>	<b>CRHR/NRHP/SHL Eligibility Status</b>	<b>Recorded By and Year</b>	<b>Proximity to Survey Area</b>	<b>Proximity to Proposed Project Area</b>
P-37-009194	CA-SDI-9194	Prehistoric site	Lithic scatter	Not evaluated	Brandoff, J. 1975	Outside	Outside
P-37-009841	CA-SDI-9841	Prehistoric site	Lithic scatter	Not evaluated	Noach, A., and R. Gadler 1984	Outside	Outside
P-37-029773	CA-SDI-19036	Prehistoric site	Bedrock milling features and lithic scatter	Recommended eligible for NRHP/CRHR	Bouscaren, C., P. Hanes, P. Shattuck, L. Burgos, M. Hares, and R. Pettus 2007; Williams, B. 2010; Williams, B. 2011	Outside	Outside
P-37-029774	CA-SDI-19037	Prehistoric site	Bedrock milling features and lithic scatter	Not evaluated	Bouscaren, C., P. Hanes, P. Shattuck, L. Burgos, M. Hares, and R. Pettus 2007	Outside	Outside
P-37-029775	CA-SDI-19038	Prehistoric site	Bedrock milling features and lithic artifact	Not evaluated	Bouscaren, C., P. Hanes, R. Pettus, L. Burgos, and M. Hares 2007; Comeau, B. 2009	Outside	Outside
P-37-030222	CA-SDI-19254	Prehistoric site	Lithic scatter	Not evaluated	Piek, L. 2007	Outside	Outside
P-37-030375	CA-SDI-19307	Prehistoric site	Bedrock milling feature and lithic scatter	Not evaluated	Doose, N, B. Spelts, R. Brooke, and C. Linton 2008; Williams, B. 2010	Within	Outside
P-37-031198	CA-SDI-19771	Prehistoric site	Bedrock milling features and lithic scatter	Not evaluated	Williams, B., D. Mengers, W. Reed, and J. Herrera 2009	Outside	Outside
P-37-031199	CA-SDI-19772	Prehistoric site	Bedrock milling features	Not evaluated	Williams, B., W. Reed, and J. Herrera 2009	Outside	Outside
P-37-031200	CA-SDI-19773	Prehistoric site	Ceramic scatter	Not evaluated	Williams, B., W. Reed, and J. Herrera 2009	Outside	Outside



**Table 3. Previously Recorded Cultural Resources within the Records Search Area**

<b>Primary Number</b>	<b>Trinomial</b>	<b>Type</b>	<b>Resource Description</b>	<b>CRHR/NRHP/SHL Eligibility Status</b>	<b>Recorded By and Year</b>	<b>Proximity to Survey Area</b>	<b>Proximity to Proposed Project Area</b>
P-37-031202	CA-SDI-19775	Prehistoric site	Lithic scatter	Not evaluated	Williams, B., D. Mengers, S. Rochester, L. Piek 2010	Outside	Outside
P-37-031203	CA-SDI-19776	Prehistoric site	Lithic scatter and rock alignment	Not evaluated	Williams, B., D. Mengers, S. Rochester, L. Piek 2010	Outside	Outside
P-37-031204	CA-SDI-19777	Prehistoric site	Bedrock milling features and ceramic scatter	Not evaluated	Williams, B. 2010	Outside	Outside
P-37-031206	CA-SDI-19779	Historic site	Refuse scatter	Not evaluated	Comeau, B. 2009	Outside	Outside
P-37-031212	N/A	Historic site	Two rock cairns	Not evaluated	Williams, B., D. Mengers, W. Reed, and J. Herrera 2009	Outside	Outside
P-37-031221	CA-SDI-20166	Prehistoric site	Bedrock milling features	Not evaluated	Elliot, W., T. Hector-Rosen, J. Herrera, D. Iversen, D. Mengers, and J. Parada 2009	Outside	Outside
P-37-031717	–	Prehistoric isolate	Biface fragment	Not evaluated	Williams, B. 2010	Outside	Outside
P-37-031744	CA-SDI-20166	Prehistoric site	Bedrock milling feature	Unknown	Piek, L., B. Williams, and B. Comeau 2011	Within	Within
P-37-031970	CA-SDI-20239	Prehistoric site	Lithic scatter	Unknown	Justus, S. 2011	Outside	Outside
P-37-033363	CA-SDI-20984	Prehistoric site	Bedrock milling feature	Not evaluated	Justus, S. 2011	Within	Outside
P-37-033365	–	Historic site	Rock ring	Not evaluated	MacHardy, B. 2012	Outside	Outside



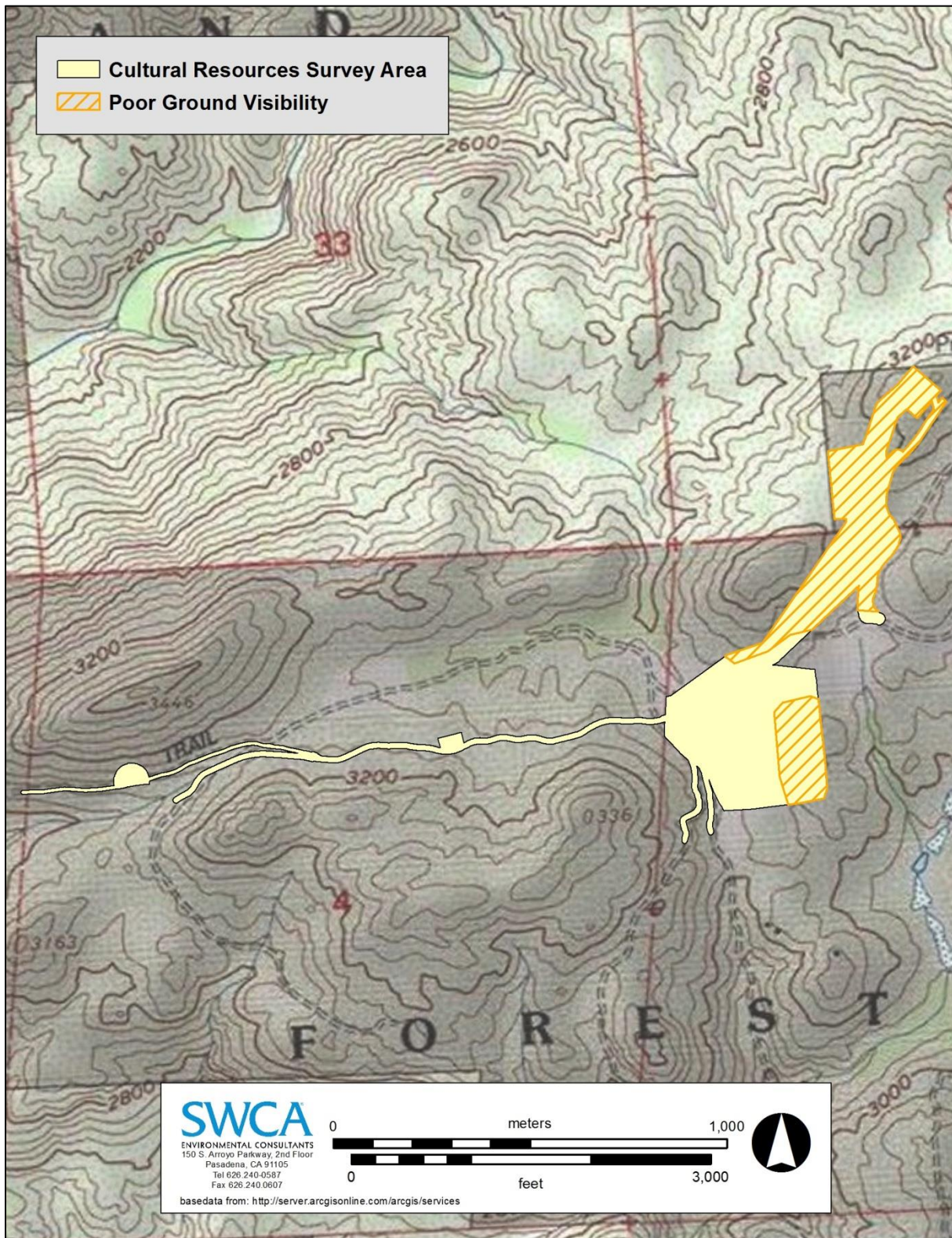
## 7.2 Cultural Resources Survey

SWCA conducted an intensive-level pedestrian survey of the 65.2-acre Cultural Resources Survey Area (Figure 4). Thirteen resources were recorded within the Survey Area (Table 4; Figure A-1): three previously recorded prehistoric archaeological sites (CA-SDI-19307, CA-SDI-20984, and CA-SDI-20166); three newly identified prehistoric archaeological sites (SUN-S-1004, SUN-S-1005, and SUN-S-1012); two newly identified historic built environment resources (SUN-BSO-1002 and SUN-BSO-1011); three newly identified prehistoric isolates (SUN-ISO-1006, SUN-ISO-1017, and SUN-ISO-1028); and two newly identified historic isolates (SUN-ISO-1001 and SUN-ISO-1016). Disturbances are generally limited to the areas adjacent to Bell Bluff Truck Trail and the former location of the Wilson Laydown Area, a temporary laydown yard for construction associated with the Suncrest Substation and currently the site of biological habitat restoration; the SVC location is located within the former laydown yard. Most of the Survey Area consists of slopes of varying steepness and is covered in dense vegetation, including brush, trees, and grasses. Ground visibility in the Survey Area is variable though generally very poor, ranging from less than 10 percent in undisturbed, highly vegetated areas to over 70 percent in disturbed areas that have been cleared of brush (Figures 6–9). SWCA identified 31 acres within the Survey Area as areas with very poor ground visibility; none of these are within the Proposed Project Area (Figure 5).

**Table 4. Resources Recorded in Survey Area During Cultural Resources Survey**

Primary Number	Trinomial or Temporary Number	Resource Type	Time Period	Description	Intersecting Project Components
P-37-030375	CA-SDI-19307	Prehistoric archaeological site	Prehistoric	Bedrock mortar with one milling slick	None
P-37-031744	CA-SDI-20166	Prehistoric archaeological site	Prehistoric	Bedrock mortar with two milling slicks	SVC underground tie-line
P-37-033363	CA-SDI-20984	Prehistoric archaeological site	Prehistoric	Bedrock mortar with one milling slick	None
–	SUN-S-1004	Prehistoric archaeological site	Prehistoric	Lithic scatter and quarry	None
–	SUN-S-1005	Prehistoric archaeological site	Prehistoric	Bedrock mortar with one milling slick	None
–	SUN-S-1012	Prehistoric archaeological site	Prehistoric	Lithic scatter	SVC location
–	SUN-ISO-1001	Historic isolate	Mid-twentieth century	5-gallon metal drum	None
–	SUN-ISO-1006	Prehistoric isolate	Prehistoric	Flake	None
–	SUN-ISO-1016	Historic isolate	Twentieth century	Metal can	None
–	SUN-ISO-1017	Prehistoric isolate	Prehistoric	Mano fragment	None
–	SUN-ISO-1028	Prehistoric isolate	Prehistoric	Flake	None
–	SUN-BSO-1002	Historic built environment resource	Early twentieth century	Bell Bluff Truck Trail	SVC underground tie line
–	SUN-BSO-1011	Historic built environment resource	Early to mid-twentieth century	Water conveyance feature	None



**Figure 5.** Survey Coverage and Areas of Poor Ground Visibility



**Figure 6.** Overview of SVC Location, View to the East



**Figure 7.** Overview of Survey Area, View to the West





**Figure 8.** Overview of Survey Area with Dense Vegetation Outside of Proposed Project Area, View to the South



**Figure 9.** Overview of Bell Bluff Truck Trail within Proposed Project Area, View to the East





## 7.2.1 Previously Recorded Archaeological Sites

SWCA updated three previously recorded archaeological sites during the field survey: CA-SDI-19307, CA-SDI-20984, and CA-SDI-20166. All three sites are small bedrock milling stations with one or two slicks on granite outcrops. Only one of these, CA-SDI-19307, has associated artifacts.

### 7.2.1.1 CA-SDI-19307 (P-37-030375)

**Temporal Affiliation:** Prehistoric

**Dimensions:** 29 × 20 m (95 feet × 65.5 feet)

**Proximity to Proposed Project Area:** Outside

Site CA-SDI-19307 (P-37-030375) is a prehistoric bedrock milling station occupying a west-facing slope measuring 29 × 20 m (95 × 65.5 feet) (Figure 10). The site is situated on a granite bedrock landform with an unknown thickness of residuum and colluvium composed of decomposed granite and organic matter or duff. The topography of the vicinity is characterized by mostly flat terrain that slopes gently to the west and southwest toward a broad meadow. Additional, discontinuous granite outcroppings extend northeast of the site; some of these outcroppings are included within the original site boundary. An unnamed, intermittent stream is located approximately 225 m (738 feet) east of the site. Ground visibility is poor (approximately 10 percent) due to the presence of dense short and tall grasses and heavy accumulation of plant duff.

**Figure 10.** Site CA-SDI-19307, Overview of Milling Station, View to the South



The site was originally recorded in 2008 by Gallegos and Associates as a granite outcrop with a single milling slick and an associated piece of quartz debitage. The site was updated in 2010 by ASM Affiliates, Inc. (ASM), who confirmed that it was in the same condition as previously recorded. SWCA revisited and updated the site record during the current study. SWCA re-located the site in its recorded location and in the same general condition as described in the 2008 site form and in the 2010 updated site record.

The granite outcrop is oriented north-south and was originally measured in 2008 to be 0.7 × 1.0 × 0.3 m (2 feet 3 ½ inches × 3 feet 3 ⅜ inches × 1 foot). Upon measuring the outcrop for the 2015 site update,



SWCA observed that some residual deposition and accumulation of organic matter has occurred around the perimeter of the small outcrop; nonetheless, the current dimensions were approximately the same as the original measurements. The partially exfoliated milling slick or worked surface of the outcrop measures  $8 \times 20$  centimeters (cm) ( $3 \frac{1}{8}$  inches  $\times$   $7 \frac{7}{8}$  inches).

SWCA did not observe the piece of quartz debitage noted in the previous site record, possibly due to poor ground visibility. SWCA identified and recorded a flaked stone multi-directional core fragment composed of fine-grained, greenish-blue Santiago Peak metavolcanic material (Figure 11) within the site boundary approximately 14 m north of the milling slick. The core measures  $5 \times 3.7$  cm (2 inches  $\times$   $1 \frac{7}{16}$  inches) and is 2.7 cm ( $1 \frac{1}{16}$  inches) thick, and displays two negative flake scars originating from two different platform surfaces.

The site was likely utilized at low frequencies in the past by people travelling through the area on seasonal rounds. This type of site is relatively common within the Survey Area, and several new and previously recorded sites exhibit similar levels of utilization. It is unclear whether the milling slick and the associated flaked stone items were used contemporaneously.

**Figure 11.** Core Fragment Associated with CA-SDI-19307, Plan View



Site CA-SDI-19307 is in good condition with no observable disturbances. Some exfoliation is evident on the bedrock outcrop and worked surface of the milling slick. The area was used for cattle grazing in the past, which may have impacted it. Sediments within the site boundary are fine to coarse loamy sand with approximately 40 percent of the matrix composed of sub-rounded to sub-angular granitic pebbles and gravels (up to 2 cm [ $\frac{13}{16}$  inches] in length). No observable indicators such as darkened, organic sediments, additional features, or diverse ranges or densities of surface artifacts were identified at CA-SDI-19307, suggesting little potential for the presence of subsurface cultural deposits at the site. However, the thin layer of colluvium present may conceal buried deposits.

#### **7.2.1.2 CA-SDI-20166 (P-37-031744)**

**Temporal Affiliation:** Prehistoric

**Dimensions:**  $31 \times 17$  m (101 feet  $8 \frac{1}{2}$  inches  $\times$  55 feet  $9 \frac{3}{8}$  inches)

**Proximity to Proposed Project Area:** Within



Site CA-SDI-20166 (P-37-031744) is a bedrock milling station measuring  $31 \times 17$  m (101 feet  $8 \frac{1}{2}$  inches  $\times$  55 feet  $9 \frac{3}{8}$  inches), comprising a cluster of granite outcrops with two partially exfoliated slicks (Figure 12). Site CA-SDI-20166 lies among a rather discrete grouping of granite bedrock outcroppings and boulders. The entire outcrop formation is generally northeast-facing and occurs on a gentle slope that is less than 5 percent. The topography of the vicinity is characterized by a series of small hilltops to the south and west, and slightly undulating terrain sloping downward toward the north and northeast. The area is punctuated by randomly distributed granite outcrop formations. Apart from exposed granite bedrock, ground visibility is poor (approximately 20 percent) due to the presence of dense vegetation and duff in and around the site perimeter.

**Figure 12.** Overview of Site CA-SDI-20166, View to the West



The site was originally recorded in 2011 by ASM as a prehistoric bedrock milling site consisting of a low granite outcrop measuring  $15 \times 8 \times 1$  m (49 feet  $2 \frac{1}{2}$  inches  $\times$  26 feet 3 inches  $\times$  3 feet  $3 \frac{3}{8}$  inches) with one partially exfoliated slick measuring  $33 \times 19$  cm (1 foot  $11 \frac{7}{8}$  inches  $\times$  7  $\frac{1}{2}$  inches). In the 2011 site record, ASM refers to the granite outcrop with milling slick as Feature A; for the present site update, SWCA will refer to this feature as Feature 1019. ASM excavated two shovel test pits on the west and east sides of the outcrop and both were negative for cultural materials (Kyle and Williams 2013). The site was found ineligible for the CRHR by the CPUC and the Bureau of Land Management (BLM) and a portion of the bedrock outcrop was impacted during construction of the adjacent segment of Bell Bluff Truck Trail (Kyle and Williams 2013).

SWCA revisited the site as part of the current study, identified an additional milling slick, and expanded the site boundary. The site location is consistent with the original recording; however, an approximately 3-m portion of the bedrock outcrop south of the recorded milling slick location was impacted as a result of road construction (Figure 13). SWCA identified the granite outcrop and the location of Feature 1019. SWCA's measurements of Feature 1019 are consistent with ASM's measurements, and the feature appears to be in the same general condition as described in the original 2011 site record (Figure 14).



**Figure 13.** Site CA-SDI-20166, Overview of Outcrop Impacted by Road Construction, View to the North



**Figure 14.** Overview of Feature 1019, View to the Northeast



SWCA identified and recorded Feature 1021, an additional partially exfoliated milling slick measuring  $1.2 \times 1.2$  m (3 feet  $7 \frac{11}{16}$  inches  $\times$  3 feet  $7 \frac{11}{16}$  inches) (Figure 15). Feature 1021 is located on the west end of a large, raised, and partially exfoliated granite outcrop that measures  $14 \times 3 \times 2.3$  m (45 feet  $11 \frac{3}{16}$  inches  $\times$  9 feet  $10 \frac{3}{16}$  inches  $\times$  7 feet  $6 \frac{5}{8}$  inches). The location of the slick atop Feature 1021 affords 360-degree visibility of the surrounding area.



**Figure 15.** Overview of Feature 1021, View to the Northeast

The site is a special purpose site and was likely utilized at low frequencies in the past by people travelling through the area on seasonal rounds. This type of site is common in the Survey Area, and several new and previously recorded sites exhibit similar levels of utilization.

Site CA-SDI-20166 is in poor condition. Road construction for Bell Bluff Truck Trail has damaged a portion of the granite outcrop comprising Feature 1019 and has disturbed the soils bordering the south and southeast edges of the site. Substantial exfoliation is evident on the bedrock outcrops and worked surfaces of the two milling slicks. Sediments within the site boundary are dark brown, sandy silt with some decomposed granite. No observable indicators such as darkened organic sediments, additional features, or diverse ranges or densities of surface artifacts were identified at CA-SDI-20166, suggesting little potential for the presence of subsurface cultural deposits at the site. Subsurface testing in 2011 did not identify any subsurface deposits associated with the site (Kyle and Williams 2013).

#### **7.2.1.3 CA-SDI-20984 (P-37-033363)**

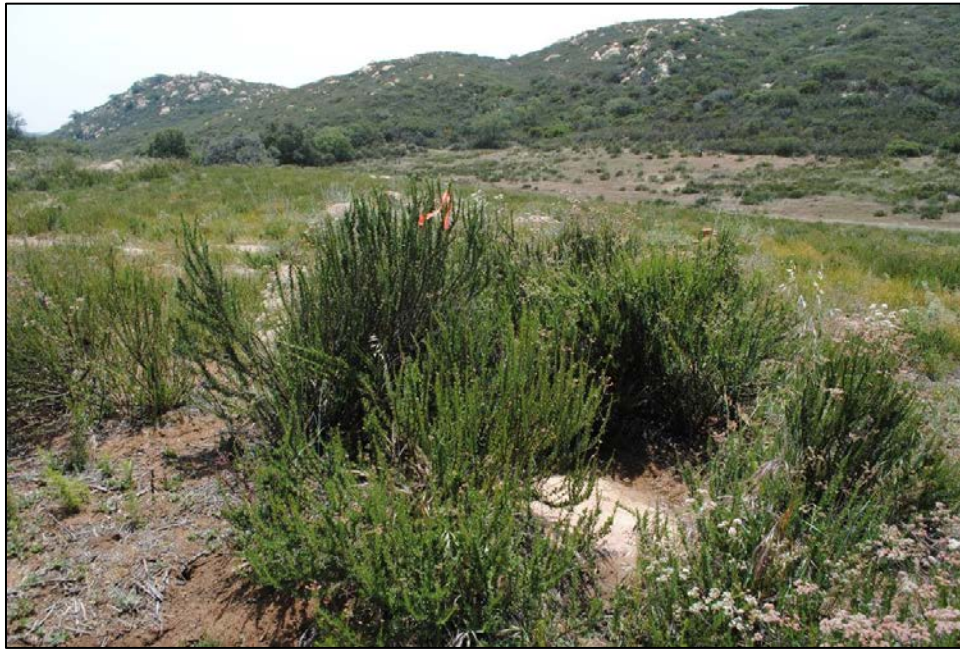
**Temporal Affiliation:** Prehistoric

**Dimensions:** 9 × 7 m (29 feet 6 <sup>3</sup>/<sub>8</sub> inches × 22 feet 11 <sup>5</sup>/<sub>8</sub> inches)

**Proximity to Proposed Project Area:** Outside

Site CA-SDI-20984 (P-37-033363) is a prehistoric bedrock milling station measuring 9 × 7 m (29 feet 6 <sup>3</sup>/<sub>8</sub> inches × 22 feet 11 <sup>5</sup>/<sub>8</sub> inches) comprising a low granite outcrop with a single, partially exfoliated slick located in a generally flat and open area (Figure 16). An additional, discrete granite outcrop exists about 20 m south of the site. The topography of the greater vicinity is characterized by mostly flat terrain that slopes gently to the east toward a small hilltop. Ground visibility is poor (approximately 25 percent) due to the presence of dense short and tall grasses, heavy accumulation of plant duff, and new vegetal growth in the site's immediate vicinity.



**Figure 16.** Site CA-SDI-20984, Overview of Milling Station, View to the South

The site was originally recorded in 2011 by ASM as a prehistoric bedrock milling site consisting of one partially exfoliated slick measuring  $50 \times 40$  cm (1 foot  $7 \frac{11}{16}$  inches  $\times$  1 foot  $3 \frac{3}{4}$  inches), located on a granite outcrop oriented north-south and measuring  $1.20 \times 0.80 \times 0.05$  m (3 feet  $11 \frac{1}{4}$  inches  $\times$  2 feet  $7 \frac{7}{16}$  inches  $\times$  1 foot  $7 \frac{11}{16}$  inches) with no associated artifacts. SWCA revisited the site as part of the current study. Although the site is located approximately 20 m (65 feet) north of the location indicated by the GIS data provided by the SCIC, it is in the same general condition as described in the 2011 site record. An unknown thickness of residuum and accumulated plant material has slightly altered the appearance of the bedrock outcrop, but SWCA's measurements were consistent with the previous recording. No other artifacts or features were encountered.

The site was likely utilized at low frequencies in the past by people travelling through the area on seasonal rounds. This type of site is relatively common in the Survey Area, and several new and previously recorded sites exhibit similar levels of utilization.

Site CA-SDI-20984 is in good condition with no observable disturbances. Some exfoliation is evident on the bedrock outcrop and worked surface of the milling slick. The area was used for cattle grazing in the past, which may have impacted the site. Observed sediments within the site boundary are medium reddish-brown colluvium with intermixed decomposed granite; approximately 20 percent of the matrix is composed of sub-angular granitic pebbles and gravels up to 2 cm ( $\frac{13}{16}$  inches) in length. No observable indicators such as darkened organic sediments, additional features, or diverse ranges or densities of surface artifacts were identified at CA-SDI-19307, suggesting little potential for the presence of subsurface cultural deposits at the site. However, the thin layer of colluvium present around the perimeter of the site may conceal buried cultural deposits.

### **7.2.2 Newly Recorded Archaeological Sites**

SWCA identified and recorded three new archaeological sites during the field survey: SUN-S-1004, SUN-S-1005, and SUN-S-1012, all of which are prehistoric.



### 7.2.2.1 SUN-S-1004

**Temporal Affiliation:** Prehistoric

**Dimensions:** 52 × 16 m (170 feet 7 <sup>3</sup>/<sub>16</sub> inches × 52 feet 5 <sup>7</sup>/<sub>8</sub> inches)

**Proximity to Proposed Project Area:** Outside

Site SUN-S-1004 is a prehistoric lithic quarry and flake scatter measuring 52 × 16 m (170 feet 7 <sup>3</sup>/<sub>16</sub> inches × 52 feet 5 <sup>7</sup>/<sub>8</sub> inches), comprising three distinct concentrations of lithics (Features 1025, 1026, and 1027), a scatter of both modified and unmodified quartz and granitic lithic materials, and an exposed quartz vein utilized as a quarry. The site is situated on an approximately 5 percent southwest-facing slope near the top of a small hill (Figure 17). The site is transected by a northeast-southwest-trending unpaved road, within which multiple fluvial channels occur. The topography of the general site vicinity is characterized by undulating terrain that slopes gently from a small hilltop to the northeast toward a relatively narrow, northeast-southwest-trending drainage to the southwest. Dense vegetation is present throughout most of the area, and identified artifacts are located either within the road or other areas that have been cleared of vegetation. Ground visibility varies from excellent (85 percent) within the unpaved access road and other areas cleared of vegetation to very poor in adjacent areas with dense vegetation.

**Figure 17.** Overview of Site SUN-S-1004, View to the Southwest



Artifacts outside the artifact concentrations consist of one core and at least 10 pieces of milky quartz and crystalline quartz debitage. The site surface is littered with small to large gravels and cobbles as well as small boulders composed of granite and quartz material types. An exposed vein of quartz that was likely used as a quarry for lithic tool production is located at the northeast end of the site within the unpaved access road.

Feature 1025 is located within a small clearing on the east side of the unpaved access road that transects the site (Figure 18). The concentration measures 3.5 × 1.5 m (11 feet 5.75 inches × 4 feet 11 inches), and consists of four pieces of milky and crystalline quartz debitage. Lithic debitage located inside of Feature 1025 is summarized in Table 5.



**Figure 18.** Site SUN-S-1004, Overview of Feature 1025, View to the Northwest**Table 5. Lithic Debitage Present in Feature 1025**

Material Type	Flake Type	Size Class (maximum length of flake in centimeters)					Type Total	Material Total
		1	2	3	4	5		
Milky quartz	T				1		1	1
	S						-	
	P						-	
Crystalline quartz	T			1	1		2	3
	S			1			1	
	P						-	
<b>Size Total</b>				<b>2</b>	<b>2</b>		<b>4</b>	<b>4</b>

T = Tertiary, S = Secondary, P = Primary

Feature 1026 is a concentration of seven pieces of crystalline quartz flaked stone debitage in a small clearing on the southwest side of the unpaved access road, and measuring  $1.5 \times 1.0$  m (4 feet 11 inches  $\times$  3 feet  $3\frac{3}{8}$  inches) (Figures 19 and 20). Lithic debitage inside Feature 1026 is summarized in Table 6.



**Figure 19.** Site SUN-S-1004, Overview of Feature 1026, View to the West



**Figure 20.** Site SUN-S-1004, Flakes from Feature 1026, Plan View





**Table 6. Lithic Debitage Present in Feature 1026**

Material Type	Flake Type	Size Class (maximum length of flake in centimeters)					Type Total
		1	2	3	4	5	
Crystalline quartz	T		4	3			7
	S						-
	P						-
<b>Size Total</b>			<b>4</b>	<b>3</b>			<b>7</b>

T = Tertiary, S = Secondary, P = Primary

Feature 1027 is a concentration of three white and gray-colored chalcedony flakes and five crystalline quartz flakes located adjacent to the west side of the unpaved access road and measuring  $2.0 \times 1.0$  m (6 feet  $6 \frac{3}{4}$  inches  $\times$  3 feet  $3 \frac{3}{8}$  inches) (Figure 21). Only two of the crystalline quartz flakes are complete; the remaining flakes are fragments. The debitage present in Feature 1027 is summarized in Table 7.

**Figure 21.** Site SUN-S-1004, Overview of Feature 1027, View to the Northwest



**Table 7. Lithic Debitage Present in 1027 Lithic Debitage**

Material Type	Flake Type	Size Class (maximum length of flake in centimeters)					Type Total	Material Total
		1	2	3	4	5		
Chalcedony	T			2	1		3	3
	S						-	
	P						-	
Crystalline quartz	T		1	4			5	5
	S						0	
	P						-	
<b>Size Total</b>			<b>1</b>	<b>6</b>	<b>1</b>		<b>8</b>	<b>8</b>

T = Tertiary, S = Secondary, P = Primary

Site SUN-S-1004 represents a locus of lithic procurement and reduction activity associated with prehistoric peoples' travel across the landscape. The flaked stone artifacts are manufactured from a narrow range of materials, consisting of milky quartz, crystalline quartz, and chalcedony; the quartz varieties were likely derived from local surface cobbles and vein deposits in the immediate vicinity. Chalcedony may be available from local geological deposits composed of weathered igneous parent material, but its origin is likely extra-local and was transported to the site from elsewhere. Only one core was identified within SUN-S-1004, suggesting that the site was the location of low frequency episodes of tool stone procurement and primary reduction. Most of the flaked stonedebitage, however, reflects middle- to late-stage flake-core reduction, indicating that a low frequency expedient stone tool production took place at this site. Only one flake from the identifieddebitage assemblage retains any cortex, and the preponderance of artifacts is interior or tertiary flakes. Given the presence of potentially extra-local lithic materials, the site may also have been a location where people conducted minor tool maintenance activities and resupplied toolkits with local materials.

Site SUN-S-1004 is in poor condition, with moderate disturbances by construction, use, and maintenance of the unpaved access road that transects it, as well as the multiple fluvial channels present in the road. Many of the lithic artifacts at the site have likely been redeposited as a result of fluvial action along the road section. Site sediments are composed of dark red and brownish-red, poorly sorted loamy sand with approximately 60 percent of the matrix composed of small to large (up to 10 cm [ $3 \frac{15}{16}$  inches] long) gravel and cobble inclusions and few boulder-sized rocks (up to 30 cm [ $11 \frac{13}{16}$  inches] long). No observable indicators such as darkened organic sediments, features, or diverse ranges or densities of surface artifacts were identified at SUN-S-1004, suggesting little potential for the presence of subsurface cultural deposits at the site. Further, evidence of frequent, high-energy fluvial action observed at the surface of SUN-S-1004 indicates an unstable land surface, which is not conducive to the preservation of intact archaeological deposits.

### 7.2.2.2 SUN-S-1005

**Temporal Affiliation:** Prehistoric

**Dimensions:** 24 × 20 m (78 feet  $8 \frac{7}{8}$  inches × 65 feet  $7 \frac{7}{16}$  inches)

**Proximity to Proposed Project Area:** Outside

Site SUN-S-1005 is a prehistoric bedrock milling station consisting of one partially exfoliated milling slick located within a group of granite outcrops and measuring 24 × 20 m (78 feet  $8 \frac{7}{8}$  inches × 65 feet  $7 \frac{7}{16}$  inches) (Figure 22). The site is located near the base of a gentle, northeast-facing slope on the west



end of a large, open, and grassy meadow. A north-south-trending ephemeral stream is located approximately 100 m to the east. Ground visibility is low, at approximately 30 percent across the site.

**Figure 22.** Overview of Site SUN-S-1005, View to the Northeast



Feature 1023 is a milling slick located at the south end of a low, flat granitic bedrock outcrop that is oriented north-south and measures  $5.5 \times 2.7$  m (18 feet  $\frac{1}{2}$  inch  $\times$  8 feet  $10 \frac{5}{16}$  inches). The worked surface of the feature measures  $1.15 \times 1.0$  m (3 feet  $9 \frac{1}{4}$  inches  $\times$  3 feet  $3 \frac{3}{8}$  inches) and exhibits faint evidence of use. No additional artifacts or features were observed. The site was likely utilized at low frequencies in the past by people travelling through the area on seasonal rounds. This type of site is relatively common in the Proposed Project Area, and several new and previously recorded sites exhibit similar levels of utilization.

Site SUN-S-1005 is in good condition with no observable disturbances. Some exfoliation is evident on the bedrock outcrop and on the milling slick, and the area has been used for livestock grazing, which may have impacted it. Portions of the bedrock outcropping and milling slick are covered with dirt and duff from the immediate vicinity. Site sediments are composed of light to medium-brown, poorly sorted coarse sand derived from decomposing granite; sediment constituents also include small to large pebbles and small gravels (up to 2 cm [ $1 \frac{3}{16}$  inches] long). No observable indicators such as darkened organic sediments, additional features, or diverse ranges or densities of surface artifacts were identified at SUN-S-1005, suggesting little potential for the presence of subsurface cultural deposits at the site. However, the thin layer of colluvium around the perimeter of the site may conceal buried cultural deposits.

### 7.2.2.3 SUN-S-1012

**Temporal Affiliation:** Prehistoric

**Dimensions:**  $15 \times 12$  m (49 feet  $2 \frac{1}{2}$  inches  $\times$  39 feet  $4 \frac{7}{16}$  inches)

**Proximity to Proposed Project Area:** Within

Site SUN-S-1012 is a prehistoric lithic scatter consisting of three pieces of flaked stone debitage measuring  $15 \times 12$  m (49 feet  $2 \frac{1}{2}$  inches  $\times$  39 feet  $4 \frac{7}{16}$  inches). The site is located on a gentle, west-facing slope (less than 2 percent) within the previous location of the Wilson Laydown Area (Figure 23).



The entire area of the former laydown yard is now the location of biological habitat restoration. Ground visibility is good, at approximately 85 percent across the site.

**Figure 23.** Overview of Site SUN-S-1012, View to the Southeast



The flakes are manufactured from a single metavolcanic material type known as Santiago Peak (Figure 24). The Santiago Peak Formation is a near-local source of lithic material; the metamorphosed volcanic material is fine-grained and exhibits a suitable conchoidal fracture (Pignuolo 2009). Lithic debitage present is summarized in Table 8.

**Figure 24.** Site SUN-S-1012, Dorsal Surface, Plan View.  
Left to Right: Artifact Nos. 1033, 1031, and 1032.





Table 8. SUN-S-1012, Lithic Debitage Tally

Material Type	Flake Type	Size Class (maximum length of flake in centimeters)					Type Total
		1	2	3	4	5	
Santiago Peak Metavolcanic	T			1	1		2
	S			1			1
	P						-
Size Total				2	1		3

T = Tertiary, S = Secondary, P = Primary

Based ondebitage type and artifact distribution and frequency, SUN-S-1012 likely represents a single-use reduction locus where people conducted core reduction and minor maintenance activities associated with their movement across the landscape. Debitage attributes indicate that middle- and late-stage core reduction took place, along with some core maintenance.

The site is in poor condition with significant disturbances and is impacted by past use of the area as a construction laydown yard and by current habitat restoration efforts. Multiple vehicle tracks likely associated with laydown yard or restoration activities are present within the site boundary. The lithic artifacts at the site were likely redeposited as a result of ground disturbances associated with use of the area as a materials storage and laydown area, including brush clearing and grading, topsoil salvage, ripping and re-contouring to a depth of 46–61 cm (18–24 inches), and habitat restoration efforts. Other disturbances include colluvial and alluvial processes, vehicle disturbances, pedestrian traffic, and bioturbation. Soils present consist of light brownish-yellow, poorly sorted fine to coarse sand with gravel-sized inclusions derived from colluvial slopewash. No observable indicators such as darkened organic sediments, features, or diverse ranges or densities of surface artifacts were identified at SUN-S-1012, suggesting little potential for the presence of buried cultural deposits at the site.

### 7.2.3 Newly Recorded Isolates

SWCA identified and recorded five isolated artifacts, consisting of three prehistoric isolates (SUN-ISO-1006, SUN-ISO-1017, and SUN-ISO-1028) and two historic isolates (SUN-ISO-1001 and SUN-ISO-1016). The prehistoric isolates are flaked and ground stone artifacts, and are consistent with regular use of the area by prehistoric peoples. The historic isolates are likely the result of use and casual dumping by local residents in the twentieth century. Isolated artifacts are summarized in Table 9.

Table 9. Newly Recorded Isolated Resources

Isolate Number	Time Period	Description	Date Range	References	Intersecting Project Components
SUN-ISO-1006	Prehistoric	Gray rhyolite medial fragment with simple dorsal topography	Prehistoric	–	None
SUN-ISO-1017	Prehistoric	Bifacial, granitic mano fragment	Prehistoric	–	None
SUN-ISO-1028	Prehistoric	Crystalline quartz tertiary flake fragment with single-facet platform	Prehistoric	–	None



**Table 9. Newly Recorded Isolated Resources**

<b>Isolate Number</b>	<b>Time Period</b>	<b>Description</b>	<b>Date Range</b>	<b>References</b>	<b>Intersecting Project Components</b>
SUN-ISO-1001	Historic	5-gallon metal drum	Twentieth century	ICC Compliance Center 2015	None
SUN-ISO-1016	Historic	Metal can; can opener—opened with welded side-seam	1904–1993	Rock 1987	None

## **7.2.4 Newly Recorded Built Environment Resources**

SWCA identified and recorded two historic built environment resources during the field survey: SUN-BSO-1002 and SUN-BSO-1011.

### **7.2.4.1 SUN-BSO-1002 (BELL BLUFF TRUCK TRAIL)**

**Temporal Affiliation:** Historic

**Dimensions:** Varied

**Proximity to Proposed Project Area:** Within

The current study identified and recorded three segments of SUN-BSO-1002, Bell Bluff Truck Trail, an access road located in unincorporated San Diego County (Figures 25–27). Historic maps and aerial photographs indicate that portions of Bell Bluff Truck Trail have been realigned several times since initial development of the road in the early twentieth century, most notably during the construction of the adjacent Suncrest Substation in 2012. The three segments that were recorded as part of the current study are identified portions of the historic road alignment that intersect the Proposed Project Area. All segments were historically unpaved, but two were graded and paved as part of the substation's construction and include drainage culverts, paved water channels, and other erosion control infrastructure.

Appearing to coincide with the original road alignment dating to at least 1903, the western segment is approximately 0.3 mile (0.48 kilometer [km]) long and 12 feet (3.7 m) wide. The middle segment begins approximately 0.5 mile (0.8 km) east of the western segment, and appears to have been constructed between 1960 and 1982, replacing an earlier alignment to the north. Also recently paved, it is approximately 0.2 mile (0.3 km) long and 30 feet (9.1 m) wide. The eastern segment comprises a small portion of a segment that was likely constructed between 1960 and 1982 and that has been recently paved, and a north-south-trending, unpaved spur that appears to have been constructed prior to 1944.

The subject property is located in a largely undeveloped area that is characterized by native vegetation. Due to the recent paving of two segments of the road and extensive grading and realignment, the subject property no longer retains integrity of design, materials, and workmanship.



**Figure 25.** Western Segment of Bell Bluff Truck Trail, View to the Northeast



**Figure 26.** Eastern Segment of Bell Bluff Truck Trail, View to the South

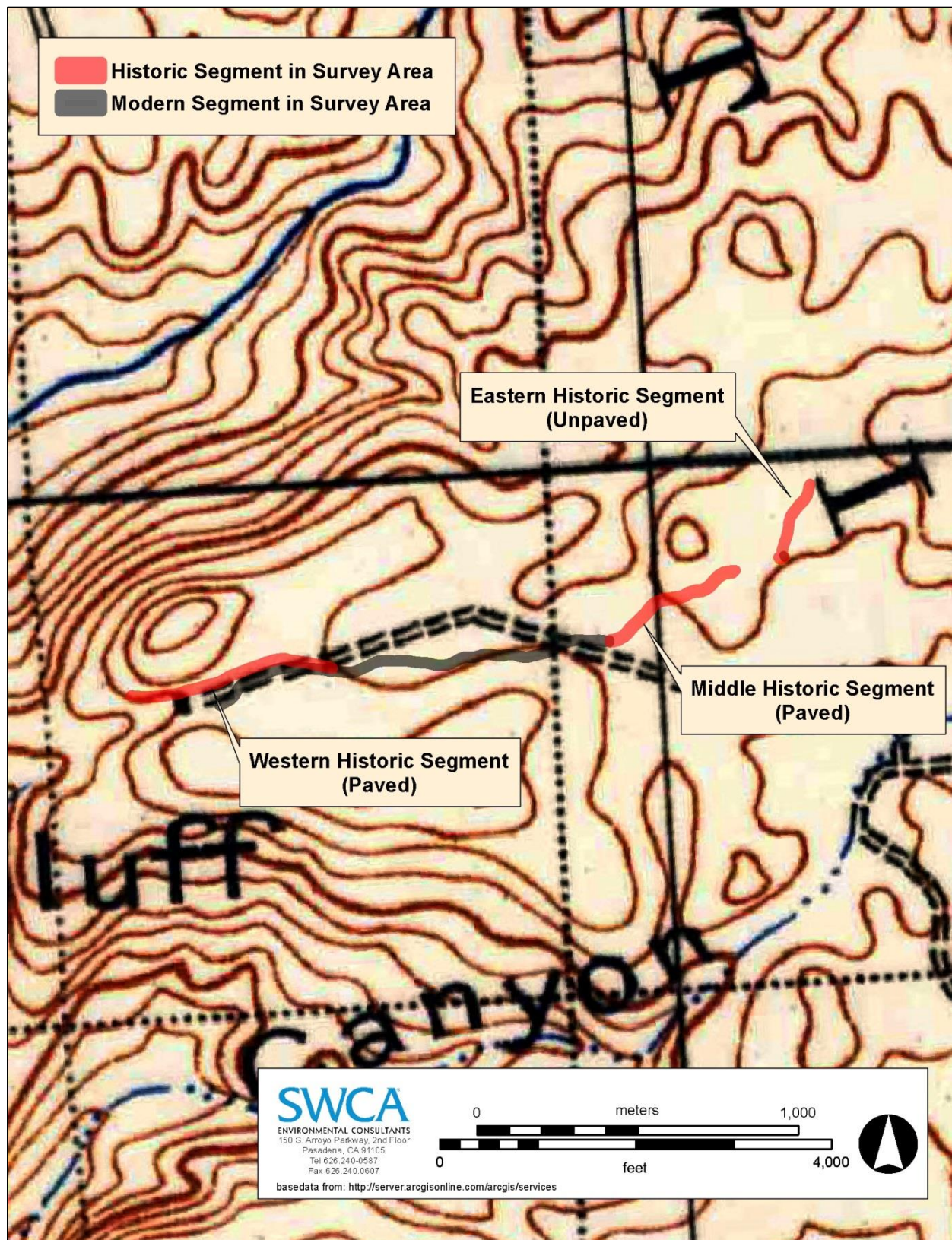




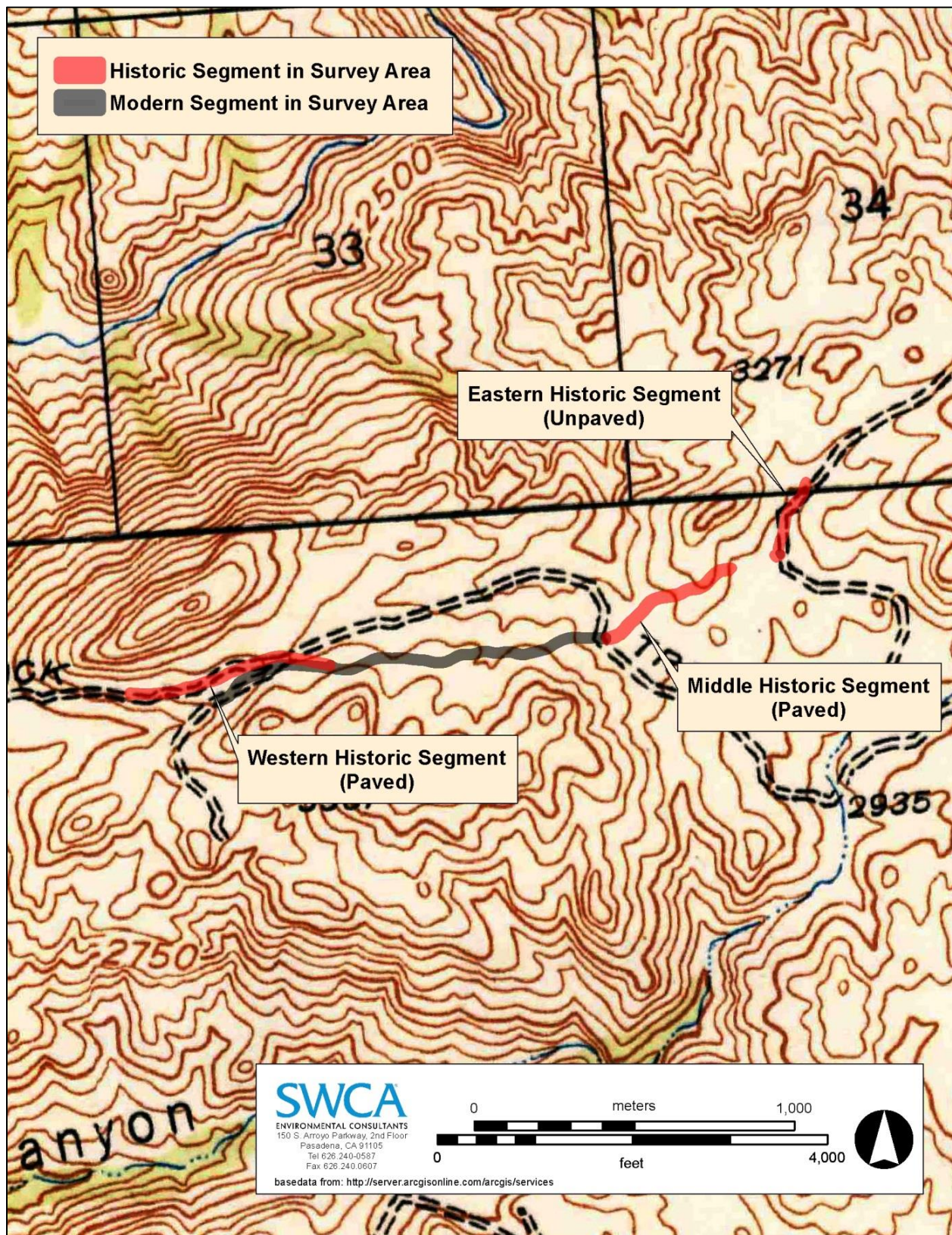
**Figure 27.** Middle Segment of Bell Bluff Truck Trail, View to the Northeast

Historic USGS topographic maps dating to 1903 identify an unpaved access road following a similar alignment of the western segment of the subject property (USGS 1903) (Figure 28). The road appears to have been developed to connect a building west of the termini of the western segment to more developed areas to the east. By 1944, the building appears to have been demolished and the road, now identified as Bell Bluff Truck Trail, had been extended further to west and north to connect to the community of Alpine (USGS 1942) (Figure 29). The road continued to operate as a recreational trail into the following decades and was intermittently realigned, including development of the current eastern segment between 1960 and 1983 (California Legislature 1951; USGS 1960) (Figure 30). Portions of Bell Bluff Truck Trail, including two segments of the subject property, were incorporated into an access road that was developed in support of the construction and operation of the Suncrest Substation in 2012 (Geocon 2015). As part of this effort, two of the three subject segments were graded and paved to connect to a newly developed segment of road.



**Figure 28.** Segments of Bell Bluff Truck Trail in the Survey Area on a 1903 USGS Topographic Map



**Figure 29.** Segments of Bell Bluff Truck Trail in the Survey Area on a 1944 USGS Topographic Map



**Figure 30.** Segments of Bell Bluff Truck Trail in the Survey Area on a 1960 USGS Topographic Map; Photorevised in 1983





#### 7.2.4.2 SUN-BSO-1011

**Temporal Affiliation:** Historic

**Dimensions:** 18 feet × 1 foot 6 inches (5.5 × 0.5 m)

**Proximity to Proposed Project Area:** Outside

SUN-BSO-1011 consists of a corrugated metal conduit and an associated rock alignment (Figure 31) within the previous location of the Wilson Laydown Area. Potentially a culvert for Bell Bluff Truck Trail prior to its realignment ca. 1960, the conduit is approximately 18 feet (5.5 m) long with a diameter of 1 foot 6 inches (0.5 m), and is partially buried under a built-up mound of sediments from the surrounding area. It is oriented east-west and is bordered to the east by a linear rock alignment composed of a single course of angular, granite boulders. Although the exposed southern portion has been slightly damaged from impact, the resource still retains overall integrity. It is situated in a small, narrow, north-south-trending valley that is undeveloped and characterized by high-density native and invasive grasses.

**Figure 31.** Overview of SUN-BSO-1011, View to the West



SUN-BSO-1011 appears to have been constructed at some point between 1903 and 1942 as part of a former alignment of Bell Bluff Truck Trail. Historic USGS topographic maps dating to 1903 first identify Bell Bluff Truck Trail following an east-west alignment south of SUN-BSO-1011 and leading to a building approximately 1 mile to the west (USGS 1903). Bell Bluff Truck Trail was realigned by 1942, crossing the location of SUN-BSO-1011 and extending to the community of Alpine approximately 6 miles northwest; SUN-BSO-1011 appears to have been constructed as a culvert for ca. 1942 alignment of Bell Bluff Truck Trail (USGS 1942). Bell Bluff Truck Trail was realigned again ca. 1960, resulting in the abandonment of SUN-BSO-1011 and the eventual erosion of the former road grading (USGS 1960).



## 8 SUMMARY AND RECOMMENDATIONS

The Proposed Project Area is in an unincorporated area of San Diego County, approximately 29 miles east of San Diego and 3.36 miles southeast of the community of Alpine. The Proposed Project consists of the SVC location, SVC tie-line, riser pole, and a single 300-foot-long overhead transmission span connecting the SVC tie-line to the Suncrest Substation. Because the cultural resources study was conducted prior to finalization of project plans, SWCA surveyed a larger Survey Area comprising approximately 65.2 acres that consisted of all land under consideration for the Proposed Project at the time of the survey; the Proposed Project Area is included in the Survey Area.

SWCA requested a CHRIS records search from the SCIC, which identified three prehistoric archaeological sites in the Survey Area; of these, site CA-SDI-20166, a bedrock milling station, is located in the Proposed Project Area. Qualified SWCA archaeologists conducted an intensive-level pedestrian cultural resources survey of the Survey Area. During the survey, SWCA revisited and updated all three previously recorded sites. In addition, SWCA identified and recorded three prehistoric archaeological sites, two historic built environment resources, three prehistoric isolated artifacts, and two historic isolated artifacts within the Survey Area. Of these, archaeological site SUN-S-1012, a prehistoric lithic scatter, and built environment SUN-BSO-1002, historic Bell Bluff Truck Trail, are located in the Proposed Project Area.

As discussed in Section 3, Regulatory Framework, above and in accordance with PRC Section 5024.1(c)(1–4), a resource is considered eligible for the CRHR and *historically significant* if it 1) retains “substantial integrity,” and 2) meets at least one of the following criteria:

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

Under CEQA, isolates are generally not eligible for the CRHR. The information potential of the five isolated artifacts identified during the field survey has been exhausted by their recordation and analysis as part of the current study, and relevant DPR forms will be submitted to the CHRIS information center. Although none of the isolates are located within the Proposed Project Area, no further work is necessary for these resources, regardless of future changes to the Proposed Project footprint.

Prehistoric archaeological sites CA-SDI-19307, CA-SDI-20984, SUN-S-1004, and SUN-S-1005 have not been evaluated for listing on the CRHR. All these sites will be avoided due to project redesign; if changes to the Proposed Project footprint occur, impacts to any of these sites should be avoided.

Prehistoric archaeological site SUN-S-1012 is located in the Proposed Project Area, within the former Wilson Laydown Area, a materials storage and laydown area for Sunrise Powerlink that is currently the site of biological habitat restoration. Ground disturbance in the vicinity of the site that occurred during site preparation, during its use as a materials storage and laydown area, and during restoration efforts was significant (SDG&E 2015). Construction activities associated with site preparation included brush clearing and grading; removal of native vegetation and incorporation of vegetation into the topsoil, and topsoil salvage to a depth of 6 inches (15.24 cm) (AECOM and RECON 2012). After the location was no longer used as a materials storage and laydown area, restoration efforts included re-contouring the land



and mechanically ripping the ground to alleviate compaction, resulting in substantial movement of sediments. The yard was ripped and cross-ripped to a depth of 18 to 24 inches (45.72 to 60.96 cm) prior to being re-contoured to the original topography. Salvaged topsoil was then re-distributed over the site and seeded (SDG&E 2015).

The ground surface surrounding site SUN-S-1012 is highly disturbed, with a visibly uneven surface consisting of a mixture of subsoil and topsoil. Information provided by SDG&E indicates that the disturbance related to the use of the area as a materials storage and laydown area for Sunrise Powerlink has thoroughly disrupted the horizontal position of materials and the stratigraphic relationships of the entire area to a depth of at least 45 cm, and as deep as 61 cm (SDG&E 2015). The site is not known to contain buried deposits, but if these exist, they are highly unlikely to retain integrity. SWCA thus finds prehistoric archaeological site SUN-S-1012 ineligible for listing in the CRHR due to a lack of integrity. In addition, SWCA prehistoric archaeological site SUN-S-1012 does not meet the criteria for a “*unique archaeological resource*” under CEQA. Thus, SWCA no further cultural resources work, including further research, avoidance, or additional mitigation measures, is necessary for this resource.

Prehistoric archaeological site CA-SDI-20166, located within the Proposed Project Area, was evaluated by ASM and found not eligible for listing on the CRHR by the CPUC and the BLM (Kyle and Williams 2013). As part of the current study, SWCA updated the site, identified an additional feature in the portion of the site outside the Proposed Project Area, and expanded the site boundary. The newly identified feature is the same type of feature as was identified in the original site record, and there is no evidence to suggest buried cultural deposits are present within the expanded site boundary. Thus, the new data do not change the previous finding that the site lacks the potential to yield important information (Criterion 4). In addition, there are no new data to suggest that the site may be eligible under Criterion 1, 2, or 3. SWCA finds the site ineligible for listing on the CRHR, and no further cultural resources work, including further research, avoidance, or additional mitigation measures, is necessary for this resource.

SWCA finds built environment resource SUN-BSO-1002 (Bell Bluff Truck Trail) not eligible for listing in the CRHR or as a historical resource in San Diego County, either individually or as a contributor to an eligible historic district for the following reasons:

- Research did not reveal any direct and important associations with the CNF, the early development of the area, or a significant event or patterns of development, nor with any individual significant in the history of the city, region, state, or nation (Criteria 1 and 2).
- Available sources also did not identify the structure’s designer or builder, and it is a typical (but not distinctive or outstanding) example of a common property type; it does not embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, nor possess high artistic values (Criterion 3).
- Research does not suggest the property has the potential to yield information important in history or prehistory (Criterion 4).

The resource has been modified numerous times since it was initially developed in the early twentieth century, including recent grading, paving, and other alterations. Taken together, these modifications have affected the integrity of the subject property, and it no longer conveys any potential significance as an early unpaved access road. Because built environment resource SUN-BSO-1002 (Bell Bluff Truck Trail) is ineligible for listing on the CRHR, no further cultural resources work, including further research, avoidance, or additional mitigation measures, is necessary for this resource.



SWCA finds built environment resource SUN-BSO-1011 not eligible for listing in the NRHP or CRHR, or as a historical resource in the County of San Diego either individually or as contributors to an eligible historic district for the following reasons:

- It is unable to convey any associations with Bell Bluff Truck Trail following realignment of the road and the subsequent erosion of the grading, and research did not reveal any direct and important associations with the CNF, the early development of the area, or a significant event or patterns of development, nor with any individual significant in the history of the city, region, state, or nation (Criteria A/1/A and B/2/D).
- Available sources also did not identify the structure's designer or builder, and it is a typical (but not distinctive or outstanding) example of a common property type; it does not embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, nor possess high artistic values (Criteria C/3/C).
- Research does not suggest the potential to yield information important in history (Criteria D/4/D).

Because built environment resource SUN-BSO-1011 is ineligible for listing on the CRHR, no further cultural resources work, including further research, avoidance, or additional mitigation measures, is necessary for this resource.

Management recommendations for all identified resources within the Survey Area are summarized in Table 10.

**Table 10. Summary of Management Recommendations**

Primary Number	Trinomial or Temporary Number	Resource Type	Intersecting Project Components	Evaluation	Management Recommendation
P-37-033363	CA-SDI-20984	Prehistoric archaeological site	None	Not evaluated	Avoid or evaluate; if avoidance is not feasible, evaluate by conducting subsurface testing
P-37-031744	CA-SDI-20166	Prehistoric archaeological site	SVC underground tie-line	Not eligible	No further work needed
P-37-030375	CA-SDI-19307	Prehistoric archaeological site	None	Not evaluated	Avoid or evaluate; if avoidance is not feasible, evaluate by conducting subsurface testing
	SUN-BSO-1002	Historic built environment resource	SVC underground tie-line	Not eligible	No further work needed
	SUN-BSO-1011	Historic built environment resource	None	Not eligible	No further work needed
	SUN-ISO-1001	Historic isolate	None	Not eligible	No further work needed
	SUN-ISO-1006	Prehistoric isolate	None	Not eligible	No further work needed



**Table 10. Summary of Management Recommendations**

<b>Primary Number</b>	<b>Trinomial or Temporary Number</b>	<b>Resource Type</b>	<b>Intersecting Project Components</b>	<b>Evaluation</b>	<b>Management Recommendation</b>
	SUN-ISO-1016	Historic isolate	None	Not eligible	No further work needed
	SUN-ISO-1017	Prehistoric isolate	None	Not eligible	No further work needed
	SUN-ISO-1028	Prehistoric isolate	None	Not eligible	No further work needed
	SUN-S-1004	Prehistoric archaeological site	None	Not evaluated	Avoid or evaluate; if avoidance is not feasible, evaluate by conducting subsurface testing
	SUN-S-1005	Prehistoric archaeological site	None	Not evaluated	Avoid or evaluate; if avoidance is not feasible, evaluate by conducting subsurface testing
	SUN-S-1012	Prehistoric archaeological site	SVC location	Not eligible	No further work needed

In addition to the known presence of two prehistoric archaeological sites in the Proposed Project Area (SUN-S-1012 and CA-SDI-20166), archival research indicates that there is a moderate to high potential to encounter prehistoric materials in the Survey Area. Surface visibility was very poor (less than 10 percent) in portions of the Survey Area due to the presence of dense chaparral. Buried or obscured archaeological resources may be encountered during construction, if construction occurs in undisturbed sediments within of the Survey Area. However, ground visibility in the Proposed Project Area was generally good to excellent (over 70 percent). Further, nearly all sediments in the Proposed Project Area have been highly disturbed from construction activities associated with the Sunrise Powerlink, including road construction, the use of the proposed SVC site as a materials storage and laydown area (Wilson Laydown Area), and habitat restoration efforts. Nearly all of the Proposed Project Area that is located outside of the former Wilson Laydown Area, including the majority of the proposed underground transmission line, is located within the paved segments of Bell Bluff Truck Trail. Bell Bluff Truck Trail was widened, graded, and paved during construction associated with the Sunrise Powerlink.

Within the former Wilson Laydown Area, construction activities associated with site preparation included brush clearing and grading in 2011–2012; removed native vegetation was incorporated into the topsoil, and topsoil salvage to a depth of 6 inches (15.24 cm) was conducted (AECOM and RECON 2012). After the location was no longer used as a materials storage and laydown area in late 2012, restoration efforts included re-contouring the land and mechanically ripping the ground, resulting in substantial movement of sediments. The yard was ripped and cross-ripped to a depth of 18 to 24 inches (46 to 61 cm) prior to being re-contoured to the original topography, and the salvaged topsoil was then re-distributed over the site and seeded (SDG&E 2015). Biological habitat restoration efforts, including restoration maintenance activities, weed control, and monitoring, are currently ongoing (SDG&E 2015).

Based on survey results and the highly disturbed context of sediments in the Proposed Project Area, it is unlikely that previously unidentified cultural resources, including intact buried archaeological deposits,



occur within the Proposed Project Area. Proposed construction activities will be limited to the Proposed Project Area, and potential blasting will be limited to areas wherein standard excavation methods are not feasible, such as within bedrock, which is highly unlikely to contain archaeological deposits. Further, the potential blasting will occur after other sediments have been mechanically removed through standard excavation methods and will be minimized to localize disturbance. Thus, proposed construction activities, including potential blasting, are unlikely to disturb previously unidentified cultural resources. The following applicant-proposed measures have been developed to avoid or minimize potential impact to cultural resources and ensure that impacts remain less than significant:

1. **Retain a Qualified Principal Investigator:** A qualified principal investigator, defined as an archaeologist who meets the Secretary of the Interior's Standards for professional archaeology, will be retained to carry out all applicant proposed measures related to archaeological and historical resources.
2. **Archaeological Construction Monitoring:** A qualified archaeological monitor will be retained to conduct periodic spot checking of initial ground disturbing activities. The archaeological monitor will work under the supervision of the principal investigator. Spot checking will include but not be limited to: excavations below 24 inches (60 cm) within the former Wilson Laydown Area (previously used as a materials storage and laydown area for the Sunrise Powerlink); and in locations wherein blasting will occur, both prior to and after blasting. The duration and timing of the monitoring will be determined by the CPUC, with recommendations provided by the principal investigator. If the principal investigator determines that periodic spot-checking is no longer warranted, he or she may recommend to the CPUC that monitoring cease entirely. In addition, if the principal investigator determines that an increase in the level of monitoring is warranted, he or she may recommend to the CPUC that full-time monitoring of ground disturbing activities be conducted in archaeologically sensitive areas.
3. **Inadvertent Discoveries:** In the event that unanticipated cultural materials are encountered during any phase of construction, all construction work within 50 feet of the deposit will cease, and the principal investigator will be consulted to assess the find. Construction activities may continue in other areas. Ground-disturbing impacts to any newly-discovered eligible or potentially eligible resources should be avoided to the extent feasible. If avoidance of these sites is not feasible, CPUC's Energy Division will ensure that potentially impacted cultural resources are assessed for significance, as defined by PRC Section 21083.2 or State CEQA Guidelines Section 15064.5(a), through implementation of Phase II investigations. Should such testing exhaust the data potential of these resources, impacts from the Proposed Project would be reduced to less than significant. Resources found to be not significant will not require additional treatment. Impacts to resources found to be significant will be reduced to less than significant through a Phase III data recovery program. Prior to any ground-disturbing activities, a detailed archaeological treatment plan will be prepared and implemented by a qualified archaeologist for the data recovery program. Data recovery investigations will be conducted in accordance with the archaeological treatment plan to ensure collection of sufficient information to address archaeological and historical research questions, and results will be presented in a technical report (or reports) describing field methods, materials collected, and conclusions. Additional testing and/or data recovery phases may involve additional excavation and/or more detailed recordation of resources or more comprehensive archival research. Any cultural material collected as part of an assessment or data recovery effort should be curated at a qualified facility. Field notes and other pertinent materials should be curated along with the archaeological collection.
4. **Discovery of Human Remains:** If human remains are discovered, all work within 15 meters (50 feet) of the discovery shall cease and the San Diego County Coroner shall be notified. State of California Health and Safety Code Section 7050.5 stipulates that no further disturbance will occur



until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The San Diego County Coroner and the CPUC will be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a MLD. The MLD will complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

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True, Delbert L.

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- 1970 *Investigation of a Late Prehistoric Complex in Cuyamaca Rancho State Park, San Diego County, California*. Archaeological Survey Monographs No. 1. University of California, Los Angeles.
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## Yenne, Bill

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## **Appendix A. Confidential Cultural Resources Survey Results Map**

*This appendix has been redacted from the public version of this report because it contains confidential site information.*







**Appendix B.  
South Coastal Information Center  
Records Search Results Letter**









South Coastal Information Center  
San Diego State University  
5500 Campanile Drive  
San Diego, CA 92182-5320  
Office: (619) 594-5682  
www.scic.org  
nick@scic.org

## CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORDS SEARCH

**Company:** SWCA Environmental Consultants

**Company Representative:** Laura Hoffman

**Date Processed:**

**Project Identification:** 32001 NEET Suncrest Reactive Power Project #32001

**Search Radius:** 1 mile

**Historical Resources:** YES

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

**Previous Survey Report Boundaries:** YES

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

**Historic Addresses:** YES

A map and database of historic properties (formerly Geofinder) has been included.

**Historic Maps:** YES

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

### Summary of SHRC Approved CHRIS IC Records Search Elements

<b>RSID:</b>	964
<b>RUSH:</b>	yes
<b>Hours:</b>	1
<b>Spatial Features:</b>	47
<b>Address-Mapped Shapes:</b>	no
<b>Digital Database Records:</b>	0
<b>Quads:</b>	1
<b>Aerial Photos:</b>	0
<b>PDFs:</b>	Yes
<b>PDF Pages:</b>	105



## **Appendix C. Native American Coordination Documentation**







**From:** Laura Hoffman  
**To:** [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
**Cc:** [Megan Peterson](#); [Flajole, Andy \(Andy.Flajole@nexteraenergy.com\)](mailto:Flajole_Andy@nexteraenergy.com)  
**Subject:** Attention Katy Sanchez: SWCA request for SLF search for Project 32001, NEET Suncrest Reactive Power Project in San Diego County  
**Date:** Monday, March 16, 2015 2:21:00 PM  
**Attachments:** [032001\\_NEET\\_Suncrest\\_Reactive\\_Power\\_Project\\_NAHC\\_Map1\\_v2.pdf](#)  
[032001\\_NEET\\_Suncrest\\_Reactive\\_Power\\_Project\\_NAHC\\_Map2\\_v2.pdf](#)

---

Dear Ms. Sanchez,

I am requesting a records search of the Sacred Lands File and a list of appropriate Native American contacts for the **32001: NEET Suncrest Reactive Power Project** located within **San Diego County, California**. The study area falls within the USGS 7.5-minute **Viejas Mountain, California quadrangle** approximately 6 miles south-southeast of the community of Alpine and 1 mile south of Interstate 8. Specifically, the project is located in **Township 15 South, Range 3 East, Section 34 and Township 16 South, Range 3 East, Sections 3 and 4**, Mount Diablo Base and Meridian (**see attached project vicinity and location maps**).

I am requesting the following information:

- Groups or individuals listed by the NAHC as contacts for San Diego County.
- Identification by the NAHC of any sacred lands in the area that are listed within the Sacred Lands File.

Please email the results to me at [lhoffman@swca.com](mailto:lhoffman@swca.com), referencing your email to "32001: NEET Suncrest Reactive Power Project, San Diego County, California." Please contact me with any questions or if you require additional information.

Thank you for your attention to this request.

Sincerely,

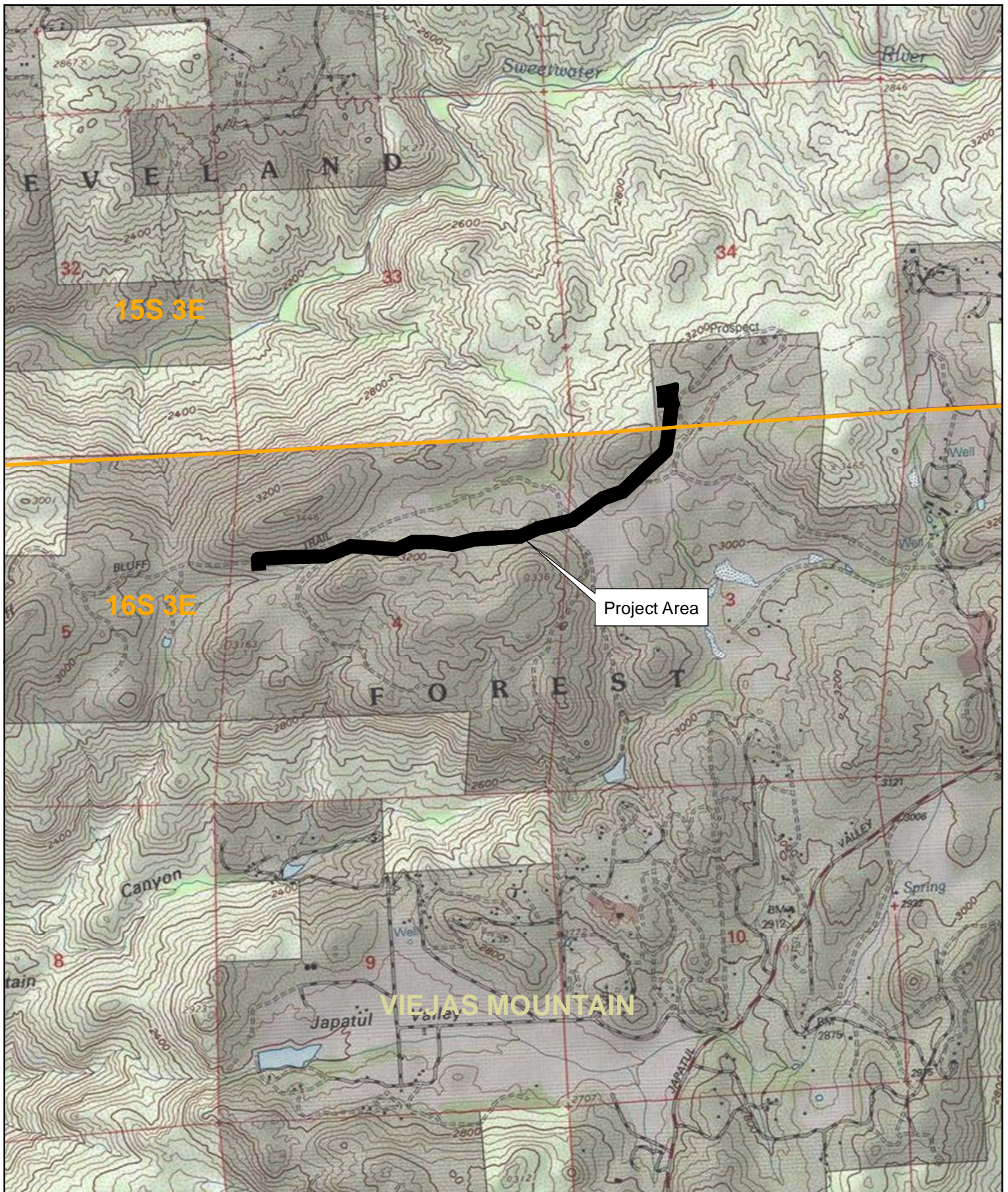
**Laura E. Hoffman, M.A., RPA**  
Cultural Resources Project Manager

**SWCA Environmental Consultants**  
150 South Arroyo Parkway, Second Floor  
Pasadena, California 91105  
P 626.240.0587 x6630 | C 310.418.4417









<p>0 Meters 1,500</p> <p>0 Feet 4,000</p> <p>basedata from: <a href="http://server.arcgisonline.com/arcgis/services">http://server.arcgisonline.com/arcgis/services</a></p>	<p><b>SWCA</b></p> <p>ENVIRONMENTAL CONSULTANTS</p> <p>60 Stone Pine Road, Suite 201</p> <p>Half Moon Bay, CA 94109</p>	<p><b>Project Location Map</b></p> <p><b>Suncrest Reactive Power Support Project</b></p> <p>San Diego County California</p> <table border="1"> <tr> <th>Project No.</th> <th>Date</th> <th>Scale</th> <th>Figure/Drawing No.</th> </tr> <tr> <td>32001</td> <td>3-11-15</td> <td>1:24,000</td> <td>2</td> </tr> </table>			Project No.	Date	Scale	Figure/Drawing No.	32001	3-11-15	1:24,000	2
Project No.	Date	Scale	Figure/Drawing No.									
32001	3-11-15	1:24,000	2									



STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

**NATIVE AMERICAN HERITAGE COMMISSION**

1550 Harbor Blvd., ROOM 100  
West SACRAMENTO, CA 95601  
(916) 373-3710  
Fax (916) 373-6471



April 20, 2015

Laura E. Hoffman  
SWCA Environmental Consultants  
150 South Arroyo Parkway, Second Floor  
Pasadena, CA 91105

Sent by Fax: (626) 240-0607  
Number of Pages: 3

Re: 032001 NEET Suncrest Reactive Power Project, San Diego County.

Dear Ms. Hoffman,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez  
Associate Government Program Analyst



**Native American Contact List  
San Diego County  
April 20, 2015**

Ewilaapaay Tribal Office  
Robert Pinto Sr., Chairperson  
4054 Willows Road  
Alpine, CA 91901  
wmicklin@leaningrock.net  
(619) 445-6315

Diegueno/Kumeyaay

Jamul Indian Village  
Raymond Hunter, Chairperson  
P.O. Box 612  
Jamul, CA 91935  
Rhunter1948@yahoo.com  
(619) 669-4785

Diegueno/Kumeyaay

(619) 445-9126 Fax

Sycuan Band of the Kumeyaay Nation  
Cody J. Martinez, Chairperson  
1 Kwaaypaay Court  
El Cajon, CA 92019  
ssilva@sycuan-nsn.gov  
(619) 445-2613

Diegueno/Kumeyaay

Kwaaymii Laguna Band of Mission Indians  
Carmen Lucas  
P.O. Box 775  
Pine Valley, CA 91962  
(619) 709-4207

Diegueno-Kwaaymii  
Kumeyaay

(619) 445-1927 Fax

Viejas Band of Kumeyaay Indians  
Anthony R. Pico, Chairperson  
P.O. Box 908  
Alpine, CA 91903  
jhagen@viejas-nsn.gov  
(619) 445-3810

Diegueno/Kumeyaay

Kumeyaay Cultural Repatriation Committee  
Steve Banegas, Spokesperson  
1095 Barona Road  
Lakeside, CA 92040  
sbanegas50@gmail.com  
(619) 742-5587

Diegueno/Kumeyaay

(619) 445-5337 Fax

(619) 443-0681 Fax

Kumeyaay Cultural Historic Committee  
Ron Christman  
56 Viejas Grade Road  
Alpine, CA 91901  
(619) 445-0385

Diegueno/Kumeyaay

Viejas Band of Kumeyaay Indians  
ATTN: Julie Hagen, Cultural Resources  
P.O. Box 908  
Alpine, CA 91903  
jhagen@viejas-nsn.gov  
(619) 445-3810  
(619) 445-5337

Diegueno/Kumeyaay

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed 32001: NEET Suncrest Reactive Power Project, San Diego County.



**Native American Contact List  
San Diego County  
April 20, 2015**

**Ewilaapaay Tribal Office**  
Will Micklin, Executive Director

4054 Willows Road Diegueno/Kumeyaay  
Alpine, CA 91901  
wmicklin@leaningrock.net  
(619) 445-6315

(619) 445-9126 Fax

**Iipay Nation of Santa Ysabel**  
Clint Linton, Director of Cultural Resources

P.O. Box 507 Diegueno/Kumeyaay  
Santa Ysabel, CA 92070  
cjlinton73@aol.com  
(760) 803-5694

**Inter-Tribal Cultural Resource Protection Council**  
Frank Brown, Coordinator

240 Brown Road Diegueno/Kumeyaay  
Alpine, CA 91901  
frbrown@viejas-nsn.gov  
(619) 884-6437

**Kumeyaay Cultural Repatriation Committee**  
Bernice Paipa, Vice Spokesperson

P.O. Box 937 Diegueno/Kumeyaay  
Boulevard, CA 91905  
bernicepaipa@gmail.com

**Sycuan Band of the Kumeyaay Nation**  
Lisa Haws, Cultural Resource Manager

1 Kwaaypaay Court Diegueno/Kumeyaay  
El Cajon, CA 92019  
(619) 445-4564

**Iipay Nation of Santa Ysabel**  
Virgil Perez, Chairperson

P.O. Box 130 Diegueno/Kumeyaay  
Santa Ysabel, CA 92070  
(760) 765-0845

(760) 765-0320 Fax

**Kumeyaay Diegueno Land Conservancy**  
Mr. Kim Bactad, Executive Director

2 Kwaaypaay Court Diegueno/Kumeyaay  
El Cajon, CA 92019  
kimbactad@gmail.com  
(619) 659-1008 Office

(619) 445-0238 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed 32001: NEET Suncrest Reactive Power Project, San Diego County.





June 22, 2015

Mr. Clifford LaChappa  
Chairman  
Barona Band of Mission Indians  
1095 Barona Road  
Lakeside, CA 92040

Subject: Proposed Suncrest Dynamic Reactive Power Support Project, San Diego County, CA

Dear Chairman LaChappa,

NextEra Energy Transmission (NextEra) is in the process of permitting the proposed Suncrest Dynamic Reactive Power (Static Var Compensator or SVC) Support Project in San Diego County, California. The Proposed Project consists of the SVC facility and an approximately one-mile-long, single-circuit 230-kilovolt (kV) underground transmission line.

Consistent with NextEra's policy to reach out to Tribes in the area of its projects, I wanted to provide you some initial information about the project and solicit your input concerning cultural resources in the area. The Proposed Project is located in an unincorporated area of San Diego County approximately 29 miles east of San Diego and 5 miles southeast of the community of Alpine as shown below in Figure 1.

The project location will be within the Area of Interest depicted in Figure 2 below and found on the United States Geological Survey (USGS) Viejas Mountain, California 7.5-Minute quadrangle map within Section 34, Township 15 South, Range 3 East and Sections 3 and 4, Township 16 South, Range 3 East. The Area of Interest consists of predominantly undeveloped scrubland dominated by drought-tolerant species associated with chaparral communities. Topography in the vicinity is undulating with steep hills interspersed by narrow valleys and deep canyons. Surface waters in the vicinity of the Proposed Project area are typified by narrow, ephemeral washes.

The Proposed Project has two primary components, the SVC and an approximately one-mile-long single circuit, 230-kV underground transmission line that extends between the SVC and San Diego Gas and Electric Company's (SDG&E) existing Suncrest Substation. Both of the facilities will be located within the Area of Interest identified in Figures 1 and 2. The SDG&E 500/230 kV Suncrest Substation (Suncrest Substation), constructed circa 2012 as part of the SDG&E Sunrise Powerlink Transmission Project, is located at the western terminus of the Area of Interest.



Figure 1: Project Vicinity Map

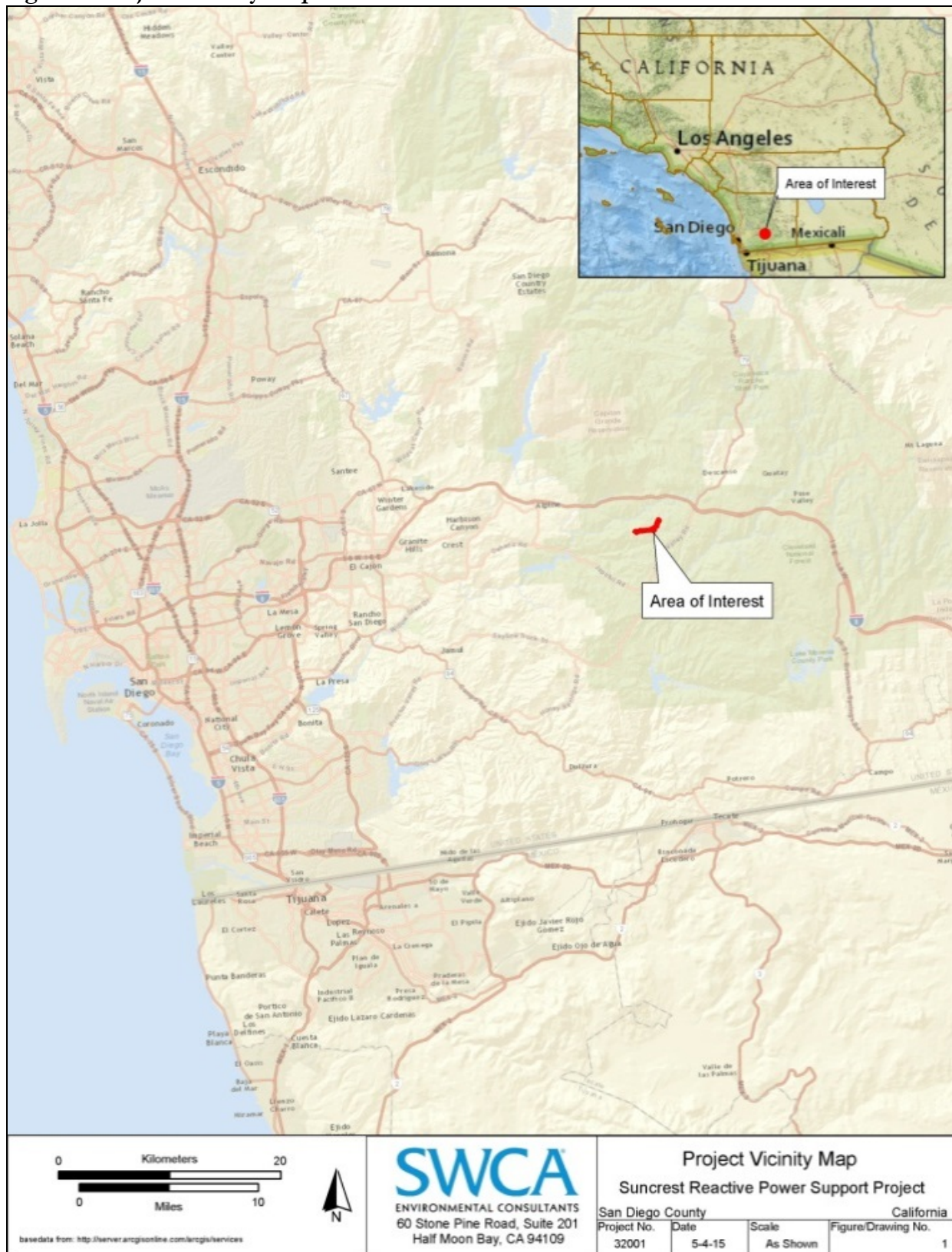
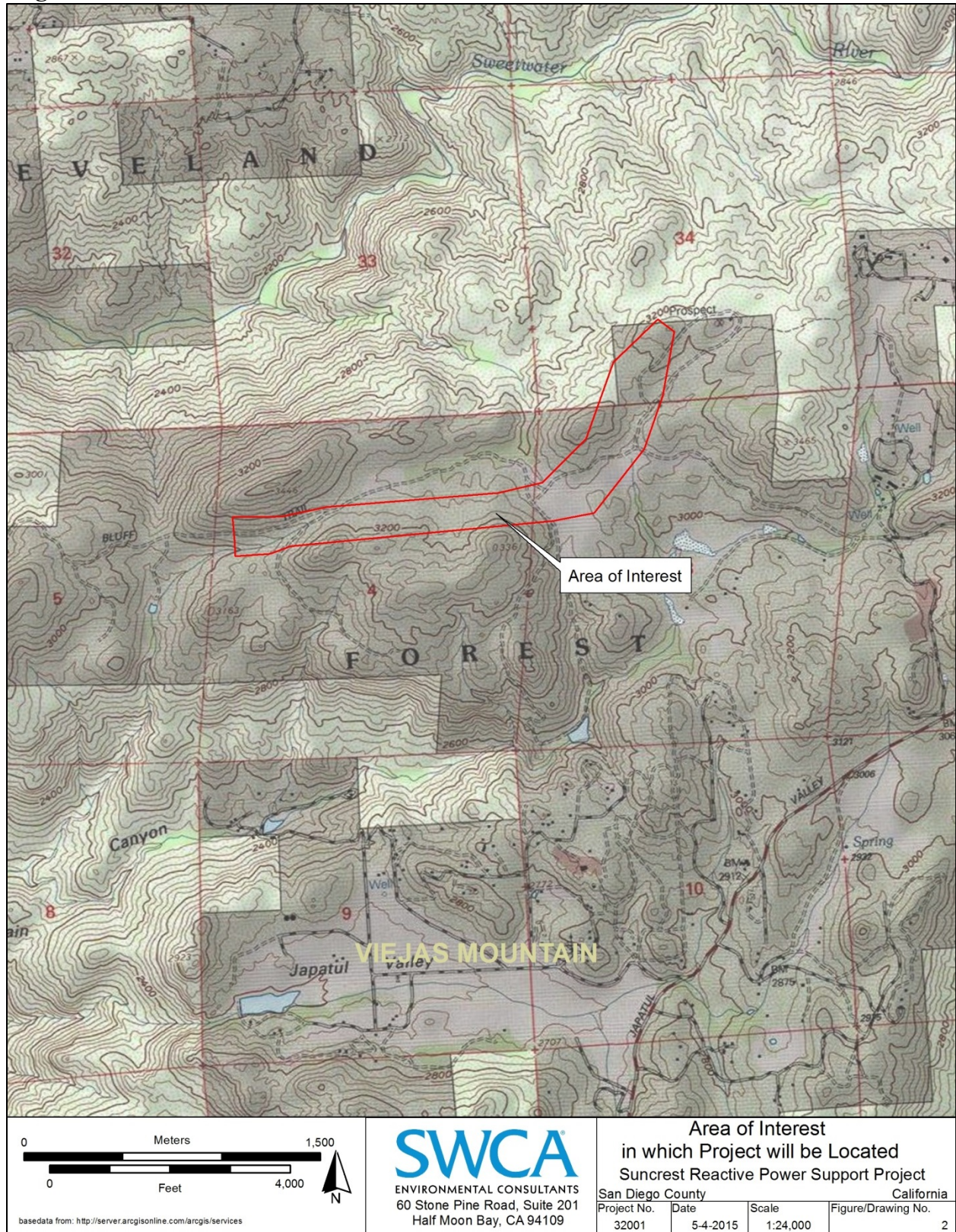




Figure 2: Area of Interest





In addition to the two main project components described above, the project will also include the following:

- Construction of a stormwater detention basin; and
- 12 kV electrical distribution feed to the SVC and associated telecommunications, utility and security infrastructure.

Once interconnected to the Suncrest Substation, the SVC will provide continuous reactive power response improving and maintaining the reliability of the transmission grid and increasing the deliverability of renewable power to the San Diego Area.

All facilities at the SVC will occupy a total area of approximately six acres within the Area of Interest. The area to be permanently occupied by the SVC will be within a fenced area of approximately two acres. The proposed transmission line will consist of a new 230 kV single-circuit underground electric transmission line that will be installed within the paved portion of Bell Bluff Truck Trail between the SVC site and Suncrest Substation. The new transmission line will be approximately one mile in length and will require a new permanent easement within the roadway for the entire length. Along the underground alignment splice vaults will be installed approximately every 700 feet within Bell Bluff Truck Trail to facilitate cable installation as well as operation and maintenance of the transmission line following construction. Permanent access to the proposed SVC and underground transmission line will occur along Bell Bluff Truck Trail, an existing private, approximately 30-foot-wide paved road, and a new graveled access driveway will be constructed to access to the SVC from the intersection with Bell Bluff Truck Trail.

Construction of the Proposed Project will follow a typical sequence beginning with pre-construction surveys and survey marking, site clearing, grubbing, grading for access and SVC construction, installation of SVC foundations and electrical equipment, and lastly, restoration. Construction of the underground transmission line will be concurrent with the SVC construction and begin with utility line locating, survey, saw-cutting of pavement, trench excavation, which may include rock removal and blasting, followed by installation of the duct bank, vaults, thermal backfill, installation of the conductor cables and OPGW, splicing, testing, and energization of the transmission line, and pavement restoration. Construction is targeted to start September 1, 2016 and is expected to be complete March 17, 2017 for a total of approximately 6.5 months of activity from initial site disturbance until the SVC is complete. Testing and commissioning of the Proposed Project will take approximately 2 months between March 17 through May 31, 2017, at which point the SVC will be energized and fully operational.

SWCA Environmental Consultants has been retained to provide cultural resources services in support of the proposed project. As part of the process of identifying cultural resources issues for this project, SWCA contacted the Native American Heritage Commission (NAHC) and requested a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The SLF search “has failed to indicate the presence of Native American cultural resources in the immediate project area,” but the NAHC recommends that we contact you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.



SWCA also requested a search of the California Historical Resources Information System (CHRIS) from the South Coastal Information Center (SCIC), located at San Diego State University. The search included any previously recorded cultural resources and investigations within the records search area. The SCIC records search results identified 21 previously recorded cultural resources within the records search area (Figure 3): three historic archaeological sites, 17 prehistoric archaeological sites, and one prehistoric isolate. The three historic archaeological sites consist of one refuse scatter and two sites comprising rock features. The prehistoric archaeological sites consist of four bedrock milling sites; five bedrock milling sites with associated lithic scatters; one bedrock milling site with an associated ceramic scatter; one ceramic scatter; five lithic scatters; and one lithic scatter and rock alignment. Details pertaining to resources identified in the records search are presented in Table 1.

Of the sites identified by the records search, two are within the Area of Interest: prehistoric sites P-37-031744/CA-SDI-20166, and P-37-029773/CA-SDI-19036 (which includes site P-37-029774/CA-SDI-19037). Site P-37-031744 is a bedrock milling station comprising one slick on a granite outcrop, and is located north of the recently paved Bell Bluff Truck Trail. Site P-37-029773 is a large site comprising a lithic scatter, ground stone, and numerous bedrock mortars; this site which is located within the San Diego Gas & Electric Sunrise Substation, was evaluated and determined not eligible for listing on the CRHR or the NRHP as part of the cultural resources studies for the Sunrise Powerlink project. Native American monitors and consulting parties identified a bedrock milling complex within the site as a sensitive resource; at their request, four of the boulders from this complex were moved from the site into an open space to the east, outside of the substation. The site was subject to extensive ground disturbance for construction of the Substation; archaeological and Native American monitoring were conducted during that construction.

In addition to the records search and Sacred Lands File search, SWCA has also completed an intensive pedestrian survey of all areas of potential ground disturbance and is preparing a technical report. The technical report will include management recommendations pertaining to cultural resources. After the report is finalized, NextEra will make the results available to you.



Figure 3. Previously Recorded Resources in the Records Search Area

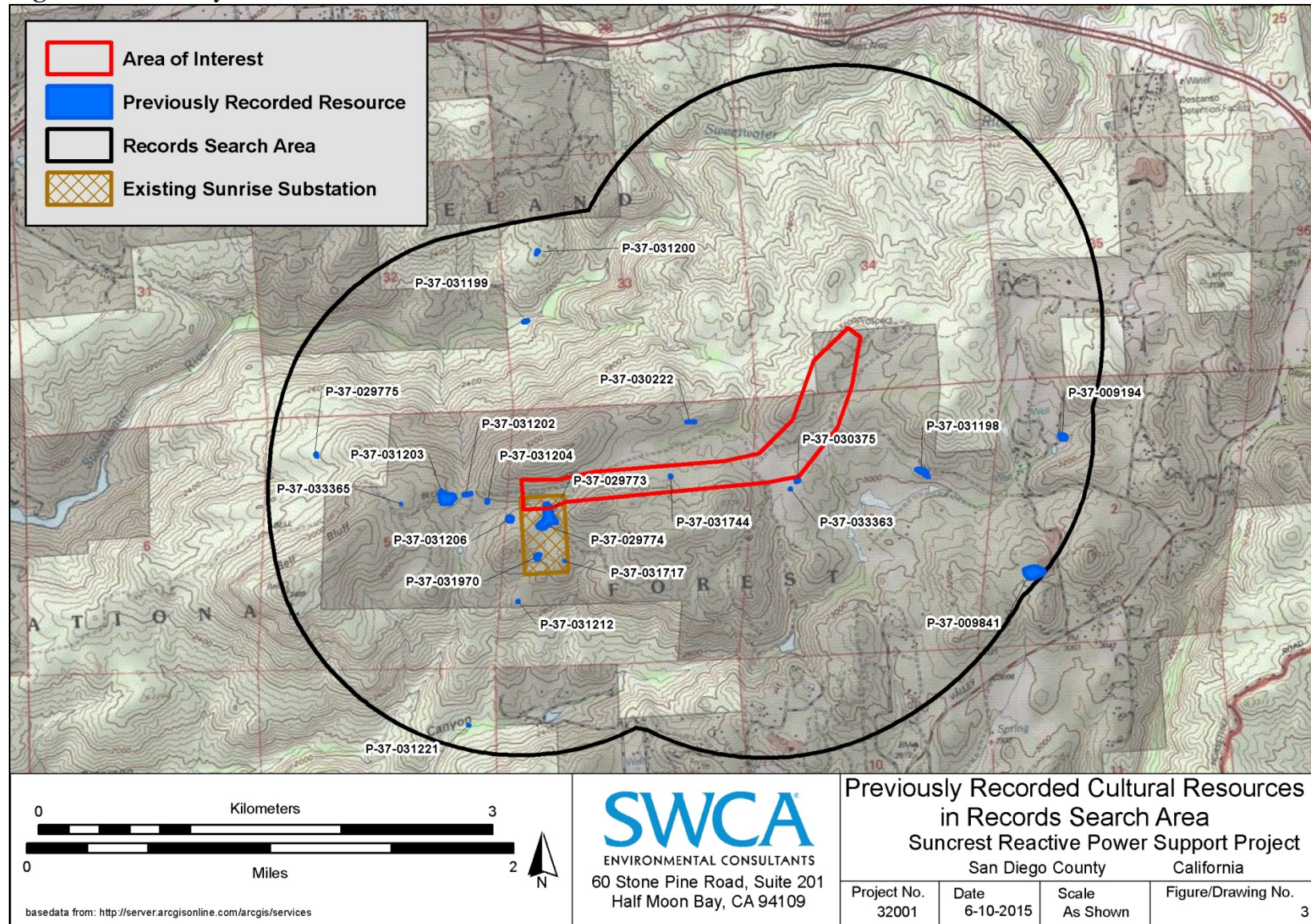




Table 1. Previously Recorded Cultural Resources in the Area of Interest

Primary Number	Trinomial	Type	Resource Description	CRHR/NRHP/ SHL Eligibility Status	Recorded By and Year	Proximity to Area of Interest
P-37-009194	CA-SDI-9194	Prehistoric site	Lithic scatter	Not evaluated	Brandoff, J. 1975	Outside
P-37-009841	CA-SDI-9841	Prehistoric site	Lithic scatter	Not evaluated	Noach, A. and R. Gadler 1984	Outside
P-37-029773	CA-SDI-19036	Prehistoric site (includes site P-37-029774/ CA-SDI-19037)	Bedrock milling features and lithic scatter	Recommended eligible for NRHP/CRHR	Bouscaren, C., P. Hanes, P. Shattuck, L. Burgos, M. Hares, and R. Pettus 2007; Williams, B. 2010; Williams, B. 2011	Within
P-37-029774	CA-SDI-19037	Prehistoric site (combined into P-37-029773/ CA-SDI-19036)	Bedrock milling features and lithic scatter	Not evaluated	Bouscaren, C., P. Hanes, P. Shattuck, L. Burgos, M. Hares, and R. Pettus 2007	Within
P-37-029775	CA-SDI-19038	Prehistoric site	Bedrock milling features and lithic artifact	Not evaluated	Bouscaren, C., P. Hanes, R. Pettus, L. Burgos, and M. Hares 2007; Comeau, B. 2009	Outside
P-37-030222	CA-SDI-19254	Prehistoric site	Lithic scatter	Not evaluated	Piek, L. 2007	Outside
P-37-030375	CA-SDI-19307	Prehistoric site	Bedrock milling feature and lithic scatter	Not evaluated	Doose, N, B. Spelts, R. Brooke, and C. Linton 2008; Williams, B. 2010	Outside
P-37-031198	CA-SDI-19771	Prehistoric site	Bedrock milling features and lithic scatter	Not evaluated	Williams, B., D. Mengers, W. Reed, and J. Herrera 2009	Outside
P-37-031199	CA-SDI-19772	Prehistoric site	Bedrock milling features	Not evaluated	Williams, B., W. Reed, and J. Herrera 2009	Outside
P-37-031200	CA-SDI-19773	Prehistoric site	Ceramic scatter	Not evaluated	Williams, B., W. Reed, and J. Herrera 2009	Outside
P-37-031202	CA-SDI-19775	Prehistoric site	Lithic scatter	Not evaluated	Williams, B., D. Mengers, S. Rochester, L. Piek 2010	Outside
P-37-031203	CA-SDI-19776	Prehistoric site	Lithic scatter and rock alignment	Not evaluated	Williams, B., D. Mengers, S. Rochester, L. Piek 2010	Outside
P-37-031204	CA-SDI-19777	Prehistoric site	Bedrock milling features and ceramic scatter	Not evaluated	Williams, B. 2010	Outside
P-37-031206	CA-SDI-19779	Historic site	Refuse scatter	Not evaluated	Comeau, B. 2009	Outside



**Table 1. Previously Recorded Cultural Resources in the Area of Interest**

<b>Primary Number</b>	<b>Trinomial</b>	<b>Type</b>	<b>Resource Description</b>	<b>CRHR/NRHP/ SHL Eligibility Status</b>	<b>Recorded By and Year</b>	<b>Proximity to Area of Interest</b>
P-37-031212	N/A	Historic site	Two rock cairns	Not evaluated	Williams, B., D. Mengers, W. Reed, and J. Herrera 2009	Outside
P-37-031221	CA-SDI-20166	Prehistoric site	Bedrock milling features	Not evaluated	Elliot, W., T. Hector-Rosen, J. Herrera, D. Iversen, D. Mengers, and J. Parada 2009	Outside
P-37-031717	–	Prehistoric isolate	Biface fragment	Not evaluated	Williams, B. 2010	Outside
P-37-031744	CA-SDI-20166	Prehistoric site	Bedrock milling feature	Unknown	Piek, L., B. Williams, and B. Comeau 2011	Within
P-37-031970	CA-SDI-20239	Prehistoric site	Lithic scatter	Unknown	Justus, S. 2011	Outside
P-37-033363	CA-SDI-20984	Prehistoric site	Bedrock milling feature	Not evaluated	Justus, S. 2011	Outside
P-37-033365	–	Historic site	Rock ring	Not evaluated	MacHardy, B. 2012	Outside



If you have any knowledge of additional cultural resources that may exist within or near the project area, and/or have an interest in meeting with me and other NextEra staff/contractors to discuss any concerns you may have about cultural resources within and near the project location please contact me via email at [Carolyn.Stewart@NextEraEnergy.com](mailto:Carolyn.Stewart@NextEraEnergy.com) or call me at (224) 251-7580.

We understand that the California Public Utilities Commission, acting as the CEQA lead agency, is responsible for formal government-to-government consultation with Native American Tribes for this project, and we do not intend for any discussions between the Tribe and NextEra to take the place of official consultation that has, or will be, conducted.

As we have further information about the site and results of completed cultural resource surveys, I will be in contact with you again. Thank you for your assistance.

Regards,

Carolyn Stewart  
Director Tribal Relations



# VIEJAS

TRIBAL GOVERNMENT

---

P.O. Box 908  
Alpine, CA 91903  
#1 Viejas Grade Road  
Alpine, CA 91901

Phone: 6194453810  
Fax: 6194455337  
viejas.com

June 29, 2015

Carolyn Stewart  
700 Universe Blvd.  
Juno Beach, FL 33408

RE: Suncrest Dynamic Reactive Power Support Project

Dear Ms. Stewart,

The Viejas Band of Kumeyaay Indians would like to request the cultural report to the above referenced project and site visit, in order to make an informed decision/recommendation on the matter.

Sincerely,

VIEJAS BAND OF KUMEYAAY INDIANS



**From:** Laura Hoffman  
**To:** [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
**Cc:** [Megan Peterson](#); [Flajole, Andy \(Andy.Flajole@nexteraenergy.com\)](mailto:Flajole_Andy@nexteraenergy.com)  
**Subject:** Attention Katy Sanchez: SWCA request for Supplemental SLF search for Project 32001, NEET Suncrest Reactive Power Project in San Diego County  
**Date:** Wednesday, July 01, 2015 9:29:00 AM  
**Attachments:** [032001 NEET Suncrest Reactive Power Project NAHC Location SLF2.pdf](#)  
[032001 NEET Suncrest Reactive Power Project NAHC Vicinity SLF2.pdf](#)

---

Dear Ms. Sanchez,

SWCA requested a search of the Sacred Lands Files and a list of appropriate Native American contacts for the **32001: NEET Suncrest Reactive Power Project** located within **San Diego County**, California in March of this year. There have been a few updates to the project, and we'd like to request a supplemental search and updated list of contacts for a slightly larger Area of Interest. The general location of the project has not changed: it is located within the USGS 7.5-minute **Viejas Mountain, California quadrangle** approximately 6 miles south-southeast of the community of Alpine and 1 mile south of Interstate 8. The Area of Interest is located in the same Township, Range and Section as the location of the original SLF search request: **Township 15 South, Range 3 East, Section 34 and Township 16 South, Range 3 East, Sections 3 and 4**, Mount Diablo Base and Meridian (**see attached project vicinity and location maps**).

I am requesting the following updated information for the expanded Area of Interest:

- Groups or individuals listed by the NAHC as contacts for San Diego County.
- Identification by the NAHC of any sacred lands in the area that are listed within the Sacred Lands File.

Please email the results to me at [lhoffman@swca.com](mailto:lhoffman@swca.com), referencing your email to "32001: NEET Suncrest Reactive Power Project, San Diego County, California." Please contact me with any questions or if you require additional information.

Thank you for your attention to this request.

Sincerely,

**Laura E. Hoffman, M.A., RPA**  
Cultural Resources Project Manager

**SWCA Environmental Consultants**  
150 South Arroyo Parkway, Second Floor  
Pasadena, California 91105  
P 626.240.0587 x6630 | C 310.418.4417

---

**From:** Laura Hoffman  
**Sent:** Monday, March 16, 2015 2:22 PM  
**To:** [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
**Cc:** [Megan Peterson](#); [Flajole, Andy \(Andy.Flajole@nexteraenergy.com\)](mailto:Flajole_Andy@nexteraenergy.com)  
**Subject:** Attention Katy Sanchez: SWCA request for SLF search for Project 32001, NEET Suncrest Reactive Power Project in San Diego County



Dear Ms. Sanchez,

I am requesting a records search of the Sacred Lands File and a list of appropriate Native American contacts for the **32001: NEET Suncrest Reactive Power Project** located within **San Diego County, California**. The study area falls within the USGS 7.5-minute **Viejas Mountain, California quadrangle** approximately 6 miles south-southeast of the community of Alpine and 1 mile south of Interstate 8. Specifically, the project is located in **Township 15 South, Range 3 East, Section 34 and Township 16 South, Range 3 East, Sections 3 and 4**, Mount Diablo Base and Meridian (**see attached project vicinity and location maps**).

I am requesting the following information:

- Groups or individuals listed by the NAHC as contacts for San Diego County.
- Identification by the NAHC of any sacred lands in the area that are listed within the Sacred Lands File.

Please email the results to me at [lhoffman@swca.com](mailto:lhoffman@swca.com), referencing your email to “32001: NEET Suncrest Reactive Power Project, San Diego County, California.” Please contact me with any questions or if you require additional information.

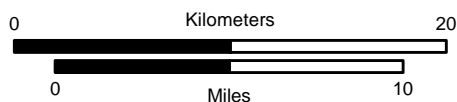
Thank you for your attention to this request.

Sincerely,

**Laura E. Hoffman, M.A., RPA**  
Cultural Resources Project Manager

**SWCA Environmental Consultants**  
150 South Arroyo Parkway, Second Floor  
Pasadena, California 91105  
P 626.240.0587 x6630 | C 310.418.4417





basedata from: <http://server.arcgisonline.com/arcgis/services>

**SWCA**  
 ENVIRONMENTAL CONSULTANTS  
 60 Stone Pine Road, Suite 201  
 Half Moon Bay, CA 94109

## Project Vicinity Map

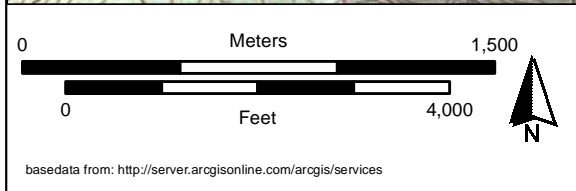
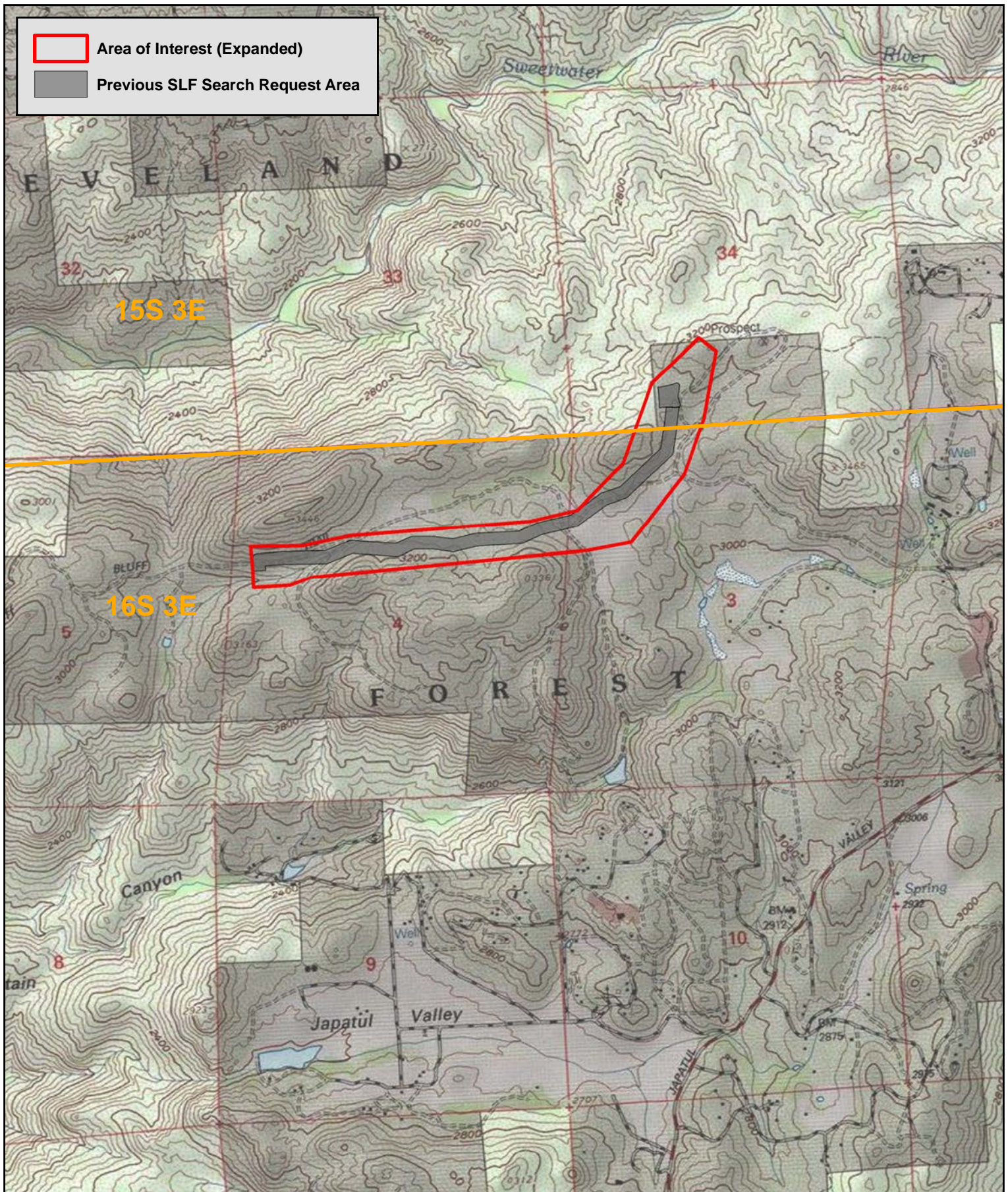
Suncrest Reactive Power Support Project

San Diego County

California

Project No.	Date	Scale	Figure/Drawing No.
32001	6-22-15	As Shown	1





**SWCA**  
 ENVIRONMENTAL CONSULTANTS  
 60 Stone Pine Road, Suite 201  
 Half Moon Bay, CA 94109

Area of Interest in which Project will be Located Suncrest Reactive Power Support Project			
San Diego County		California	
Project No.	Date	Scale	Figure/Drawing No.
32001	6-22-15	1:24,000	2





CARMEN LUCAS

P.O. Box 775

Pine Valley, California 91962

6 July 2015

Carolyn Stewart Director Tribal Relations  
NexEra Energy Transmission, LLC  
700 Universe Blvd.  
Juno Beach, Florida 33408

Reference: Your letter dated 22 June 2015; Subject: Proposed Suncrest Dynamic  
Reactive Power Support Project, San Diego County, California

Dear Carolyn,

Thank you for the referenced letter and the information contained there in. Just for your information, I was one of a number of Native American monitors on the SDG&E Sub Station in Alpine and am familiar with some of the issues that arose during the Archeological testing phase, prior to the ground disturbance and construction of that Sub Station.

A site visit for me will not be necessary; I will however like to review the SWCA technical report to include their management recommendations pertaining to the cultural resources when it becomes available. Additionally, if you have not already contacted the Viejas Band of Indians, I would like to recommend that the Viejas Cultural monitors be the Native monitors for the Suncrest Dynamic Reactive Power Support Project.

Thank you for your interest; if I can be of any assistance, please feel free to contact me.

Best Regards,

CARMEN LUCAS

Kwaaymii Laguna Band of Indians  
Laguna Mountain, California

Copy to:

Viejas Band of Indians



**Appendix D.**  
**Confidential California Department of Parks and Recreation**  
**523 Series Forms**

*This appendix has been redacted from the public version of this report because it contains confidential site information.*








**Appendix F:**  
**Paleontological Resources Technical Report**





# SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT PALEONTOLOGICAL IMPACT EVALUATION REPORT

FINAL

August 2015

## SUBMITTED TO

NextEra Energy Transmission, West LLC  
700 Universe Boulevard  
Juno Beach, Florida 33408

## SUBMITTED BY

SWCA Environmental Consultants  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019



**Suncrest Dynamic Reactive Power Support Project  
Paleontological Resource Impact Evaluation Report  
San Diego County, California**

Prepared for

**NextEra Energy Transmission, West LLC**

700 Universe Boulevard  
Juno Beach, Florida 33408  
Attn: Andy Flajole

Prepared by

Lee Hall, B.S.,  
Alyssa Bell, Ph.D.

Contact: Megan Peterson, Project Manager

**SWCA Environmental Consultants**

60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019  
(650) 440-4160  
[www.swca.com](http://www.swca.com)

SWCA Project No. 32001

SWCA Paleontological Resources Report No. CA15-32001-004

August 2015



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# 1 INTRODUCTION

This Paleontological Resource Impact Evaluation Report presents the results of the paleontological records search, literature review, and resource assessment completed for the proposed NextEra Energy Transmission, West LLC (NEET West) Suncrest Dynamic Reactive Power (Static VAR Compensator [SVC]) Support Project (Proposed Project). Environmental Consultants (SWCA) was retained by NEET West to conduct a paleontological resource study for the development phase of the Proposed Project. This review was performed to evaluate the paleontological sensitivity of the Proposed Project footprint, assess potential project-related impacts to paleontological resources, and provide initial recommendations for project-specific mitigation measures. This study was conducted in accordance with professional guidelines established by the Society of Vertebrate Paleontology (SVP) (1995; 2010).

## 2 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are any remains, imprints, or traces of once-living organisms preserved by natural processes in the geologic record. These include mineralized or un-mineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix. The geologic character of the rock record preserves the ecological, geographic, and evolutionary context of past life represented by fossils themselves. Scientific importance may be attributed to the actual fossil specimen, fossil context (e.g., location in time and space, intimate association with other evidence of scientific significance), or fossil preservation. Paleontological resources are deemed significant by meeting any one of the following criteria:

### **Specimen-based criteria:**

- Represents an unknown or undescribed/unnamed taxon;
- Represents a rare taxon, or rare morphological/anatomical element or feature (rareness criterion comprises either absolute rareness in the fossil record, or contextual rareness as described in the following section);
- Represents a vertebrate taxon (as per the 2009 Paleontological Resources Preservation Act [PRPA]), though this has no bearing on potential significance of plant and invertebrate fossils;
- Exhibits a remarkable type or quality of preservation (unaltered hard parts, evidence or preservation of soft tissue, preservation in amber or ice);

### **Context-based criteria:**

- Intimate association with other evidence of scientific significance, providing new ecological, environmental, or behavioral information; or,
- Evidence that extends or constrains the geographic or temporal distribution of a species or higher-level taxonomic group, providing new information about evolution (U.S. Forest Service [USFS] 2005).

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist and their



value may be greatly diminished or lost entirely in the absence of proper management. Thus, once destroyed, a fossil can never be replaced (Murphey and Daitch 2007). Paleontological resources are objects of national significance that are worthy of preservation for the inspiration and interpretive opportunities they offer. Fossils are important scientific and educational resources and can be used to:

- study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- reconstruct ancient environments, climate change, and paleoecological relationships;
- provide a measure of relative geologic dating which forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
- study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- study patterns and processes of evolution, extinction, and speciation; and,
- identify past and potential future human-caused effects to global environments and climates (Murphey and Daitch 2007).

### 3 REGULATORY FRAMEWORK

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under federal (PRPA), state (California Environmental Quality Act [CEQA]; California Public Resources Code [PRC]), and county (County of San Diego) laws, ordinances, and regulations (LORS). This study satisfies project requirements in accordance with CEQA (Title 14, Division 6, Chapter 3, California Code of Regulations [CCR] Section 1500 *et seq.*) and PRC (Chapter 1.7) Sections 5097.5 and 30244. The Society of Vertebrate Paleontology (1995; 2010) has established professional standards for the assessment and mitigation of adverse impacts to paleontological resources. This analysis also complies with these guidelines.

#### 3.1 Federal Authorities

Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (Public Law [PL] 59-209; 16 United States Code [U.S.C.] 431 *et seq.*; 34 Stat. 225) which calls for protection of historic landmarks, historic and prehistoric structures, as well as other objects of historic or scientific interest on federally administered lands, and the Omnibus Public Lands Management Act of 2009 (PL 111-11; 16 U.S.C. 470 *et seq.*; 123 Stat. 995) which calls for protection and preservation of paleontological resources on federally administered lands. Federal protection for significant paleontological resources would apply to the Proposed Project if any construction or other related impacts occurred on federally owned or managed lands. No federal protection of paleontological resources pertains to this study.



## 3.2 State of California Authorities

### 3.2.1 California Environmental Quality Act

State guidelines for the implementation of CEQA, as amended March 29, 1999 (Title 14, Division 6, Chapter 3, CCR 15000 et seq.), define procedures, types of activities, persons, and public agencies required to comply with CEQA. The guidelines include, as one of the questions to be answered in the Environmental Checklist (Appendix G, Section V, Part c), the following: “*Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*”

### 3.2.2 California Public Resources Code

Other state requirements for paleontological resource management are included in the PRC (Division 5: Chapter 1.7) Section 5097.5 and (Division 20: Chapter 3) Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

## 3.3 Local Authorities

### 3.3.1 County of San Diego General Plan

The Conservation and Open Space Element (COSE) of the County of San Diego General Plan (County of San Diego 2009), Chapter 5 (p. 5-2), provides guidelines for the assessment, treatment, and public awareness of the County’s natural resources:

*“The primary focus of the Conservation and Open Space Element is to provide direction to balance the accommodation of future growth and development in the County of San Diego with the following:*

- *the conservation, management, and utilization of natural resources;*
- *the protection and preservation of open space; and*
- *the provision of park and recreation resources.”*

The COSE also addresses the County’s goals for management of paleontological resources and unique geological features:

*“Preserve the County’s rich geologic and paleontological history by establishing achievable land-use-based goals and policies that balance conservation with appropriate and necessary development.”*

The Paleontological Resources and Unique Geologic Features Element of the COSE (p. 5-20) includes the following policies:

- **COS-9.1, Preservation:** Require the salvage and preservation of unique paleontological resources exposed to the elements during excavation or grading activities or other development processes.
- **COS-9.2, Impacts of Development:** Require development to minimize impacts to unique geological features from human related destruction, damage, or loss.



**Table 1. Summary of Paleontological Laws, Ordinances, and Regulations**

<b>Agency/Owner</b>	<b>Pertinent Paleontological LORS</b>
Federal	None
State (California)	CEQA
County (San Diego)	County of San Diego General Plan: Conservation and Open Space Element, Ch 5

### 3.4 Professional Standards

#### 3.4.1 Society of Vertebrate Paleontology

The SVP has established standard guidelines (SVP 1995; 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as described in the standard guidelines of the SVP. Typically, state regulatory agencies accept and use the professional standards set forth by the SVP.

As defined and revised by the SVP (1995:26, 2010:11), significant nonrenewable paleontological resources are defined as follows:

*“[f]ossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).”*

As defined by the SVP (1995:26), significant fossiliferous deposits are defined as follows:

*“A rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways, or nests and middens which provide datable material and climatic information). Paleontologic resources are considered to be older than recorded history and/or older than 5,000 years BP [Before Present].”*

Based on the significance definitions of the SVP (1995; 2010), all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in



association with vertebrate fossils or if defined as uncommon or significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered to be “sensitive” and vulnerable to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either disturb or destroy fossil remains directly or indirectly. This definition of sensitivity differs fundamentally from that for archaeological resources as follows:

*“It is extremely important to distinguish between archaeological and paleontological (fossil) resource sites when defining the sensitivity of rock units. The boundaries of archaeological sites define the areal extent of the resource. Paleontologic sites, however, indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontologic potential in each case.” (SVP 1995:23)*

Fossils are contained within subsurface sediments or bedrock and are therefore not observable or detectable unless exposed by erosion or human activity. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken to prevent adverse impacts to these resources.

## 4 RESOURCE ASSESSMENT GUIDELINES

The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Direct impacts on paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to below a significant level through the implementation of paleontological mitigation.

The CEQA threshold of significance for a significant impact to paleontological resources is reached when a project is determined to “*directly or indirectly destroy a significant paleontological resource or unique geologic feature.*” In general, for project areas that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For project areas that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units that underlie the non-sensitive unit are also affected.

## 5 PALEONTOLOGICAL SENSITIVITY

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Occurrences of paleontological resources are closely related to the geologic units in which they are contained, and the potential for finding scientifically important paleontological resources can be broadly predicted by the presence of the pertinent geologic units at or near the surface. Therefore, geologic mapping can be used as a proxy for assessing the potential for occurrences of important paleontological resources. The potential for a geologic unit to produce scientifically important fossils is determined by rock type, past history of the



geologic unit in producing important fossils, and fossil localities recorded from that unit within and near the Proposed Project footprint.

Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its *Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources*, the SVP (1995:23, 2010) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources are included in this category. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontologic resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both: a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical, and; b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas that contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant.
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.
- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.
- **No Potential.** Metamorphic and granitic rock units generally do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within the study area.

## 6 PROPOSED PROJECT LOCATION AND DESCRIPTION

### 6.1 Proposed Project Location

The Proposed Project is located in the south central portion of San Diego County, approximately 33 miles east of the Pacific Coast. Specifically, the Proposed Project is located in the northern half of Sections 3 and 4 of Township 16 South, Range 3 East, and the southwestern quarter of Section 34, Township 15 South, Range 3 East of the Viejas Mountain, CA 7.5 minute USGS quadrangle (photorevised 1988) (See Figure 1).

The Proposed Project area consists of predominantly undeveloped scrubland dominated by drought tolerant species associated with chaparral communities. Topography in the vicinity of the Proposed Project area is undulating with steep hills interspersed by narrow valleys and deep canyons. Elevations in the Proposed Project area range between approximately 3,000 and 3,200 feet above mean sea level. Surface waters in the vicinity of the Proposed Project area are typified by narrow, ephemeral washes.



Figure 1. Proposed Project location map.





The Proposed Project is in an unincorporated area of San Diego County, on private land within the Cleveland National Forest (CNF). The Proposed Project is situated west of Japatul Valley Road and south of Interstate 8, approximately 0.7 mile northeast of Bell Bluff overlooking the Sweetwater River. Nearby communities include Descanso, approximately 3.78 miles to the northeast, and Alpine, approximately 3.36 miles to the northwest. The city of El Cajon is approximately 13.36 miles to the west. The SVC will be constructed on part of a parcel that is privately owned, and immediately east of and adjacent to the CNF.

The Proposed Project area is immediately bound in all directions by undeveloped vegetated lands. Low-density rural residential developments are present approximately 0.75 mile to the east and 1 mile to the south. Interstate 8 is located approximately 1.75 miles to the north and Japatul Valley Road (State Highway 79) is located approximately 1.66 miles to the west. Several features of the built environment are present in the vicinity of the Proposed Project area. The San Diego Gas and Electric Company (SDG&E) Suncrest Substation, constructed circa 2012, is located at the western terminus of the SVC tie-line. Several localized development improvements were made within the area associated with construction of the Suncrest Substation and the larger SDG&E Sunrise Powerlink Transmission Project (Sunrise Powerlink). Bell Bluff Truck Trail, a historically dirt road, was widened and paved to provide access to the Suncrest Substation. Several drainage improvements were made along Bell Bluff Truck Trail to provide stormwater drainage and conveyance.

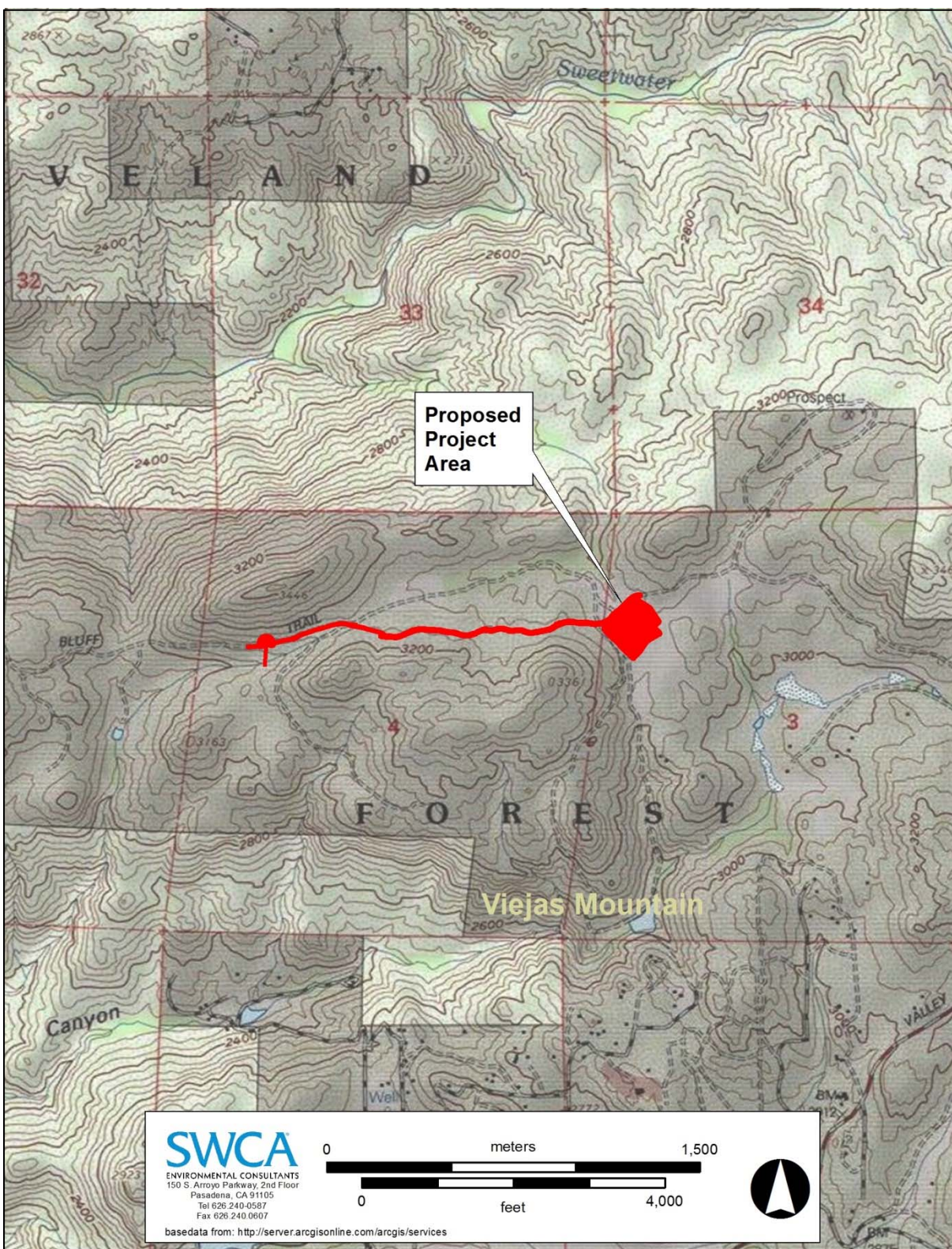
The Proposed Project is located within privately owned lands within the administrative boundary of the USFS CNF. The SVC will be constructed within an approximately 6-acre portion of Assessor's Parcel Number (APN) 523-040-080 that was the site of a laydown yard associated with the construction of the SDG&E Suncrest Substation. This parcel is currently owned by a private landowner. NEET West has an Option Agreement for this parcel and prior to construction will obtain fee ownership of the approximately 6-acre area containing the entirety of the SVC. The SVC is located immediately south of lands owned by the USFS that are part of CNF (see Figure 2).

The Proposed Project has two primary components, the SVC and an approximately 1-mile long 230-kilovolt (kV) single-circuit underground transmission line connecting the SVC to the existing Suncrest Substation, which is owned and operated by SDG&E. An approximately 300-foot-long overhead span will connect into the existing Suncrest Substation's 230 kV bus.

In addition to the two primary components, the Proposed Project will also include:

- Construction of two new access drives to facilitate construction, operation, and maintenance of the SVC;
- Installation of fiber optic cable within the same underground duct bank as the 230 kV cable to provide communications for line relaying, Supervisory Control and Data Acquisition (SCADA), and other devices as required;
- Installation of up to five splice vaults to facilitate installation of the new underground cable and operation and maintenance of the transmission line; and,
- Installation of a 12 kV underground electrical distribution feed to the SVC.



**Figure 2. Proposed Project area map.**



The proposed SVC will be constructed immediately south of Bell Bluff Truck Trail (an existing paved private road which is approximately 30 feet wide curb-to-curb near the SVC site and 12 feet curb-to-curb closer to the Suncrest Substation), in an area that was previously used as a materials storage and laydown area for Sunrise Powerlink. The proposed underground transmission line will exit the SVC on the north side and then turn westward along the north side of Bell Bluff Truck Trail for approximately 0.95 mile to a point where the transmission line will transition to a riser pole structure. The riser pole structure will serve as the change of ownership pole between NEET West and SDG&E. SDG&E will then string the conductor overhead with a single, approximately 300-foot-long overhead span to enter the Suncrest Substation and make the interconnection.

With the exception of the riser pole structure and some temporary work areas (to facilitate installation of the vault structures), the majority of the proposed underground transmission line will be located within the paved roadbed of Bell Bluff Truck Trail. Duct bank installation and equipment and material staging will be limited to either the north or south side of the road centerline, depending on the location of other utilities in the roadway, to maintain an unobstructed single lane of travel on the 30-foot-wide road section so as not to impede access to Suncrest Substation. Up to five splice vaults will be installed underground along the transmission line alignment approximately every 900 feet to facilitate installation of the underground cable and operation and maintenance of the transmission line following construction. Access to the proposed SVC area will be immediately off of Bell Bluff Truck Trail via two new approximately 20-foot-wide by 95-foot-long access drives. The roadway aprons of these access drives will be paved while the remainder of the access drives will be graveled.

Construction of the SVC (e.g., limit of grading and associated site improvements based on current information) will occupy a total area of approximately 261,360 square feet (6.00 acres). The SVC will be contained within a fenced area of up to approximately 112,000 square feet (2.58 acres). An approximately 12-foot-wide permanent easement will be obtained from SDG&E and the private landowner to operate and maintain the underground transmission line on their respective properties. New temporary disturbance associated with the underground transmission line will be approximately 0.48 acre. The remaining 3.13-acre temporary work area will be within the paved portion of Bell Bluff Truck Trail. Permanent disturbance totals 0.01 acre as the majority of the underground line will be installed within the existing roadway.

Construction of the Proposed Project will follow a typical sequence beginning with pre-construction surveys and survey staking; then site preparation and grading for the SVC pad, transmission structure work areas, and access road construction; followed by installation of SVC structures, transmission structure foundations, pole installation, laying of conductor; and lastly installing and testing of electrical equipment, energization, and site restoration. Site preparation will involve clearing, grubbing, and grading of the SVC footprint, transmission structure work areas, and access roads, as well as installing security fencing. Underground equipment, if necessary, will be installed in trenches, backfilled with suitable material (e.g., excavated soil or clean fill). SVC equipment will be installed on concrete foundations. After clearing and grading, transmission line and SVC construction activities will occur simultaneously. Construction is targeted to start September 1, 2016, and is expected to be complete March 10, 2017, at total of approximately 6.5 months from initial site disturbance until the SVC is ready for testing. Testing and commissioning of the Proposed Project will take approximately 2.5 months between March 11 and May 30, 2017, at which point the SVC will be fully operational and ready for energization. Restoration and cleanup will take another 2 months following energization.



## 7 METHODS

### 7.1 Project Personnel

Project oversight was provided by SWCA Paleontology Team Lead Sara Dietler, B.A. This report was authored by SWCA paleontologists Lee Hall, B.S., and Alyssa Bell, Ph.D. Alyssa Bell served as paleontological Principal Investigator and provided quality assurance and quality control of this report. Laura Hoffman, M.A., served as Paleontological Task Manager and produced the maps for this report. Technical editing services were provided by Jaime Jones.

### 7.2 Analysis of Existing Data Methods

Geologic units (bedrock formations and surficial sedimentary deposits) were assigned resource potential rankings based on unpublished data by the Department of Paleoservices (DPS) at the San Diego Natural History Museum (SDNHM) (Deméré 2010). The Proposed Project footprint was then the subject of thorough background research and analysis, including geologic map and literature reviews, and requests for paleontological record searches from the SDNHM in San Diego, California. The purpose of the review was to evaluate the paleontological sensitivity of the Proposed Project area in order to identify known fossil resources within it or nearby in the same geologic formations. If any previously recorded fossil localities occur in the Proposed Project footprint, the potential for disturbance of these localities during construction would be assessed.

### 7.3 Distribution of Data

Copies of this study will be submitted to NEET West. An electronic copy of the report as well as relevant communications and literature will be retained at SWCA's Pasadena office.

## 8 RESULTS

### 8.1 Literature Search Results

#### 8.1.1 *Geologic Setting*

California comprises the following twelve geomorphic provinces, each distinguished from one another by having unique topographic features and geologic formations: (1) the Sierra Nevada; (2) the Klamath Mountains; (3) the Cascade Range; (4) the Modoc Plateau; (5) the Basin and Range; (6) the Mojave Desert; (7) the Colorado Desert; (8) the Peninsular Ranges; (9) the Transverse Ranges; (10) the Coast Ranges; (11) the Great Valley; and (12) the Offshore area (Norris and Webb 1990). The Proposed Project area is located within the north central Peninsular Ranges province, which is bounded to the north by the Transverse Ranges, to the east by the Colorado Desert, and extends far southward to Baja California (Weber 1963; Norris and Webb 1990). The Peninsular Ranges occupy the majority of area in San Diego County, which is divided into three topographic regions: the narrow strip of Coastal Plain; the vast Interior Upland (Peninsular Ranges); and the arid Salton Basin (Colorado Desert) (Weber 1963). The interior upland is largest of the three regions and is characterized by ranges of steeply-sloped, boulder-covered mountains and intermediate valleys carved from the Peninsular Ranges Batholith (PRB) (Weber 1963; Walawender 1999).

The interior upland is composed largely of metamorphic and igneous rocks associated with a once active subduction zone off the ancient west coast. These rocks represent several phases of continent building, including island arc collisions, volcanic eruptions, and the emplacement of the voluminous, structurally complex PRB. The PRB is an enormous mass of crystalline rock formed by the episodic invasion of molten magma into the crust of San Diego County between the Late Jurassic and Early Cretaceous



(Weber 1963; Todd 1978; Walawender 1999; Todd et al. 2004). The PRB is colossal in size, stretching a distance of nearly 1,000 miles from Riverside, California, to the southern tip of Baja California. In San Diego County, the PRB is up to 70 miles wide, covers an area of nearly 1,900 square miles (Weber 1963), and is divided into two zones: the Eastern PRB and the Western PRB. The Proposed Project area is located within the Western PRB, which is composed mainly of a suite of gabbros, tonalites, and granites which were emplaced during the Early Cretaceous, between 120 and 100 million years ago (Walawender 1999).

According to mapping by Todd (1978) and Todd et al. (2004), the Proposed Project area is underlain by four geologic units: metasedimentary and metavolcanic rocks; Cuyamaca Reservoir Granodiorite; Corte Madera Monzogranite; and Cuyamaca Gabbro. These geologic units and their paleontological resource potential are discussed in more detail below.

### **8.1.2 Geology and Paleontology**

More than 200 million years of time are recorded in the geologic formations of the Proposed Project area. It is directly underlain by four mapped geologic units (Todd 1978; Todd et al. 2004) (see Figure 3). In approximate ascending sequence, from oldest to youngest, these units are: Triassic to Jurassic-age metasedimentary and metavolcanic rocks equivalent to the Julian Schist; Middle to Late Jurassic Cuyamaca Reservoir Granodiorite; Early Cretaceous Corte Madera Monzogranite; and Early Cretaceous Cuyamaca Gabbro. General geology and paleontologic content of these units are described below.

These rocks are Triassic and Jurassic in age and include several types of schist, metaquartzite, and metaconglomerate, as well as layers of mudstone, sandstone, and pebble conglomerate (Todd 1978; Todd et al. 2004). This unit has been interpreted as the metamorphosed remains of submarine fan deposits and interspersed volcanic flows (Todd 1978; Todd et al. 2004). Due to the metamorphosed nature of the sedimentary deposits, they are not likely to contain paleontological resources. This unit is considered to have no sensitivity for paleontological resources.

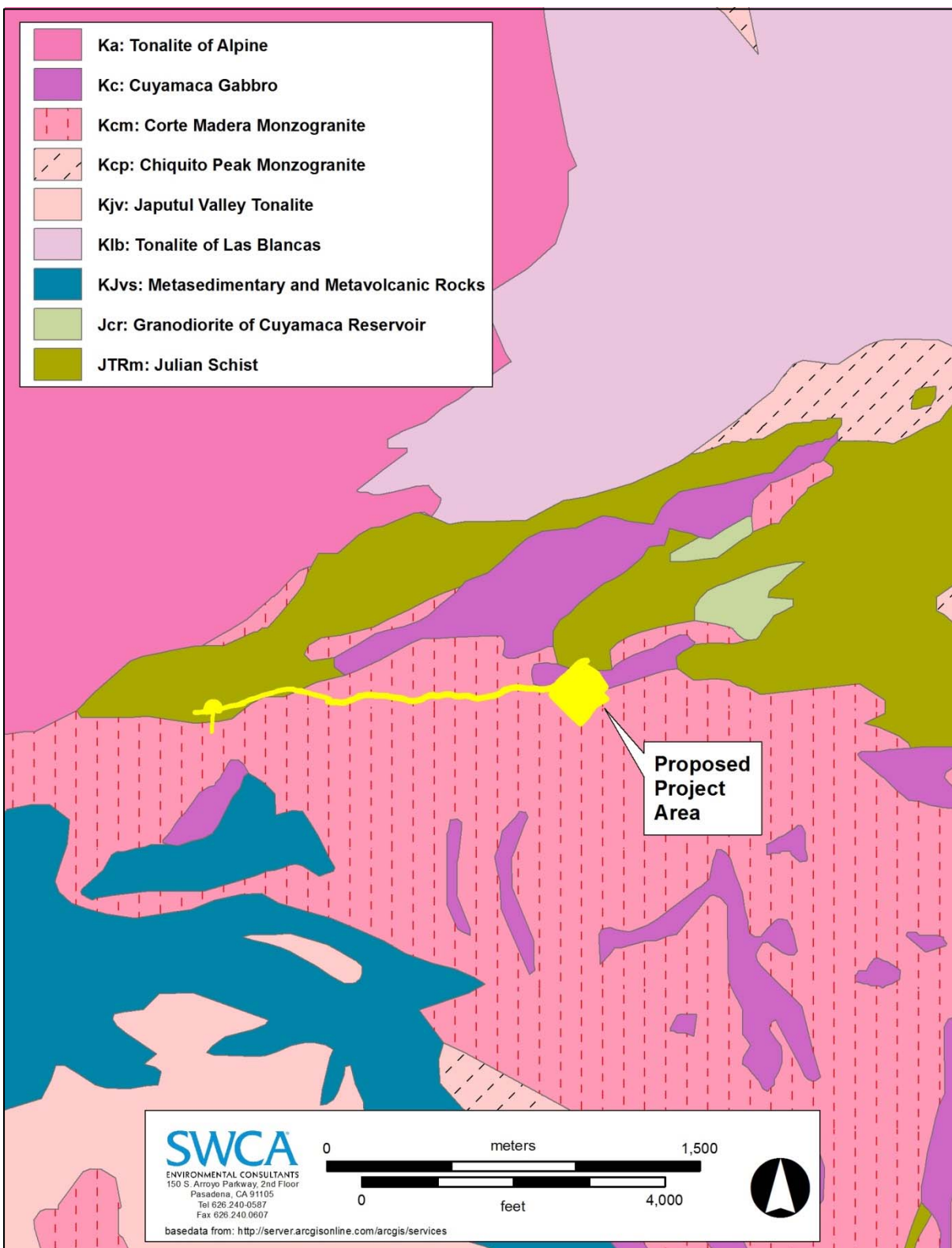
The Granodiorite of Cuyamaca Reservoir is Middle to Late Jurassic in age and occurs in the eastern-most portion of the Proposed Project area. This unit includes tonalite and granodiorite, which are silica and aluminum-rich, coarse-grained, intrusive igneous rocks that contain high composition percentages of plagioclase feldspars and amphiboles (Todd 1978; Todd et al. 2004). This unit occurs regionally as sheet-like intrusions wrapped around older plutons and interlayered and cross-cut by younger intrusive rocks (Todd 1978). Because this unit consists of crystalline igneous rock, there is no potential for fossils within. Therefore, this unit is considered to have no sensitivity for paleontological resources.

The Early Cretaceous Corte Madera Monzogranite (CMM) underlies much of the central portion of the Proposed Project area. It is an intrusive igneous mass, medium to coarse-grained in texture, and contains subunits of biotite-bearing leucomonzogranite, leucogranodiorite, and syenogranite (Todd 1978; Todd et al. 2004). The CMM occurs as sheets wrapped around older plutons and contains small traces of the Pine Valley Monzogranite (PVM). The PVM and CMM are of similar age, appearance, and composition, but the CMM exhibits a lower overall color index. Regionally, the CMM exhibits gradational contacts with the PVM. This unit is crystalline igneous rock and is considered to have no sensitivity for paleontological resources.

The Early Cretaceous Cuyamaca Gabbro is the most mafic rock unit in the Proposed Project area. It occurs in limited parts of the central SVC tie-line, and again in the northeastern-most portion of the Proposed Project area beneath the SVC. This unit consists of several bodies containing gabbro, hornblende gabbro, and troctolite, as well as olivine-bearing gabbro (Todd et al. 2004).



**Figure 3. Geologic map of bedrock units underlying the Proposed Project area (Todd et al. 2004).**





The Cuyamaca Gabbro contains evidence of secondary melting and recrystallization, along with foliations from post-emplacement deformation (Todd 1978). Due to the formative conditions of this unit occurring at depth within the crust, it is not possible for fossils to form or preserve within. Therefore, this unit is considered to have no sensitivity for paleontological resources.

## 8.2 Records Search Results

A records search request was submitted to the SDNHM with the stipulations of including the area within 1 mile of the Proposed Project area. No previously recorded paleontological localities were reported by the SDNHM within the Proposed Project area or within one mile of the Proposed Project footprint (Randall 2015).

## 8.3 Resource Potential Classification

The literature search revealed that none of the rock units underlying the Proposed Project area are known to be fossiliferous and none have produced scientifically important localities in the past, nor are there any known fossil localities within a 1-mile radius of the Proposed Project footprint (Deméré 2010; Randall 2015).

The four geologic units (Cuyamaca Gabbro, Corte Madera Monzogranite, Granodiorite of Cuyamaca Reservoir, metasedimentary and metavolcanic rocks equivalent to the Julian Schist) underlying the Proposed Project area were classified based on unpublished data from a SDNHM DPS report which included the existing Suncrest Substation (see Table 2) (Deméré 2010). According to these classifications, none of the geologic units underlying the Proposed Project area have the potential for or have confirmed occurrences of paleontological resources (see Figure 4).

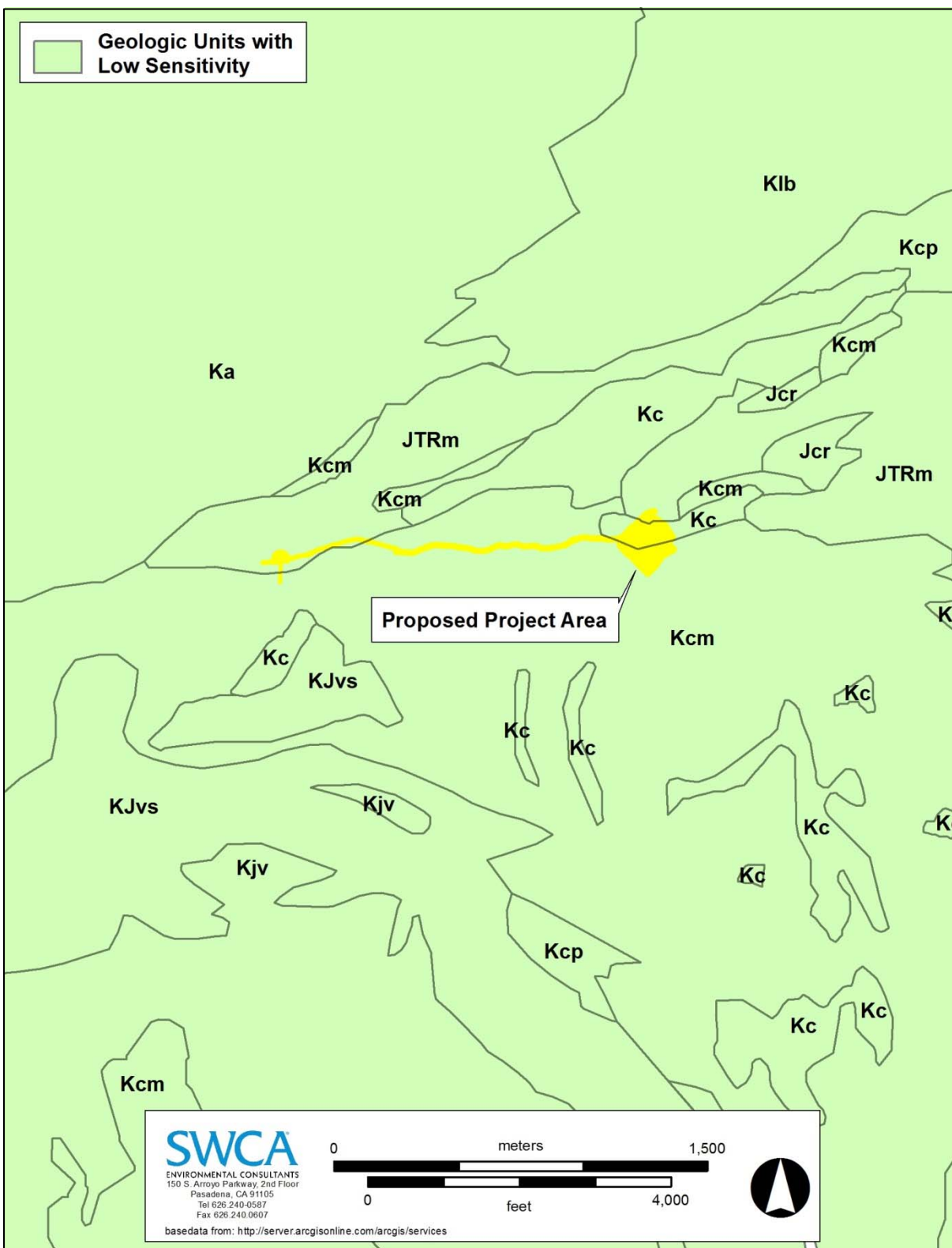
**Table 2. Paleontological Resource Potential of the Geologic Units Underlying the Proposed Project Area**

Geologic Unit	Map Symbol	Age	Resource Potential	Lithology
Cuyamaca Gabbro	Kc	Early Cretaceous	None	<i>Igneous</i> : plutonic gabbro, hornblende gabbro, and troctolite, as well as olivine-bearing gabbro
Corte Madera Monzogranite	Kcm	Early Cretaceous	None	<i>Igneous</i> : plutonic biotite-bearing leucomonzogranite, leucogranodiorite, and syenogranite
Granodiorite of Cuyamaca Reservoir	Jcr	Late and Middle Jurassic	None	<i>Igneous</i> : plutonic: biotite and hypersthene-biotite granodiorite and tonalite; actinolitic amphibole
Metasedimentary and metavolcanic rocks	JTrm	Jurassic and Triassic	None	<i>Metamorphic</i> : schist, metaquartzite, and metaconglomerate; mudstone, sandstone, and pebble conglomerate

NOTE: Data provided in *Geologic Unit*, *Map Abbreviation* and *Age* are from the El Cajon 30' x 60' Quadrangle geologic map (Todd et al. 2004); the data in *Resource Potential* from Deméré (2010); the data provided for *Lithology* is from Todd (1978) and Todd et al. (2004).



**Figure 4. Paleontological resource potential of units within the Proposed Project area (potentials from Deméré [2010]).**





## 9 CONCLUSIONS

Based on results of this study, a pedestrian field survey for paleontological resources is not recommended. The four geologic units which underlie the Proposed Project area (Cuyamaca Gabbro, Corte Madera Monzogranite, Granodiorite of Cuyamaca Reservoir, metasedimentary and metavolcanic rocks equivalent to the Julian Schist) are igneous and metamorphic rocks. These rock types form at considerable depth beneath the surface under extreme heat and pressure; these conditions are not conducive to fossil preservation.

Searches of the available literature and museum records have revealed that all units mapped within the Proposed Project area are unlikely to contain paleontological resources. It is therefore unlikely that Proposed Project construction activities will encounter or impact paleontological resources.

## 10 RECOMMENDATIONS

In order to demonstrate CEQA compliance, a response to the following question in the Environmental Checklist based on the results of the paleontological analysis is required: *“Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?”*

The following Applicant Proposed Measures (APMs) have been developed in accordance with the SVP (1995; 2010) standards and meet the paleontological requirements of CEQA. These measures have been used throughout California and have been demonstrated to be successful in protecting paleontological resources while allowing timely completion of construction.

**Error! Reference source not found.** presents recommendations for further evaluation and proposed measures for the Proposed Project based on the findings of the paleontological assessment. The intent of the recommendations is to ensure that potential adverse impacts to paleontological resources as a result of project implementation are reduced to a less than significant level.

**Table 3. Applicant Proposed Measures**

APM No.	Description
APM-PR-1	<p><b>Inadvertent Fossil Discovery.</b> Should any paleontological resources be found within the Proposed Project footprint prior to or during construction:</p> <ul style="list-style-type: none"> <li>▪ Surface-disturbing work will be halted in the immediate area (within 50 feet) of the find and project paleontologist notified immediately so the find can be evaluated</li> </ul> <p>No operations will resume in the immediate area of the find until written authorization to proceed is issued by the appropriate agency personnel.</p>



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## **Appendix G:**

### **Phase I Environmental Site Assessment**





# SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT PHASE I ENVIRONMENTAL SITE ASSESSMENT

FINAL

August 2015

## **SUBMITTED TO**

NextEra Energy Transmission, West LLC  
700 Universe Boulevard  
Juno Beach, Florida 33408

## **SUBMITTED BY**

SWCA Environmental Consultants  
60 Stone Pine Road, Suite 201  
Half Moon Bay, California 94019



**Suncrest Dynamic Reactive Power Support Project  
Phase I Environmental Site Assessment  
Alpine, San Diego County, California**

Prepared for

**NextEra Energy Transmission, West LLC**

700 Universe Boulevard  
Juno Beach, Florida 33408  
Attn: Andy Flajole

Prepared by

Steve O'Brien, Environmental Specialist

**SWCA Environmental Consultants**

3033 North Central Avenue  
Phoenix, Arizona 85012  
(602) 274-3831  
[www.swca.com](http://www.swca.com)

SWCA Project No. 32001

July 17, 2015



## EXECUTIVE SUMMARY

This executive summary presents the results of a Phase I Environmental Site Assessment (Phase I ESA) for the proposed Suncrest Dynamic Reactive Power (Static Var Compensator or SVC) Support Project, an approximately 6-acre proposed SVC site and approximately 1-mile-long proposed transmission line right-of-way (the “subject property”), near the western end of Bell Bluff Truck Trail, near the community of Alpine, in San Diego County, California. The purpose of this Phase I ESA is to meet due diligence requirements under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 prior to occupying the property.

NextEra Energy Transmission West, LLC provided a description of the boundaries of the subject property, and this description was taken as an accurate and true representation of the site. Independent verification of the subject property boundaries was not conducted by SWCA Environmental Consultants (SWCA) as part of this Phase I ESA.

The following list presents selected findings of this Phase I ESA:

- SWCA’s review of historical aerial photographs and topographic maps did not identify any past uses of the subject property considered to be recognized environmental conditions (RECs) for the subject property.
- SWCA’s review of a 2010 addendum to a 2009 Phase I ESA for the subject property found that the report did not identify any RECs or “indications of environmental conditions which may present an elevated potential to affect construction of the proposed Sunrise Powerlink” (Geosyntec Consultants 2010:4).
- SWCA’s review of the Environmental Data Resources, Inc., environmental database report and supplemental records from the California State Water Resources Control Board and the California Department of Toxic Substances Control did not identify any relevant nearby sites or facilities.
- SWCA did not identify potential sources of vapor intrusion or vapor encroachment that would be considered to be RECs for the subject property.
- SWCA’s reconnaissance of the subject property found that it primarily consists of undeveloped densely vegetated land that was previously used for grazing. The subject property also includes paved roadway and associated storm drains, culverts, and utility infrastructure; an abandoned garage; and a vegetation restoration project with water tanks and irrigation lines. A short span of the subject property enters an electrical substation where an overhead connection is planned. No soil staining, odors, or other evidence of leaks or spills was observed on the subject property.
- SWCA’s reconnaissance of the subject property identified the existing San Diego Gas and Electric Suncrest Substation, an electrical substation, at the western end of the subject property. No soil staining, odors, or other evidence of leaks or spills was observed at or in the vicinity of the substation.
- No wells, evidence of underground storage tanks, or evidence of spills, staining, or leaking of hazardous materials or petroleum products were observed within the subject property.

SWCA has completed a Phase I ESA of the subject property based on information obtained during the site investigation conducted on March 25, 2015, and the information obtained through the activities of this Phase I ESA, excluding the limitations.



We have performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E 1527 of the Suncrest Dynamic Reactive Power Support Project, an approximately six-acre proposed SVC site and approximately one-mile-long proposed transmission line right-of-way, near the western end of Bell Bluff Truck Trail, near Alpine, in San Diego County, California, the *property*. Any exceptions to, or deletions from, this practice are described in Section 1.3 of this *report*. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *property*.



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# 1 INTRODUCTION

This report presents the results of a Phase I Environmental Site Assessment (Phase I ESA) for the proposed Suncrest Dynamic Reactive Power (Static Var Compensator or SVC) Support Project, an approximately six-acre proposed SVC site and approximately one-mile-long proposed transmission line right-of-way (the “subject property”), near the western end of Bell Bluff Truck Trail, near the community of Alpine, in San Diego County, California. SWCA Environmental Consultants (SWCA) completed this Phase I ESA for NextEra Energy Transmission West, LLC (NEET West), in accordance with the March 5, 2015, proposed scope of work. A copy of the scope of work is included in Appendix A.

## 1.1 Purpose

The purpose of this Phase I ESA is to meet due diligence requirements under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 prior to occupation of the property.

The Phase I ESA followed the standards described in the American Society for Testing and Materials (ASTM) Standard E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM 2013). Deletions or deviations from ASTM Standard E 1527-13 are documented in this report. The goal of the processes established by this practice is to assess the property, to the extent practical, for the potential presence of recognized environmental conditions (RECs), defined in the ASTM standard as “the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a *property*: (1) due to any *release* to the *environment*; (2) under conditions indicative of a *release* to the *environment*; or (3) under conditions that pose a *material threat* of a future *release* to the *environment*.” De minimis conditions, which generally do not present risks of harm to public health or the environment and which generally would not be the subject of enforcement actions if brought to the attention of appropriate regulating agencies, are not RECs.

This Phase I ESA did not include activities such as inspections or sampling for the presence of asbestos-containing materials, radon, other radioactive substances, vapor intrusion, lead-based paint, non-hazardous wastes and materials, mold, or biological and medical wastes. No soil, air, or water samples were collected for this Phase I ESA.

## 1.2 Scope of Work

To achieve the objective referenced above, SWCA completed the following tasks:

- Reviewed intermittent topographic maps and/or aerial photographs.
- Surveyed relevant documents in order to assess the subject property’s physiography, including a review of the local hydrogeology and geology of the surrounding area.
- Reviewed available federal and state regulatory databases.
- Visually surveyed the subject property by walking on and driving around the subject property and visually surveyed the surrounding properties from the subject property perimeter.

## 1.3 Limitations

SWCA warrants that qualified professionals in conformance with ethical business practices and industry standards prepared this report. Credentials of the individuals involved in preparing this report are included in Appendix B.



Some standard historical sources are not readily available and thus were not used to prepare this Phase I ESA. Based on our professional experience, Sanborn fire insurance maps and city directories were assumed to not be available for the subject property because of its rural nature and because it remained undeveloped until recent years. SWCA was not provided with a chain-of-title report or judicial records of environmental liens and activity and use limitations (AULs). Because they were disturbed or obscured by vegetation, compacted earth, or pavement, not all land surfaces within the subject property were able to be observed. On the parcels of the subject property owned by San Diego Gas & Electric Company (SDG&E) (see Table 1 below), SWCA's access was restricted to established roads plus 10 feet on either side of the road. SWCA was not provided access inside the SDG&E Suncrest Substation, so observations were limited to visual observation from a distance. SWCA was not provided with landowner contact information to conduct interviews, and a Phase I ESA User Questionnaire was not completed for the subject property. Because of the lack of available aerial photographs and U.S. Geological Survey (USGS) topographic maps, the commonly used 5-year interval between photographs and topographic dates could not be followed for all photographs and maps reviewed. Standard historical sources dating back to 1940 were not reasonably attainable for the subject property. Because supplemental data sources provided sufficient information, this gap in the data is not thought to have affected SWCA's ability to identify RECs on the subject property. SWCA's findings and conclusions within this assessment do not take into consideration the limitations identified in this report.

The information contained in this report relates only to the subject property and adjacent properties and should not be extrapolated or construed to apply to any other site. The description of the subject property as provided herein represents the conditions of the subject property as it existed on the date of the site reconnaissance. The contents of this report are valid as of the date shown on the report cover. The information presented in this report is intended for the exclusive use of NEET West and its affiliates, underwriters, and lenders. Reliance of any other parties on the information presented herein is the sole responsibility of said parties.

## 2 PROPERTY DESCRIPTION

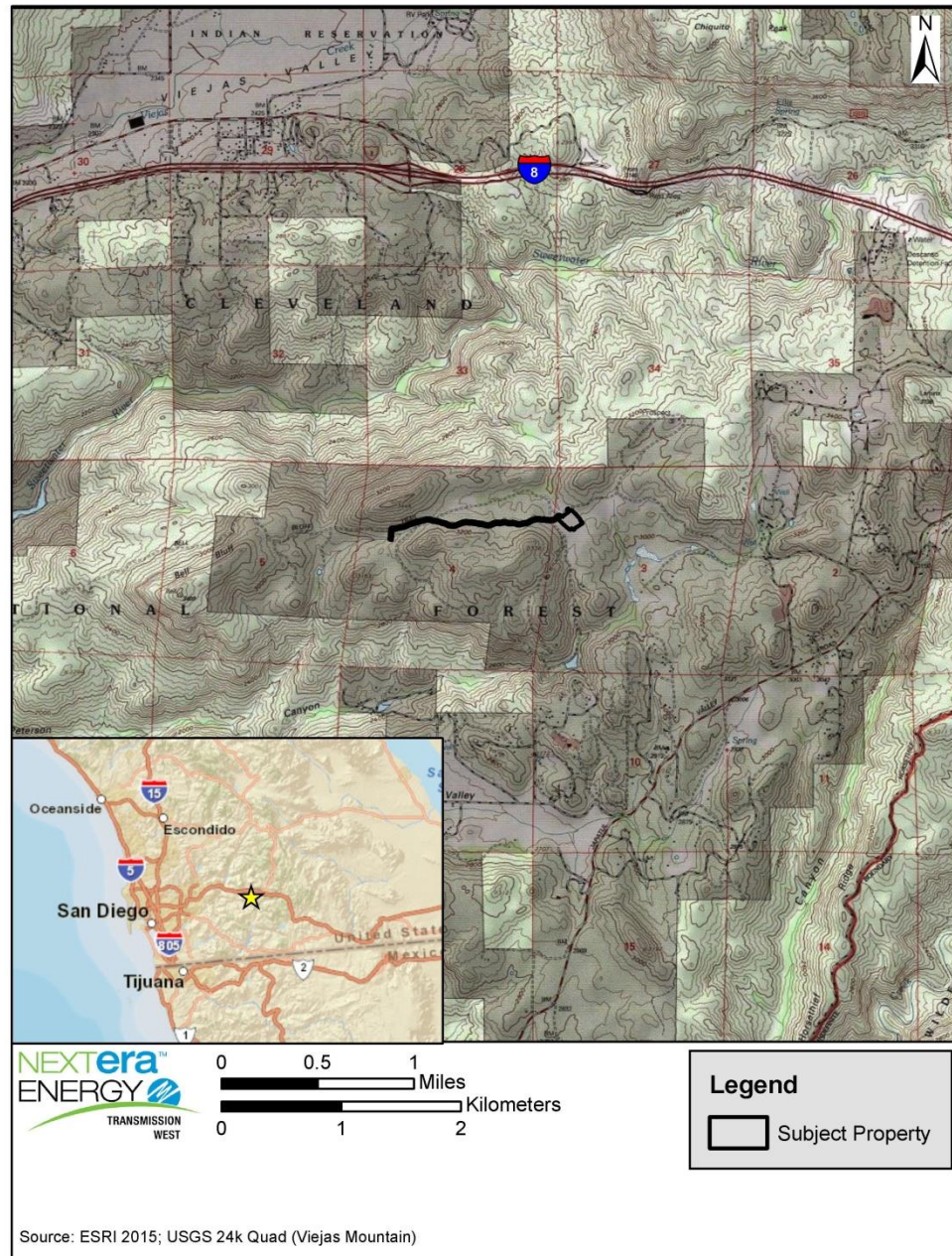
The subject property is an approximately 6-acre area at the eastern end of an approximately one-mile-long, 70-foot-wide proposed transmission line right-of-way, near the western end of Bell Bluff Truck Trail, near the community of Alpine, in San Diego County, California. It runs from inside the existing SDG&E Suncrest Substation at its western end, eastward along Bell Bluff Truck Trail for approximately one mile to the 6-acre location of the proposed SVC site. The subject property is vacant and undeveloped except for the existing roadway and the existing SDG&E Suncrest Substation. Parcel mapping from 2015 indicates that the subject property crosses through three parcels: two owned by SDG&E and one owned by Dean R. and Deborah S. Wilson (San Diego Geographic Information Source 2015). Ownership of the parcels is provided in Table 1, and the subject property is depicted in Figures 1 and 2.

**Table 1. Ownership of Subject Property**

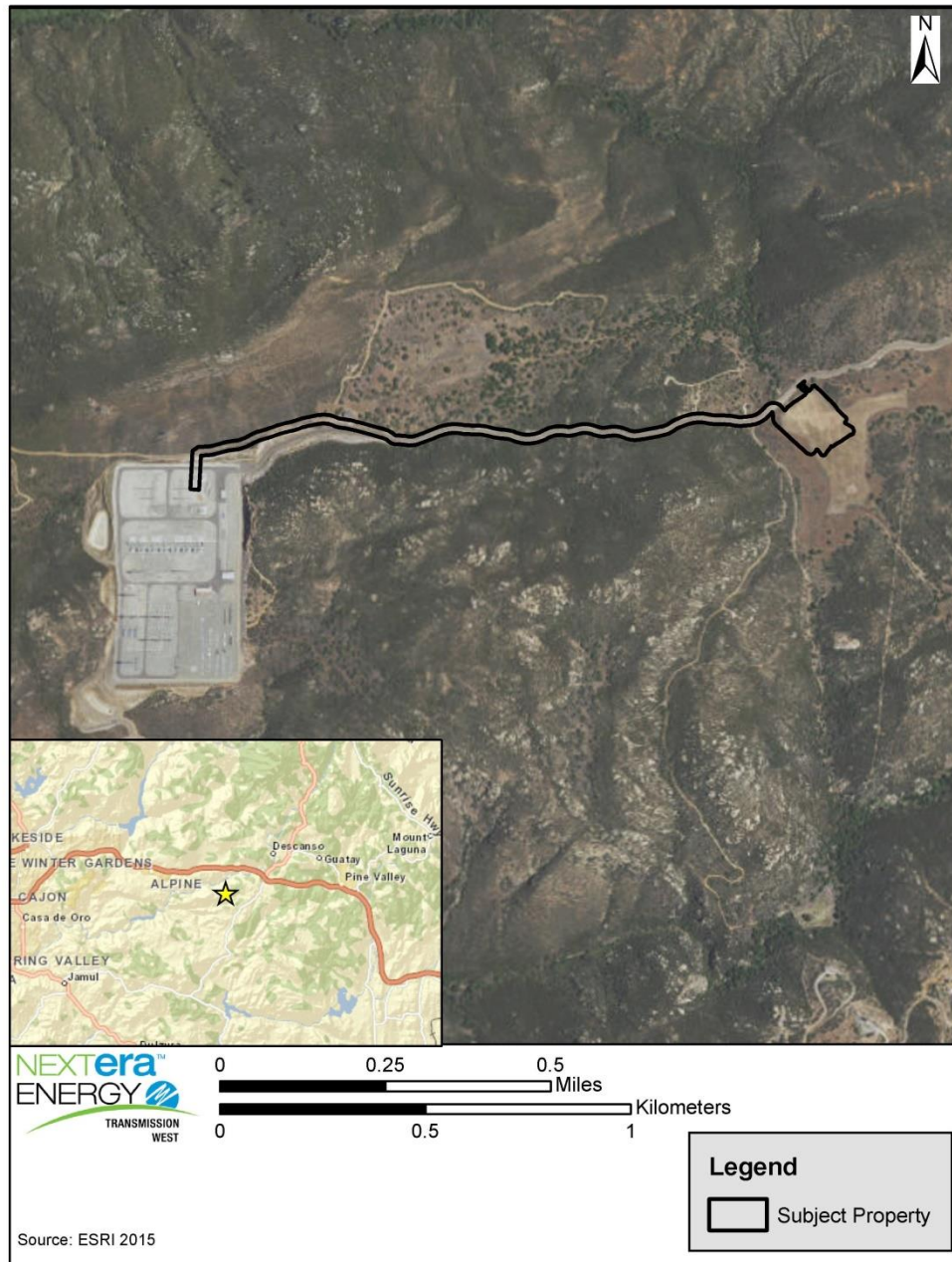
<b>Parcel # (APN*)</b>	<b>Owner</b>
523-030-13-00	San Diego Gas & Electric Company
523-030-09-00	San Diego Gas & Electric Company
523-040-08-00	Dean R. and Deborah S. Wilson

\*Assessor's Parcel Number



**Figure 1. Subject property location.**



**Figure 2. Subject property and surrounding properties.**



### 3 PHYSICAL SETTING ANALYSIS

The following sections present physical characteristics of the subject property, as obtained from available natural history information sources.

#### 3.1 Topography

The USGS 1997 Alpine, California, 7.5-minute quadrangle indicates that the subject property is along a ridge that leads to Bells Bluff west of the subject property. The vicinity is hilly with moderate to steep slopes, and appears to consist of hills and ridges dissected by washes and canyons. In a larger context, the subject property is located approximately midway up the mountains east of San Diego, approximately 33 miles from the coast. Though the mountains reach heights of 6,000 feet or more east of the subject property, the subject property is located at approximately 3,150 feet above mean sea level.

#### 3.2 Geology

The subject property is mapped within an area called the Mesozoic granitic rocks, unit 2 (Peninsular Ranges). This mapping unit is from the Middle Jurassic to Late Cretaceous geologic age, and is composed primarily of tonalite, granodiorite, and minor quartz monzonite and granite (Rogers 1967; USGS 2015).

#### 3.3 Soils

A review of soils data from the Natural Resources Conservation Service (NRCS) (2015a) indicates that the subject property is mapped within areas of Cieneba coarse sandy loam and very rocky coarse sandy loam, and Fallbrook sandy loam. The Cieneba series consists of very shallow and shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. Cieneba soils are found on hills and mountains, and have slopes ranging from 9 to 85 percent. Runoff ranges from low to high. They exhibit moderately rapid permeability in the soil and much slower permeability in the weathered bedrock. Areas with these soils are used for wildlife, recreation, watersheds, and incidental grazing. Typical vegetation is mainly chaparral and chemise with widely spread foothill pine or oak tree. There are small area of thin annual grasses and weeds. This soil is common in coastal mountain ranges in central and southern California, and the foothills of the Sierra Nevada.

The Fallbrook series consists of deep, well-drained soils that formed in material weathered from granitic rocks. Fallbrook soils are found on rolling hills and have slopes ranging from 5 to 75 percent. They exhibit medium to very rapid runoff and moderately slow permeability. Extensive areas with this soil are used for grazing and also production of irrigated avocados, citrus, truck crops, and non-irrigated small grain and hay. Uncultivated areas are typically annual grasses and forbs with considerable chaparral, chamise, flattop buckwheat, and other shrubs. This soil is common in foothills on the east side of the San Joaquin Valley and foothills in the west part of southern California (NRCS 2015b).

#### 3.4 Hydrogeology

Drainage in the vicinity of the subject property has been somewhat affected by development, and some drainage follows human-made channels or diversions. The subject property appears to primarily drain towards the south, where it would enter unnamed tributaries to Peterson Canyon via unnamed washes, then into the Sweetwater River, which leads to San Diego Bay. Because the subject property is located on a ridge, groundwater is not believed to flow towards the subject property, only away from it.

The subject property is mapped within the South Coast hydrologic region, which covers approximately 10,600 square miles of the southern California watershed that drains to the Pacific Ocean. The region is bounded on the west by the Pacific Ocean and the watershed divide near the Ventura-Santa Barbara County line. The northern boundary corresponds to the crest of the Transverse Ranges through the San



Gabriel and San Bernardino Mountains. The eastern boundary lies along the crest of the San Jacinto Mountains and low-lying hills of the Peninsular Range that form a drainage boundary with the Colorado River hydrologic region. The southern boundary is the international boundary with Mexico. Significant geographic features include the coastal plain, the central Transverse Ranges, the Peninsular Ranges, and the San Fernando, San Gabriel, Santa Ana River, and Santa Clara River valleys.

The South Coast hydrologic region has 56 delineated groundwater basins. The San Diego subregion overlies 27 groundwater basins, encompasses most of San Diego County, and includes parts of Orange and Riverside Counties. Groundwater basins underlie approximately 11% of the surface of the San Diego subregion. The subject property is not located within a mapped groundwater basin or subbasin, nor a state or private water district. Many of the subbasin boundaries were developed or modified with public input, but little physical data. Because they should not be considered precise boundaries, a detailed local study should determine whether any specific area lies within a groundwater basin boundary.

Groundwater is found in unconfined alluvial aquifers in most of the basins of the San Diego subregion and the inland basins of the Santa Ana and Los Angeles subregions. In some larger basins, typified by those underlying the coastal plain, groundwater occurs in multiple aquifers separated by aquitards that create confined groundwater conditions.

Groundwater in basins of the San Diego subregion has mainly calcium and sodium cations, and bicarbonate and sulfate anions. Local impairments by nitrate, sulfate, and dissolved solids are known to occur. Camp Pendleton Marine Base, in the northwestern part of this subregion, is on the U.S. Environmental Protection Agency's National Priorities List for soil and groundwater contamination by many constituents (California Department of Water Resources [CDWR] 2003).

A few water wells were mapped on properties northeast of the subject property; however, water level data were not available for any of the nearby wells (CDWR 2015).

## 4 HISTORICAL PROPERTY USES AND RECORDS REVIEW

The history of the subject property and adjacent properties was reviewed in accordance with the applicable ASTM standards, except as noted in Section 1.3. Historical uses of the subject property were determined based on a review of readily available, reasonably ascertainable historical data, including historical topographic maps and aerial photographs. Sanborn fire insurance maps and city directories were created for urbanized areas; therefore, they were assumed to not be available for the subject property because of its rural nature and because it remained undeveloped until recent years.

### 4.1 Historical Map Review

SWCA reviewed USGS topographic maps of the area dated from 1903 to 1997 (see Appendix C). A summary of SWCA's evaluation of the reviewed topographic maps is provided in Table 2.

**Table 2. Summary of Historical Topographic Map Interpretation**

Date of Topographic Map	Observations
1903 Cuyamaca, California USGS 30-series 1:125,000 and 1904 Southern California Sheet 2 USGS 60-series 1:250,000	The subject property and vicinity are depicted as primarily vacant and undeveloped in this map, except for some dirt roads. Bell Bluff Truck Trail appears to be present, with one structure depicted on its western end, south of the subject property.



Date of Topographic Map	Observations
1944 Cuyamaca Peak, California USGS 15-series 1:62,500	The subject property and surrounding properties do not appear to have changed significantly since the previous map. Bell Bluff Truck Trail appears to have extended to the west.
1960 Viejas Mountain, California USGS 7.5-series 1:24,000	The subject property and surrounding properties do not appear to have changed significantly since the previous map. A mining prospect is depicted on what is currently disturbed earth approximately 0.65 mile northeast of the subject property. A side trail branches to the south of Bell Bluff Truck Trail. It appears to run to a small pond that is still present approximately 0.35 mile southwest of the subject property.
1982, 1988, and 1997 Viejas Mountain, California USGS 7.5-series 1:24,000	The subject property and surrounding properties do not appear to have changed significantly since the previous map.

## 4.2 Historical Aerial Photograph Review

SWCA reviewed available historical aerial photographs of the subject property dating from 1953 to 2014. A summary of SWCA's evaluation of the reviewed aerial photography is provided in Table 3.

**Table 3. Summary of Historical Aerial Photograph Interpretation**

Date of Aerial Photograph	Observations
1953, 1963, 1975, 1989 EDR aerial photographs Various scales	The subject property and most surrounding properties appear to be vacant and undeveloped scrubland with a few dirt roads. An area adjacent to the southwest appears as if it may have been cleared for grazing. The subject property and surrounding area does not appear to have changed significantly during this time period.
1994, 1996, 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010 EDR and Google Earth aerial photographs Various scales	By 1994, the subject property and adjacent land still appear to be undeveloped and vacant. No significant changes are evident in the 1996 photograph, except that what appears to be a square-shaped residence is present on or adjacent to the north of the right-of-way, approximately 0.77 mile east of the area where the SDG&E Suncrest Substation exists today. In 2003, another structure, possibly a gate, is evident north of the right-of-way, approximately 900 feet east-northeast of the location of the proposed SVC. No additional significant changes are evident during this time period.
2012, 2013, 2014 Google Earth aerial photographs Variable scales	By 2012, the SDG&E Suncrest Substation at the western end of the subject property has been constructed. It appears that the roadway has been improved and paved, and stormwater controls are in place along the road. A tank, probably a water tank, is present approximately 1,000 feet northeast of the substation. A smaller tank has been added approximately 0.7 mile east of the substation, north of the road. A large portion of the location of the proposed substation has been graded. In 2013, another smaller tank has been added, approximately 275 feet southeast of the large tank. The surrounding area appears to remain undeveloped and unoccupied, except as described above.



### 4.3 Adjacent Properties

Adjacent land remained primarily undeveloped until the SDG&E Suncrest Substation was constructed between 2010 and 2012, at the western end of the subject property. Other adjacent land remains undeveloped today except for a garage and some water tanks.

### 4.4 Previous Phase I ESA Reports

SWCA was provided with a January 2010 addendum to a Phase I ESA report that was completed in 2009 by Geosyntec Consultants (Geosyntec). The subject of the addendum is “Addendum No. 10 to the Sunrise Powerlink Phase I ESA” “Lightner Parcels – APNs [Assessor’s Parcel Numbers] 523-020-01, 523-020-06, 523-03-07, 523-030-09, 523-030-12, 523-030-13, and 523-030-14.” The original report and previous addendums were not provided to SWCA for review. The original Phase I ESA was for a 120-mile-long transmission corridor, and this addendum was to further evaluate the stated parcels. Geosyntec did not identify any RECs or “indications of environmental conditions which may present an elevated potential to affect construction of the proposed Sunrise Powerlink” (Geosyntec 2010:4). SWCA was not provided with additional previous Phase I ESA reports or other environmental reports for review that are relevant to this Phase I ESA.

### 4.5 Interviews

SWCA was not provided with contact information to interview the owners of the subject property. SWCA sent a Phase I ESA User Questionnaire for the subject property to NextEra Energy Resources, LLC. A completed questionnaire was not returned to SWCA by the time of this report. However, if a completed questionnaire is returned and the answers would alter the conclusions of this report, SWCA will prepare an addendum to this report. SWCA will retain the returned questionnaire in its files, regardless of the answers within.

### 4.6 Environmental Liens and Activity and Use Limitations

SWCA was not provided with a chain-of-title report or judicial records of environmental liens or AULs to review.

## 5 ENVIRONMENTAL REGULATORY REVIEW

SWCA conducted an environmental regulatory review to establish the environmental history of the subject property and surrounding area to ascertain whether hazardous waste or hazardous material management, handling, treatment, or disposal activities have occurred on or near the subject property.

### 5.1 Federal and State Environmental Records

An environmental database report generated by Environmental Data Resources, Inc. (EDR) on March 12, 2015, was used to access environmental records for the subject property and the surrounding properties. No nearby sites or facilities were listed in the databases searched by EDR. The proximity of listed facilities would have been reviewed to determine the potential effect, if any, these facilities may have on the subject property. The databases searched by EDR include those specified by ASTM Standard E 1527-13, as well as several additional federal and state databases and databases proprietary to EDR. EDR updates its records in accordance with ASTM Standard E 1527-13 guidelines. Additional listed facilities that EDR has not identified may exist within a 1-mile radius of the subject property.

SWCA also reviewed supplemental records from the California State Water Resources Control Board’s (SWRCB’s) GeoTracker website (SWRCB 2015), which contains environmental data for regulated facilities in California including cleanup sites and hazardous waste facilities, and the California



Department of Toxic Substances Control's (DTSC's) EnviroStor website (DTSC 2015), which includes data for leaking underground storage tank and other cleanup sites, land disposal sites, and hazardous waste permitted facilities. No relevant nearby sites or facilities were listed in the supplemental databases searched by SWCA. Appendix C provides copies of the EDR reports and mapping from the State agencies.

SWCA considered the potential for contaminant migration; however, SWCA did not identify any off-site potential sources of vapor intrusion or vapor encroachment to the subject property.

### **5.1.1 Orphan Sites**

In addition to the sites/facilities listed in the EDR report, EDR provides a list of sites or facilities that are listed in one or more regulatory agency databases but could not be mapped because of incomplete address or location information; these are called orphan sites. This EDR report identified no orphan sites.

## **6 PROPERTY RECONNAISSANCE**

Ms. Laura Hoffman of SWCA completed the Phase I ESA site investigation for the subject property on March 25, 2015. The subject property was accessed from paved and unpaved access roads. The eastern part of the subject property is privately owned, with unrestricted access for SWCA. The western part is owned by SDG&E, and allowed access was restricted to established roads plus 10 feet on either side. SWCA was not provided access inside the SDG&E Suncrest Substation, so observations were limited to visual observation from a distance. The property reconnaissance consisted of walking and driving through the subject property on maintained access roads and walking on unpaved access roads in areas inaccessible to vehicles on the privately owned portion. Photographs taken during the property reconnaissance are included in Appendix D.

### **6.1 Property Inspection**

The subject property primarily consists of undeveloped land that was previously used for grazing. The undeveloped portion is densely vegetated with various shrubs and trees, including chemise, manzanita, scrub oaks, and sage. Grasses, such as buckwheat and red brome, are found in recently disturbed areas.

One building, a garage built by the former property owner, is located in the approximate center of the subject property. The building is located on SDG&E -owned land and is approximately 80 feet north of the road. Therefore, observation was limited to a view from the road. The building appeared to be abandoned, though it likely had electricity at one point; a utility pole that has been removed and cut into several pieces is located near the garage. A catch basin is attached to the roof to collect rainwater. Several old barbed wire and wood fences are present within the subject property.

All of the remaining development in the subject property is associated with the adjacent Suncrest Substation. The substation itself appears fairly typical. It is a fenced area measuring approximately 37 acres in size and contains various electrical equipment and related structures, and three or more buildings. The subject property extends approximately 235 feet into the northeast of the substation. No soil staining, odors, or other evidence of leaks or spills was observed within this or any part of the substation.

Bell Bluff Truck Trail is an east-west-trending, paved access road from the east measuring approximately 30 feet wide, decreasing to 12 feet wide approximately 1,200 feet east-northeast of the Suncrest Substation. It is unpaved west of the Suncrest Substation. A paved access road connects the Suncrest Substation to Bell Bluff Truck Trail. Numerous culverts, gutters, and storm drains and one new, metal gate are located along the roads. One circular pad composed of gravel and lined with metal is located adjacent to Bell Bluff Truck Trail on the north side; it is outside of the area SWCA had access to and thus



inspection was limited. Two series of manholes are located within the road: one marked “AT&T,” likely for fiber-optic telecommunication lines; and one marked “SDG&E,” likely for electrical lines.

The 6-acre proposed SVC is adjacent to the south of Bell Bluff Truck Trail and is situated on what was the Wilson Laydown Yard for the SDG&E Sunrise Powerlink Project. This area was graded and compacted for use as the laydown yard. Since the completion of the Suncrest Substation, the area has been the site of a habitat restoration project, including efforts to loosen the compacted earth and replant native vegetation. This includes aboveground irrigation infrastructure such as PVC pipes and sprinklers. A temporary nursery and two plastic, temporary water tanks are associated with the restoration effort. One large, permanent water tank is situated on a graded, paved pad and surrounded by a chain-link fence near the western end of the subject property. A fire hydrant and three electrical boxes are located immediately outside of the fenced area. No soil staining, odors, or other evidence of leaks or spills was observed on the subject property.

Numerous unnamed drainages are located throughout the subject property. Culverts, gutters, and storm drains associated with Bell Bluff Truck Trail feed into the drainages. The Suncrest Substation, an electrical substation, is located adjacent to the south of the western end of the subject property. One large, open-air catch basin is located south of the subject property adjacent to the Suncrest Substation; several storm drains appear to feed water from the subject property into this catch basin. No soil staining, odors, or other evidence of leaks or spills was observed at or in the vicinity of the Suncrest Substation.

## 7 PHASE I ESA FINDINGS

The following list presents selected findings of this Phase I ESA:

- SWCA’s review of historical aerial photographs and topographic maps did not identify any past uses of the subject property considered to be RECs for the subject property.
- SWCA’s review of a 2010 addendum to a 2009 Phase I ESA for the subject property found that the report did not identify any RECs or “indications of environmental conditions which may present an elevated potential to affect construction of the proposed Sunrise Powerlink” (Geosyntec Consultants 2010:4).
- SWCA’s review of the EDR environmental database report and supplemental records from the California SWRCB and the California DTSC did not identify any relevant nearby sites or facilities.
- SWCA did not identify potential sources of vapor intrusion or vapor encroachment that would be considered to be RECs for the subject property.
- SWCA’s reconnaissance of the subject property found that it primarily consists of undeveloped densely vegetated land that was previously used for grazing. The subject property also includes paved roadway and associated storm drains, culverts, and utility infrastructure; an abandoned garage; and a vegetation restoration project with water tanks and irrigation lines. A short span of the subject property enters an electrical substation where an overhead connection is planned. No soil staining, odors, or other evidence of leaks or spills was observed on the subject property.
- SWCA’s reconnaissance of the subject property identified the existing SDG&E Suncrest Substation, an electrical substation, at the western end of the subject property. No soil staining, odors, or other evidence of leaks or spills was observed at or in the vicinity of the substation.



- No wells, evidence of underground storage tanks, or evidence of spills, staining, or leaking of hazardous materials or petroleum products were observed within the subject property.

## 8 PHASE I ESA CONCLUSIONS

SWCA has completed a Phase I ESA of the subject property based on information obtained during the site investigation conducted on March 25, 2015, and the information obtained through the activities of this Phase I ESA, excluding the limitations.

We have performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527 of the Suncrest Dynamic Reactive Power Support Project, an approximately 6-acre proposed SVC site and approximately 1-mile-long proposed transmission line right-of-way, near the western end of Bell Bluff Truck Trail, near the community of Alpine, in San Diego County, California, the *property*. Any exceptions to, or deletions from, this practice are described in Section 1.3 of this *report*. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *property*.



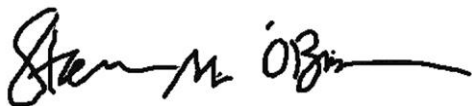
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## 10 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professional as defined in §312.10 of 40 Code of Federal Regulations (CFR) 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312. Our qualifications are presented in Appendix B of this report.



Steven M. O'Brien  
Environmental Specialist

07/17/15

Date



DeAnne Rietz  
Environmental Specialist

07/17/15

Date



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## **Appendix A. Phase I ESA Scope of Work**









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## SCOPE OF WORK

### Phase I Environmental Site Assessment for the Suncrest Reactive Power Support Project, San Diego County, California

#### TASK 1. PHASE I ENVIRONMENTAL SITE ASSESSMENT

SWCA Environmental Consultants (SWCA) will complete a Phase I Environmental Site Assessment (ESA) for an approximately 3-acre dynamic reactive power support facility site and approximately 1.8-mile 230kV transmission line right-of-way, near the western end of Avenue de Los Arboles, in San Diego County, California, in accordance with the standards described in American Society for Testing and Materials (ASTM) Standard E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (2013). It is our understanding that the proposed project requires a Phase I ESA to support the Proponent's Environmental Assessment and application for Certificate of Public Convenience and Necessity.

The goal of the Phase I ESA is to assess the subject property, to the extent practical, for the potential presence of recognized environmental conditions (RECs), defined in ASTM Standard E 1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions." The following scope of work applies to a Phase I ESA, and consists of five subtasks.

##### 1.1 Records Review

SWCA will review available historical documents, including aerial photographs and other land-use documents (if available), in order to identify past operations or activities that may have caused the release of hazardous substances into the environment. SWCA also will review copies of environmental reports previously prepared for the site (e.g., Sunrise Powerlink EIR/EIS and associated reports), environmental compliance audits, environmental permits, environmental liens and activity and use limitations (AULs), and any other available environmental documents relating to the site. If provided by the client or landowner, specialized knowledge of or experience relating to the property or nearby properties will be reviewed by SWCA. As part of the review process, site location, hydrogeological characteristics, geographic setting, and physiography also will be summarized. SWCA assumes that Sanborn fire insurance maps and city directories are not available for the subject property because of its rural nature and because it has remained undeveloped until recently.

Additionally, available state and federal regulatory databases will be reviewed to determine whether the subject property or nearby facilities have been subject to environmental actions or review. The regulatory database review will, at a minimum, include the databases required to satisfy the ASTM standard. If the subject property or an adjoining property appears on a federal, state, or tribal database, the ASTM standard requires additional in-person regulatory file review unless the environmental professional determines that a file review is unnecessary and/or that the records cannot be obtained within a reasonable time (20 calendar days from the date of request) for a reasonable cost. SWCA will review regulatory files for up to three adjacent sites, if deemed necessary, provided that such files are publicly and readily available.





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The ASTM standard requires that the user of the Phase I ESA report (the client for whom the report is prepared) must search recorded land-title records and judicial records for environmental liens and AULs and report this information to the environmental professional. A 50-year chain-of-title report and a lien search will not be obtained by SWCA under this scope of work. SWCA will, however, review a chain-of-title report and lien search if supplied by the client, or we will obtain these data at an additional cost to this scope of work, if requested by the client.

## 1.2 Interviews

If site contact and/or property owner contact information is made available by the client, SWCA personnel will attempt to interview those individuals who are knowledgeable about the history of the site (typically, a past or current owner, operator, manager, or occupant of the site). Reasonable attempts will be made to interview at least one staff member of state or local government agencies regarding information that indicates RECs in connection with the property.

## 1.3 Site Reconnaissance

SWCA personnel will conduct a reconnaissance of the project area and vicinity to visually identify and photograph areas with potential RECs and to document current site conditions. This scope of work does not include activities such as collecting or analyzing soil, air, water, or other environmental samples and will not address issues such as radon, asbestos, lead, or radioactivity. SWCA personnel will visually inspect the property and the interiors of buildings where hazardous chemicals and petroleum products are stored or used. SWCA personnel will require access to all areas of the subject property on the day of the site reconnaissance. It is assumed that the client will assist with access arrangements for SWCA personnel to visit the site.

## 1.4 User-Provided Information

User-provided information is an essential component of the Phase I ESA and includes items such as copies of any previous Phase I ESAs or other relevant environmental documents, a completed Phase I ESA User Questionnaire, the reason why the Phase I ESA is being performed, access to the subject property, and contact information for current or past owners or land users. The user of the report is defined as the party seeking to use ASTM Standard E 1527-13 to complete a Phase I ESA of the property.

The ASTM standard also requires that the user of the Phase I ESA report must search recorded land-title records and judicial records for environmental liens and AULs and must report this information to SWCA, as the environmental professional writing the Phase I ESA report. Environmental liens and AULs can commonly be found within recorded land title records (e.g., County Recorder/Registry of Deeds). The types of title reports that may disclose environmental liens and AULs include Preliminary Title Reports, Title Commitments, Condition of Title, and Title Abstracts. In jurisdictions where environmental liens or AULs are only recorded or filed in judicial records, the judicial records must be searched for environmental liens and AULs. The user may wish to engage a title company, real estate attorney, or title professional to undertake a review of reasonably ascertainable recorded land-title records and lien records for environmental liens and AULs. If the user opts not to search for liens and AULs, this would be noted as a limitation of the report.

A 50-year chain-of-title report and a search for liens and AULs will not be obtained by SWCA under this scope of work. SWCA will, however, review a chain-of-title report and lien search if supplied by





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the client, or we will obtain these data at an additional cost to this scope of work, if requested by the client.

### 1.5 Report Generation

The Phase I ESA findings will be summarized and documented in a report. Sections within the report will include 1) an introduction and description of the scope of work; 2) a description of the site; 3) a summary of the site history, including interviews and user-provided information; 4) a regulatory database review; 5) a description of the site reconnaissance; and 6) report findings and conclusions. The potential for contaminant migration, including vapor in the subsurface, will be assessed in accordance with ASTM Standard E 1527-13. A formal ASTM Standard E 2600-10 Vapor Encroachment Screening to identify vapor encroachment conditions will not be conducted as part of this scope of work. Report limitations and literature cited will also be included. Figures, at a minimum, will include 1) a regional site location map; and 2) an aerial photograph. Where applicable, report appendices could include 1) reproductions of select aerial photographs; 2) a copy of the regulatory database review report; 3) select site photographs; 4) applicable site history and prior-use documentation; and 5) copies of relevant environmental reports that have been previously prepared for the site, if supplied by the client.

According to ASTM Standard E 1527-13, the content of a Phase I ESA is valid for only 180 days. If the date of the intended use for Phase I ESA is not within 180 days of the completion of the report, an update will be necessary.

### ASSUMPTIONS

1. The report will be delivered in electronic PDF format.
2. Access to private lands, if restricted, will be arranged by a client representative. Fieldwork will be conducted in a single site visit.
3. The Phase I ESA will be prepared in accordance with ASTM standards and does not include any sampling such as soil, air, water, vapor, lead, or asbestos.
4. The cost assumes that additional regulatory file reviews for up to three adjacent sites will be conducted if deemed necessary.
5. The date of the intended use of the Phase I ESA is within 180 days of the completion of the report.



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## **Appendix B. SWCA Credentials**









**STEVEN M. O'BRIEN**  
**Environmental Specialist**

**Education / Training**

- B.A., Biology / Chemistry,  
 Gettysburg College; 1994

**Expertise**

- ESAs
- Wetland delineation and hydric soils
- Stream channel assessment and restoration
- Riparian restoration
- Soil surveys
- State/National Environmental Policy Act (S/NEPA) documentation
- Protected species
- 404/401 permitting
- Construction oversight
- Project management

**Relevant Projects**

- Phase I EDDAs for eight Airport Expansion Projects
- Phase I ESA of Former Mining Operation; Silverton, Colorado
- 52-square-mile Phase I ESA for Wind Farm Construction, Colorado
- 43,000-acre Phase I ESA for Wind Farm Construction, Williams, Arizona
- 4,500-acre Phase I ESA for Wind Farm Construction; New Mexico
- Phase I ESA of Former Naval Depot for Redevelopment; Guam
- 86-mile Transmission Line Phase I ESA and Wetland Delineation; Florence, South Carolina
- Several Phase I ESA for Solar Development; California, Arizona, and Hawaii
- 950-acre Phase I ESA and Wetland Delineation; Fort Stewart, Georgia
- EBS for Wastewater Treatment Plant Improvements; Schofield Barracks U.S. Army Post, Honolulu, Hawaii

Mr. O'Brien is an Environmental Specialist in SWCA's Phoenix, Arizona office. He has more than 17 years of experience in environmental consulting and technical writing, including 13 years of extensive experience performing Phase I environmental site assessments (ESAs).

He has performed numerous ESAs in a variety of locations, from uninhabited deserts and mountains to dense metropolitan settings in 18 states and Guam, from tiny parcels to 600-square mile assemblages, including a U.S. Environmental Protection Agency (EPA) Superfund site and Department of Defense sites. He teaches others to conduct ESAs and has prepared and taught classroom and field sessions on ESA field and writing techniques. His specialties include applying ASTM Standard 2247-08 for large-scale projects and performing FAA-Standard Phase I Environmental Due Diligence Audits (EDDAs) for airport projects. He is skilled in applying the principles of ESAs to Environmental Baseline Surveys (EBSs) for Department of Defense sites and classification of environmental condition of property area types. He manages the large and difficult Phase I ESAs for SWCA.

Mr. O'Brien is experienced in performing soil mapping, wetland delineations, habitat assessments, permitting, protected species, and stream morphology assessments. He has delineated more than 40,000 acres of wetlands and has performed assessment, design, and construction oversight for more than 250 stream stabilization sites. He has completed M.A.-level coursework in soil characterization and hydric soils. He has extensive experience performing construction oversight and has experience training contractors, staff, and local officials.

Mr. O'Brien has extensive plant, soil, and hydrology fieldwork experience in 12 states, in locations from coastal marshes to deserts to high in the Rocky Mountains. He has been 40-hour Hazardous Waste and Emergency Response (HAZWOPER)-certified since 1996. He earned a Watershed Training Certificate from the EPA, a Water Supply Watershed Protection certificate, and is a current member of the Arizona Association of Environmental Professionals and the Arizona Riparian Council.





**DEANNE RIETZ, M.S., CPESC**  
**Project Manager / Hydrologist**

**Education**

M.S., Watershed Management;  
 University of Arizona;  
 1999

B.S. magna cum laude,  
 Natural Resources;  
 University of Arizona;  
 1997

**Expertise**

ESAs and SWPPPs

EA/EISs

Hydrologic/hydraulic  
 sensitivity analysis

Surface water and  
 groundwater modelling  
 and floodplain  
 mapping

**Registration/  
 Certification**

CPESC – Certified  
 Professional in Erosion  
 and Sediment Control  
 (Certification Number  
 6100)

**Training**

ESAs for Commercial  
 Real Estate—ASTM-  
 accredited Course;  
 2006

U.S. Environmental  
 Protection Act All  
 Appropriate Inquiry  
 and the New ASTM  
 Phase I Standard after  
 AAI—ASTM-accredited  
 Course; 2007–2008

**Experience Summary**

Ms. Rietz is a hydrologist and project manager in SWCA's Phoenix, Arizona, office, with 16 years of experience in compliance with the National Environmental Policy Act (NEPA), Sections 402 and 404 of the Clean Water Act (CWA), and the Arizona Groundwater Code.

Ms. Rietz has developed scientific studies and prepared resource reports in support of environmental assessments (EAs), environmental impact statements (EISs), and stormwater pollution prevention plans (SWPPPs) throughout the desert Southwest, and Guam. Her experience also includes GIS analysis, vegetative mapping, and the use of programs such as THWELLS and Hydrologic Engineering Center software for groundwater and surface water modeling and floodplain mapping. Ms. Rietz has conducted sensitivity analysis on riparian restoration projects and is experienced in performing Phase I and II environmental site assessments (ESAs) in accordance with the American Society for Testing and Materials (ASTM) Standards for ESAs.

**Selected Project Experience**

Southline Transmission EIS; Las Cruces, New Mexico, to Tucson, Arizona; Southline Transmission LLC. SWCA serves as the third-party NEPA consultant to the BLM and the Western Area Power Administration (the co-lead federal agencies) and Southline Transmission LLC (the proponent). The project proposes more than 360 miles of new and rebuilt transmission line and will provide 1,000 megawatts of capacity in southern New Mexico and Arizona. SWCA is responsible for successfully coordinating with multiple agencies, consultants, and developers to ultimately compile a comprehensive and legally defensible EIS. *Role: Resource Coordinator. Manage data acquisition and coordinate resource reporting by various authors. Research and writing in support of EIS.*

Perrin Ranch; Coconino County, Arizona; NextEra Energy Resources, LLC. SWCA completed pre-construction surveys, permitting, and construction monitoring for installation of the 99-megawatt wind facility and post-construction monitoring studies as described in the Avian and Bat Protection Plan. *Role: Hydrologist. Conducted water resources analysis in support of the EA. Analyzed best management practices proposed for erosion control. Performed a Phase I ESA on the private and State Trust lands associated with the project.*

Phase I ESA for 30 acres at Apra Harbor; Piti, Guam; TG Engineers. SWCA performed a Phase I ESA and follow-up mitigation plan for a commercial development of a 30-acre parcel at Polaris Point in Piti, Guam. *Role: Environmental Specialist. Performed environmental record and historical aerial photography review, assessed the presence of recognized environmental conditions and formulated Phase II sampling plan to characterize contaminants at the site.*





Resume

## LAURA HOFFMAN, M.A., RPA, CULTURAL RESOURCES PROJECT MANAGER

Laura Hoffman has experience in archaeology as both a project manager and field director. Ms. Hoffman regularly acts as project manager and field director during cultural resources work in support of compliance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). Ms. Hoffman has authored numerous technical reports detailing the results of cultural resources survey, testing, and evaluation, as well as cultural resources management plans and California Department of Parks and Recreation (DPR) series 523 forms. She has

### YEARS OF EXPERIENCE

11

### EXPERTISE

Archaeological survey, testing, and data recovery

Technical report writing

GPS and survey technology

ArcGIS software and applications

### EDUCATION

M.A., Anthropology; California State University, Northridge; 2012

B.A., History; University of California, Los Angeles; 2002

### REGISTRATIONS / CERTIFICATIONS

Registered Professional Archaeologist, ID#989821

GIS Certificate, California State University, Northridge; 2009

California BLM Permit, Field Director, Statewide

### TRAINING

Archaeological Field School Training, California State University, Northridge; 2007

### SELECTED PROJECT EXPERIENCE

**Sothern California Edison On-Call Cultural Services; Southern California Edison.** SWCA provides cultural resources consulting services in support of various utility projects including deteriorated pole replacements, grid reliability and maintenance, emergency services, and transmission line rating remediation. Projects are located throughout Southern California Edison's territory in Los Angeles, Kern, San Bernardino, Riverside, Ventura, Orange, Mono, Inyo, and Tulare Counties; projects are located on land administered by numerous agencies including Edwards Air Force Base, the Bureau of Land Management, United States National Forests, The National Park Service, and California State Parks. *Role: Project Manager, GIS Analyst, and Report Author. Managed projects, supervised field crews, coordinated with the client, performed GIS analysis of data, produced report figures, and authored technical reports.*

**Southern California Gas Company Mission Road Pipeline Replacement Project Archaeological Testing and Monitoring; Los Angeles County, California; ICF International.** SWCA provided archaeological testing and monitoring in order to make management recommendations for portions of a NRHP-eligible historical site in support of this pipeline maintenance project. *Role: Project Manager, Report Author, and GIS Analyst. Managed project, coordinated field crew, and performed in-field assessments of monitoring finds. Co-author of and GIS analyst for technical report for the project.*

**Operations and Maintenance Project on Line 1901 at Milepost 17 + 1500, San Bernardino County, California; Kinder Morgan, Inc.** SWCA provided cultural resources studies for this energy maintenance project that included: the results of a cultural resources records search and literature review; a cultural resources survey, archaeological monitoring services for the construction activities, and preparation of a cultural resources technical report. *Role: Cultural Resources Task Manager, Report Author, and GIS Analyst. Managed cultural resources tasks, responsible for coordinating field crew and assessing monitoring finds. Contributing author to and and GIS analyst for technical report for the project.*

**Apex 3D Seismic; Kern County, California; Robert A. Booher Consulting.** SWCA provided cultural resources studies for this oil exploration project that included: the results of a cultural resources records search and literature review; a Class III cultural resources survey of BLM-administered land, and preparation of a cultural resources technical report. *Role: Assistant Project Manager, Report Author, and GIS Analyst. Assisted in project management tasks, supervised field crew, performed pre-field research and fieldwork preparation. Coauthor of and GIS analyst for technical report documenting the results of the pedestrian survey and site recordation.*



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## **Appendix C. Environmental Database Records**





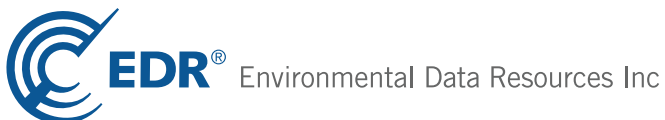


**32001 - Suncrest P1ESA**

Avenue De Los Arboles  
Alpine, CA 91901

Inquiry Number: 4232128.2s  
March 12, 2015

## The EDR Radius Map™ Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



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Government Records Searched/Data Currency Tracking .....	GR-1

### GEOCHECK ADDENDUM

#### GeoCheck - Not Requested

***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

AVENUE DE LOS ARBOLES  
SAN DIEGO County, CA 91901

#### COORDINATES

Latitude (North):	32.8144000 - 32° 48' 51.84"
Longitude (West):	116.6727000 - 116° 40' 21.72"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	530639.6
UTM Y (Meters):	3630568.5
Elevation:	3104 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	32116-G6 VIEJAS MOUNTAIN, CA
Most Recent Revision:	1988

### AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120507
Source:	USDA

### 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



## EXECUTIVE SUMMARY

Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

### ***Federal CERCLIS list***

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
FEDERAL FACILITY..... Federal Facility Site Information listing

### ***Federal CERCLIS NFRAP site List***

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

### ***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***

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls  
LUCIS..... Land Use Control Information System

### ***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



## EXECUTIVE SUMMARY

SLIC..... Statewide SLIC Cases  
SAN DIEGO CO. SAM..... Environmental Case Listing  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

UST..... Active UST Facilities  
AST..... Aboveground Petroleum Storage Tank Facilities  
INDIAN UST..... Underground Storage Tanks on Indian Land  
FEMA UST..... Underground Storage Tank Listing

### ***State and tribal voluntary cleanup sites***

VCP..... Voluntary Cleanup Program Properties  
INDIAN VCP..... Voluntary Cleanup Priority Listing

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
ODI..... Open Dump Inventory  
SWRCY..... Recycler Database  
HAULERS..... Registered Waste Tire Haulers Listing  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands  
WMUDS/SWAT..... Waste Management Unit Database

#### ***Local Lists of Hazardous waste / Contaminated Sites***

US CDL..... Clandestine Drug Labs  
HIST Cal-Sites..... Historical Calsites Database  
SCH..... School Property Evaluation Program  
Toxic Pits..... Toxic Pits Cleanup Act Sites  
CDL..... Clandestine Drug Labs  
San Diego Co. HMMD..... Hazardous Materials Management Division Database  
US HIST CDL..... National Clandestine Laboratory Register

#### ***Local Lists of Registered Storage Tanks***

CA FID UST..... Facility Inventory Database  
HIST UST..... Hazardous Substance Storage Container Database  
SWEEPS UST..... SWEEPS UST Listing

#### ***Local Land Records***

LIENS 2..... CERCLA Lien Information  
LIENS..... Environmental Liens Listing  
DEED..... Deed Restriction Listing

#### ***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System



## EXECUTIVE SUMMARY

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
DOT OPS.....	Incident and Accident Data
DOD.....	Department of Defense Sites
FUDS.....	Formerly Used Defense Sites
CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
UMTRA.....	Uranium Mill Tailings Sites
US MINES.....	Mines Master Index File
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS.....	Section 7 Tracking Systems
ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
CA BOND EXP. PLAN.....	Bond Expenditure Plan
NPDES.....	NPDES Permits Listing
UIC.....	UIC Listing
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE.....	Hazardous Waste & Substance Site List
CUPA Listings.....	CUPA Resources List
Notify 65.....	Proposition 65 Records
DRYCLEANERS.....	Cleaner Facilities
WIP.....	Well Investigation Program Case List
ENF.....	Enforcement Action Listing
HAZNET.....	Facility and Manifest Data
EMI.....	Emissions Inventory Data
INDIAN RESERV.....	Indian Reservations
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
MWMP.....	Medical Waste Management Program Listing
WDS.....	Waste Discharge System
Financial Assurance.....	Financial Assurance Information Listing
PROC.....	Certified Processors Database
HWT.....	Registered Hazardous Waste Transporter Database
HWP.....	EnviroStor Permitted Facilities Listing
COAL ASH DOE.....	Steam-Electric Plant Operation Data
2020 COR ACTION.....	2020 Corrective Action Program List
PRP.....	Potentially Responsible Parties
LEAD SMELTERS.....	Lead Smelter Sites
EPA WATCH LIST.....	EPA WATCH LIST



## EXECUTIVE SUMMARY

US FIN ASSUR..... Financial Assurance Information  
PCB TRANSFORMER..... PCB Transformer Registration Database

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP..... EDR Proprietary Manufactured Gas Plants  
EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations  
EDR US Hist Cleaners..... 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.

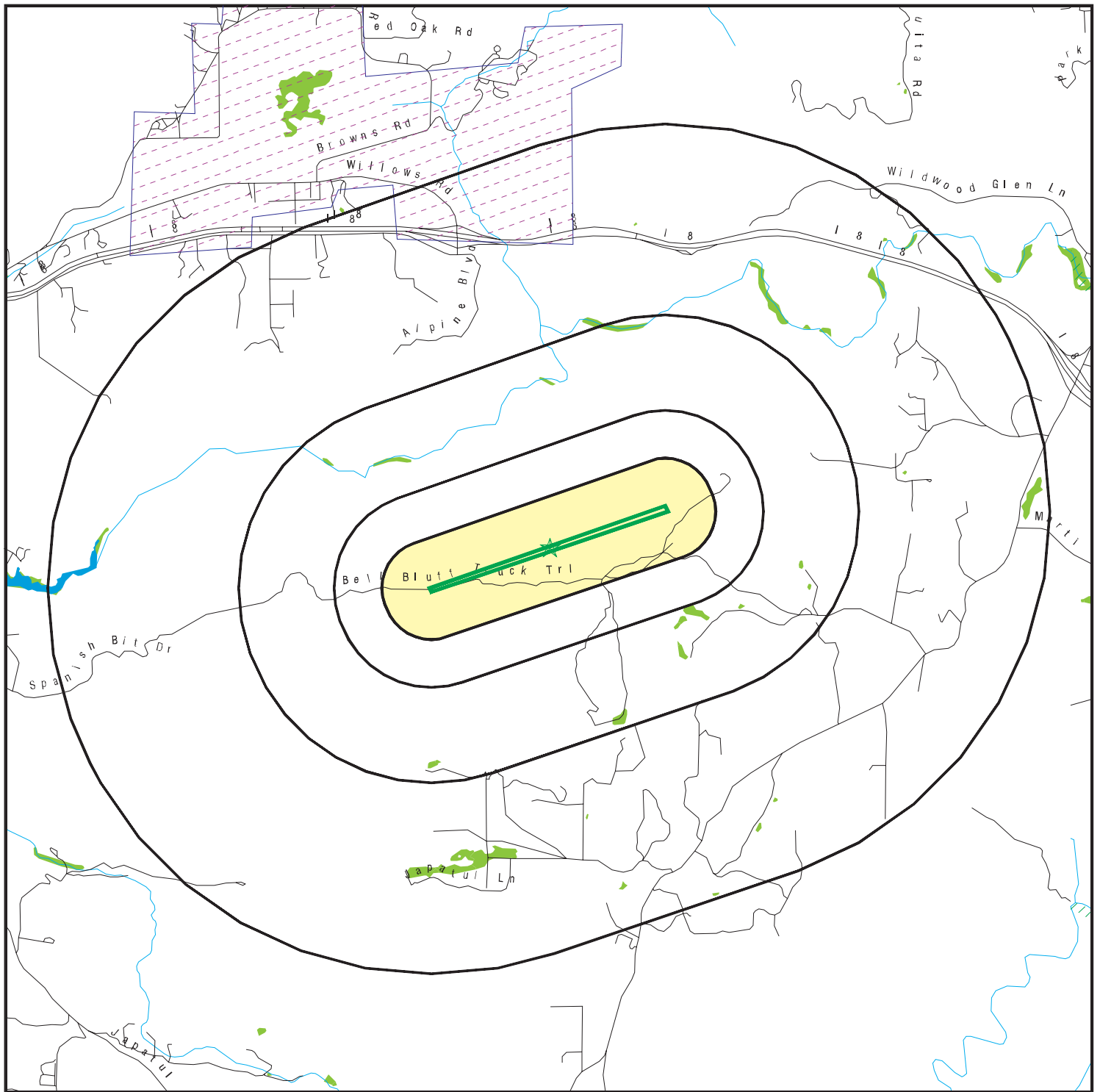


## EXECUTIVE SUMMARY

There were no unmapped sites in this report.



# OVERVIEW MAP - 4232128.2S



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

Indian Reservations BIA

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

National Wetland Inventory

Areas of Concern

0 1/2 1 2 Miles

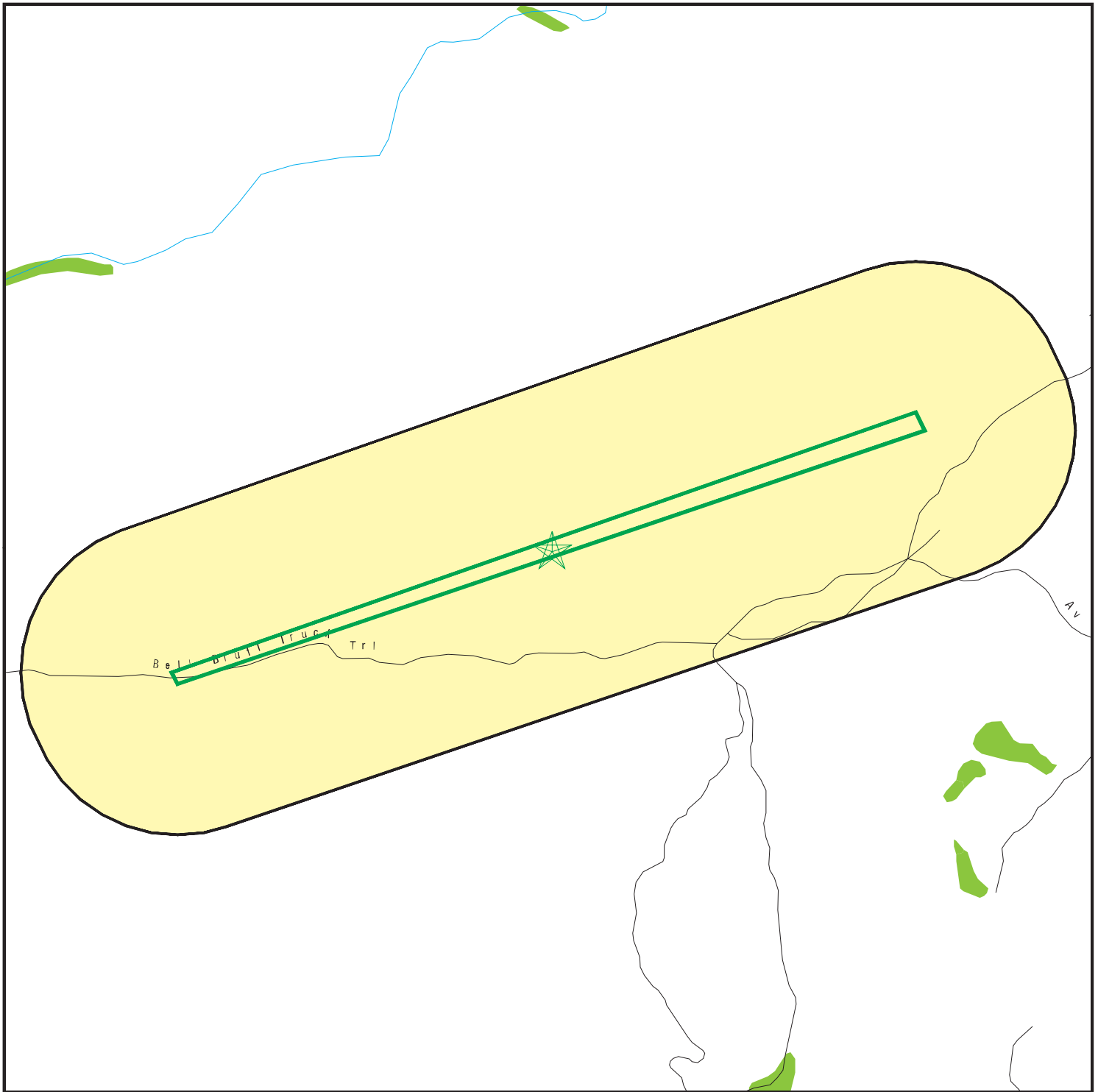
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.








SITE NAME: 32001 - Suncrest P1ESA  
ADDRESS: Avenue De Los Arboles  
Alpine CA 91901  
LAT/LONG: 32.8144 / 116.6727







CLIENT: SWCA Environmental Consultants  
CONTACT: Steve Obrien  
INQUIRY #: 4232128.2s  
DATE: March 12, 2015 2:16 pm



# DETAIL MAP - 4232128.2S



-  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

-  Indian Reservations BIA
-  Oil & Gas pipelines from USGS
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  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: 32001 - Suncrest P1ESA  
 ADDRESS: Avenue De Los Arboles  
 Alpine CA 91901  
 LAT/LONG: 32.8144 / 116.6727

CLIENT: SWCA Environmental Consultants  
 CONTACT: Steve Obrien  
 INQUIRY #: 4232128.2s  
 DATE: March 12, 2015 2:19 pm



## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.250		0	0	0	0	0	0
Proposed NPL	1.250		0	0	0	0	0	0
NPL LIENS	0.250		0	0	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.250		0	0	0	0	0	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	0.750		0	0	0	0	NR	0
FEDERAL FACILITY	0.750		0	0	0	0	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	0.750		0	0	0	0	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.250		0	0	0	0	0	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.750		0	0	0	0	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.500		0	0	0	NR	NR	0
RCRA-SQG	0.500		0	0	0	NR	NR	0
RCRA-CESQG	0.500		0	0	0	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	0.750		0	0	0	0	NR	0
US INST CONTROL	0.750		0	0	0	0	NR	0
LUCIS	0.750		0	0	0	0	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	0.250		0	0	NR	NR	NR	0
<b><i>State- and tribal - equivalent NPL</i></b>								
RESPONSE	1.250		0	0	0	0	0	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
ENVIROSTOR	1.250		0	0	0	0	0	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.750		0	0	0	0	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.750		0	0	0	0	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
SLIC	0.750		0	0	0	0	NR	0
SAN DIEGO CO. SAM	0.750		0	0	0	0	NR	0
INDIAN LUST	0.750		0	0	0	0	NR	0
<b>State and tribal registered storage tank lists</b>								
UST	0.500		0	0	0	NR	NR	0
AST	0.500		0	0	0	NR	NR	0
INDIAN UST	0.500		0	0	0	NR	NR	0
FEMA UST	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
VCP	0.750		0	0	0	0	NR	0
INDIAN VCP	0.750		0	0	0	0	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.750		0	0	0	0	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
DEBRIS REGION 9	0.750		0	0	0	0	NR	0
ODI	0.750		0	0	0	0	NR	0
SWRCY	0.750		0	0	0	0	NR	0
HAULERS	0.250		0	0	NR	NR	NR	0
INDIAN ODI	0.750		0	0	0	0	NR	0
WMUDS/SWAT	0.750		0	0	0	0	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US CDL	0.250		0	0	NR	NR	NR	0
HIST Cal-Sites	1.250		0	0	0	0	0	0
SCH	0.500		0	0	0	NR	NR	0
Toxic Pits	1.250		0	0	0	0	0	0
CDL	0.250		0	0	NR	NR	NR	0
San Diego Co. HMMD	0.250		0	0	NR	NR	NR	0
US HIST CDL	0.250		0	0	NR	NR	NR	0
<b>Local Lists of Registered Storage Tanks</b>								
CA FID UST	0.500		0	0	0	NR	NR	0
HIST UST	0.500		0	0	0	NR	NR	0
SWEEPS UST	0.500		0	0	0	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	0.250		0	0	NR	NR	NR	0
LIENS	0.250		0	0	NR	NR	NR	0
DEED	0.750		0	0	0	0	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	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
CHMIRS	0.250		0	0	NR	NR	NR	0
LDS	0.250		0	0	NR	NR	NR	0
MCS	0.250		0	0	NR	NR	NR	0
SPILLS 90	0.250		0	0	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.500		0	0	0	NR	NR	0
DOT OPS	0.250		0	0	NR	NR	NR	0
DOD	1.250		0	0	0	0	0	0
FUDS	1.250		0	0	0	0	0	0
CONSENT	1.250		0	0	0	0	0	0
ROD	1.250		0	0	0	0	0	0
UMTRA	0.750		0	0	0	0	NR	0
US MINES	0.500		0	0	0	NR	NR	0
TRIS	0.250		0	0	NR	NR	NR	0
TSCA	0.250		0	0	NR	NR	NR	0
FTTS	0.250		0	0	NR	NR	NR	0
HIST FTTS	0.250		0	0	NR	NR	NR	0
SSTS	0.250		0	0	NR	NR	NR	0
ICIS	0.250		0	0	NR	NR	NR	0
PADS	0.250		0	0	NR	NR	NR	0
MLTS	0.250		0	0	NR	NR	NR	0
RADINFO	0.250		0	0	NR	NR	NR	0
FINDS	0.250		0	0	NR	NR	NR	0
RAATS	0.250		0	0	NR	NR	NR	0
RMP	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.250		0	0	0	0	0	0
NPDES	0.250		0	0	NR	NR	NR	0
UIC	0.250		0	0	NR	NR	NR	0
Cortese	0.750		0	0	0	0	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
CUPA Listings	0.500		0	0	0	NR	NR	0
Notify 65	1.250		0	0	0	0	0	0
DRYCLEANERS	0.500		0	0	0	NR	NR	0
WIP	0.500		0	0	0	NR	NR	0
ENF	0.250		0	0	NR	NR	NR	0
HAZNET	0.250		0	0	NR	NR	NR	0
EMI	0.250		0	0	NR	NR	NR	0
INDIAN RESERV	1.250		0	0	0	0	0	0
SCRD DRYCLEANERS	0.750		0	0	0	0	NR	0
COAL ASH EPA	0.750		0	0	0	0	NR	0
US AIRS	0.250		0	0	NR	NR	NR	0
MWMP	0.500		0	0	0	NR	NR	0
WDS	0.250		0	0	NR	NR	NR	0
Financial Assurance	0.250		0	0	NR	NR	NR	0
PROC	0.750		0	0	0	0	NR	0
HWT	0.500		0	0	0	NR	NR	0
HWP	1.250		0	0	0	0	0	0
COAL ASH DOE	0.250		0	0	NR	NR	NR	0
2020 COR ACTION	0.500		0	0	0	NR	NR	0
PRP	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
LEAD SMELTERS	0.250		0	0	NR	NR	NR	0
EPA WATCH LIST	0.250		0	0	NR	NR	NR	0
US FIN ASSUR	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	0.250		0	0	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP	1.250		0	0	0	0	0	0
EDR US Hist Auto Stat	0.500		0	0	0	NR	NR	0
EDR US Hist Cleaners	0.500		0	0	0	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF	0.250		0	0	NR	NR	NR	0
RGA LUST	0.250		0	0	NR	NR	NR	0

#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

NO SITES FOUND



Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

#### **NPL Site Boundaries**

##### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

#### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned



# 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: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

### CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS 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). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 02/27/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Quarterly

### 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: 07/21/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/07/2014	Telephone: 703-603-8704
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Varies

## ***Federal CERCLIS NFRAP site List***

### CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS 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 this 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. This 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 a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 02/27/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

### CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### ***Federal RCRA non-CORRACTS TSD facilities list***

#### **RCRA-TSDF: RCRA - Treatment, Storage and Disposal**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### ***Federal RCRA generators list***

#### **RCRA-LQG: RCRA - Large Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

#### **RCRA-SQG: RCRA - Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
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: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal institutional controls / engineering controls registries***

### **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: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 02/26/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 06/15/2015
	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: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 02/26/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Varies

### **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: 12/03/2014	Source: Department of the Navy
Date Data Arrived at EDR: 12/12/2014	Telephone: 843-820-7326
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 48	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Varies

## ***Federal ERNS list***

### **ERNS: Emergency Response Notification System**

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/29/2014	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 09/30/2014	Telephone: 202-267-2180
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 12/29/2014
Number of Days to Update: 37	Next Scheduled EDR Contact: 04/13/2015
	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: 02/02/2015	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 02/03/2015	Telephone: 916-323-3400
Date Made Active in Reports: 02/27/2015	Last EDR Contact: 02/03/2015
Number of Days to Update: 24	Next Scheduled EDR Contact: 05/18/2015
	Data Release Frequency: Quarterly

## ***State- and tribal - equivalent CERCLIS***



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies 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: 02/02/2015  
Date Data Arrived at EDR: 02/03/2015  
Date Made Active in Reports: 02/27/2015  
Number of Days to Update: 24

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 02/03/2015  
Next Scheduled EDR Contact: 05/18/2015  
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 inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/16/2015  
Date Data Arrived at EDR: 02/17/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery  
Telephone: 916-341-6320  
Last EDR Contact: 02/17/2015  
Next Scheduled EDR Contact: 06/01/2015  
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 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calaveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008  
Date Data Arrived at EDR: 07/22/2008  
Date Made Active in Reports: 07/31/2008  
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-4834  
Last EDR Contact: 07/01/2011  
Next Scheduled EDR Contact: 10/17/2011  
Data Release Frequency: No Update Planned

#### LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004  
Date Data Arrived at EDR: 02/26/2004  
Date Made Active in Reports: 03/24/2004  
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)  
Telephone: 760-776-8943  
Last EDR Contact: 08/01/2011  
Next Scheduled EDR Contact: 11/14/2011  
Data Release Frequency: No Update Planned



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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 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: 01/20/2015  
Date Data Arrived at EDR: 01/21/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 15

Source: State Water Resources Control Board  
Telephone: see region list  
Last EDR Contact: 01/21/2015  
Next Scheduled EDR Contact: 03/30/2015  
Data Release Frequency: Quarterly

### LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005  
Date Data Arrived at EDR: 02/15/2005  
Date Made Active in Reports: 03/28/2005  
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)  
Telephone: 909-782-4496  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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 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

### 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: 01/20/2015  
Date Data Arrived at EDR: 01/21/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 15

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 01/21/2015  
Next Scheduled EDR Contact: 03/30/2015  
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



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/10/2014  
Date Data Arrived at EDR: 11/14/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 87

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 11/04/2014  
Date Data Arrived at EDR: 11/07/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 10

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 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: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies

### INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/06/2014  
Date Data Arrived at EDR: 10/29/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 19

Source: EPA Region 6  
Telephone: 214-665-6597  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 07/30/2014  
Date Data Arrived at EDR: 08/12/2014  
Date Made Active in Reports: 08/22/2014  
Number of Days to Update: 10

Source: EPA Region 4  
Telephone: 404-562-8677  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Semi-Annually

### 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: 02/01/2013  
Date Data Arrived at EDR: 05/01/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 184

Source: EPA Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 01/30/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 01/30/2015	Source: EPA, Region 5
Date Data Arrived at EDR: 02/05/2015	Telephone: 312-886-7439
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

### INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/08/2015	Telephone: 415-972-3372
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

### **State and tribal registered storage tank lists**

#### UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/20/2015	Source: SWRCB
Date Data Arrived at EDR: 01/21/2015	Telephone: 916-341-5851
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 01/21/2015
Number of Days to Update: 6	Next Scheduled EDR Contact: 03/30/2015
	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	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2009	Telephone: 916-327-5092
Date Made Active in Reports: 10/01/2009	Last EDR Contact: 12/23/2014
Number of Days to Update: 21	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Quarterly

### INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/06/2014	Source: EPA Region 6
Date Data Arrived at EDR: 10/29/2014	Telephone: 214-665-7591
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 05/11/2015
	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	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

### INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/04/2014  
Date Data Arrived at EDR: 11/07/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 10

Source: EPA Region 8  
Telephone: 303-312-6137  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 11/13/2014  
Date Data Arrived at EDR: 11/18/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 83

Source: EPA Region 9  
Telephone: 415-972-3368  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 02/01/2013  
Date Data Arrived at EDR: 05/01/2013  
Date Made Active in Reports: 01/27/2014  
Number of Days to Update: 271

Source: EPA, Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 01/30/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies

### INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/03/2014  
Date Data Arrived at EDR: 11/05/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 12

Source: EPA Region 5  
Telephone: 312-886-6136  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 07/30/2014  
Date Data Arrived at EDR: 08/12/2014  
Date Made Active in Reports: 08/22/2014  
Number of Days to Update: 10

Source: EPA Region 4  
Telephone: 404-562-9424  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Semi-Annually

### INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/10/2014  
Date Data Arrived at EDR: 11/14/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 87

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Quarterly

### FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Varies

### ***State and tribal voluntary cleanup sites***

#### **INDIAN VCP R7: Voluntary Cleanup Priority Listing**

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: 09/29/2014  
Date Data Arrived at EDR: 10/01/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 36

Source: EPA, Region 1  
Telephone: 617-918-1102  
Last EDR Contact: 12/31/2014  
Next Scheduled EDR Contact: 04/13/2015  
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: 02/02/2015  
Date Data Arrived at EDR: 02/03/2015  
Date Made Active in Reports: 02/27/2015  
Number of Days to Update: 24

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 02/03/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Quarterly

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Brownfield lists***

##### **US BROWNFIELDS: A Listing of Brownfields Sites**

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2014  
Date Data Arrived at EDR: 12/22/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 38

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Semi-Annually

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: No Update Planned

### ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 12/15/2014  
Date Data Arrived at EDR: 12/15/2014  
Date Made Active in Reports: 01/26/2015  
Number of Days to Update: 42

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 12/15/2014  
Next Scheduled EDR Contact: 03/30/2015  
Data Release Frequency: Quarterly

### HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 12/01/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 01/23/2015  
Number of Days to Update: 53

Source: Integrated Waste Management Board  
Telephone: 916-341-6422  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
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: 02/02/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Varies

### 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: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: No Update Planned



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Local Lists of Hazardous waste / Contaminated Sites***

### **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: 11/10/2014	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 12/01/2014	Telephone: 202-307-1000
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 03/03/2015
Number of Days to Update: 70	Next Scheduled EDR Contact: 06/15/2015
	Data Release Frequency: Quarterly

### **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	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 02/23/2009
Number of Days to Update: 21	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: 02/02/2015	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 02/03/2015	Telephone: 916-323-3400
Date Made Active in Reports: 02/27/2015	Last EDR Contact: 02/03/2015
Number of Days to Update: 24	Next Scheduled EDR Contact: 05/18/2015
	Data Release Frequency: Quarterly

### **TOXIC PITS: Toxic Pits Cleanup Act Sites**

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995	Source: State Water Resources Control Board
Date Data Arrived at EDR: 08/30/1995	Telephone: 916-227-4364
Date Made Active in Reports: 09/26/1995	Last EDR Contact: 01/26/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: No Update Planned

### **CDL: Clandestine Drug Labs**

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2014	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 09/02/2014	Telephone: 916-255-6504
Date Made Active in Reports: 09/24/2014	Last EDR Contact: 03/09/2015
Number of Days to Update: 22	Next Scheduled EDR Contact: 04/27/2015
	Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### US HIST CDL: National Clandestine Laboratory Register

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: 11/10/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 70

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 03/03/2015  
Next Scheduled EDR Contact: 06/15/2015  
Data Release Frequency: No Update Planned

### **Local Lists of Registered Storage Tanks**

#### 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

#### UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009  
Date Data Arrived at EDR: 09/23/2009  
Date Made Active in Reports: 10/01/2009  
Number of Days to Update: 8

Source: Department of Public Health  
Telephone: 707-463-4466  
Last EDR Contact: 02/26/2015  
Next Scheduled EDR Contact: 06/15/2015  
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

#### 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

### **Local Land Records**

#### 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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/30/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies

### LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 12/15/2014  
Date Data Arrived at EDR: 12/18/2014  
Date Made Active in Reports: 01/23/2015  
Number of Days to Update: 36

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 03/09/2015  
Next Scheduled EDR Contact: 06/22/2015  
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: 12/08/2014  
Date Data Arrived at EDR: 12/09/2014  
Date Made Active in Reports: 01/23/2015  
Number of Days to Update: 45

Source: DTSC and SWRCB  
Telephone: 916-323-3400  
Last EDR Contact: 03/10/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Semi-Annually

### ***Records of Emergency Release Reports***

#### HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/29/2014  
Date Data Arrived at EDR: 12/30/2014  
Date Made Active in Reports: 03/09/2015  
Number of Days to Update: 69

Source: U.S. Department of Transportation  
Telephone: 202-366-4555  
Last EDR Contact: 12/30/2014  
Next Scheduled EDR Contact: 04/13/2015  
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: 01/21/2015  
Date Data Arrived at EDR: 01/28/2015  
Date Made Active in Reports: 02/26/2015  
Number of Days to Update: 29

Source: Office of Emergency Services  
Telephone: 916-845-8400  
Last EDR Contact: 01/28/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 01/20/2015  
Date Data Arrived at EDR: 01/21/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 15

Source: State Water Quality Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 01/21/2015  
Next Scheduled EDR Contact: 03/30/2015  
Data Release Frequency: Quarterly



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 01/20/2015

Date Data Arrived at EDR: 01/21/2015

Date Made Active in Reports: 02/05/2015

Number of Days to Update: 15

Source: State Water Resources Control Board

Telephone: 866-480-1028

Last EDR Contact: 01/21/2015

Next Scheduled EDR Contact: 03/30/2015

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

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2014

Date Data Arrived at EDR: 12/29/2014

Date Made Active in Reports: 01/29/2015

Number of Days to Update: 31

Source: Environmental Protection Agency

Telephone: (415) 495-8895

Last EDR Contact: 12/29/2014

Next Scheduled EDR Contact: 04/13/2015

Data Release Frequency: Varies

#### DOT OPS: Incident and Accident Data

Department of Transportation, 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 Transportation, Office of Pipeline Safety

Telephone: 202-366-4595

Last EDR Contact: 02/03/2015

Next Scheduled EDR Contact: 05/18/2015

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: 01/15/2015

Next Scheduled EDR Contact: 04/27/2015

Data Release Frequency: Semi-Annually

#### 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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/06/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 09/18/2014  
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 12/12/2014  
Next Scheduled EDR Contact: 03/23/2015  
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: 01/23/2015  
Date Data Arrived at EDR: 02/13/2015  
Date Made Active in Reports: 03/09/2015  
Number of Days to Update: 24

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 12/24/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

### 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: 03/10/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Annually

### 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: 02/27/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### 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: 12/30/2014  
Date Data Arrived at EDR: 12/31/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 03/06/2015  
Next Scheduled EDR Contact: 06/15/2015  
Data Release Frequency: Semi-Annually

### 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: 12/31/2011  
Date Data Arrived at EDR: 07/31/2013  
Date Made Active in Reports: 09/13/2013  
Number of Days to Update: 44

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 01/29/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Annually

### 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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Every 4 Years

**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: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
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: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
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

**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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 01/09/2015  
Next Scheduled EDR Contact: 04/27/2015  
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: 01/16/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Annually

### 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: 12/29/2014  
Date Data Arrived at EDR: 01/08/2015  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 21

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 03/09/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Quarterly

### 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: 10/07/2014  
Date Data Arrived at EDR: 10/08/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 12

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 02/27/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Quarterly

### FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/16/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 40

Source: EPA  
Telephone: (415) 947-8000  
Last EDR Contact: 03/09/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Quarterly



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

### 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: 08/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/12/2014	Telephone: 202-564-8600
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 86	Next Scheduled EDR Contact: 05/11/2015
	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: 12/31/2011	Source: EPA/NTIS
Date Data Arrived at EDR: 02/26/2013	Telephone: 800-424-9346
Date Made Active in Reports: 04/19/2013	Last EDR Contact: 02/24/2015
Number of Days to Update: 52	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Biennially

### CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/16/2015	Source: State Water Resources Control Board
Date Data Arrived at EDR: 02/17/2015	Telephone: 916-445-9379
Date Made Active in Reports: 03/04/2015	Last EDR Contact: 02/17/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Quarterly



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/19/2014	Source: Department of Conservation
Date Data Arrived at EDR: 12/15/2014	Telephone: 916-445-2408
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 12/15/2014
Number of Days to Update: 45	Next Scheduled EDR Contact: 03/30/2015
	Data Release Frequency: Varies

### 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: 12/29/2014	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 12/29/2014	Telephone: 916-323-3400
Date Made Active in Reports: 02/03/2015	Last EDR Contact: 12/29/2014
Number of Days to Update: 36	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Quarterly

### HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/22/2009	Telephone: 916-323-3400
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/22/2009
Number of Days to Update: 76	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### 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: 10/21/1993	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/01/1993	Telephone: 916-445-3846
Date Made Active in Reports: 11/19/1993	Last EDR Contact: 12/18/2014
Number of Days to Update: 18	Next Scheduled EDR Contact: 04/06/2015
	Data Release Frequency: No Update Planned

### 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: 06/28/2014	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 07/03/2014	Telephone: 916-327-4498
Date Made Active in Reports: 08/21/2014	Last EDR Contact: 03/09/2015
Number of Days to Update: 49	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Annually

### WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 12/23/2014
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 01/26/2015  
Date Data Arrived at EDR: 01/28/2015  
Date Made Active in Reports: 02/26/2015  
Number of Days to Update: 29

Source: State Water Resources Control Board  
Telephone: 916-445-9379  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 12/31/2013  
Date Data Arrived at EDR: 10/15/2014  
Date Made Active in Reports: 11/19/2014  
Number of Days to Update: 35

Source: California Environmental Protection Agency  
Telephone: 916-255-1136  
Last EDR Contact: 01/16/2015  
Next Scheduled EDR Contact: 04/27/2015  
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: 12/31/2012  
Date Data Arrived at EDR: 03/25/2014  
Date Made Active in Reports: 04/28/2014  
Number of Days to Update: 34

Source: California Air Resources Board  
Telephone: 916-322-2990  
Last EDR Contact: 12/24/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Varies

### 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: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Semi-Annually

### 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: 02/18/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Varies

### FEDLAND: Federal and Indian Lands

Federally and Indian administered lands of the United States. Lands included are administered 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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: N/A

### 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: 10/16/2014  
Date Data Arrived at EDR: 10/31/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 17

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 02/06/2015  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Annually

### US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014  
Date Data Arrived at EDR: 10/31/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 17

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 02/06/2015  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Annually

### COAL ASH DOE: Sleam-Electric Plan 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: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Varies

### 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: 01/12/2015  
Date Data Arrived at EDR: 01/13/2015  
Date Made Active in Reports: 02/03/2015  
Number of Days to Update: 21

Source: Department of Toxic Substances Control  
Telephone: 916-440-7145  
Last EDR Contact: 01/13/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Quarterly

### 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: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Quarterly

### HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/23/2015  
Date Data Arrived at EDR: 02/24/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 7

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 02/24/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Quarterly

### 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: 02/13/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Quarterly

### 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: 11/19/2014  
Date Data Arrived at EDR: 11/21/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 69

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Quarterly

### Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/17/2015  
Date Data Arrived at EDR: 02/20/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 11

Source: California Integrated Waste Management Board  
Telephone: 916-341-6066  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Varies

### Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 02/02/2015  
Date Data Arrived at EDR: 02/06/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 25

Source: Department of Toxic Substances Control  
Telephone: 916-255-3628  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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 1931 and 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

### 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: 01/05/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/03/2015	Telephone: 703-308-4044
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 02/13/2015
Number of Days to Update: 6	Next Scheduled EDR Contact: 05/25/2015
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 01/30/2015
Number of Days to Update: 83	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

### EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 02/09/2015
Number of Days to Update: 88	Next Scheduled EDR Contact: 05/25/2015
	Data Release Frequency: Quarterly

### PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/15/2014	Source: Department of Conservation
Date Data Arrived at EDR: 12/15/2014	Telephone: 916-323-3836
Date Made Active in Reports: 01/26/2015	Last EDR Contact: 12/15/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 03/30/2015
	Data Release Frequency: Quarterly

### 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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/12/2014
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/23/2015
	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.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/13/2014  
Date Data Arrived at EDR: 12/09/2014  
Date Made Active in Reports: 01/26/2015  
Number of Days to Update: 48

Source: Department of Public Health  
Telephone: 916-558-1784  
Last EDR Contact: 03/10/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Varies

## **EDR HIGH RISK HISTORICAL RECORDS**

### ***EDR Exclusive Records***

#### **EDR MGP: EDR Proprietary Manufactured Gas Plants**

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### **EDR US Hist Auto Stat: 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 US Hist Cleaners: 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***



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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

Source: Department of Resources Recycling and Recovery

Date Data Arrived at EDR: 07/01/2013

Telephone: N/A

Date Made Active in Reports: 01/13/2014

Last EDR Contact: 06/01/2012

Number of Days to Update: 196

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

Source: State Water Resources Control Board

Date Data Arrived at EDR: 07/01/2013

Telephone: N/A

Date Made Active in Reports: 12/30/2013

Last EDR Contact: 06/01/2012

Number of Days to Update: 182

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: 01/21/2015

Source: Alameda County Environmental Health Services

Date Data Arrived at EDR: 01/28/2015

Telephone: 510-567-6700

Date Made Active in Reports: 02/26/2015

Last EDR Contact: 12/29/2014

Number of Days to Update: 29

Next Scheduled EDR Contact: 04/13/2015

Data Release Frequency: Semi-Annually

#### Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/21/2015

Source: Alameda County Environmental Health Services

Date Data Arrived at EDR: 01/28/2015

Telephone: 510-567-6700

Date Made Active in Reports: 02/26/2015

Last EDR Contact: 12/29/2014

Number of Days to Update: 29

Next Scheduled EDR Contact: 04/13/2015

Data Release Frequency: Semi-Annually

### AMADOR COUNTY:

#### CUPA Facility List

Cupa Facility List

Date of Government Version: 12/08/2014

Source: Amador County Environmental Health

Date Data Arrived at EDR: 12/11/2014

Telephone: 209-223-6439

Date Made Active in Reports: 01/23/2015

Last EDR Contact: 03/09/2015

Number of Days to Update: 43

Next Scheduled EDR Contact: 06/22/2015

Data Release Frequency: Varies

### BUTTE COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 02/26/2015

Next Scheduled EDR Contact: 04/27/2015

Data Release Frequency: No Update Planned

### CALVERAS COUNTY:

#### CUPA Facility Listing

Cupa Facility Listing

Date of Government Version: 03/03/2015

Date Data Arrived at EDR: 03/05/2015

Date Made Active in Reports: 03/10/2015

Number of Days to Update: 5

Source: Calveras County Environmental Health

Telephone: 209-754-6399

Last EDR Contact: 01/12/2015

Next Scheduled EDR Contact: 04/13/2015

Data Release Frequency: Quarterly

### COLUSA COUNTY:

#### CUPA Facility List

Cupa facility list.

Date of Government Version: 06/11/2014

Date Data Arrived at EDR: 06/13/2014

Date Made Active in Reports: 07/07/2014

Number of Days to Update: 24

Source: Health & Human Services

Telephone: 530-458-0396

Last EDR Contact: 02/09/2015

Next Scheduled EDR Contact: 05/25/2015

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: 02/23/2015

Date Data Arrived at EDR: 02/25/2015

Date Made Active in Reports: 03/04/2015

Number of Days to Update: 7

Source: Contra Costa Health Services Department

Telephone: 925-646-2286

Last EDR Contact: 02/02/2015

Next Scheduled EDR Contact: 05/18/2015

Data Release Frequency: Semi-Annually

### DEL NORTE COUNTY:

#### CUPA Facility List

Cupa Facility list

Date of Government Version: 02/23/2015

Date Data Arrived at EDR: 02/25/2015

Date Made Active in Reports: 03/03/2015

Number of Days to Update: 6

Source: Del Norte County Environmental Health Division

Telephone: 707-465-0426

Last EDR Contact: 02/16/2015

Next Scheduled EDR Contact: 05/18/2015

Data Release Frequency: Varies

### EL DORADO COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA Facility List CUPA facility list.

Date of Government Version: 02/24/2015  
Date Data Arrived at EDR: 02/25/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 6

Source: El Dorado County Environmental Management Department  
Telephone: 530-621-6623  
Last EDR Contact: 02/02/2015  
Next Scheduled EDR Contact: 05/18/2015  
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: 12/31/2014  
Date Data Arrived at EDR: 01/16/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 20

Source: Dept. of Community Health  
Telephone: 559-445-3271  
Last EDR Contact: 01/05/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Semi-Annually

### HUMBOLDT COUNTY:

#### CUPA Facility List CUPA facility list.

Date of Government Version: 12/11/2014  
Date Data Arrived at EDR: 12/15/2014  
Date Made Active in Reports: 01/23/2015  
Number of Days to Update: 39

Source: Humboldt County Environmental Health  
Telephone: N/A  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### IMPERIAL COUNTY:

#### CUPA Facility List Cupa facility list.

Date of Government Version: 02/10/2015  
Date Data Arrived at EDR: 02/12/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 19

Source: San Diego Border Field Office  
Telephone: 760-339-2777  
Last EDR Contact: 02/09/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### KERN COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 07/22/2014  
Date Data Arrived at EDR: 11/12/2014  
Date Made Active in Reports: 12/19/2014  
Number of Days to Update: 37

Source: Kern County Environment Health Services Department  
Telephone: 661-862-8700  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 05/25/2015  
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: 11/21/2014  
Date Data Arrived at EDR: 11/25/2014  
Date Made Active in Reports: 12/30/2014  
Number of Days to Update: 35

Source: Kings County Department of Public Health  
Telephone: 559-584-1411  
Last EDR Contact: 03/09/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### LAKE COUNTY:

#### CUPA Facility List

Cupa facility list

Date of Government Version: 01/20/2015  
Date Data Arrived at EDR: 01/21/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 15

Source: Lake County Environmental Health  
Telephone: 707-263-1164  
Last EDR Contact: 01/19/2015  
Next Scheduled EDR Contact: 05/04/2015  
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: 12/18/2014  
Next Scheduled EDR Contact: 04/06/2015  
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: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Semi-Annually

#### List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/19/2015  
Date Data Arrived at EDR: 01/20/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 16

Source: La County Department of Public Works  
Telephone: 818-458-5185  
Last EDR Contact: 01/20/2015  
Next Scheduled EDR Contact: 05/04/2015  
Data Release Frequency: Varies

### City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009  
Date Data Arrived at EDR: 03/10/2009  
Date Made Active in Reports: 04/08/2009  
Number of Days to Update: 29

Source: Engineering & Construction Division  
Telephone: 213-473-7869  
Last EDR Contact: 01/19/2015  
Next Scheduled EDR Contact: 05/04/2015  
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: 01/19/2015  
Next Scheduled EDR Contact: 05/04/2015  
Data Release Frequency: Annually

### City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 10/20/2014  
Date Data Arrived at EDR: 10/22/2014  
Date Made Active in Reports: 12/15/2014  
Number of Days to Update: 54

Source: City of El Segundo Fire Department  
Telephone: 310-524-2236  
Last EDR Contact: 03/06/2015  
Next Scheduled EDR Contact: 05/04/2015  
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: 01/29/2015  
Date Data Arrived at EDR: 02/13/2015  
Date Made Active in Reports: 02/26/2015  
Number of Days to Update: 13

Source: City of Long Beach Fire Department  
Telephone: 562-570-2563  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Annually

### City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/08/2015  
Date Data Arrived at EDR: 01/15/2015  
Date Made Active in Reports: 01/27/2015  
Number of Days to Update: 12

Source: City of Torrance Fire Department  
Telephone: 310-618-2973  
Last EDR Contact: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/02/2014  
Date Data Arrived at EDR: 10/03/2014  
Date Made Active in Reports: 11/20/2014  
Number of Days to Update: 48

Source: Madera County Environmental Health  
Telephone: 559-675-7823  
Last EDR Contact: 03/09/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### MARIN COUNTY:

#### Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 10/08/2014  
Date Data Arrived at EDR: 10/22/2014  
Date Made Active in Reports: 12/15/2014  
Number of Days to Update: 54

Source: Public Works Department Waste Management  
Telephone: 415-499-6647  
Last EDR Contact: 01/05/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Semi-Annually

### MERCED COUNTY:

#### CUPA Facility List

CUPA facility list.

Date of Government Version: 02/23/2015  
Date Data Arrived at EDR: 02/24/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 7

Source: Merced County Environmental Health  
Telephone: 209-381-1094  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### MONO COUNTY:

#### CUPA Facility List

CUPA Facility List

Date of Government Version: 02/27/2015  
Date Data Arrived at EDR: 03/06/2015  
Date Made Active in Reports: 03/10/2015  
Number of Days to Update: 4

Source: Mono County Health Department  
Telephone: 760-932-5580  
Last EDR Contact: 02/26/2015  
Next Scheduled EDR Contact: 06/15/2015  
Data Release Frequency: Varies

### MONTEREY COUNTY:

#### CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 12/18/2014  
Date Data Arrived at EDR: 12/19/2014  
Date Made Active in Reports: 01/23/2015  
Number of Days to Update: 35

Source: Monterey County Health Department  
Telephone: 831-796-1297  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### NAPA COUNTY:

#### Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 02/26/2015  
Next Scheduled EDR Contact: 06/15/2015  
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: 02/26/2015  
Next Scheduled EDR Contact: 06/15/2015  
Data Release Frequency: No Update Planned

### NEVADA COUNTY:

#### CUPA Facility List

CUPA facility list.

Date of Government Version: 02/12/2015  
Date Data Arrived at EDR: 02/13/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 18

Source: Community Development Agency  
Telephone: 530-265-1467  
Last EDR Contact: 02/06/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Varies

### ORANGE COUNTY:

#### List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2015  
Date Data Arrived at EDR: 02/13/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 18

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Annually

#### List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/03/2015  
Date Data Arrived at EDR: 02/13/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 18

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Quarterly

#### List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/01/2015  
Date Data Arrived at EDR: 02/13/2015  
Date Made Active in Reports: 02/26/2015  
Number of Days to Update: 13

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Quarterly

### PLACER COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/08/2014

Date Data Arrived at EDR: 12/09/2014

Date Made Active in Reports: 01/26/2015

Number of Days to Update: 48

Source: Placer County Health and Human Services

Telephone: 530-745-2363

Last EDR Contact: 03/09/2015

Next Scheduled EDR Contact: 06/22/2015

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: 01/28/2015

Date Data Arrived at EDR: 01/29/2015

Date Made Active in Reports: 03/03/2015

Number of Days to Update: 33

Source: Department of Environmental Health

Telephone: 951-358-5055

Last EDR Contact: 12/22/2014

Next Scheduled EDR Contact: 01/05/2015

Data Release Frequency: Quarterly

#### Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 01/28/2015

Date Data Arrived at EDR: 01/29/2015

Date Made Active in Reports: 02/26/2015

Number of Days to Update: 28

Source: Department of Environmental Health

Telephone: 951-358-5055

Last EDR Contact: 12/22/2014

Next Scheduled EDR Contact: 04/06/2015

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: 11/03/2014

Date Data Arrived at EDR: 01/07/2015

Date Made Active in Reports: 02/03/2015

Number of Days to Update: 27

Source: Sacramento County Environmental Management

Telephone: 916-875-8406

Last EDR Contact: 01/07/2015

Next Scheduled EDR Contact: 04/20/2015

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: 11/03/2014

Date Data Arrived at EDR: 01/09/2015

Date Made Active in Reports: 02/03/2015

Number of Days to Update: 25

Source: Sacramento County Environmental Management

Telephone: 916-875-8406

Last EDR Contact: 01/05/2015

Next Scheduled EDR Contact: 04/20/2015

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.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/02/2015  
Date Data Arrived at EDR: 03/03/2015  
Date Made Active in Reports: 03/10/2015  
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division  
Telephone: 909-387-3041  
Last EDR Contact: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
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: 03/10/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Quarterly

#### Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014  
Date Data Arrived at EDR: 11/21/2014  
Date Made Active in Reports: 12/29/2014  
Number of Days to Update: 38

Source: Department of Health Services  
Telephone: 619-338-2209  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
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: 03/09/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: No Update Planned

### SAN FRANCISCO COUNTY:

#### Local Oversight 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: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
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: 02/09/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Quarterly

### SAN JOAQUIN COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 01/08/2015  
Date Data Arrived at EDR: 01/12/2015  
Date Made Active in Reports: 01/27/2015  
Number of Days to Update: 15

Source: Environmental Health Department  
Telephone: N/A  
Last EDR Contact: 01/05/2015  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Semi-Annually

### SAN LUIS OBISPO COUNTY:

#### CUPA Facility List

Cupa Facility List.

Date of Government Version: 02/23/2015  
Date Data Arrived at EDR: 02/24/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 7

Source: San Luis Obispo County Public Health Department  
Telephone: 805-781-5596  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
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: 01/09/2015  
Date Data Arrived at EDR: 01/12/2015  
Date Made Active in Reports: 02/03/2015  
Number of Days to Update: 22

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 12/15/2014  
Next Scheduled EDR Contact: 03/30/2015  
Data Release Frequency: Annually

#### Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/15/2014  
Date Data Arrived at EDR: 12/18/2014  
Date Made Active in Reports: 01/26/2015  
Number of Days to Update: 39

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 12/11/2014  
Next Scheduled EDR Contact: 03/30/2015  
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: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### SANTA CLARA COUNTY:

#### Cupa Facility List

Cupa facility list



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/23/2015  
Date Data Arrived at EDR: 02/25/2015  
Date Made Active in Reports: 03/03/2015  
Number of Days to Update: 6

Source: Department of Environmental Health  
Telephone: 408-918-1973  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
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: 02/26/2015  
Next Scheduled EDR Contact: 06/15/2015  
Data Release Frequency: Annually

### Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/23/2015  
Date Data Arrived at EDR: 02/24/2015  
Date Made Active in Reports: 03/04/2015  
Number of Days to Update: 8

Source: City of San Jose Fire Department  
Telephone: 408-535-7694  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Annually

### SANTA CRUZ COUNTY:

#### CUPA Facility List

CUPA facility listing.

Date of Government Version: 11/24/2014  
Date Data Arrived at EDR: 11/25/2014  
Date Made Active in Reports: 12/31/2014  
Number of Days to Update: 36

Source: Santa Cruz County Environmental Health  
Telephone: 831-464-2761  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### SHASTA COUNTY:

#### CUPA Facility List

Cupa Facility List.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/11/2014  
Date Made Active in Reports: 01/23/2015  
Number of Days to Update: 43

Source: Shasta County Department of Resource Management  
Telephone: 530-225-5789  
Last EDR Contact: 02/23/2015  
Next Scheduled EDR Contact: 06/08/2015  
Data Release Frequency: Varies

### SOLANO COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/17/2014  
Date Data Arrived at EDR: 11/24/2014  
Date Made Active in Reports: 01/05/2015  
Number of Days to Update: 42

Source: Solano County Department of Environmental Management  
Telephone: 707-784-6770  
Last EDR Contact: 12/11/2014  
Next Scheduled EDR Contact: 03/30/2015  
Data Release Frequency: Quarterly

### Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 11/17/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 01/27/2015  
Number of Days to Update: 57

Source: Solano County Department of Environmental Management  
Telephone: 707-784-6770  
Last EDR Contact: 12/11/2014  
Next Scheduled EDR Contact: 03/30/2015  
Data Release Frequency: Quarterly

### SONOMA COUNTY:

#### Cupa Facility List

Cupa Facility list

Date of Government Version: 01/06/2015  
Date Data Arrived at EDR: 01/09/2015  
Date Made Active in Reports: 02/05/2015  
Number of Days to Update: 27

Source: County of Sonoma Fire & Emergency Services Department  
Telephone: 707-565-1174  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
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: 01/02/2015  
Date Data Arrived at EDR: 01/06/2015  
Date Made Active in Reports: 02/03/2015  
Number of Days to Update: 28

Source: Department of Health Services  
Telephone: 707-565-6565  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### SUTTER COUNTY:

#### Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/08/2014  
Date Data Arrived at EDR: 12/08/2014  
Date Made Active in Reports: 01/27/2015  
Number of Days to Update: 50

Source: Sutter County Department of Agriculture  
Telephone: 530-822-7500  
Last EDR Contact: 03/09/2015  
Next Scheduled EDR Contact: 06/22/2015  
Data Release Frequency: Semi-Annually

### TUOLUMNE COUNTY:

#### CUPA Facility List

Cupa facility list

Date of Government Version: 01/30/2015  
Date Data Arrived at EDR: 02/03/2015  
Date Made Active in Reports: 02/27/2015  
Number of Days to Update: 24

Source: Division of Environmental Health  
Telephone: 209-533-5633  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies

### VENTURA COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 01/27/2015	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 02/19/2015	Telephone: 805-654-2813
Date Made Active in Reports: 03/03/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 06/01/2015
	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	Source: Environmental Health Division
Date Data Arrived at EDR: 12/01/2011	Telephone: 805-654-2813
Date Made Active in Reports: 01/19/2012	Last EDR Contact: 01/05/2015
Number of Days to Update: 49	Next Scheduled EDR Contact: 04/20/2015
	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	Source: Environmental Health Division
Date Data Arrived at EDR: 06/24/2008	Telephone: 805-654-2813
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 02/16/2015
Number of Days to Update: 37	Next Scheduled EDR Contact: 06/01/2015
	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: 12/29/2014	Source: Ventura County Resource Management Agency
Date Data Arrived at EDR: 01/30/2015	Telephone: 805-654-2813
Date Made Active in Reports: 03/03/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	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: 11/26/2014	Source: Environmental Health Division
Date Data Arrived at EDR: 12/15/2014	Telephone: 805-654-2813
Date Made Active in Reports: 02/02/2015	Last EDR Contact: 12/15/2014
Number of Days to Update: 49	Next Scheduled EDR Contact: 03/30/2015
	Data Release Frequency: Quarterly

### YOLO COUNTY:

#### Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/18/2014	Source: Yolo County Department of Health
Date Data Arrived at EDR: 12/23/2014	Telephone: 530-666-8646
Date Made Active in Reports: 01/27/2015	Last EDR Contact: 12/18/2014
Number of Days to Update: 35	Next Scheduled EDR Contact: 04/06/2015
	Data Release Frequency: Annually

### YUBA COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 02/17/2015

Date Data Arrived at EDR: 02/19/2015

Date Made Active in Reports: 03/03/2015

Number of Days to Update: 12

Source: Yuba County Environmental Health Department

Telephone: 530-749-7523

Last EDR Contact: 02/16/2015

Next Scheduled EDR Contact: 05/18/2015

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: 11/17/2014

Next Scheduled EDR Contact: 03/02/2015

Data Release Frequency: No Update Planned

#### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011

Date Data Arrived at EDR: 07/19/2012

Date Made Active in Reports: 08/28/2012

Number of Days to Update: 40

Source: Department of Environmental Protection

Telephone: N/A

Last EDR Contact: 01/12/2015

Next Scheduled EDR Contact: 04/27/2015

Data Release Frequency: Annually

#### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2015

Date Data Arrived at EDR: 02/04/2015

Date Made Active in Reports: 02/27/2015

Number of Days to Update: 23

Source: Department of Environmental Conservation

Telephone: 518-402-8651

Last EDR Contact: 02/04/2015

Next Scheduled EDR Contact: 05/18/2015

Data Release Frequency: Annually

#### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013

Date Data Arrived at EDR: 07/21/2014

Date Made Active in Reports: 08/25/2014

Number of Days to Update: 35

Source: Department of Environmental Protection

Telephone: 717-783-8990

Last EDR Contact: 01/19/2015

Next Scheduled EDR Contact: 05/04/2015

Data Release Frequency: Annually

#### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013

Date Data Arrived at EDR: 07/15/2014

Date Made Active in Reports: 08/13/2014

Number of Days to Update: 29

Source: Department of Environmental Management

Telephone: 401-222-2797

Last EDR Contact: 02/23/2015

Next Scheduled EDR Contact: 06/08/2015

Data Release Frequency: Annually



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013

Date Data Arrived at EDR: 06/20/2014

Date Made Active in Reports: 08/07/2014

Number of Days to Update: 48

Source: Department of Natural Resources

Telephone: N/A

Last EDR Contact: 12/12/2014

Next Scheduled EDR Contact: 03/30/2015

Data Release Frequency: Annually

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

**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.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### STREET AND ADDRESS INFORMATION

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**32001 - Suncrest P1ESA**

Avenue De Los Arboles  
Alpine, CA 91901

Inquiry Number: 4232128.6  
March 12, 2015

## EDR Historical Topographic Map Report



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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# Historical Topographic Map



## Unsurveyed Area on the Topographic Map

<p>N ↑</p>	<p><b>TARGET QUAD</b>  <b>NAME:</b> CUYAMACA  <b>MAP YEAR:</b> 1903    <b>SERIES:</b> 30  <b>SCALE:</b> 1:125000</p>	<p><b>SITE NAME:</b> 32001 - Suncrest P1ESA  <b>ADDRESS:</b> Avenue De Los Arboles  Alpine, CA 91901  <b>LAT/LONG:</b> 32.8144 / -116.6727</p>	<p><b>CLIENT:</b> SWCA Environmental Consultants  <b>CONTACT:</b> Steve Obrien  <b>INQUIRY#:</b> 4232128.6  <b>RESEARCH DATE:</b> 03/12/2015</p>
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# Historical Topographic Map

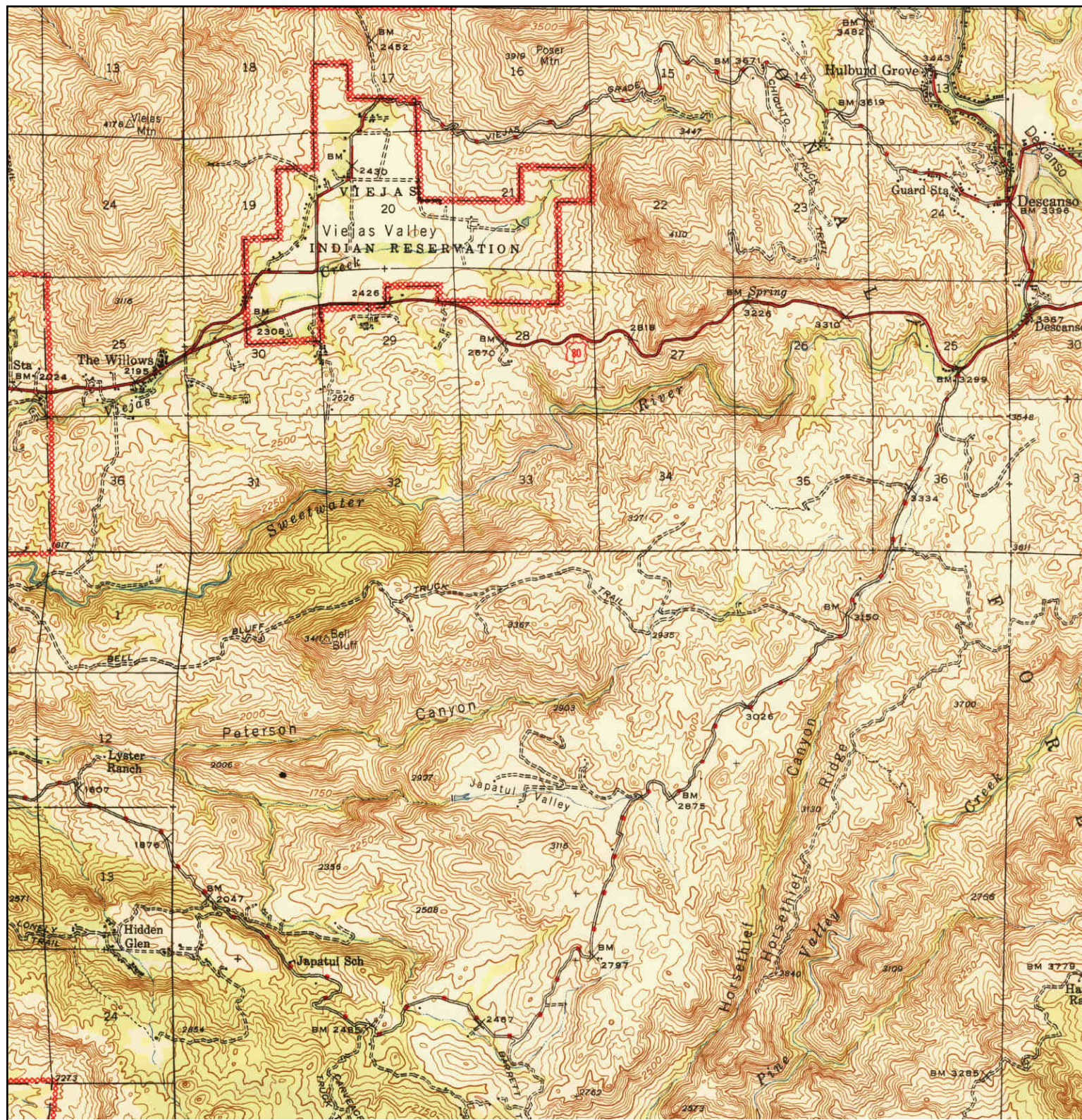


## Unsurveyed Area on the Topographic Map

<p>N ↑</p>	<p><b>TARGET QUAD</b>  <b>NAME:</b> SOUTHERN CA SHEET 2  <b>MAP YEAR:</b> 1904    <b>SERIES:</b> 60  <b>SCALE:</b> 1:250000</p>	<p><b>SITE NAME:</b> 32001 - Suncrest P1ESA  <b>ADDRESS:</b> Avenue De Los Arboles  Alpine, CA 91901  <b>LAT/LONG:</b> 32.8144 / -116.6727</p>	<p><b>CLIENT:</b> SWCA Environmental Consultants  <b>CONTACT:</b> Steve Obrien  <b>INQUIRY#:</b> 4232128.6  <b>RESEARCH DATE:</b> 03/12/2015</p>
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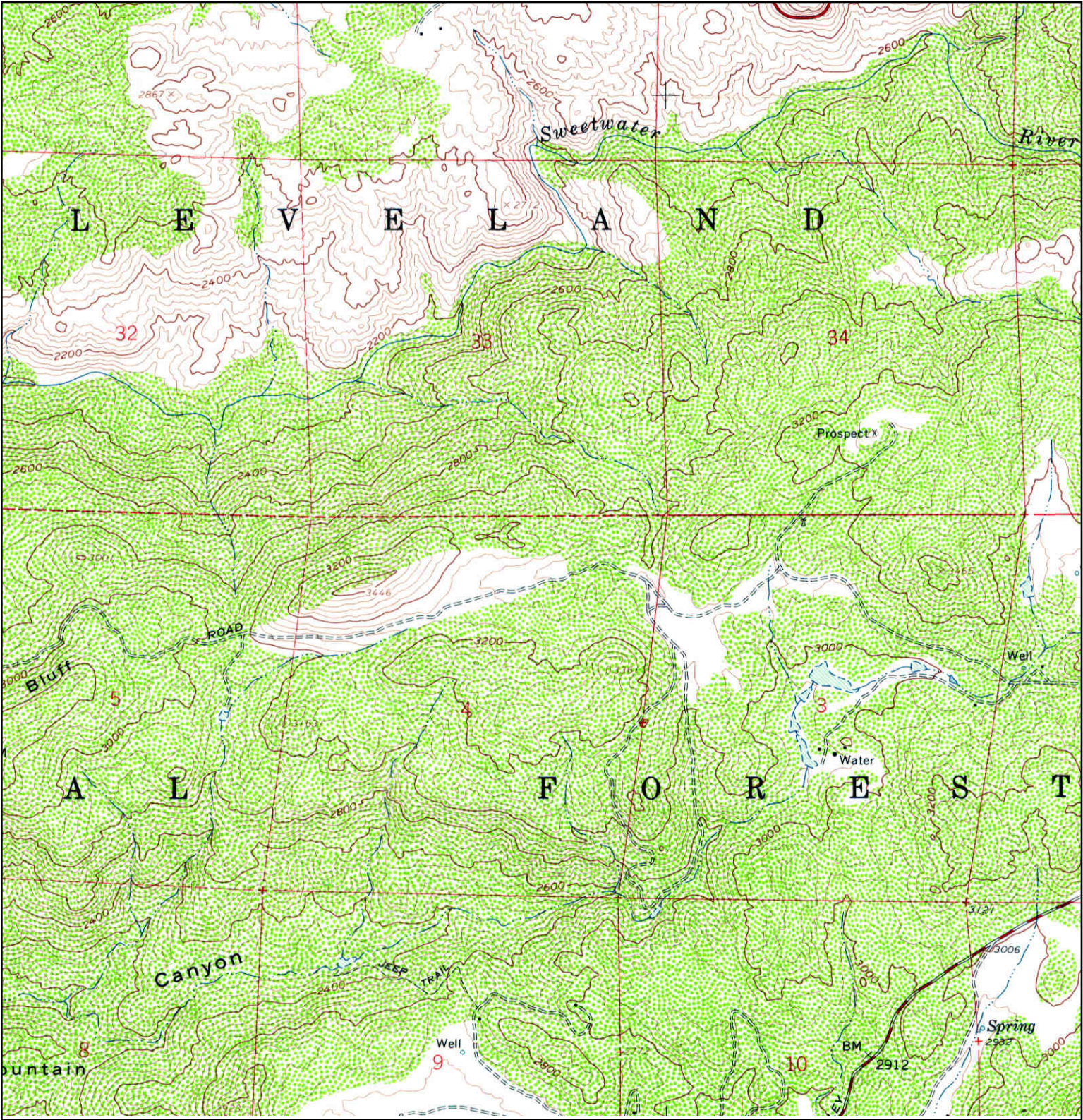
# Historical Topographic Map




<p>N ↑</p>	<p><b>TARGET QUAD</b>  <b>NAME:</b> CUYAMACA PEAK  <b>MAP YEAR:</b> 1944    <b>SERIES:</b> 15  <b>SCALE:</b> 1:62500</p>	<p><b>SITE NAME:</b> 32001 - Suncrest P1ESA  <b>ADDRESS:</b> Avenue De Los Arboles  Alpine, CA 91901  <b>LAT/LONG:</b> 32.8144 / -116.6727</p>	<p><b>CLIENT:</b> SWCA Environmental Consultants    <b>CONTACT:</b> Steve Obrien  <b>INQUIRY#:</b> 4232128.6  <b>RESEARCH DATE:</b> 03/12/2015</p>
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Historical Topographic Map



	<b>TARGET QUAD</b>	<b>SITE NAME:</b> 32001 - Suncrest P1ESA	<b>CLIENT:</b> SWCA Environmental Consultants
	<b>NAME:</b> VIEJAS MOUNTAIN	<b>ADDRESS:</b> Avenue De Los Arboles	
	<b>MAP YEAR:</b> 1960	Alpine, CA 91901	<b>CONTACT:</b> Steve Obrien
	<b>SERIES:</b> 7.5	<b>LAT/LONG:</b> 32.8144 / -116.6727	<b>INQUIRY#:</b> 4232128.6
	<b>SCALE:</b> 1:24000		<b>RESEARCH DATE:</b> 03/12/2015



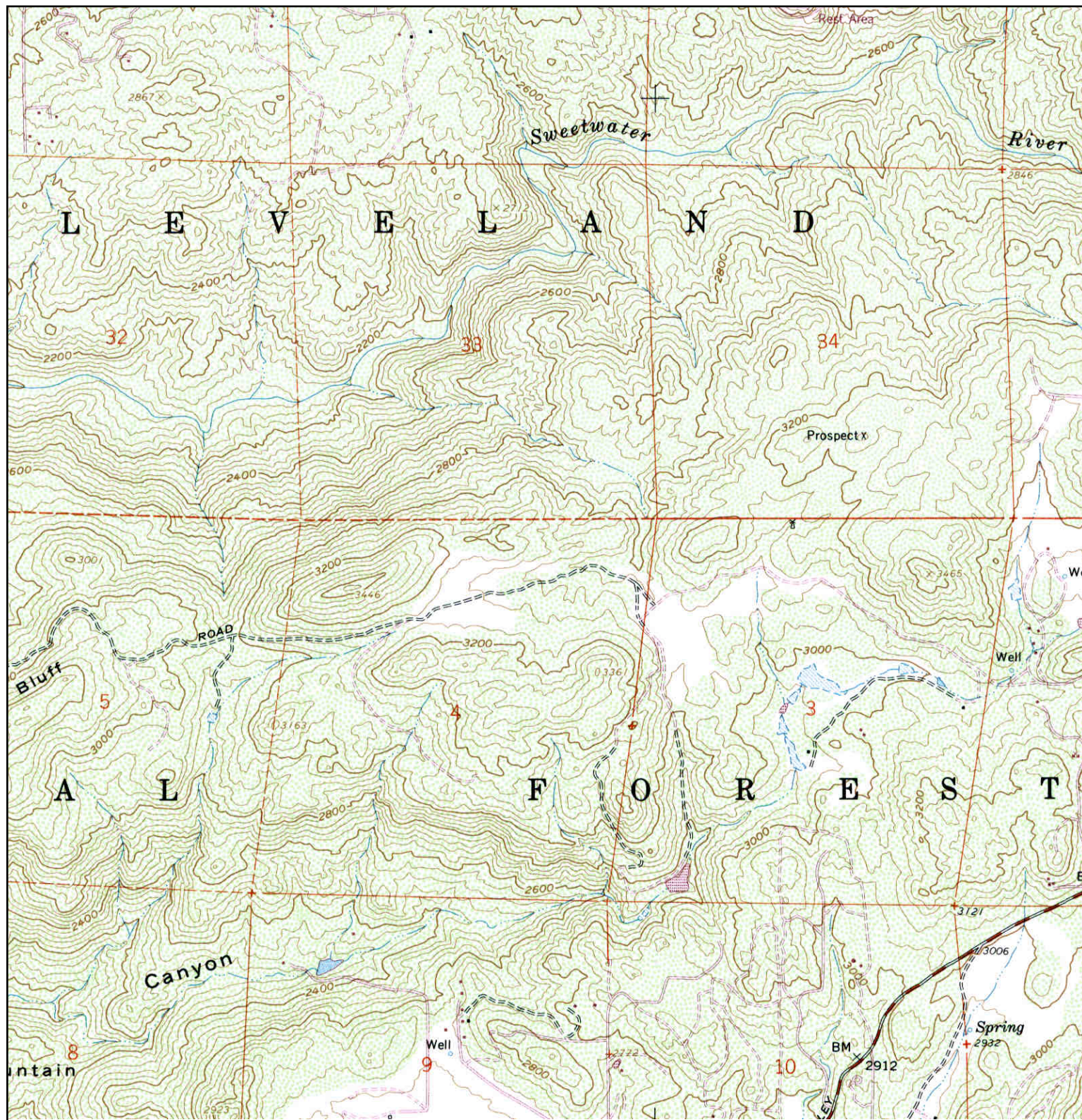
# Historical Topographic Map



<p>N ↑</p>	<p><b>TARGET QUAD</b>  <b>NAME:</b> CUYAMACA PEAK  <b>MAP YEAR:</b> 1960    <b>SERIES:</b> 15  <b>SCALE:</b> 1:62500</p>	<p><b>SITE NAME:</b> 32001 - Suncrest P1ESA  <b>ADDRESS:</b> Avenue De Los Arboles  Alpine, CA 91901  <b>LAT/LONG:</b> 32.8144 / -116.6727</p>	<p><b>CLIENT:</b> SWCA Environmental Consultants    <b>CONTACT:</b> Steve Obrien  <b>INQUIRY#:</b> 4232128.6  <b>RESEARCH DATE:</b> 03/12/2015</p>
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# Historical Topographic Map



<p>N ↑</p>	<p><b>TARGET QUAD</b>  NAME: VIEJAS MOUNTAIN  MAP YEAR: 1982  PHOTOREVISED FROM :1960  SERIES: 7.5  SCALE: 1:24000</p>	<p><b>SITE NAME:</b> 32001 - Suncrest P1ESA  <b>ADDRESS:</b> Avenue De Los Arboles  Alpine, CA 91901  <b>LAT/LONG:</b> 32.8144 / -116.6727</p>	<p><b>CLIENT:</b> SWCA Environmental Consultants  <b>CONTACT:</b> Steve Obrien  <b>INQUIRY#:</b> 4232128.6  <b>RESEARCH DATE:</b> 03/12/2015</p>
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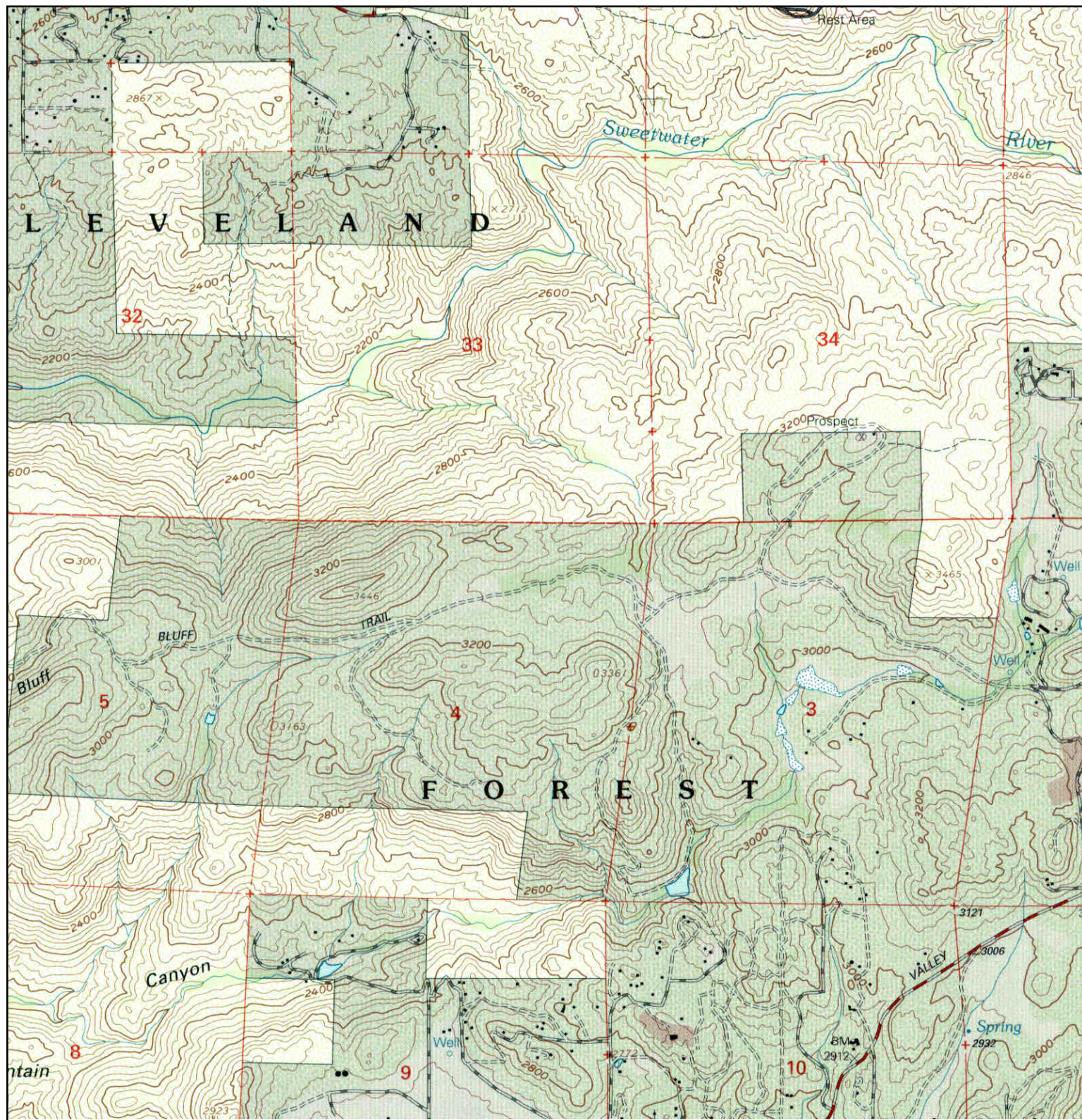
# Historical Topographic Map



<p>N ↑</p>	<p><b>TARGET QUAD</b> NAME: VIEJAS MOUNTAIN MAP YEAR: 1988 PHOTOREVISED FROM :1960 SERIES: 7.5 SCALE: 1:24000</p>	<p>SITE NAME: 32001 - Suncrest P1ESA ADDRESS: Avenue De Los Arboles Alpine, CA 91901 LAT/LONG: 32.8144 / -116.6727</p>	<p>CLIENT: SWCA Environmental Consultants  CONTACT: Steve Obrien INQUIRY#: 4232128.6 RESEARCH DATE: 03/12/2015</p>
----------------	---	--	--



# Historical Topographic Map



<p>N ↑</p>	<p><b>TARGET QUAD</b>  <b>NAME:</b> VIEJAS MOUNTAIN  <b>MAP YEAR:</b> 1997    <b>SERIES:</b> 7.5  <b>SCALE:</b> 1:24000</p>	<p><b>SITE NAME:</b> 32001 - Suncrest P1ESA  <b>ADDRESS:</b> Avenue De Los Arboles                      Alpine, CA 91901  <b>LAT/LONG:</b> 32.8144 / -116.6727</p>	<p><b>CLIENT:</b> SWCA Environmental Consultants    <b>CONTACT:</b> Steve Obrien  <b>INQUIRY#:</b> 4232128.6  <b>RESEARCH DATE:</b> 03/12/2015</p>
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**32001 - Suncrest P1ESA**

Avenue De Los Arboles  
Alpine, CA 91901

Inquiry Number: 4232128.5  
March 17, 2015

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# EDR Aerial Photo Decade Package

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**Date EDR Searched Historical Sources:**

Aerial Photography March 17, 2015

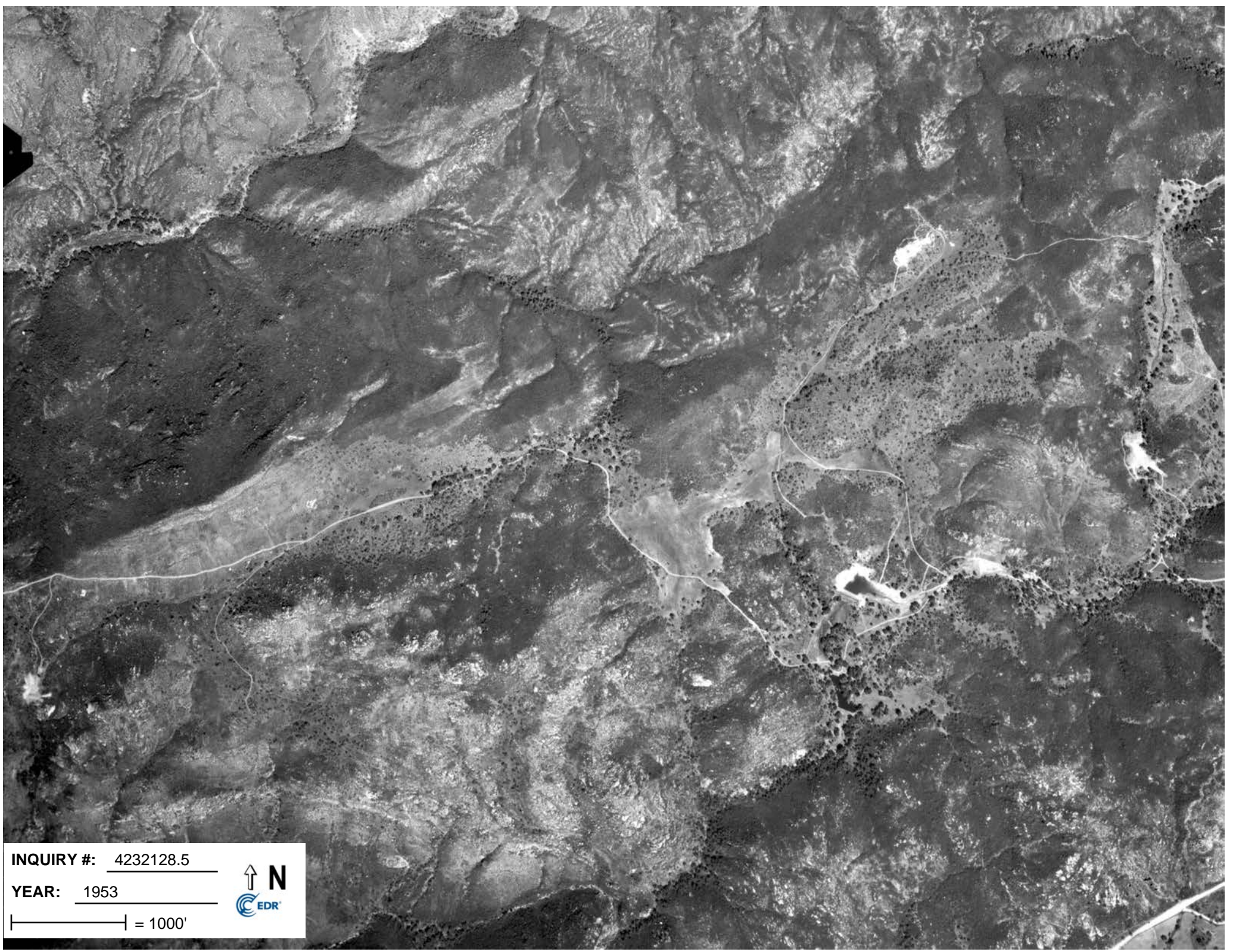
**Target Property:**

Avenue De Los Arboles

Alpine, CA 91901

<u><i>Year</i></u>	<u><i>Scale</i></u>	<u><i>Details</i></u>	<u><i>Source</i></u>
1953	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1953 Best Copy Available from original source	Park
1953	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1953 Best Copy Available from original source	Park
1963	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1963	Cartwright
1975	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1975	AMI
1989	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1989	AMI
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	USGS/DOQQ
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	USGS/DOQQ
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP





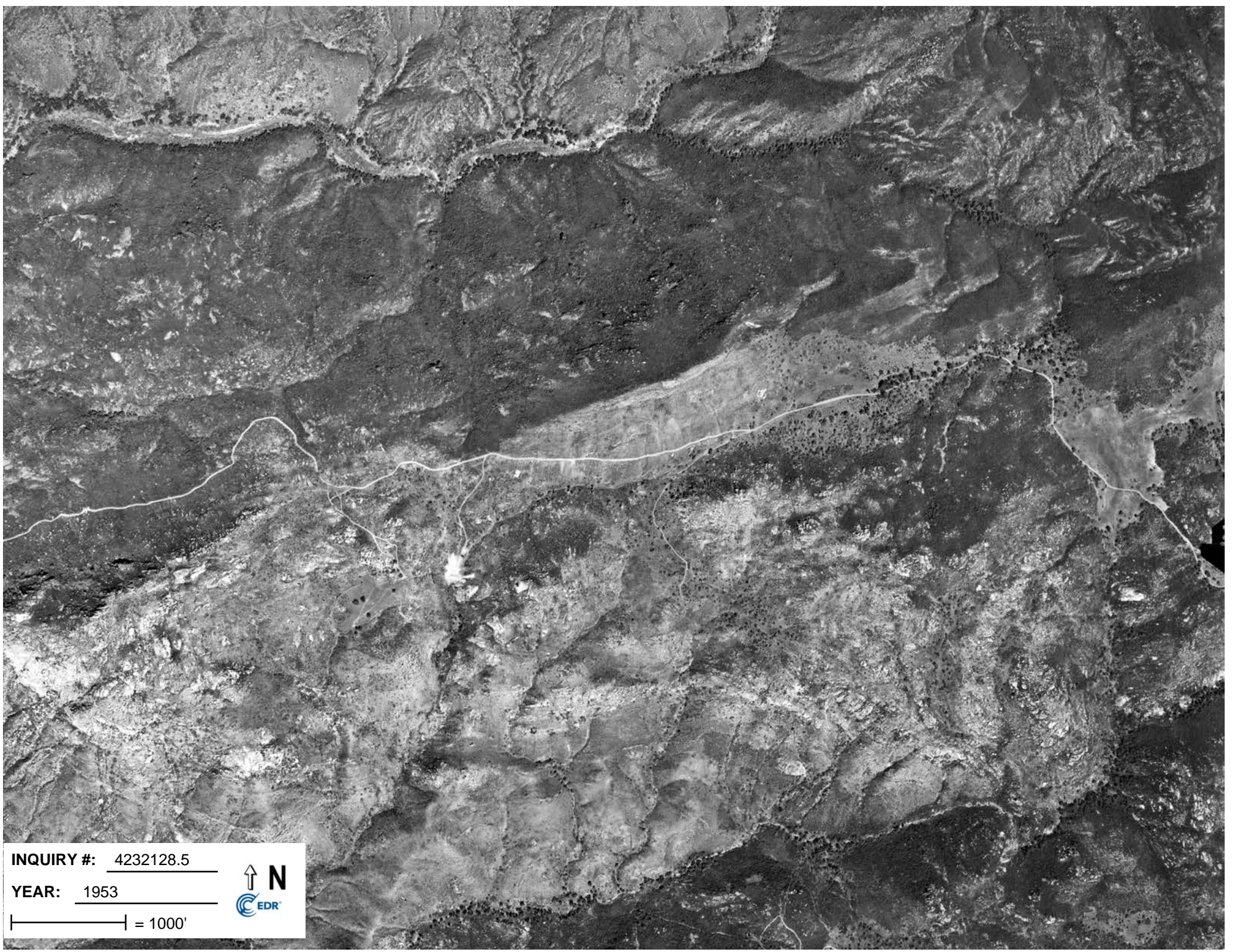
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YEAR: 1953

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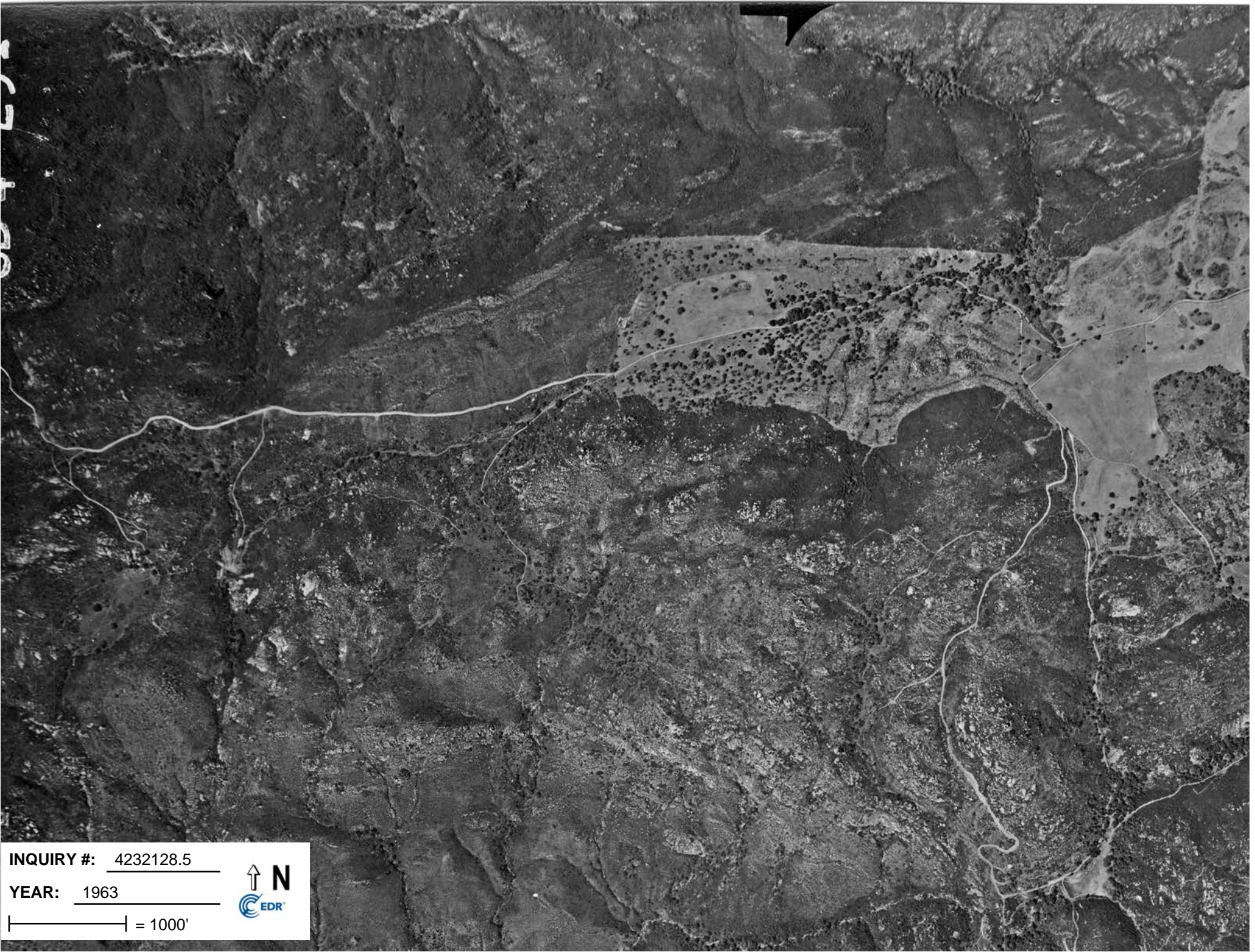
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YEAR: 1953

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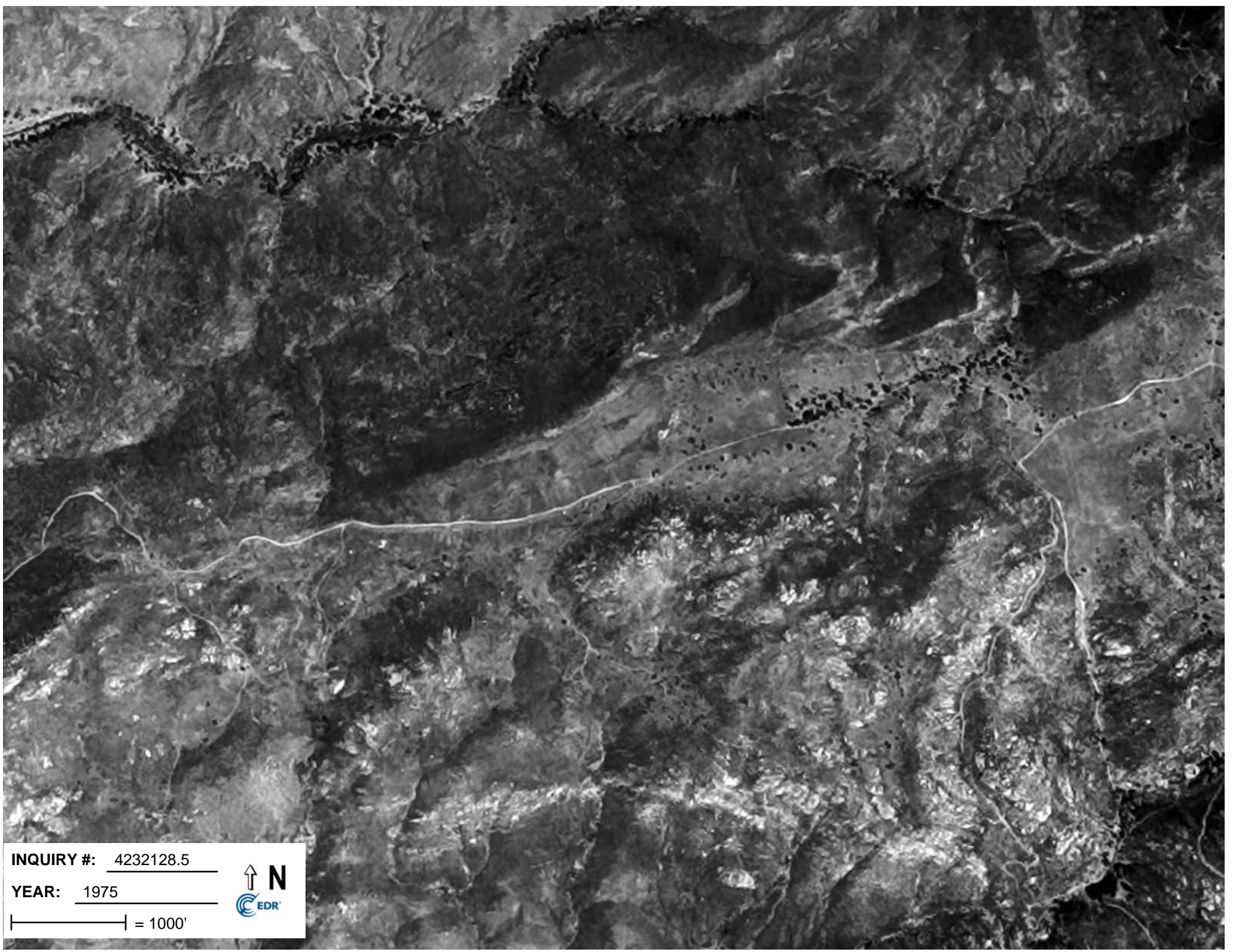
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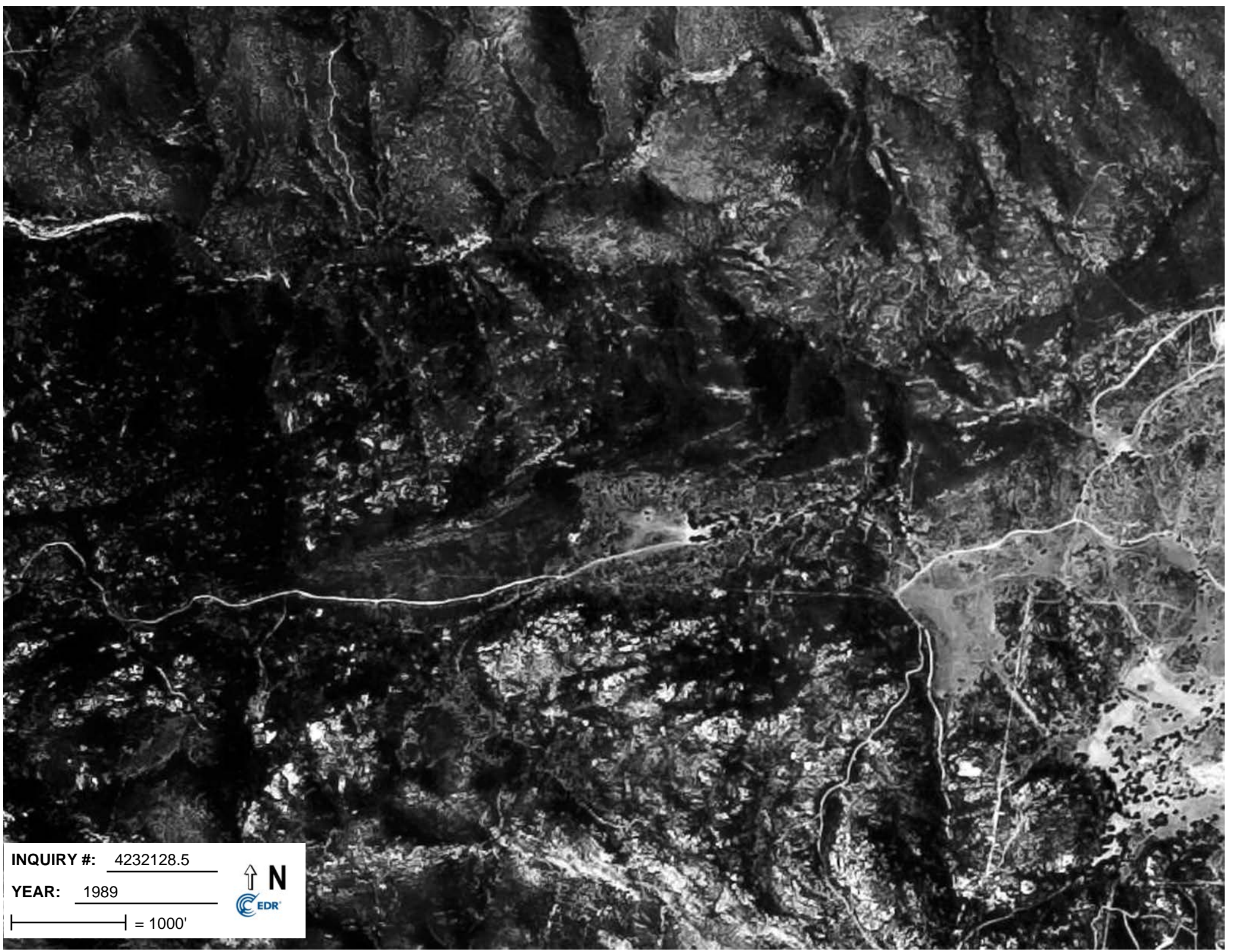
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INQUIRY #: 4232128.5

YEAR: 1989

| = 1000'







**INQUIRY #:** 4232128.5

**YEAR:** 1994

| = 500'







**INQUIRY #:** 4232128.5

**YEAR:** 1994

| = 500'







**INQUIRY #:** 4232128.5

**YEAR:** 2005

| = 500'







**INQUIRY #:** 4232128.5

**YEAR:** 2005

| = 500'







INQUIRY #: 4232128.5

YEAR: 2009

| = 500'







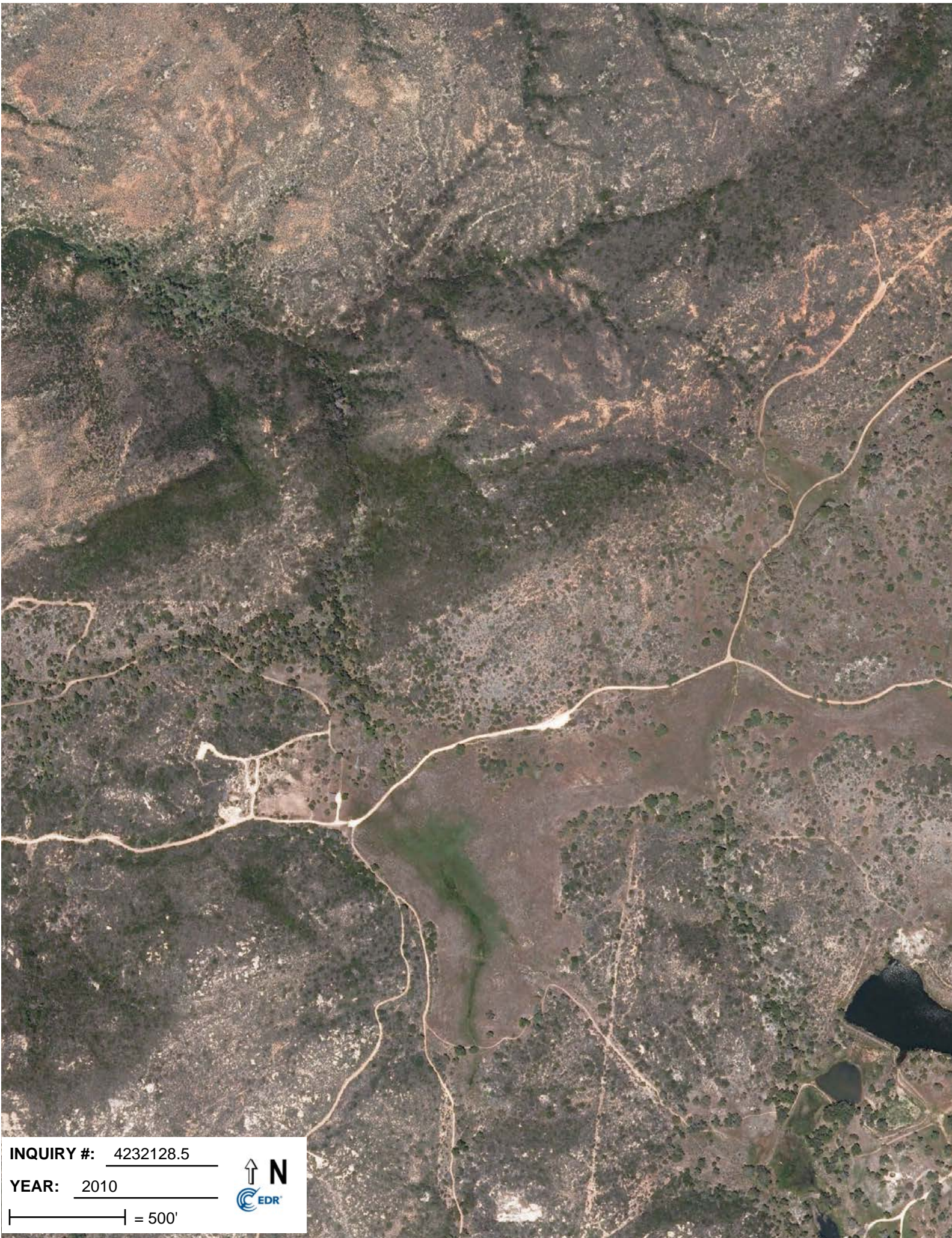
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**YEAR:** 2009

| = 500'







**INQUIRY #:** 4232128.5

**YEAR:** 2010

| = 500'







INQUIRY #: 4232128.5

YEAR: 2012

| = 500'







INQUIRY #: 4232128.5

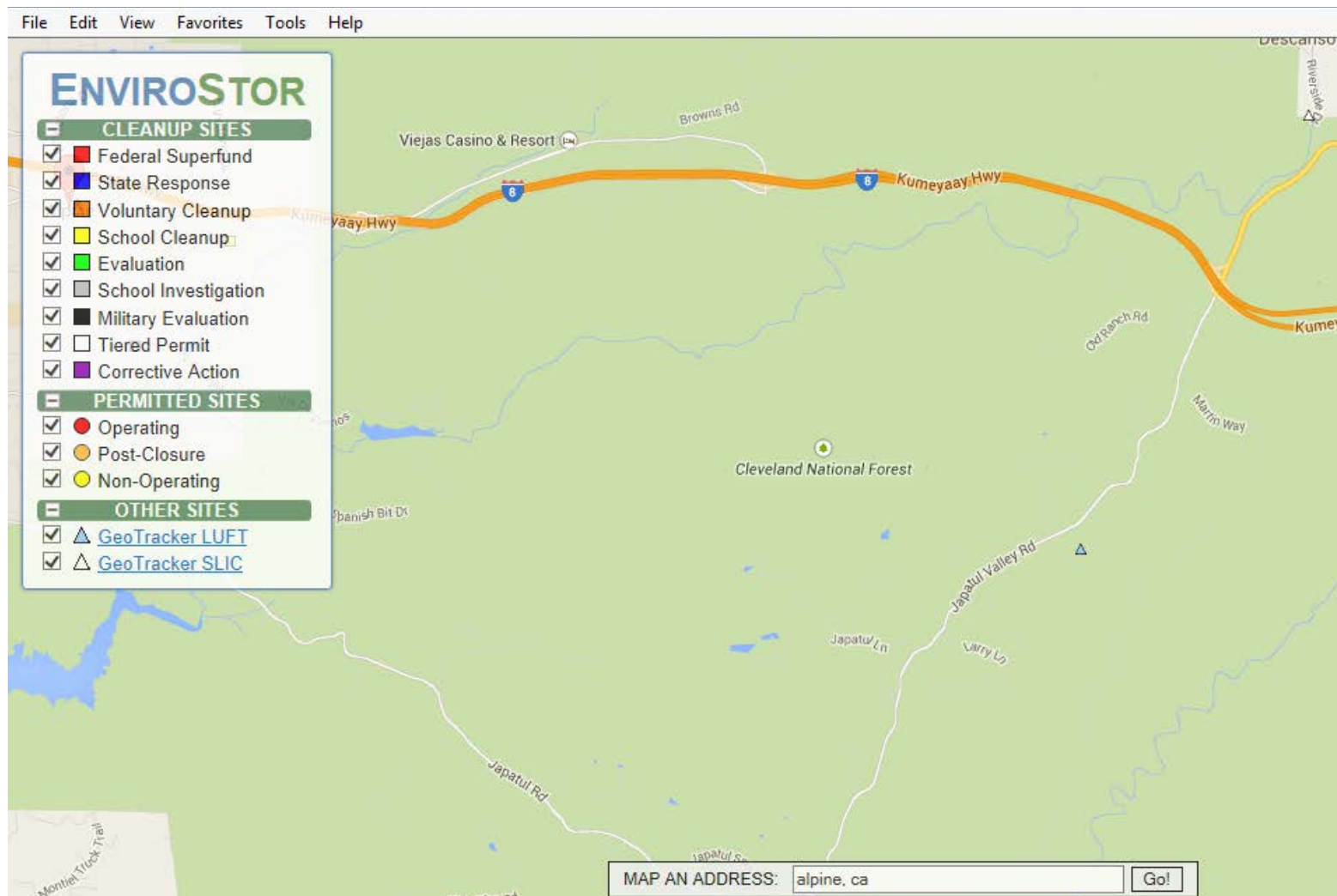
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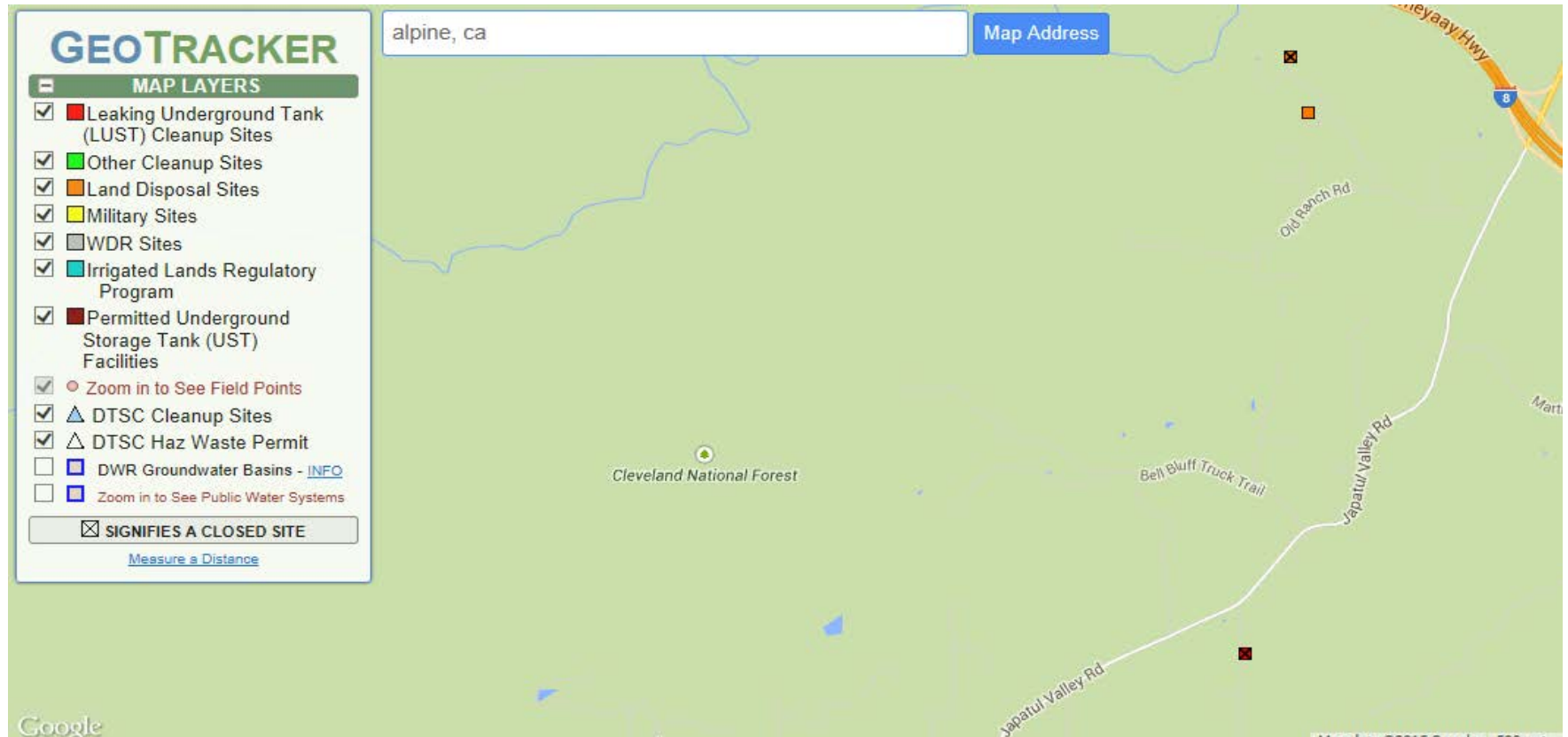


<http://www.envirostor.dtsc.ca.gov/public/mapfull.asp>





<http://geotracker.waterboards.ca.gov/map>





## **Appendix D. Subject Property Photographs**









**PHOTO 1:**

Typical view of the surrounding area, from east of the subject property, facing west.



**PHOTO 2:**

Garage near middle of the subject property, facing northwest.





**PHOTO 3:**

Garage showing  
rainwater catch basin,  
facing north.



**PHOTO 4:**

Typical view of Bell  
Bluff Truck Trail,  
facing east.





**PHOTO 5:**

Gutter and culvert associated with Bell Bluff Truck Trail, facing east.



**PHOTO 6:**

Culvert, fence, and metal gate on south side of Bell Bluff Truck Trail, facing west.





**PHOTO 7:**

Gravel pad lined with metal border on north side of Bell Bluff Truck Trail, facing north.



**PHOTO 8:**

AT&T manhole located in Bell Bluff Truck Trail, facing west.





**PHOTO 9:**

SDG&E manhole located in Bell Bluff Trail, facing east.



**PHOTO 10:**

Restoration nursery with temporary fence, facing north.





**PHOTO 11:**

Temporary water tanks associated with the nursery, facing northwest.



**PHOTO 12:**

Permanent water tank with electrical boxes in foreground, facing northwest.





**PHOTO 13:**

Overview of  
proposed SVC  
location, facing east.



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**Appendix H:**  
**Noise Modeling and Baseline Noise Survey**



**Suncrest Noise Monitoring Technical  
Memorandum**





ENVIRONMENTAL CONSULTANTS

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Phoenix Office  
3033 North Central Avenue, Suite 145  
Phoenix, Arizona 85012  
Tel 602.274.3831 Fax 602.274.3958  
www.swca.com

## Technical Memorandum

**To:** Steve Stielstra, SWCA Environmental Consultants  
**From:** Mike Sonenberg, SWCA Environmental Consultants  
**Date:** April 20, 2015  
**Re:** **Suncrest Noise Monitoring (April 11 – April 13, 2015)**

---

This memorandum provides a summary of the noise monitoring results for the area surrounding the proposed location of the Suncrest Reactive Power Station. The station will be located near Alpine, California, approximately 30 miles [50 kilometers] east-northeast of downtown San Diego. The noise monitoring was conducted from April 11, to April 13, 2015.

This memo briefly describes the area monitored, provides a map showing the proposed location of the Suncrest Reactive Power Station and location of the sound monitor, provides a description of the sound level meter used, a description of the metrics recorded, and a summary of sound level readings collected at the monitoring locations. Weather data from a nearby U.S. Forest Service monitoring station is also included.

### Project Area Description

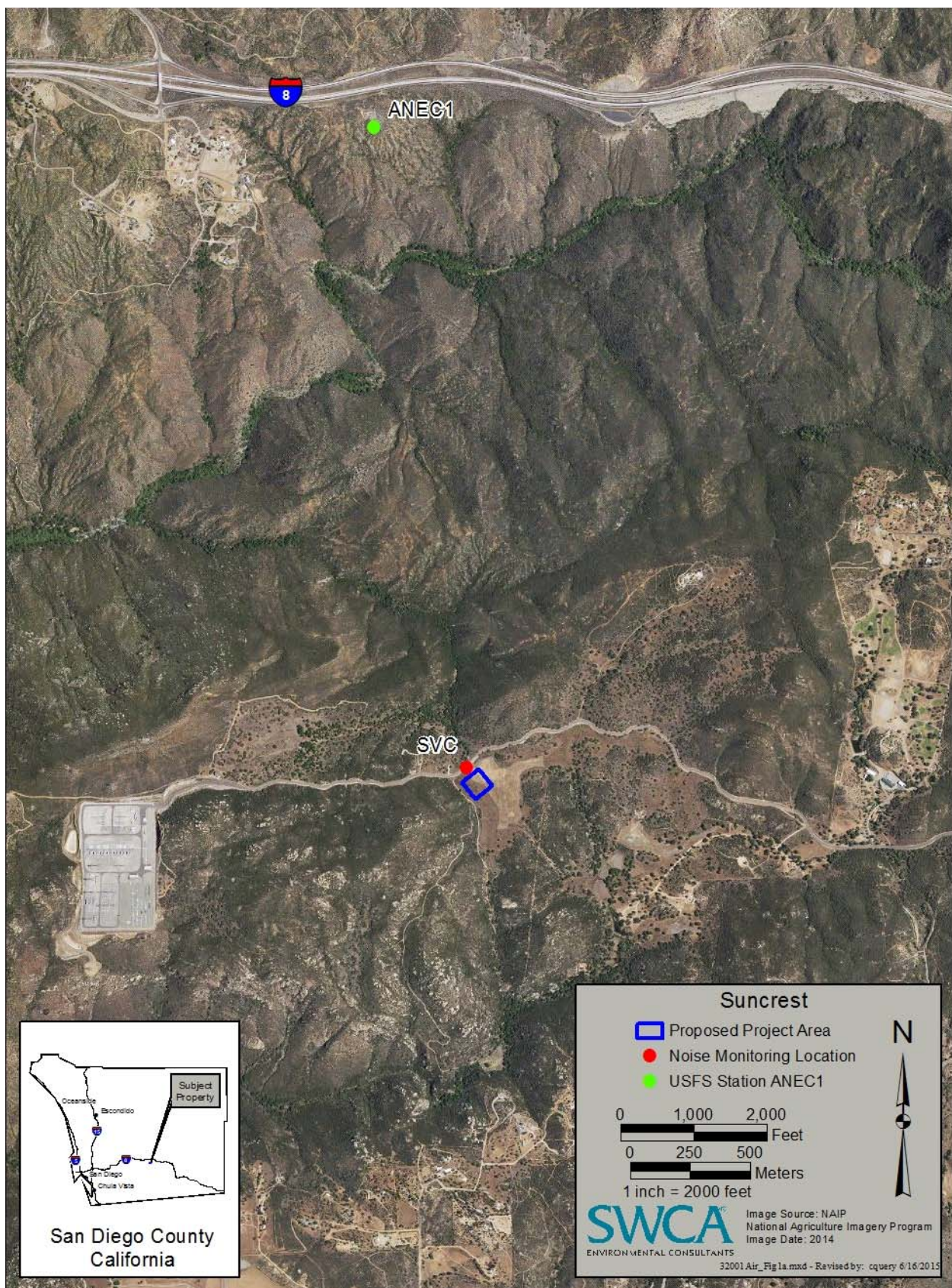
The project area is approximately 3 miles [5 km] east of the unincorporated community of Alpine, CA, in the Descanso District of Cleveland National Forest. The area is located in the Cuyamaca Mountains of Southern California. Elevations in the immediate area vary from 2,100 – 3,100 feet [640 – 945 m]. The highest peak in the range, Cuyamaca Peak, is 10 miles [16 km] north of the area, at an elevation of 6,512 feet [1,985 m].

A map of the proposed action area appears in Figure 1. The location of the sound meter is marked SVC.

Also shown on the map is a US Forest Service Remote Automated Weather Station (RAWS) for Alpine (station ANEC1) that was used to provide weather data for the period of testing. RAWS sites are primarily used to collect data for determining fire danger, but do record relevant meteorological parameters that may impact sound propagation (wind, temperature, and humidity). ANEC1 is approximately 1.5 miles [2.4 km] north of the project area at 2,807 feet [856 m].

Pictures from the noise monitoring site are shown in Appendix A.





**Figure 1.** Proposed project areas and monitoring sites.



## Instrument Description

Measurements were taken with a Larson Davis 831 (LD 831) Sound Level Meter with PCB Model 377B02 free-field microphone, deployed for long-term monitoring. The LD 831 is a precision integrating sound level meter, and can automatically calculate long-term variables such as  $L_{eq}$ ,  $L_{DN}$ , and CNEL when configured to do so. The PCB 377B02 is a highly accurate and reliable microphone that is typically used in research and design applications.

## Calibration Checks

Before being deployed and after all data was collected, the calibration of the instrument was checked with a Larson Davis CAL200. The Larson Davis CAL200 emits a 1 kHz tone at 94 dB and 114 dB against which the 831 response can be checked. The LD 831 showed a response of at or less than the normal error of 0.5 dB for each tone. The results of these checks are shown below. Laboratory calibration certificates for the 831 sound level meter, the microphone, and the Larson Davis CAL200 calibrator are included in Appendix B to this memo.

**Table 1.** Pre- and Post- Instrument Response Checks

Instrument Setup	Test	Sound Level	Response	Error
LD 831 (S/N: 3329) with PCB 377B02 (S/N: LW138408)	Pre-Test (4/9/15)	94 dB	94.1 dB	0.1 dB
		114 dB	114.0 dB	0.0 dB
	Post-Test (4/13/15)	94 dB	94.5 dB	0.5 dB
		114 dB	114.5 dB	0.5 dB

## Metrics Description

All metrics reported in this memorandum are in A-weighted decibels (abbreviated dBA). A-weighting is used to account for the relative loudness as perceived by the human ear as perceived at different frequencies, in contrast to unweighted decibels, which measure sound pressure level. The sound level detector was set to slow, which takes measurements over 1 second. The statistics below are calculated by the meter based on these 1 second measurements.

$L_{eq}$  is the energy equivalent sound level. It is the preferred way to describe sound levels that vary over time, it is a single decibel value that represents the level of a constant sound over a specific time period that has the same sound energy as the actual (unsteady) sound over the same period.

$L_{DN}$  is the day-night noise level. It is calculated the same as  $L_{eq}$ , but with a 10 dBA penalty added to nighttime (10 pm to 7am) sounds to account for increased sensitivity to sound during those times.

CNEL is the Community Noise Equivalent Level. Also calculated similarly to  $L_{eq}$  and  $L_{DN}$ , but with a 5 dBA penalty added to evening noise (7pm-10pm) and a 10 dBA penalty added to night noise (10 pm to 7 am).

$L_{50}$  is a statistical measure of noise during a given time period. Specifically, it is the noise level in dBA that is exceeded 50% of the time. It is useful for characterizing the general noise level without any peaks that may be uncharacteristically loud or the result of chance events.

$L_{90}$  is the noise level in dBA that is exceeded 90% of the time for a given time period. It is useful for characterizing the general minimum noise level without any valleys that may be uncharacteristically quiet or the result of chance events.



$L_{\min}$  is the minimum sound level in dBA (averaged over 1 second) during the measurement period.

$L_{\max}$  is the maximum sound level in dBA (averaged over 1 second) during the measurement time period.

$L_{\text{peak}}$  is the maximum instantaneous sound level during the measurement period and is presented only in Appendix C.

### **Readings/Weather**

Average Sound Level readings and weather data from the US Forest Service weather station are summarized on the following page. Hourly sound level readings and weather information are presented in Appendix C. Readings were taken from April 11<sup>th</sup> to April 13<sup>th</sup>.



## RESULTS

The monitoring site (32°48'44.67" N, 116°40'2.89 W) was next to a paved road with a posted speed limit of 15 mph. There was mowing of a field nearby on the first day of the monitoring period. Noise from Interstate 8 was not audible at this location. LD 831 sound meter S/N 3329, and PCB microphone S/N LW138408 were placed at the site from 9:17 am (PDT) on April 11 to 8:01 am (PDT) on April 13. Summary data for that time period is in Table 2 below. Table 2 presents the measured A-weighted  $L_{DN}$ , CNEL,  $L_{min}$ ,  $L_{max}$ ,  $L_{50}$ , and  $L_{90}$  noise level values collected at the noise monitoring station, as well as weather data obtained from the US Forest Service Alpine weather monitoring station. Hourly data is presented in Appendix C.

**Table 2.** Monitoring Station and Weather Data

Monitoring Start	Monitoring End	Elapsed Time	Measured Noise Levels (dBA)							Wind Speed (mph)		Gust Speed (mph)	Temperature (°F)		Humidity (% relative humidity)	
			$L_{eq}$	$L_{DN}$	CNEL	$L_{min}$	$L_{max}$	$L_{50}$	$L_{90}$	Minimum	Average		Range	Average	Range	Average
4/11/15 9:17 am (PDT)	4/13/15 8:01 am (PDT)	46 hours, 44 minutes	49.8	52.0	52.1	16.8	83.7	30.8	23.0	0	5.5	21	47 - 75	60	33-80	55

Weather data is based on hourly average observations at ANEC1, April 11, 8:52 am to April 13, 7:52 am.



## **APPENDIX A**

### **MONITORING SITE PICTURES**





**Figure A1.** Monitoring site facing East (Water bottle is used to weigh down the tripod and has no other purpose)



**Figure A2.** Monitoring site facing North





**Figure A3.** Monitoring site facing South



**Figure A4.** Monitoring site facing West



## **APPENDIX B**

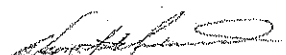
### **EQUIPMENT CALIBRATION CERTIFICATES**





## ~Calibration Certificate~

3149 East Kemper Rd.  
Cincinnati, OH 45241  
Ph : 513-351-9919  
Fax: 513-458-2172  
www.modalshop.com

Manufacturer:	Larson Davis	Asset ID:	49574
Model:	CAL200	Calibration Date:	Aug 08, 2014 12:41:23
Serial Number:	10473	Due Date:	
Description:	Acoustic Calibrator	Technician:	Wayne Underwood
Customer:	TMS Rental	Approval:	

### Calibration Results:

Measured SPL : 94.06 dB re. 20 $\mu$ Pa

Temperature: 21 °C (71 °F)

Humidity: 48.10%

Measured Frequency : 1,000.00 Hz

Pressure: 996.4 mbar

Upon receipt for calibration, the instrument was found to be:  
**WITHIN** the stated tolerance of the manufacturer's specification.

Note: **As Found/As Left In Tolerance**

Measurement uncertainty at 95% confidence level: 0.3 dB

The subject instrument was calibrated to the indicated specification using standards stated below or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the customer.

This calibration is traceable through : 683/281794-12

### Notes:

The calibration was performed under operating procedures intended to implement the requirements of ISO 9001, ISO 17025 and ANSI Z540. Unless otherwise noted, the reported value is both "as found" and "as left" data. Calibration results relate only to the items calibrated. This certificate may not be reproduced, except in full, without written permission.

### Reference Equipment Used:

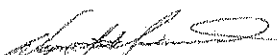
Manuf.	Model	Serial	Cal. Date	Due Date
GRAS	40AG	9542	9/16/2013	9/16/2014





## ~Calibration Certificate~

3149 East Kemper Rd.  
Cincinnati, OH 45241  
Ph : 513-351-9919  
Fax: 513-458-2172  
www.modalshop.com

Manufacturer:	Larson Davis	Asset ID:	49574
Model:	CAL200	Calibration Date:	Aug 08, 2014 12:43:28
Serial Number:	10473	Due Date:	
Description:	Acoustic Calibrator	Technician:	Wayne Underwood
Customer:	TMS Rental	Approval:	

### Calibration Results:

Measured SPL : 113.96 dB re. 20 $\mu$ Pa

Temperature: 21 °C (71 °F)

Humidity: 48.10%

Measured Frequency : 1,000.00 Hz

Pressure: 996.4 mbar

Upon receipt for calibration, the instrument was found to be:

**WITHIN** the stated tolerance of the manufacturer's specification.

Note: **As Found/As Left In Tolerance**

Measurement uncertainty at 95% confidence level: 0.3 dB

The subject instrument was calibrated to the indicated specification using standards stated below or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the customer.

This calibration is traceable through : 683/281794-12

### Notes:

The calibration was performed under operating procedures intended to implement the requirements of ISO 9001, ISO 17025 and ANSI Z540. Unless otherwise noted, the reported value is both "as found" and "as left" data. Calibration results relate only to the items calibrated. This certificate may not be reproduced, except in full, without written permission.

### Reference Equipment Used:

Manuf.	Model	Serial	Cal. Date	Due Date
GRAS	40AG	9542	9/16/2013	9/16/2014



## Certificate of Calibration and Conformance

This document certifies that the instrument referenced below meets published specifications per Procedure PRD-P263; ANSI S1.4-1983 (R 2006) Type 1; S1.4A-1985; S1.43-1997 Type 1; S1.11-2004 Octave Band Class 0; S1.25-1991; IEC 61672-2002 Class 1; 60651-2001 Type 1; 60804-2000 Type 1; 61260-2001 Class 0; 61252-2002.

Manufacturer:	Larson Davis	Temperature:	71	°F
Model Number:	831		21.67	°C
Serial Number:	3329	Rel. Humidity:	30.9	%
Customer:	TMS Rental	Pressure:	990.5	mbars
Description:	Sound Level Meter		990.5	hPa

Note: As Found / As Left: In Tolerance

Upon receipt for testing, this instrument was found to be:

Within the Stated tolerance of the manufacturer's specification

Calibration Date: 2-May-14

Calibration Due:

### Calibration Standards Used:

Manufacturer	Model	Serial Number	Cal Due	Traceability No.
Larson Davis	LDSigGen/2239	0760/0101	4/14/2015	2013-176324

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at The Modal Shop and/or Larson Davis Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. Calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of The Modal Shop.

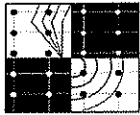
Technician: Tim Rarden

Signature: 



The Modal Shop, Inc.  
3149 East Kemper Road  
Cincinnati, OH 45241  
Phone: (513) 351-9919  
(800) 860-4867  
[www.modalshop.com](http://www.modalshop.com)





**THE  
MODAL  
SHOP**  
INC.  
A PCB GROUP CO.

## ~Certificate of Calibration~

3149 East Kemper Rd.  
Cincinnati, OH 45241  
Ph : 513-351-9919  
Fax: 513-458-2172  
www.modalshop.com

**Manufacturer:** PCB  
**Model Number:** 377B02  
**Serial Number:** LW138408  
**Description:** Free-Field Microphone

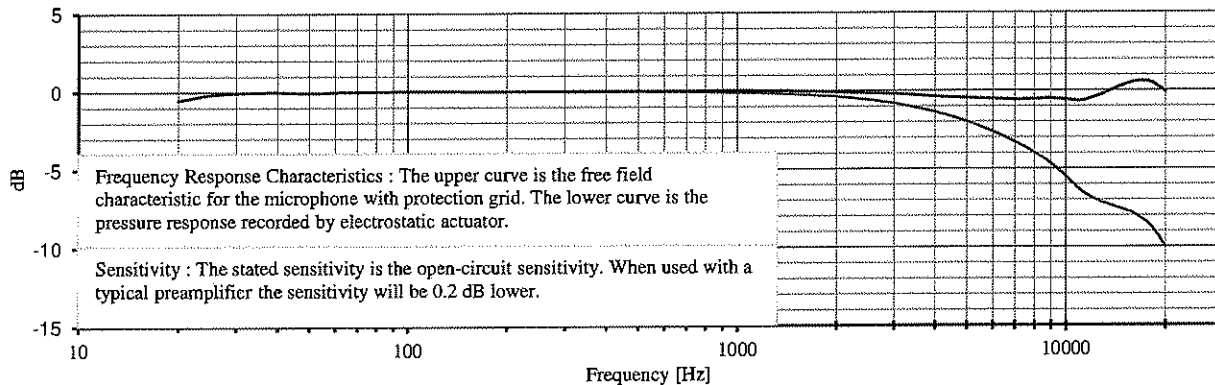
**Asset ID:** 49331  
**Customer:** TMS Rental  
**Calibration Date:** Jan 15, 2015 10:35:57  
**Due Date:**

**Sensitivity:** **250 Hz** **1 kHz**  
-25.87 -25.97 dB re. 1V/Pa  
50.88 50.29 mV/Pa

**Temperature:** 73 (23) °F (°C)  
**Humidity:** 16 %  
**Ambient Pressure:** 1000.2 mbar

**Cal. Results:** In Tolerance

**Polarization Voltage:** 0 VDC



**Traceability:** The calibration is traceable through 683/281764-12.

**Notes:** Calibration results relate only to the items calibrated.  
This certificate may not be reproduced, except in full, without written permission.  
This calibration is performed in compliance with ISO 9001, ISO 17025 and ANSI Z540.  
Measurement uncertainty (250 Hz sensitivity calibration) at 95% confidence level: 0.30 dB.  
Calibrated per procedure PRD-P204.

**User Note :** As Found/As Left; In Tolerance

### Frequency Response with reference to level at 250 Hz

Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)
20	-0.52	630	0.00	4500	-0.43		
25	-0.16	800	0.03	5000	-0.47		
31.5	-0.04	1000	0.02	5600	-0.52		
40	0.00	1120	0.01	6300	-0.56		
50	-0.06	1250	0.00	7100	-0.58		
63	0.00	1400	0.00	8000	-0.56		
80	0.00	1600	-0.04	9000	-0.52		
100	0.02	1800	-0.05	10000	-0.59		
125	0.03	2000	-0.07	11200	-0.65		
160	0.01	2240	-0.11	12500	-0.35		
200	0.00	2500	-0.13	14000	0.08		
250	0.00	2800	-0.17	16000	0.52		
315	0.00	3150	-0.22	18000	0.52		
400	0.00	3550	-0.30	20000	-0.07		
500	0.02	4000	-0.37				

**Technician:** Wayne Underwood

**Reference Equipment Used:**



**Approval:**

Manuf.	Model	Serial	Cal. Date	Due Date
GRAS	40AG	9542	9/15/2014	9/15/2015



## **APPENDIX C**

### **HOURLY DATA SUMMARIES**



Record #	Date	Time	Leq
1	4/11/2015	09:17:29	Start Time
2	4/11/2015	09:17:29	56.5
3	4/11/2015	10:17:29	58.5
4	4/11/2015	11:17:29	59.9
5	4/11/2015	12:17:29	55.9
6	4/11/2015	13:17:29	48.9
7	4/11/2015	14:17:29	58.1
8	4/11/2015	15:17:29	53.8
9	4/11/2015	16:17:29	38.4
10	4/11/2015	17:17:29	37.4
11	4/11/2015	18:17:29	37.5
12	4/11/2015	19:17:29	35.9
13	4/11/2015	20:17:29	32.3
14	4/11/2015	21:17:29	31.9
15	4/11/2015	22:17:29	34.4
16	4/11/2015	23:17:29	38.1
17	4/12/2015	00:17:29	26.9
18	4/12/2015	01:17:29	24.4
19	4/12/2015	02:17:29	20.7
20	4/12/2015	03:17:29	24.3
21	4/12/2015	04:17:29	25.0
22	4/12/2015	05:17:29	34.9
23	4/12/2015	06:17:29	33.4
24	4/12/2015	07:17:29	38.0
25	4/12/2015	08:17:29	36.4
26	4/12/2015	09:17:29	38.3
27	4/12/2015	10:17:29	42.6
28	4/12/2015	11:17:29	41.5
29	4/12/2015	12:17:29	36.8
30	4/12/2015	13:17:29	40.1
31	4/12/2015	14:17:29	39.3
32	4/12/2015	15:17:29	40.9
33	4/12/2015	16:17:29	38.3
34	4/12/2015	17:17:29	38.8
35	4/12/2015	18:17:29	34.4
36	4/12/2015	19:17:29	37.4
37	4/12/2015	20:17:29	39.6
38	4/12/2015	21:17:29	32.1
39	4/12/2015	22:17:29	33.0
40	4/12/2015	23:17:29	38.1
41	4/13/2015	00:17:29	22.8
42	4/13/2015	01:17:29	27.0
43	4/13/2015	02:17:29	25.6
44	4/13/2015	03:17:29	27.1
45	4/13/2015	04:17:29	29.9
46	4/13/2015	05:17:29	35.1
47	4/13/2015	06:17:29	56.7
48	4/13/2015	07:17:29	56.7
49	4/13/2015	08:01:53	Stop Time

Instrument Calculated Statistics	
L <sub>eq</sub>	49.8
L <sub>DN</sub>	52.0
CNEL	52.1
L <sub>min</sub>	16.8
L <sub>max</sub>	83.7
L <sub>peak</sub>	97.3
L <sub>50</sub>	30.8
L <sub>90</sub>	23.0

These statistics are based on all readings taken by the instrument, and can not be calculated from hourly averages.



## **Sound Calculation Methodology**



## Introduction

The purpose of this document is to describe how the sound level at the property line was calculated due to noise from the SVC. As required by the California Environmental Quality Act (CEQA), determinations of existing and projected sound levels at property lines proximate to California Public Utilities Commission (CPUC) projects are required to be measured and analyzed in a Proponents Environmental Assessment (PEA) document. This document supplements the noise analysis provided in Section 4.10 of the Suncrest Reactive Power Support Project PEA. Generally,

1. The noise level from all equipment was summed to determine in total input power,
2. Attenuation due to Geometric Divergence, Atmospheric Absorption, and Ground Effects was calculated and subtracted from the total input power, and
3. The total sound spectrum at the property line was converted into a single A-weighted decibel value.

The following sections describe this process in greater detail. For ease of calculation, the total sound power was summed as a single source operating at the center of the SVC, which is 120 m away from the property line.

## Input Power Spectrum

The first step was to sum the sound power level of each of the noise generating units. Sound power decibels is a logarithmic scale, and therefore, the noise levels cannot be added arithmetically. In order to add decibel levels, the decibels must first be converted to a geometric scale. Sound power decibels are calculated by the following equation:

$$SP = 10 \log_{10} \left( \frac{P}{P_0} \right)$$

Where:

SP is the Sound Power in dB,

P is the sound power in picowatts, and

P<sub>0</sub> is the reference value of 1 picowatt.

Solving for P:

$$P = 10^{\left(\frac{SP}{10}\right)}$$

Using this equation, the sound power can be converted into picowatts and added arithmetically. Once all sources are added, the power from each source can be summed and converted back to decibels.

Table 1 below shows the sound power of each noise generating unit in dB, and the total sound power for all units at the station, calculated using the above methodology.



**Table 1.** Input Power Spectrum

Qty.	Equipment used in SVC operation	Input Power Spectrum, dB (Power, not Pressure)					
		OB CENTER FREQUENCY, HZ					
		125	250	500	1000	2000	4000
3	150 MVAR Thyristor Controlled Reactor	75	75	94	77	53	0
3	105 MVAR Transformer	81	81	94	83	59	0
6	TSC caps	68	69	72	45	0	0
6	FC caps	72	81	79	62	47	0
6	TSC reactor	70	76	73	77	66	0
6	FC reactors	59	76	73	76	66	0
2	Heat exchanger	64	75	84	76	65	0
1	HVAC	77	85	92	88	75	0
1	Aux transformer	68	73	67	61	40	0
-	<b>Total</b>	<b>88.6</b>	<b>93.3</b>	<b>102.5</b>	<b>93.0</b>	<b>79.5</b>	<b>15.3</b>

## Attenuation

Attenuation calculations are based on ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation. The three types of attenuation analyzed were:

1. Attenuation due to Geometrical Divergence
2. Attenuation due to Atmospheric Absorption
3. Attenuation due to Ground Effect

### Attenuation due to Geometrical Divergence

Attenuation due to geometrical divergence,  $A_{div}$ , in decibels, is calculated by the following equation:

$$A_{div} = 20 \log_{10} \left( \frac{d}{d_0} \right)$$

Where:

$d$  is the distance from source to receiver (in meters), and  
 $d_0$  is the reference value of 1 meter.

$A_{div}$  is the same for all frequency bands. The attenuation is shown in Table 2 below, and is based on the source to receiver distance of 120 meters.

**Table 2.** Attenuation Due to Geometrical Divergence (in dB)



Octave Band Center Frequency (Hz)					
125	250	500	1000	2000	4000
41.6	41.6	41.6	41.6	41.6	41.6

### **Attenuation due to Atmospheric Absorption**

Attenuation due to atmospheric absorption,  $A_{atm}$ , in decibels, is calculated by the following equation:

$$A_{atm} = \frac{\alpha d}{1000}$$

Where:

$\alpha$  is the atmospheric attenuation coefficient (in dB per km, varies for each octave band),  
and  
d is the distance from source to receiver, in meters.

$A_{atm}$  is different for all frequency bands. The atmospheric attenuation coefficient,  $\alpha$ , is dependent on the temperature and humidity. For these calculations, the average conditions in Alpine (68°F and 50% humidity) were used. The attenuation coefficient for each frequency is shown in Table 3 below.

**Table 3.** Values of  $\alpha$  for 68°F and 50% Relative Humidity

Octave Band Center Frequency (Hz)					
125	250	500	1000	2000	4000
0.45	1.30	2.70	4.70	9.90	29.00

The attenuation due to atmospheric absorption is shown in Table 4 below, and is based on the source to receiver distance of 120 meters and the value of  $\alpha$ .

**Table 4.** Attenuation Due to Atmospheric Absorption (in dB)

Octave Band Center Frequency (Hz)					
125	250	500	1000	2000	4000
0.1	0.2	0.3	0.6	1.2	3.5

### **Attenuation due to Ground Effect**

Attenuation due to ground effects,  $A_{gr}$ , in decibels, is calculated by the following equation:

$$A_{gr} = A_S + A_M + A_R$$

Where:

$A_S$  is the ground effect for the source region (in dB),  
 $A_M$  is the ground effect for the middle region (in dB), and  
 $A_R$  is the ground effect for the receiver region (in dB).



$A_{gr}$  is different for all frequency bands. For short distances like those at Suncrest,  $A_M$  is 0.  $A_S$  and  $A_R$  are calculated similarly, as shown in Table 5 below:

**Table 5.** Formulae for calculating Ground Effect Attenuation

Frequency (Hz)	$A_S$ or $A_R$ (dB)
125	$-1.5 + G * a$
250	$-1.5 + G * b$
500	$-1.5 + G * c$
1000	$-1.5 + G * d$
2000	$-1.5 (1 - G)$
4000	$-1.5 (1 - G)$

Where:

G is the ground factor, which varies from 0 to 1, with 0 indicating hard ground (paving, water, ice, concrete, etc.), and 1 indicating porous ground (grass, trees, vegetation). For calculation, the source region was assumed to have a value of 0.1, and the receiver region a value of 1.0.

a, b, c, and d vary with source height and distance from source to receiver, and can be found by equation or estimated using Tables 6,7,8, and 9 below. For these calculations, both the source and the receiver were assumed to be at a height of 1.5 m, and the values for a distance between them was chosen as 100 m.

**Table 6.** Values of a

Source to Receiver distance (m)	Source or Receiver Height (m)				
	0.5	1.5	3	6	>10
50	1.7	2.0	2.7	3.2	1.6
100	1.9	2.2	3.2	3.8	1.6
200	2.3	2.7	3.6	4.1	1.6
500	4.6	4.5	4.6	4.3	1.6
> 1000	7.0	6.6	5.7	4.4	1.7

**Table 7.** Values of b

Source to Receiver distance (m)	Source or Receiver Height (m)				
	0.5	1.5	3	6	>10
50	6.8	5.9	3.9	1.7	1.5
100	8.8	7.6	4.8	1.8	1.5
> 200	9.8	8.4	5.3	1.8	1.5



**Table 8.** Values of c

Source to Receiver distance (m)	Source or Receiver Height (m)				
	0.5	1.5	3	6	>10
50	9.4	4.6	1.6	1.5	1.5
100	12.3	5.8	1.7	1.5	1.5
> 200	13.8	6.5	1.7	1.5	1.5

**Table 9.** Values of d

Source to Receiver distance (m)	Source or Receiver Height (m)				
	0.5	1.5	3	6	>10
50	4.0	1.9	1.5	1.5	1.5
> 100	5.0	2.1	1.5	1.5	1.5

Total ground effect attenuation (source plus receiver attenuation) is shown in Table 10 below.

**Table 10.** Attenuation Due to Ground Effect (in dB)

Octave Band Center Frequency (Hz)					
125	250	500	1000	2000	4000
0.2	6.1	4.1	0.1	0.9	0.9

## Total

The total sound pressure at the receiver location is found by taking the input power spectrum, subtracting total attenuation, subtracting 10.9 to convert from sound power to sound pressure, and subtracting the appropriate A-weighting factors, as shown in Table 11 below.

**Table 11.** Total Sound Pressure at the Receiver Location

Value	Sound Level, dB					
	OB CENTER FREQUENCY, HZ					
	125	250	500	1000	2000	4000
Input Sound Power	88.6	93.3	102.5	93.0	79.5	15.3
- Total Attenuation	41.8	47.8	46.0	42.2	43.7	46.0
- Conversion from Power to Pressure	10.9	10.9	10.9	10.9	10.9	10.9
- A-Weighing Frequency Factors	-16.1	-8.6	-3.2	0	1.2	1
= Sound Pressure at Reciever	19.8	26.0	42.4	39.9	26.1	-40.5



The sound pressure level for each frequency is then summed, using the formulae for adding decibels first described in the “Input Power” section. Thus, the total Sound Pressure at the property line is 44.5 dBA.



## **Construction and Operation Noise Predictions**



Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 08/18/2015  
Case Description: Suncrest Reactive Power Station

\*\*\*\* Receptor #1 \*\*\*\*

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Property Line	Residential	49.8	49.8	49.8

Equipment						
Description	Impact Device	Usage (%)	Spec Lmax (dBA)		Receptor Distance (meters)	Estimated Shielding (dBA)
			Lmax	Actual Lmax (dBA)		
Excavator	No	40		80.7	300.0	0.0
Pickup Truck	No	40		75.0	300.0	0.0
Grader	No	40	85.0		300.0	0.0
Dozer	No	40		81.7	300.0	0.0
Tractor	No	40	84.0		300.0	0.0
Concrete Mixer Truck	No	40		78.8	300.0	0.0
Drill Rig Truck	No	20		79.1	300.0	0.0
Dump Truck	No	40		76.5	300.0	0.0
Crane	No	16		80.6	300.0	0.0
Compressor (air)	No	40		77.7	300.0	0.0
Dump Truck	No	40		76.5	300.0	0.0
All Other Equipment > 5 HP	No	50	85.0		300.0	0.0
All Other Equipment > 5 HP	No	50	85.0		300.0	0.0
All Other Equipment > 5 HP	No	50	85.0		300.0	0.0
All Other Equipment > 5 HP	No	50	85.0		300.0	0.0
Blasting	Yes	1		94.0	300.0	0.0

Results															
Equipment		Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
		Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
		Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Excavator		54.8	53.8	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Pickup Truck		49.1	48.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Grader		59.1	58.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Dozer		55.8	54.8	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Tractor		58.1	57.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Concrete Mixer Truck		52.9	51.9	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Drill Rig Truck		53.3	49.3	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Dump Truck		50.6	49.6	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Crane		54.7	49.7	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Compressor (air)		51.8	50.8	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Dump Truck		50.6	49.6	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
All Other Equipment > 5 HP		59.1	59.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
All Other Equipment > 5 HP		59.1	59.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
All Other Equipment > 5 HP		59.1	59.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
All Other Equipment > 5 HP		59.1	59.1	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A
Blasting		68.1	51.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		68.1	67.6	75.0	N/A	75.0	N/A	75.0	N/A	None	N/A	None	N/A	None	N/A



# PREDICTING THE SOUND LEVEL AT DISTANCES GREATER THAN 100 METERS FOR OUTDOORS SOUND PROPAGATION

NOTE: You must enter the requested input information in the yellow highlighted cells.  
All blue highlighted cells represent a calculated value or result.

INPUT POWER SPECTRUM, dB Input Power , Not Pressure)	OB CENTER FREQUENCY, HZ					
	125	250	500	1000	2000	4000
	88.843	93.330	102.547	93.032	79.495	15.315

## SECTION 1A: DIVERGENCE CALCULATIONS

	Attenuation due to Divergence:	INPUT INFORMATION:	
		REFERENCE DISTANCE (m)	DIST. FROM SOURCE (m)
POINT SOURCE:	41.6 dB	1	120
LINE SOURCE:	20.8 dB		

## SECTION 1B: ATTENUATION DUE TO DIVERGENCE ASSIGN TO EACH OCTAVE-BAND FREQUENCY

DIVERGENCE:	ATTENUATION: COMPONENTS AND TOTAL OB CENTER FREQUENCY, HZ					
	125	250	500	1000	2000	4000
POINT SOURCE	41.6	41.6	41.6	41.6	41.6	41.6
LINE SOURCE	20.8	20.8	20.8	20.8	20.8	20.8

NOTE: Divergence is not a function of frequency

## SECTION 2A: AIR ABSORPTION INFORMATION

TEMPERATURE		RELATIVE HUMIDITY %	TABLE 15.1 AIR ATTENUATION COEFFICIENTS, dB/km OCTAVE-BAND CENTER FREQUENCY, HZ					
			125	250	500	1000	2000	4000
30C 86F	10		0.96	1.80	3.40	8.70	29.00	96.00
	20		0.73	1.90	3.40	6.00	15.00	47.00
	30		0.54	1.70	3.70	6.20	12.00	33.00
	50		0.35	1.30	3.60	7.00	12.00	25.00
	70		0.26	0.96	3.10	7.40	13.00	23.00
	90		0.20	0.78	2.70	7.30	14.00	24.00
20C 68F	10		0.78	1.60	4.30	14.00	45.00	109.00
	20		0.71	1.40	2.60	6.50	22.00	74.00
	30		0.62	1.45	2.50	5.90	14.00	49.00
	50		0.45	1.30	2.70	4.70	9.90	29.00
	70		0.34	1.10	2.80	5.00	9.00	23.00
	90		0.27	0.97	2.70	5.30	9.10	20.00
10C 50F	10		0.79	2.30	7.50	22.00	42.00	57.00
	20		0.58	1.20	3.30	11.00	36.00	92.00
	30		0.55	1.10	2.30	6.80	24.00	77.00
	50		0.49	1.10	1.90	4.30	13.00	47.00
	70		0.41	1.00	1.90	3.70	9.70	33.00
	90		0.35	1.00	2.00	3.50	8.10	26.00
0C 32F	10		1.30	4.00	9.30	14.00	17.00	19.00
	20		0.61	1.90	6.20	18.00	35.00	47.00
	30		0.47	1.20	3.70	13.00	36.00	69.00
	50		0.41	0.82	2.10	6.80	24.00	71.00
	70		0.39	0.76	1.60	4.60	16.00	56.00
	90		0.38	0.76	4.50	3.70	12.00	43.00

## AIR ABSORPTION:

At 68 °F and 50% Hum.	OB CENTER FREQUENCY, HZ					
	125	250	500	1000	2000	4000
ATTEN. COEFFICIENT:	0.45	1.30	2.70	4.70	9.90	29.00
ATTEN. DUE TO AIR:	0.1	0.2	0.3	0.6	1.2	3.5

Average Temperature for Alpine, CA, 5/13/14-5/13/15  
68  
Average RH for Alpine, CA 5/13/14-5/13/15  
50  
(Based on Average Dew Point of 49F and average temperature)

## SECTION 3A: ENVIRONMENTAL ATTENUATION AT LONG RANGE

SOURCE	RECEIVER
Hs	Hr
30 Hs	30Hr
SOURCE ZONE	MIDDLE ZONE
RECEIVER ZONE	

$e = \{ 1 - [30 \cdot (H_s + H_r) / v] \}$  = 0.25  
input information = Hs = 1.5 Hr = 1.5  
r is at position H23  
G factor: what percentage of the combined 30 Hs and 30 Hr surfaces that is hard.

Hard = 90 Soft = 10  
G = 0.10  
for the source zone  
G = 1 soft  
for the receiver zone  
G = 1 grass and trees  
for the middle zone

LONG RANGE FACTORS		SOURCE OR RECIEVER HEIGHT, m				
		0.5	1.5	3	6	>10
FACTOR a						
50	1.7	2.0	2.7	3.2	1.6	
100	1.9	2.2	3.2	3.8	1.6	
200	2.3	2.7	3.6	4.1	1.6	
500	4.6	4.5	4.6	4.3	1.6	
>1000	7.0	6.6	5.7	4.4	1.7	
FACTOR b						
50	6.8	5.9	3.9	1.7	1.5	
100	8.8	7.6	4.8	1.8	1.5	
>200	9.8	8.4	5.3	1.8	1.5	
FACTOR c						
50	9.4	4.6	1.6	1.5	1.5	
100	12.3	5.8	1.7	1.5	1.5	
>200	13.8	6.5	1.7	1.5	1.5	
FACTOR d						
50	4.0	1.9	1.5	1.5	1.5	
>100	5.0	2.1	1.5	1.5	1.5	

## ENVIRONMENTAL ATTENUATION VALUES AT LONG RANGE: 50M

		Frequency, Hz					
		125	250	500	1000	2000	4000
SOURCE CONST. G=(G92)	a=	2.2	SOURCE>	0.00	0.00	0.00	0.00
	b=	7.6					
	c=	5.8					
	d=	2.1					
	e=	0.25					
RECEIV. CONST. e(G82)	a=	2.2	RECEIVER>	0.70	6.10	4.30	0.60
	b=	7.6					
	c=	5.8					
	d=	2.1					
	e=	0.3					
MIDDLE G=(G95)							
		0.00	0.00	0.00	0.00	0.00	0.00

## POINT SOURCE

		Frequency, Hz					
		125	250	500	1000	2000	4000
DIVERGENCE COMP.		41.6	41.6	41.6	41.6	41.6	41.6
ALL OTHER COMPONENTS		0.8	6.3	4.6	1.2	2.7	5.0
TOTAL ATTENUATION		42.3	47.8	46.2	42.7	44.3	46.6
SOURCE POWER SPECTRUM		88.6	93.3	102.5	93.0	79.5	15.3
OCTAVE-BAND SPLS		35.4	34.6	45.4	39.4	24.3	-42.1
A-FREQUENCY WT. FACTORS		-16.1	-8.6	-3.2	0	1.2	1
A-WT OB SPLS		19.3	26.0	42.2	39.4	25.5	-41.1
A-WT SOUND LEVEL		44.2 dBA	Predicted Sound Level at : 120 meters				



**Appendix I:**  
**Geophysical Survey**



**GEOPHYSICAL SURVEY  
SVC SUN CREST  
ALPINE, CALIFORNIA**

**PREPARED FOR:**

Kleinfelder  
550 West C Street  
San Diego, CA 92101

**PREPARED BY:**

Southwest Geophysics, Inc.  
8057 Raytheon Road, Suite 9  
San Diego, CA 92111

August 5, 2015  
Project No. 115336



August 5, 2015  
Project No. 115336

Mr. Scott Rugg  
Kleinfelder  
550 West C Street  
San Diego, CA 92101

Subject: Geophysical Survey  
SVC Sun Crest  
Alpine, California

Dear Mr. Rugg:

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the SVC Sun Crest project located in Alpine, California. Specifically, our survey consisted of performing five P-wave refraction traverses, one refraction microtremor (ReMi) profile, and electrical resistivity soundings at four test locations at the subject site. The purpose of our study was to characterize the subsurface conditions in the study area. This data report presents our survey methodology, equipment used, analysis, and results.

We appreciate the opportunity to be of service on this project. Should you have any questions related to this report, please contact the undersigned at your convenience.

Sincerely,  
**SOUTHWEST GEOPHYSICS, INC.**



Patrick Lehrmann, P.G., P.Gp.  
Principal Geologist/Geophysicist



Hans van de Vrugt, C.E.G., P.Gp.  
Principal Geologist/Geophysicist

PFL/HV/hv

Distribution: Addressee (electronic)





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## **1. INTRODUCTION**

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the SVC Sun Crest project located in Alpine, California (Figure 1). Specifically, our survey consisted of performing five P-wave refraction traverses, one refraction microtremor (ReMi) profile, and electrical resistivity soundings at four test locations at the subject site. The purpose of our study was to characterize the subsurface conditions in the study area. This data report presents our survey methodology, equipment used, analysis, and results.

## **2. SCOPE OF SERVICES**

Our scope of services included:

- Performance of five seismic P-wave refraction lines: SL-1 through SL-5.
- Performance of one ReMi profile: R-1.
- Performance of electrical resistivity soundings at four locations: RL-1 through RL-4.
- Compilation and analysis of the data collected.
- Preparation of this illustrated data report presenting our results.

## **3. SITE DESCRIPTION AND PROJECT DESCRIPTION**

The subject site is generally located near the west end of Bell Bluff Truck Trail, just east of it's intersection with Japatul Valley Road in Alpine, California (Figure 1). The seismic survey was conducted along the north side of an asphalt paved access road. The profiles were conducted generally from west to east. The electrical resistivity soundings were conducted in an open field south of the access road. Figures 2a through 2d and Figures 3a and 3b depict the locations of the lines as well as the general site conditions.

Based on our discussions with you, it is our understanding your office is conducting a geotechnical evaluation of the site for the proposed excavation of an electrical trench along the access road, and the construction of a new substation in the open field south of the access road. The results of our survey will be used in the design and construction of the project.



## 4. SURVEY METHODOLOGY

As previously indicated, the primary purpose of our services was to characterize the subsurface conditions at pre-selected locations through the collection of seismic and electrical resistivity data. The following sections provide an overview of the methodologies used during our study.

### 4.1 P-wave Refraction Survey

The seismic refraction method uses first-arrival times of refracted seismic waves to estimate the thicknesses and seismic velocities of subsurface layers. Seismic P-waves (compression waves) generated at the surface are refracted at boundaries separating materials of contrasting velocities. These refracted seismic waves are then detected by a series of surface vertical component 14-Hz geophones, and recorded with a 24-channel Geometrics Geode seismograph. The travel times of the seismic P-waves are used in conjunction with the shot-to-geophone distances to obtain thickness and velocity information of the subsurface materials. In general, the effective depth of evaluation for a seismic refraction traverse is approximately one-third to one-fifth the length of the traverse. The refraction method requires that subsurface velocities increase with depth. A layer having a velocity lower than that of the layer above will not generally be detectable by the seismic refraction method and, therefore, could lead to errors in the depth calculations of subsequent layers. In addition, lateral variations in velocity, such as those caused by buried boulders, fractures, dikes, etc. can result in the misinterpretation of the subsurface conditions.

Five 125-foot long seismic traverses, SL-1 through SL-5, were conducted in the area of the proposed electrical trench. Multiple shot points (signal generator locations) were conducted at the ends and intermediate points along the lines. The P-wave signal (shot) was generated using a 20-pound hammer and an aluminum plate. The locations of the profiles, which were selected by your office, are depicted on Figures 2a through 2d.

In general, the seismic P-wave velocity of a material can be correlated to rippability (see Table 1 below), or to some degree “hardness.” Table 1 is based on published information from the Caterpillar Performance Handbook (Caterpillar, 2011) as well as our experience with similar materials, and assumes that a Caterpillar D-9 dozer ripping with a single shank is used. We emphasize that the cutoffs in this classification scheme are approximate and that rock characteristics, such as fracture spacing and orientation, play a significant role in determining rock quality or rippability.

Table 1 – Rippability Classification	
Seismic P-wave Velocity	Rippability
0 to 2,000 feet/second	Easy
2,000 to 4,000 feet/second	Moderate
4,000 to 5,500 feet/second	Difficult, Possible Blasting
5,500 to 7,000 feet/second	Very Difficult, Probable Blasting
Greater than 7,000 feet/second	Blasting Generally Required



## **4.2 ReMi Survey**

The refraction microtremor technique uses recorded surface waves (specifically Rayleigh waves) which are contained in the background noise to develop a shear wave velocity profile of the site down to a depth, in this case, up to approximately 75 feet. Fifteen records, 32 seconds long were collected with a 24-channel Geometrics Geode seismograph and 4.5-Hz vertical component geophones. Unlike the refraction method, described above, the ReMi method does not require an increase of material velocity with depth. Therefore, low velocity zones (velocity inversions) are detectable with ReMi. The depth of exploration is dependent on the length of the line and the frequency content of the background noise. The results of the ReMi method are displayed as a one dimensional sounding which represents the average condition across the length of the line.

One ReMi line (R-1) was conducted along refraction line SL-1. The purpose of R-1 was to obtain additional subsurface data in this area, since there was a potential for interference from the presence of a storm drain line and nearby asphalt road.

## **4.3 Electrical Resistivity Survey**

Electrical resistivity data were collected at four test locations selected by your office. The data were collected in general accordance with ASTM G57 using an Advanced Geosciences, Inc. (AGI) MiniSting earth resistivity meter and four stainless steel electrodes in a Wenner configuration. The MiniSting can generate up to 800 volts (V) and 500 milliamps (mA) and allows for the direct measurement of resistance. Soil resistance measurements were collected at electrode spacings of approximately 2, 3, 5, 7, 10, 20, 30, 50, 70, 100 and 200 feet. Stainless steel electrodes were hammered into place and the soils surrounding the electrodes were moistened with water where necessary. The soundings were performed along four different orientations in order to assess possible lateral variations in resistivity. Figure 2d illustrates the approximate locations of the lines.

# **5. DATA ANALYSIS**

The following sections provide a summary of our data analysis.

## **5.1 P-wave Refraction Data**

The collected P-wave refraction data were processed using SIPwin (Rimrock Geophysics, 2003), a seismic interpretation program, and analyzed using SeisOpt Pro (Optim, 2008). SeisOpt Pro uses first arrival picks and elevation data to produce subsurface velocity models through a nonlinear optimization technique called adaptive simulated annealing. The resulting velocity model provides a tomography image of the estimated geologic conditions. Both vertical and lateral velocity information is contained in the tomography model. Changes in layer velocity are revealed as gradients rather than discrete contacts, which typically are more representative of actual conditions. Figures 4a through 4e presents the results from the P-wave refraction survey.



### **5.2 ReMi Survey**

Collected ReMi data were processed using SeisOpt® ReMi™ software (Optim, 2005), which uses the refraction microtremor method (Louie, 2001). The program generates phase-velocity dispersion curves for each record and provides an interactive dispersion modeling tool where the users determines the best fitting model. The result is a one-dimensional shear-wave velocity model of the site with roughly 5 to 15 percent accuracy. Figure 5 displays the results for R-1.

### **5.3 Electrical Resistivity Survey**

The resistivity results are presented on Figure 6. In general, the quality of the collected data is very good. The standard deviation between multiple readings is 0.3 percent or less.

## **6. RESULTS**

The purpose of our evaluation was to characterize the subsurface conditions and to provide parameters for use in the design and construction of the proposed project through the collection of seismic and electrical data. The results from our P-wave refraction, ReMi, and resistivity surveys are presented on Figures 4a through 4e, Figure 5, and Figure 6, respectively. In addition, the ReMi results are shown on Table 2.

The P-wave and ReMi models reveal distinct layers/zones in the near surface that likely represent fill soil overlying bedrock with varying degrees of weathering. Some vertical and lateral velocity variations are evident in the P-wave models. These inhomogeneities are likely related to the presence of boulders, intrusions and differential weathering of the bedrock. It is also evident in the P-wave models that the depth to bedrock varies across the site.

As previously indicated, the ReMi data were collected along refraction line SL-1 in order to assess the possible interference from an existing storm rain line and nearby roadway on the seismic data. In general the P-wave and Remi results are somewhat consistent with respect to the depth of bedrock, although the ReMi results reveal a low velocity zone (inversion) roughly between 15 and 20 feet below the ground surface. The specific cause and extent of this inversion is unknown. It should be emphasized that the ReMi survey provides a 1-dimensional model that represents an average across the profile length.

In general, the results of the resistivity survey are fairly consistent along soundings RL-1, RL-3 and RL-4. The results for the shorter spacings along RL-2 reveal the presence of more resistive



material in the near surface. The specific cause of this variation is unknown, but is likely related to changes in geology and/or bioturbation of the near surface soils.

<b>Table 2 – ReMi Results</b>		
<b>Line No.</b>	<b>Depth (feet)</b>	<b>Shear Wave Velocity (feet/second)</b>
RL-1	0 – 3	551
	3 – 5	605
	5 – 8	1,235
	7.5 – 15	1,426
	15 – 21	816
	21 – 43	2,097
	43 – 66	2,247
	66 – 75	4,208

## 7. LIMITATIONS

The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants performing similar tasks in the project area. No warranty, express or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface surveying will be performed upon request.

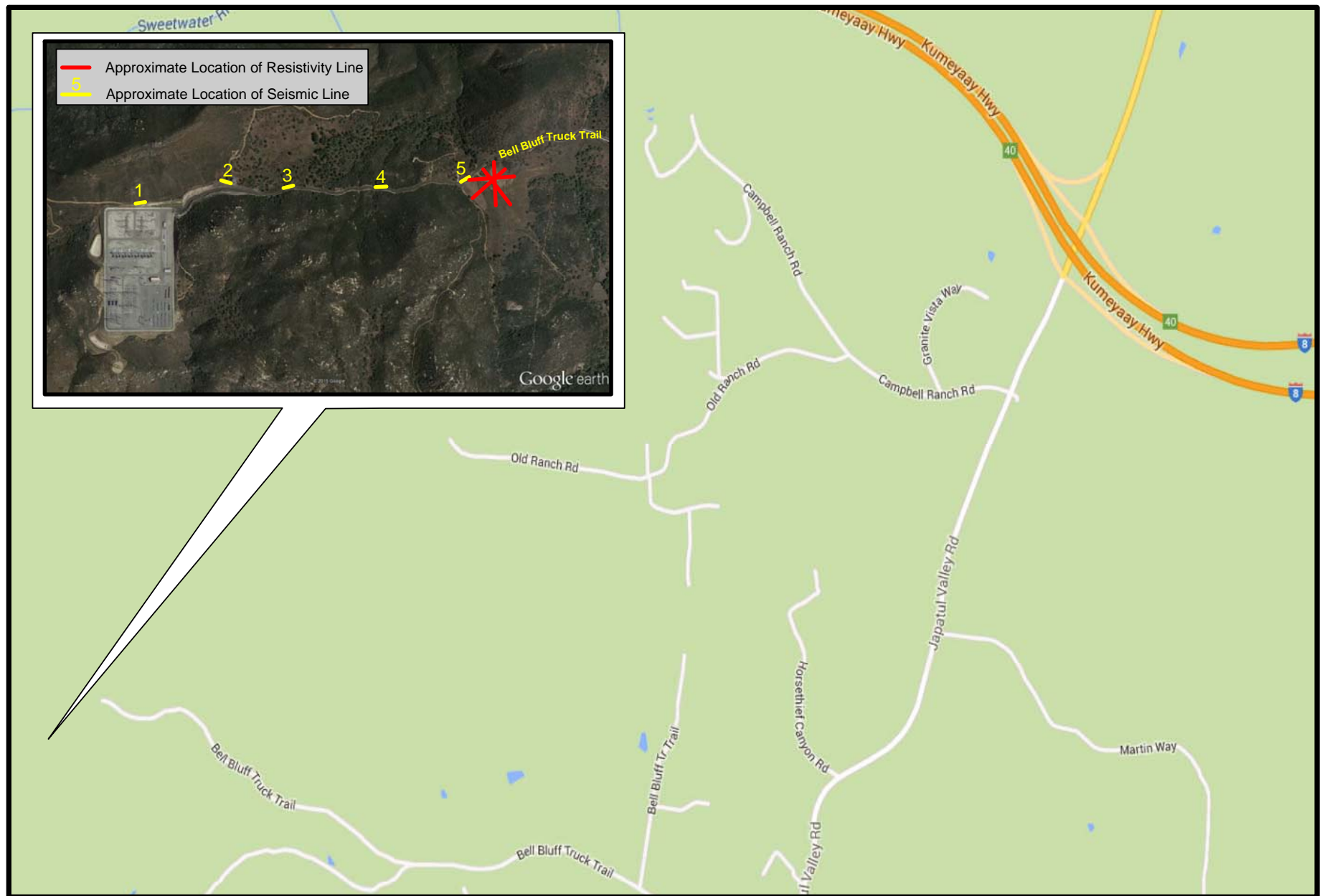
This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophysics, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.



## 8. SELECTED REFERENCES

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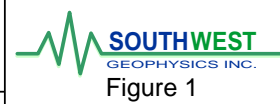
## SITE LOCATION MAP



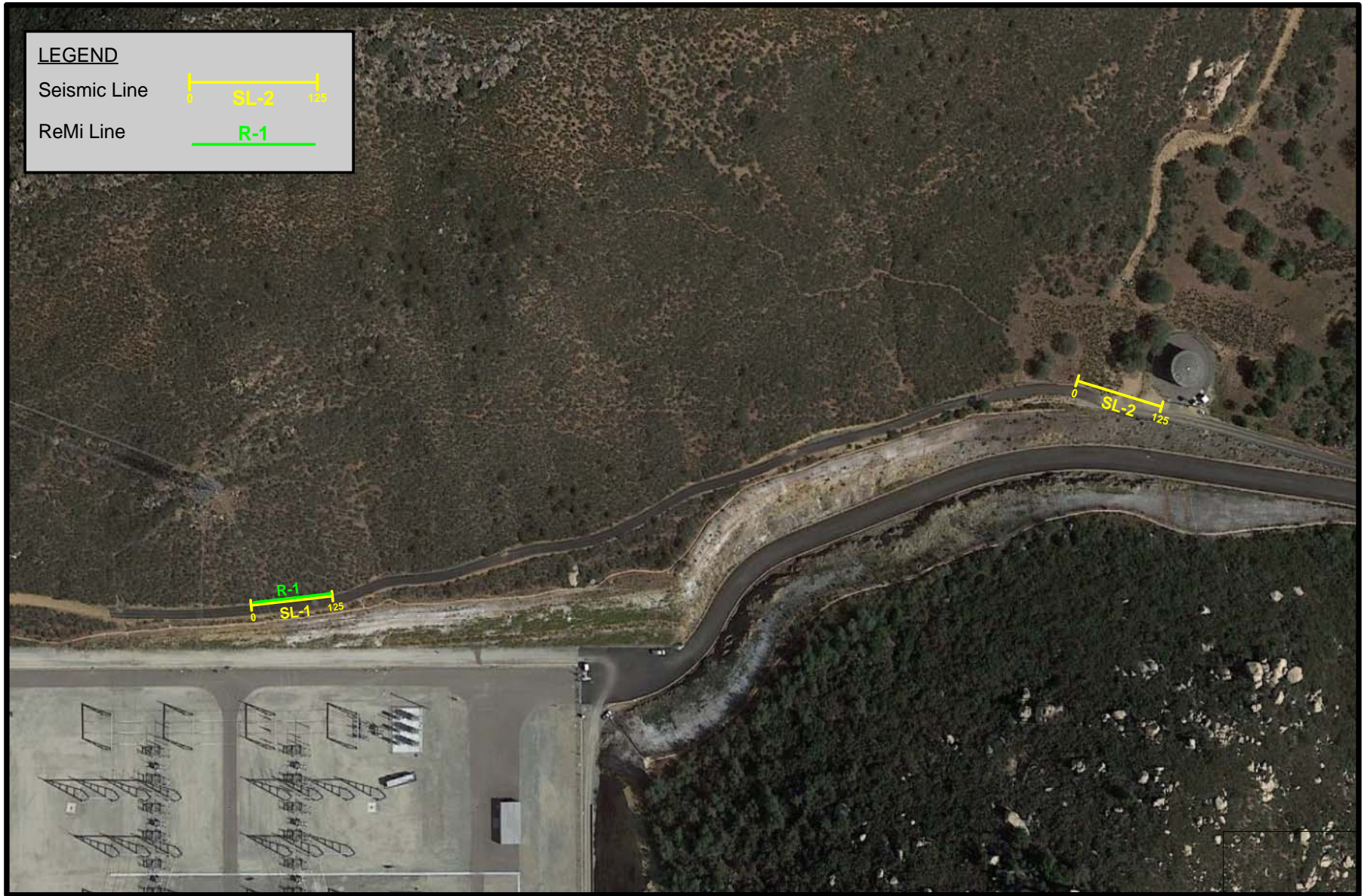
SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15







**LINE LOCATION MAP**  
(SL-1, SL-2, and and R-1)



SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15



Figure 2a

0      200      400  
approximate scale in feet





# **LINE LOCATION MAP** (SL-3)



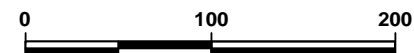
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Alpine, California

Project No.: 115336

Date: 08/15



Figure 2b



approximate scale in feet





## LINE LOCATION MAP (SL-4 and SL-5)



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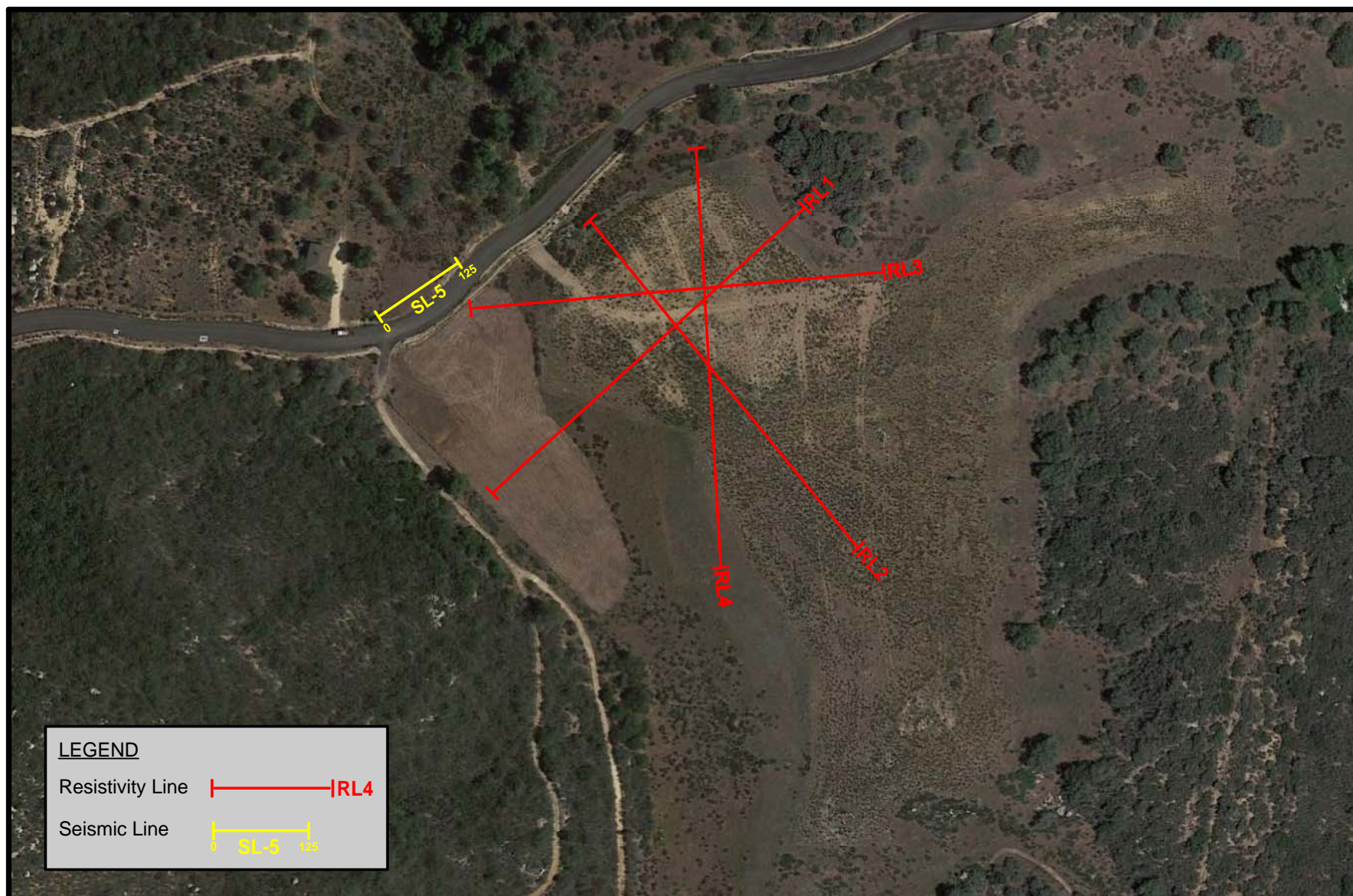
Date: 08/15



Figure 2c

0 200 400  
approximate scale in feet





# **LINE LOCATION MAP** (SL-5 and RL-1 through RL-4)



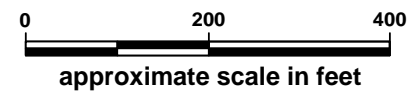
SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15



Figure 2d







## SITE PHOTOGRAPHS

SVC Sun Crest  
Alpine, California

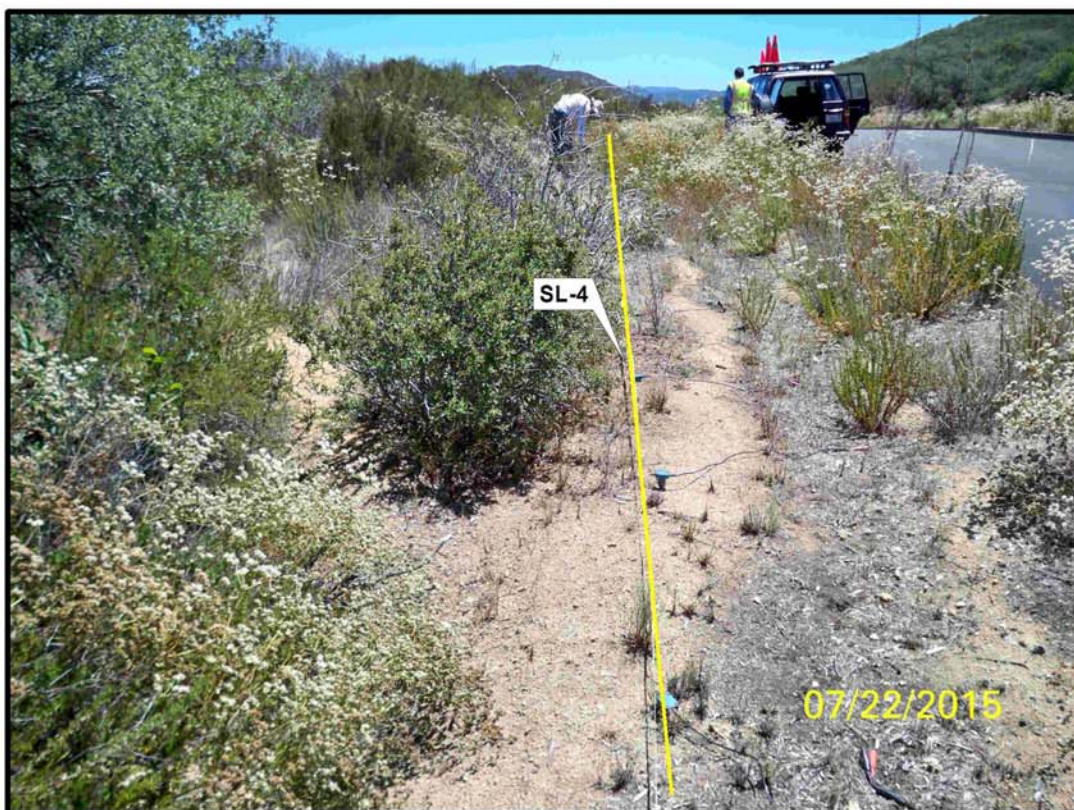
Project No.: 115336

Date: 08/15



Figure 3a





## SITE PHOTOGRAPHS

SVC Sun Crest  
Alpine, California

Project No.: 115336

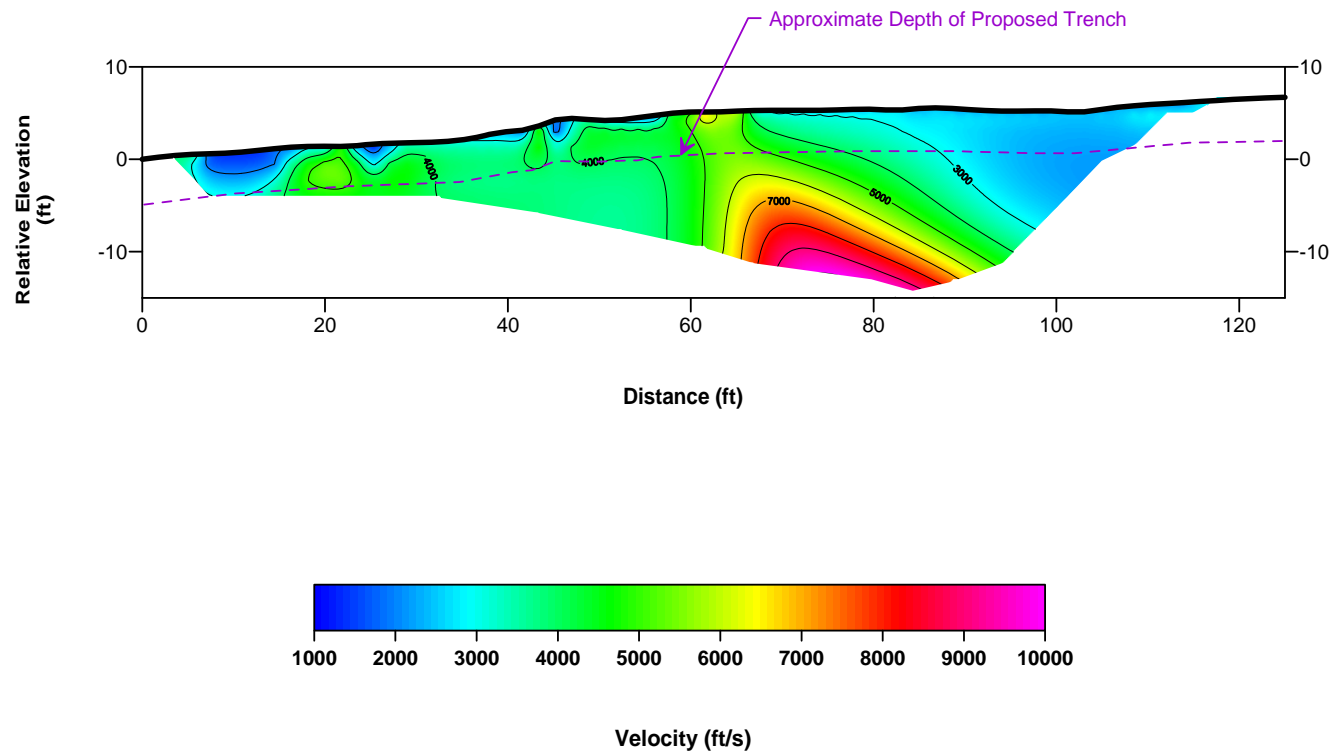
Date: 08/15



Figure 3b



# TOMOGRAPHY MODEL



**SEISMIC PROFILE  
SL-1**

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15

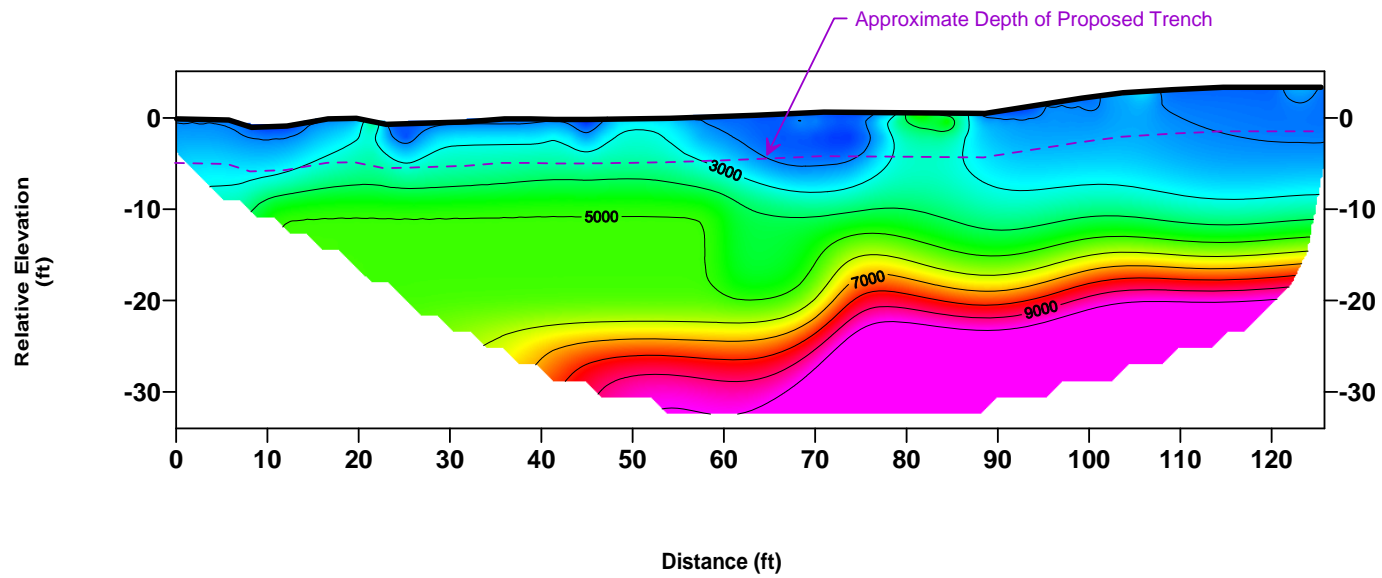


Figure 4a

**Note: Contour Interval = 1,000 feet per second**



# TOMOGRAPHY MODEL



Velocity (ft/s)

**SEISMIC PROFILE  
SL-2**

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15

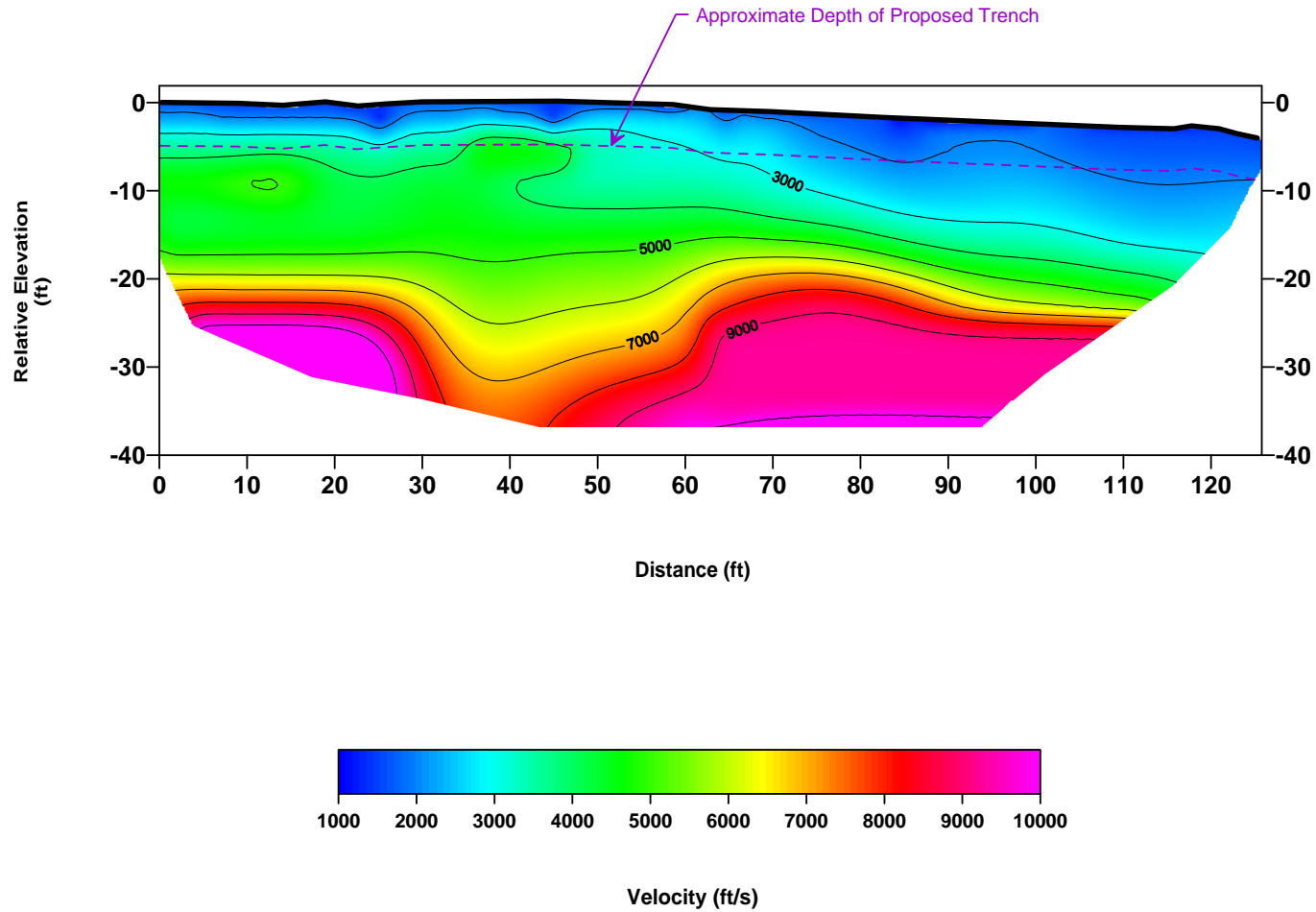


Figure 4b

**Note: Contour Interval = 1,000 feet per second**



# TOMOGRAPHY MODEL



**SEISMIC PROFILE  
SL-3**

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15

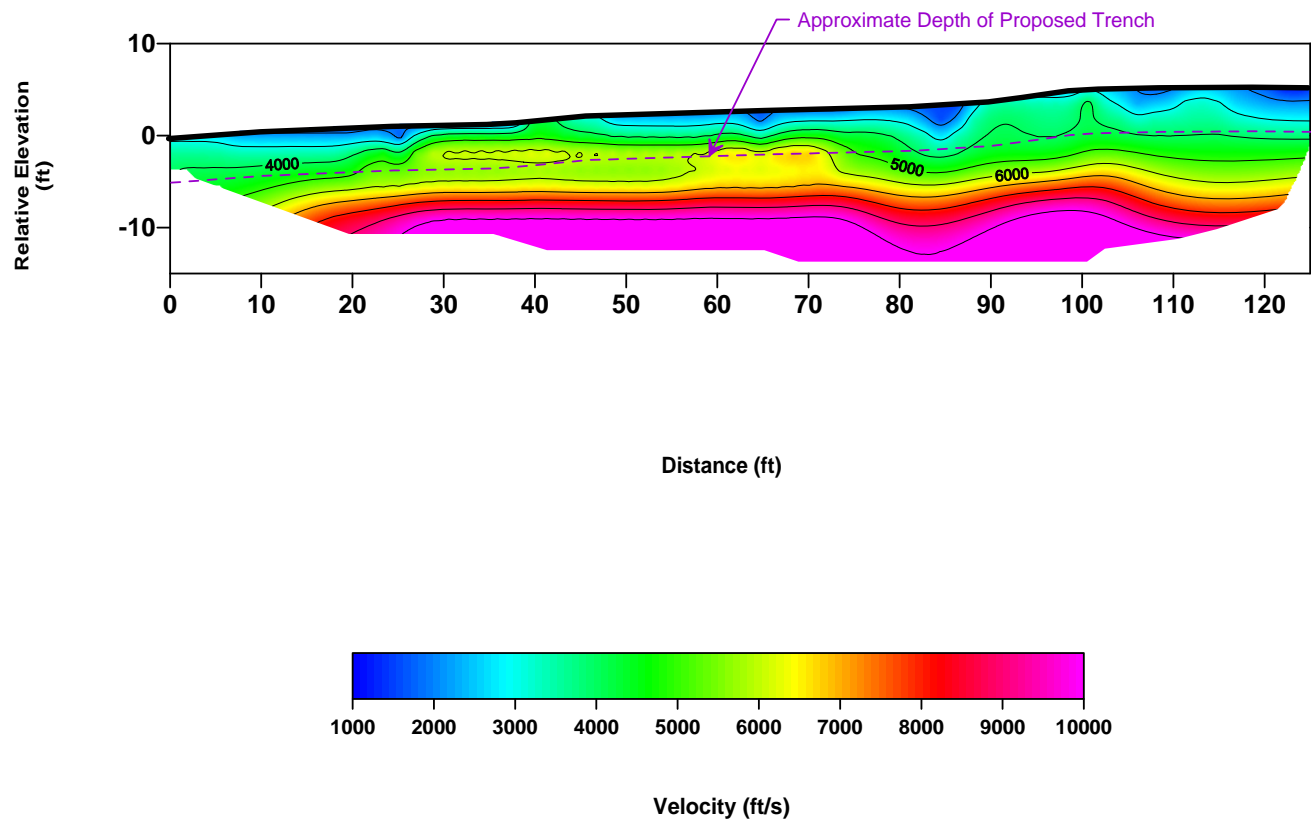


Figure 4c

**Note: Contour Interval = 1,000 feet per second**



# TOMOGRAPHY MODEL



**SEISMIC PROFILE  
SL-4**

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15

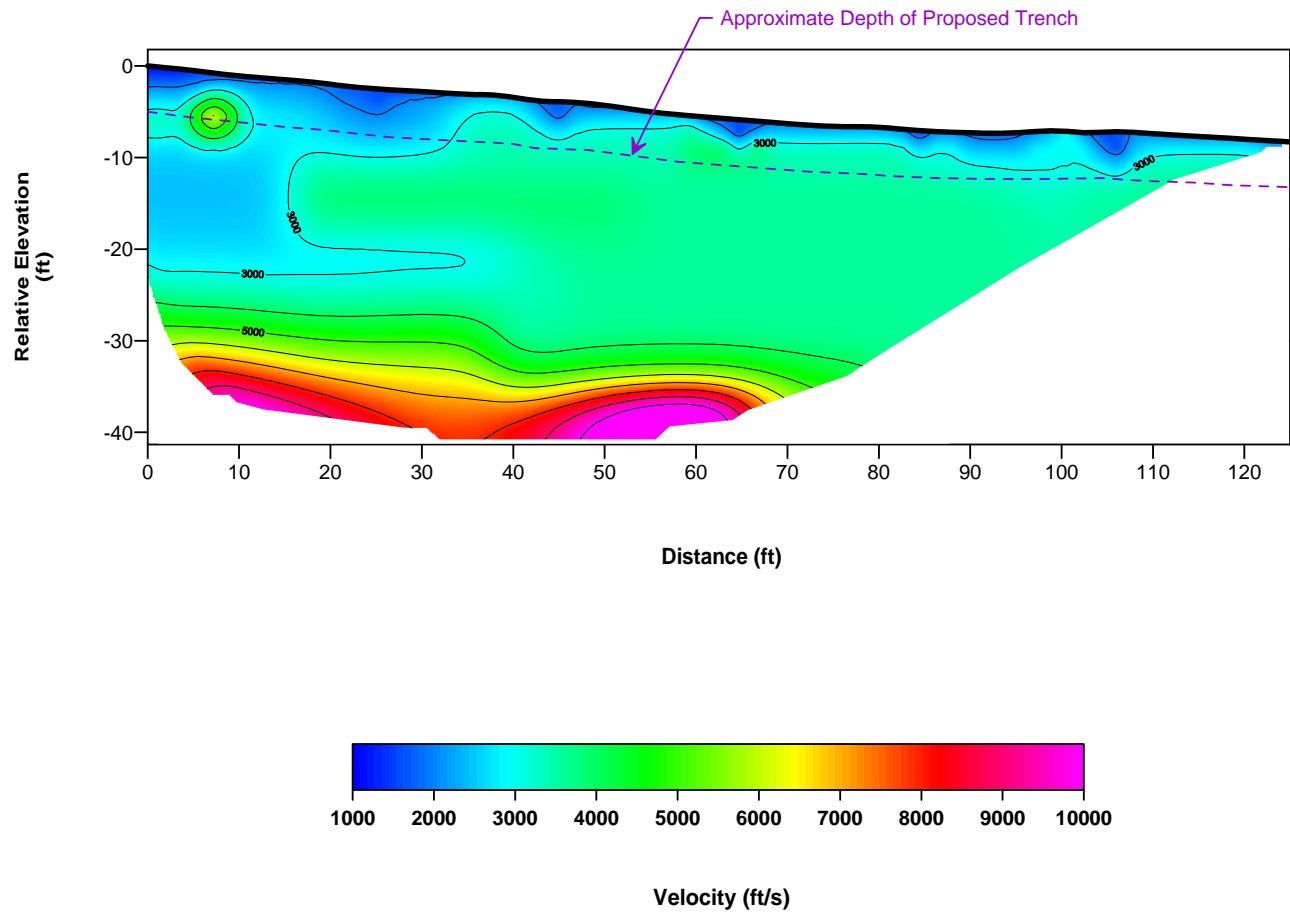


Figure 4d

Note: Contour Interval = 1,000 feet per second



# TOMOGRAPHY MODEL



**SEISMIC PROFILE  
SL-5**

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15

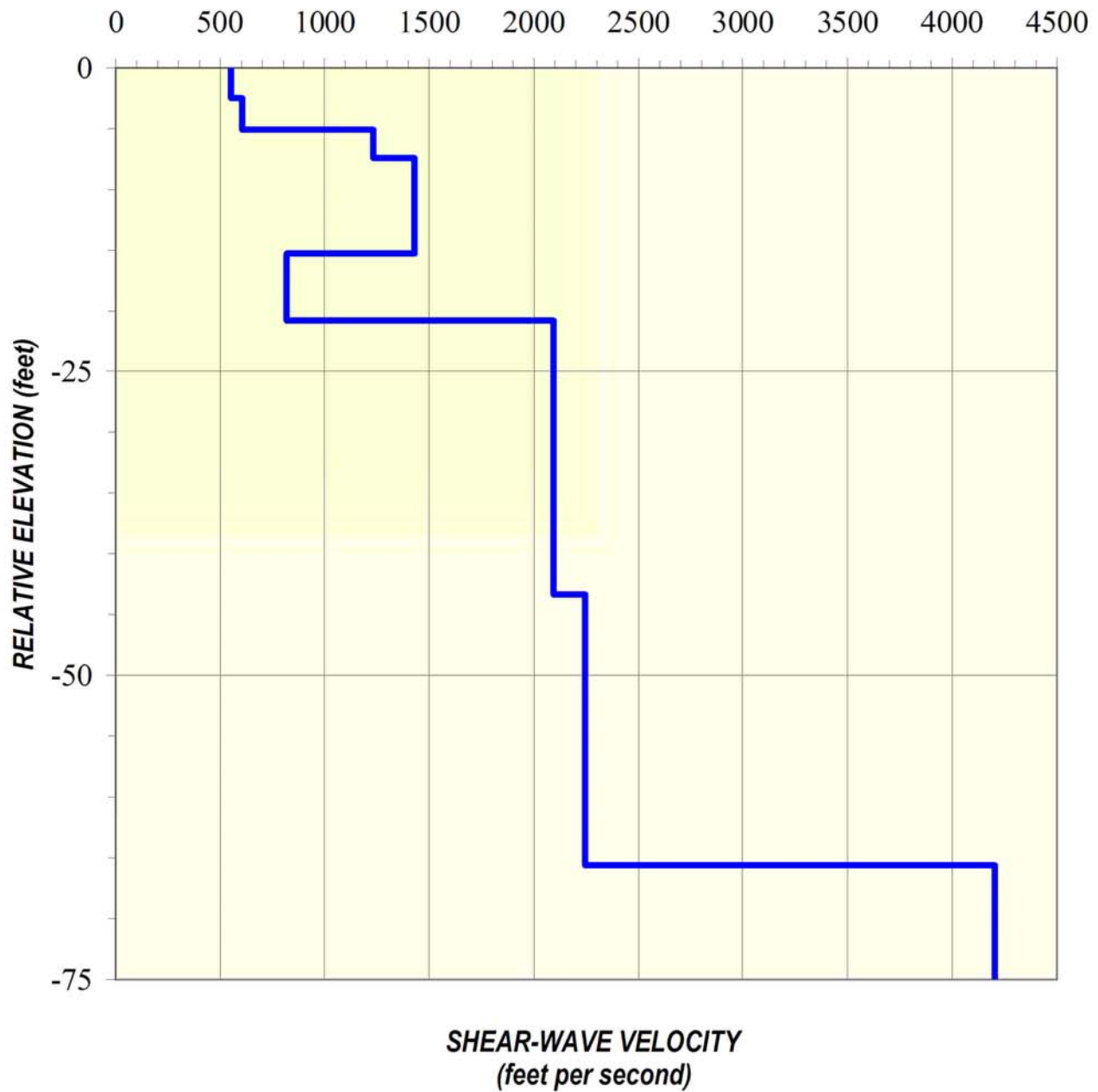


Figure 4e

**Note: Contour Interval = 1,000 feet per second**



## ***Vs Model***



**ReMi RESULTS  
RL-1**

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15



Figure 5



Line No. (Orientation)	Spacing (ft)	Current (mA)	Resistance (Ohms)	Error (%)	Apparent Resistivity	
					(ohm-cm)	(ohm-ft)
RL-1	2	2	54.93	0.1	21039	690
(SW-NE)	3	2	24.42	0.0	14030	460
	5	2	10.25	0.0	9815	322
	7	2	6.03	0.1	8082	265
	10	2	3.74	0.0	7161	235
	20	2	2.01	0.0	7691	252
	30	2	1.81	0.1	10388	341
	50	2	1.74	0.1	16633	546
	70	2	1.82	0.1	24425	801
	100	2	1.88	0.1	36023	1182
	200	2	1.63	0.3	62586	2053
RL-2	2	2	175.80	0.0	67335	2209
(NW-SE)	3	2	108.80	0.0	62509	2051
	5	2	48.33	0.0	46279	1518
	7	2	23.19	0.0	31088	1020
	10	2	11.63	0.0	22273	731
	20	2	5.67	0.0	21714	712
	30	2	4.53	0.0	26021	854
	50	2	3.66	0.0	35008	1149
	70	2	3.17	0.1	42523	1395
	100	2	2.31	0.1	44277	1453
	200	2	1.86	0.0	71395	2342
RL-3	2	2	54.32	0.0	20806	683
(NW-SE)	3	2	38.34	0.0	22028	723
	5	2	16.54	0.0	15838	520
	7	2	11.88	0.0	15926	523
	10	2	6.84	0.1	13105	430
	20	2	3.84	0.1	14689	482
	30	2	3.06	0.0	17558	576
	50	2	2.60	0.2	24868	816
	70	2	2.58	0.1	34600	1135
	100	2	2.52	0.1	48318	1585
	200	2	2.07	0.0	79401	2605
RL-4	2	2	45.37	0.0	17378	570
(NE-SW)	3	2	30.69	0.0	17632	578
	5	2	16.57	0.0	15867	521
	7	2	10.33	0.1	13848	454
	10	2	6.50	0.0	12450	408
	20	2	3.40	0.1	13023	427
	30	2	2.85	0.1	16363	537
	50	2	2.52	0.1	24092	790
	70	2	2.64	0.0	35391	1161
	100	2	2.17	0.0	41635	1366
	200	2	1.45	0.1	55347	1816

## ELECTRICAL RESISTIVITY RESULTS

SVC Sun Crest  
Alpine, California

Project No.: 115336

Date: 08/15



Figure 6



## **Appendix J:**

### **Public Participation and Outreach Effort Materials**

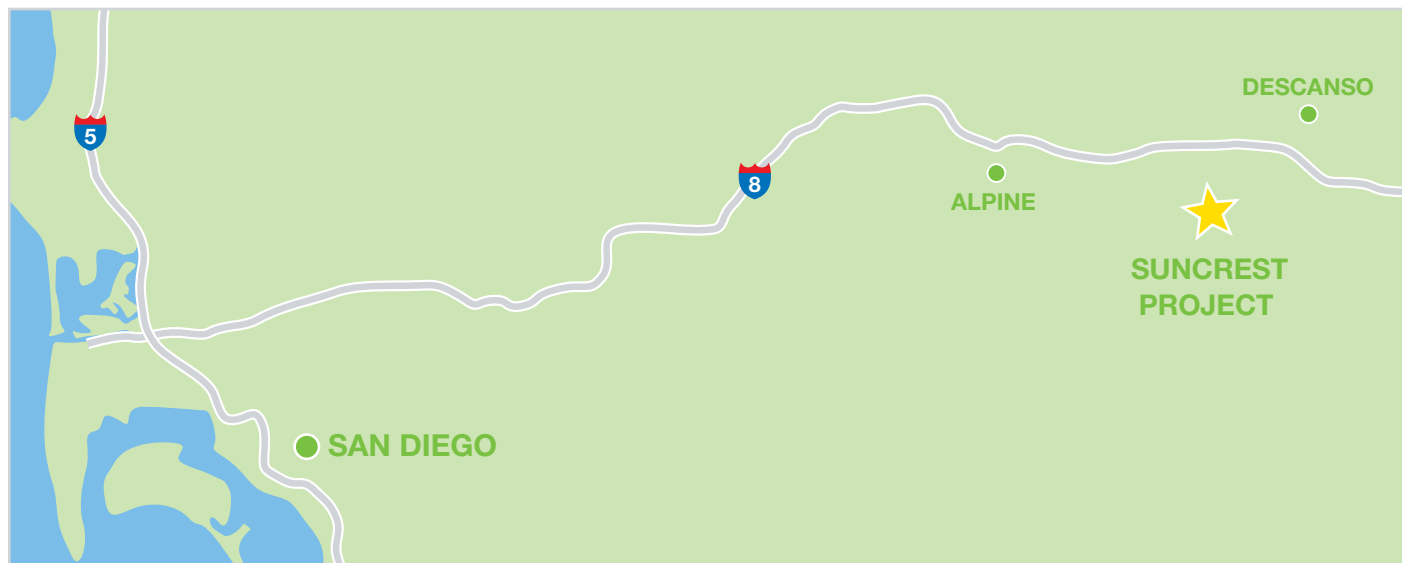


## **Appendix J-1:**

### **Suncrest Dynamic Reactive Support Project Fact Sheet**



# Suncrest Dynamic Reactive Support Project



The location for the proposed Suncrest Dynamic Reactive Support Project is east of San Diego, California.

## Overview

- » Located 30 miles east of San Diego, California on a previously disturbed site
- » To be built, owned and operated by NextEra Energy Transmission West (NEET West)
- » Will include a Static Volt Ampere Reactive Compensator (SVC), a technology that is used throughout the world, including California
- » Will include an approximately one mile, 230-kilovolt (kV) transmission line expected to be undergrounded below an existing roadway
- » An approximately two-acre footprint for the SVC facility on a six-acre site
- » Will interconnect with the existing Suncrest substation owned and operated by San Diego Gas & Electric Company

## Benefits

- » Will improve the integration of renewables into Southern California
- » Will provide greater voltage control and stability
- » Will improve and maintain the reliability of the transmission grid by providing dynamic reactive power support
- » Will meet the project need in a cost-effective manner

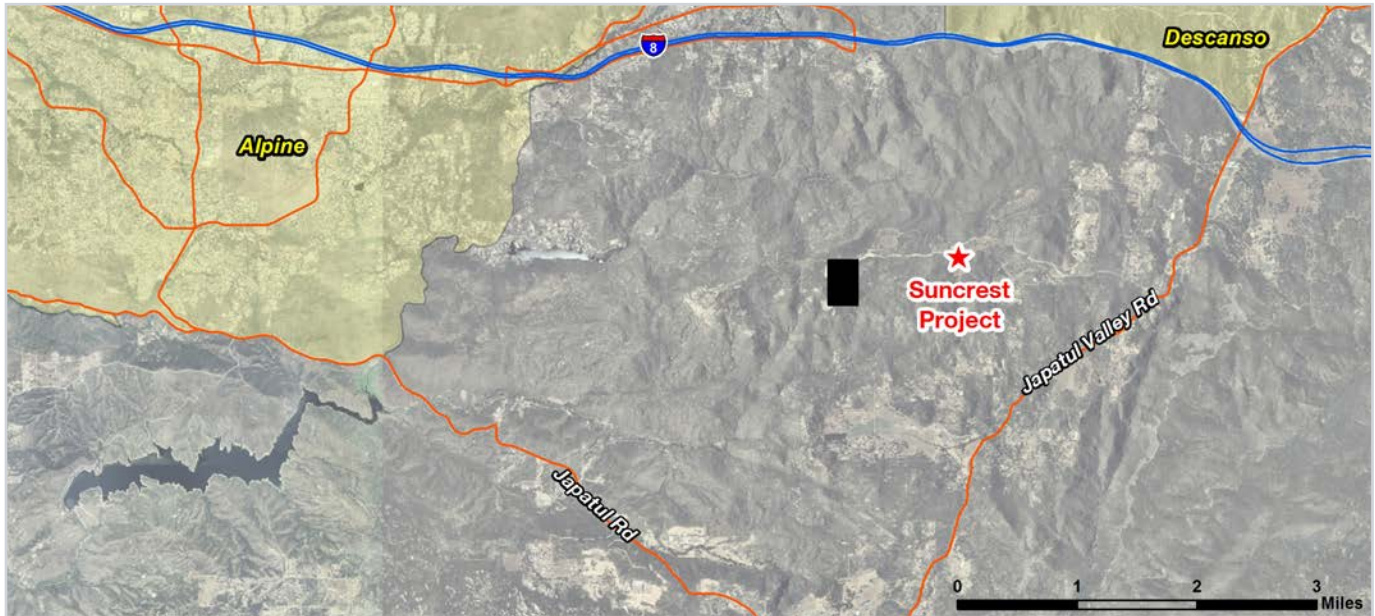
## About NextEra Energy

- » NextEra Energy, Inc. is a leading clean energy company
- » Operates approximately 44,900 megawatts of generating capacity
- » Approximately 13,800 employees in 27 states and Canada

## NextEra Energy Transmission (NEET) is a wholly-owned subsidiary of NextEra Energy

- » World-class transmission construction and operations team
- » Recent construction experience, on time and under budget
- » Awarded the right to develop, finance, construct, own and operate two substation projects in California through its subsidiary, NEET West





## Project Need

- » CAISO's 2013-2014 transmission plan identified a policy-driven need for dynamic reactive power support connected to the Suncrest substation 230 kV bus to meet the 33 percent California Renewable Portfolio Standard
- » CAISO governing board approved the Suncrest 230 kV 300 MVar dynamic reactive power support project on March 25, 2014 as part of its approval of the 2013-2014 transmission plan

## Selection Process

- » The CAISO Tariff specifies that the CAISO's transmission planning process must include a competitive solicitation process for new, stand-alone regional transmission facilities needed for reliability, economic, and/or public policy driven reasons
- » CAISO determined that the Suncrest Project was eligible for competitive solicitation
- » In January 2015, CAISO selected NEET West as the Approved Project Sponsor to finance, construct, own, operate, and maintain the Suncrest Project
- » CAISO selection report can be found at:  
<http://www.caiso.com/Documents/SuncrestProjectSponsorSelectionReport.pdf>

## Regulatory/Permitting Process

- » California Public Utilities Commission (CPUC) has jurisdiction over the Suncrest Project
- » Suncrest Project will be evaluated under two separate, but parallel paths per CPUC procedures
  - Certificate of Public Convenience and Necessity (CPCN) for project need and costs
  - California Environmental Quality Act (CEQA) for environmental review

## Next Steps

- » NEET West expected to file its CPCN application and Proponent's Environmental Assessment (PEA) with the CPUC late this summer
- » CPUC will conduct scoping meetings following NEET West's application being deemed complete

## Project Schedule

NEET West Suncrest Project	2014	2015	2016	2017
CAISO Solicitation	■			
Engineering/Permitting		■		
Construction			■	



## **Appendix J-2:**

### **Alpine Community Planning Group Meeting Poster**







**Appendix J-3:**  
**Informational Open House Mailer**



# What is the Suncrest Dynamic Reactive Support Project?

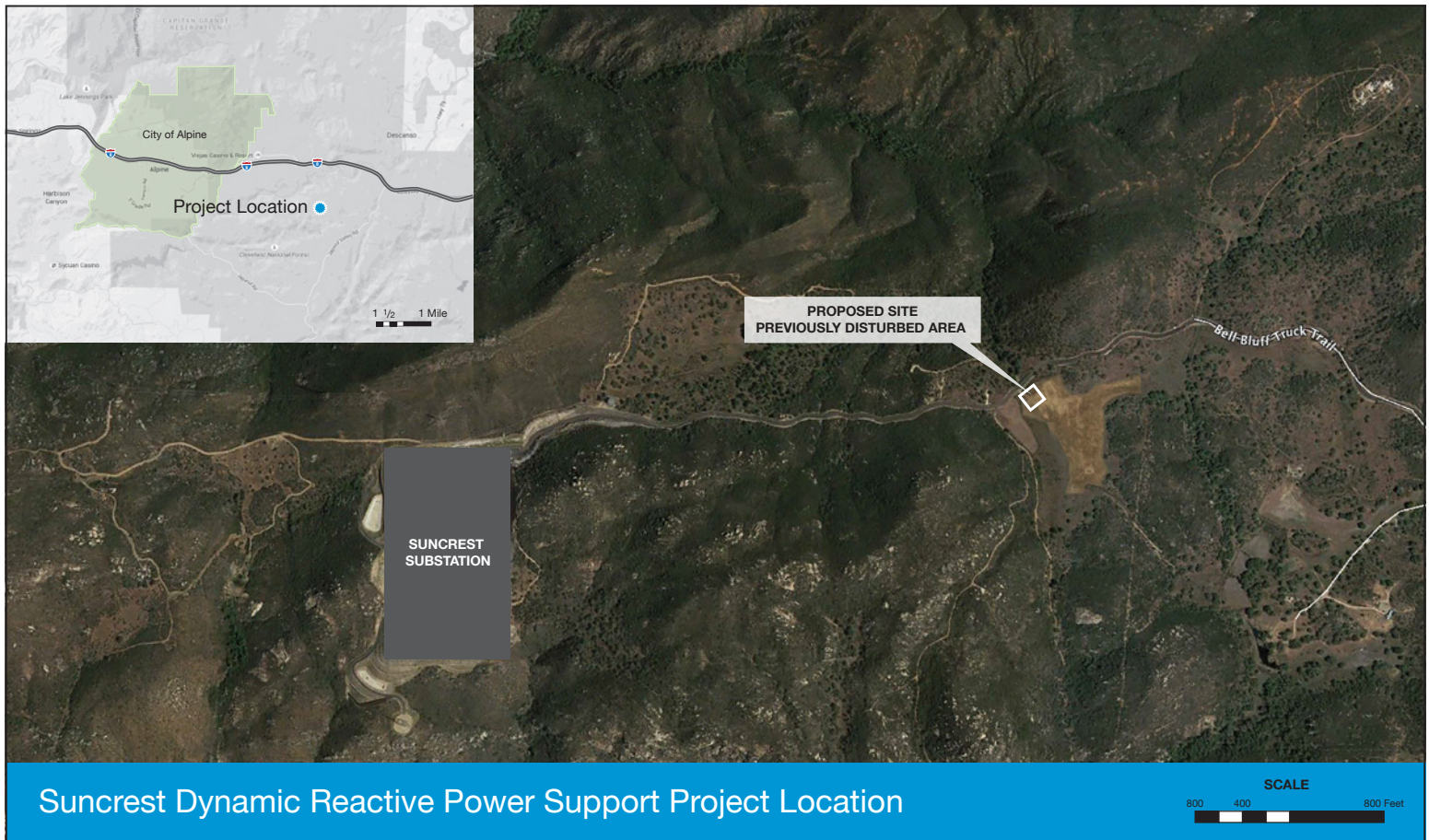
The Suncrest Project will provide voltage support for the electric transmission system and enhance the ability to bring more renewable energy into Southern California. The project will be built, owned, and operated by NextEra Energy Transmission West, a leader in developing and operating energy transmission assets. The project consists of a new transmission facility that will interconnect with SDG&E's existing Suncrest substation.

## The Suncrest Project includes:

- » Static Volt Ampere Reactive Compensator (SVC) to provide greater voltage control and stability (transmission solution that looks like a small substation)

- » SVC facility constructed on a previously disturbed six-acre site
- » A one-mile 230 kilovolt (kV) transmission line to be constructed underground beneath an existing road
- » Construction expected to start in the Fall of 2016 with commercial operation in June 2017

Members of the NextEra Energy project team and consultants will be at the Informational Open House to discuss the project, and will be available to answer your questions. We hope you will set aside this time to join us. Your input during the planning process is important to us.



## Event Information

**Informational Open House**  
**August 4, 2015, 6:00-8:00pm**

Alpine Community Center, 1830 Alpine Blvd., Alpine, CA 91901  
Light appetizers and refreshments will be served

For more information, please contact us at: [SuncrestProject@NextEraEnergy.com](mailto:SuncrestProject@NextEraEnergy.com)



NextEra Energy Transmission  
P.O. Box 14000  
Juno Beach, FL 33408-0420

**Informational  
Open House**

**Learn More  
Inside!**

# Please Join Us

To Learn About the Suncrest Dynamic Reactive Support Project



August 4, 2015 from 6:00-8:00 pm  
Alpine Community Center, 1830 Alpine Boulevard, Alpine CA



**Appendix J-4:**  
**Informational Open House Mailing List**



#### Appendix J-4. Informational Open House Mailing List

Owner Names			Owner Address	City/State	Zip Code
VIEJAS BAND OF KUMEYAAY INDIANS ET AL			1 VIEJAS GRADE RD	ALPINE CA	91901
MARY T MAYORS REVOCABLE TRUST 01-25-05			1088 STAGE COACH TRL	JULIAN CA	92036
KATHRYN JUST REVOCABLE TRUST 06-27-01			1163 AVOCADO SUMMIT DR	EL CAJON CA	92019
RICHARD T FASSO TRUST 04-27-09			11734 SHADOW VALLEY RD	EL CAJON CA	92020
ROBERT K HANCOCK 11-05-04			1190 DAWN RIDGE AVE	EL CAJON CA	92021
RICHARD & PATRICIA DEBUSK FAMILY TRUST 05-07-03			1231 BERMUDA LN	EL CAJON CA	92021
FEDERAL NATIONAL MORTGAGE ASSN			135 N LOS ROBLES AVE #300	PASADENA CA	91101
RAYMOND A JR PINHO			137 BRUCE DR	MANAHAWKIN NJ	08050
NELS T CHRISTENSEN REVOCABLE TRUST 02-08-00			1380 EL CAJON BLVD #220	EL CAJON CA	92020
JAMES C & ANITA L PICKENS 2004 TRUST 04-15-04			13883 MARBOK WAY	JAMUL CA	91935
ROBERT S ARCHIBALD			1402 N MAGNOLIA AVE	EL CAJON CA	92020
LANCE P LYONS			14213 HILLSIDE DR	JAMUL CA	91935
HERNANDEZ FAMILY TRUST 05-08-06			14539 RANCHO JAMUL DR	JAMUL CA	91935
DONALD A & CLARICE M NIRSCHL LIVING TRUST 04-14-92			14717 CAMINITO MAR DE PLATA	DEL MAR CA	92014
THOMAS F & DENINE L MORIARTY			1561 CONWAY DR	ESCONDIDO CA	92027
MARK T KOSSYTA &			1623 CUYAMACA AVE	SPRING VALLEY	91977



Owner Names			Owner Address	City/State	Zip Code
KIMBERLEE ADAMS				CA	
CARIN HOWARD	ALFRED D HINKLE JR		1625 FERN ST	SAN DIEGO CA	92102
SCOTT PRILL			1648 FARLIN RD	ALPINE CA	91901
RANDY R & LINDA G TORRES			1681 FARLIN RD	ALPINE CA	91901
WILSON FAMILY TRUST 02-25-00			1683 FARLIN RD	ALPINE CA	91901
MCKEAN NATURAL GAS CO			2026 W CALIFORNIA ST	SAN DIEGO CA	92110
LUMSDEN LIVING TRUST 04-06-10			2059 GARFIELD RD	SAN DIEGO CA	92110
ROBERT B & SHARON L BEALE REVOCABLE 2013 TRUST 07-25-13	ROBERT S BEALE		21912 JAPATUL LN	ALPINE CA	91901
BORCHARD ESTATE TRUST 10-13-95			21916 JAPATUL LN	ALPINE CA	91901
CHARLES BIXBY			22150 JAPATUL LN	ALPINE CA	91901
JAMIE G & LENORE SEPARATE PROPERTY TRUST 08-02-06			22340 JAPATUL VALLEY RD	ALPINE CA	91901
RON & CATHARINA M VANLEEUEWEN			22356 JAPATUL LN	ALPINE CA	91901
BROC N & MARISOL R THORN			22362 JAPATUL LN	ALPINE CA	91901
KELLY M & CARRIE L HAWES			22405 JAPATUL LN	ALPINE CA	91901
JOHN WIEDENFELD LIVING TRUST 01-16-08			22501 VISTA ESPERANZA LN	ALPINE CA	91901
ROBERT LEE JONES			22680 JAPATUL LN	ALPINE CA	91901
HALL FAMILY TRUST 11-05-04			22750 ILLAHEE DR	ALPINE CA	91901
RONALD S & ALLISON J ROBINSON			22775 JAPATUL VALLEY RD	ALPINE CA	91901
ESTEBAN A LOPEZ			22779 JAPATUL VALLEY RD	ALPINE CA	91901



Owner Names			Owner Address	City/State	Zip Code
LOIS J THIEL DOUGLAS A THIEL			22920 ILLAHEE DR	ALPINE CA	91901
MICHAEL J ABBOTT			22970 JAPATUL VALLEY RD	ALPINE CA	91901
DAVID V & PATRICIA L NUNES			22975 JAPATUL RD	ALPINE CA	91901
VERNON E & KELLY A MORTENSEN FAMILY 2011 TRUST 08-30-11			23002 JAPATUL VALLEY RD	ALPINE CA	91901
CASTELLAW FAMILY TRUST 06-14-00			23008 OLD RANCH RD	ALPINE CA	91901
SARONA L COLE-OLIVARES			23030 OLD RANCH RD	ALPINE CA	91901
DAVID MELLNER			23085 OLD RANCH RD	ALPINE CA	91901
DENNIS & LENORE DUNSON LIVING TRUST 05-01-06			23146 OLD RANCH RD	ALPINE CA	91901
JOHN & JANET PRUITT			23188 OLD RANCH RD	ALPINE CA	91901
RICHARD SWAN			23227 ILLAHEE DR	ALPINE CA	91901
DOBLADO LIVING TRUST 07-27-09			23250 OLD RANCH RD	ALPINE CA	91901
RONALD KEITH & PATRICIA ANN JOHNSON LIVING TRUST 04-18-96 ET AL			23251 OLD RANCH RD	ALPINE CA	91901
JANIS A REVOCABLE TOBEY TRUST 12-02-98	JANIS A TOBEY TRUST 12-02-98		23251 OLD RANCH RD	ALPINE CA	91901
SAMUEL C & LORI J BLEDSOE			23377 ILLAHEE DR	ALPINE CA	91901
RICHARD P & SHAUNA A STARK			23410 OLD RANCH RD	ALPINE CA	91901
JAMES JENSEN			23425 TRAPPERS HOLLOW RD	ALPINE CA	91901
DARRIN P & JEAN F GOODWIN			23428 JAPATUL VALLEY RD	ALPINE CA	91901
SMITH FAMILY TRUST 02-18-			23441 JAPATUL VALLEY	ALPINE CA	91901



Owner Names			Owner Address	City/State	Zip Code
03			RD		
FINCH TRUST 09-20-07			23444 JAPATUL VALLEY RD	ALPINE CA	91901
LEO J FLYNN JR			23449 TRAPPERS HOLLOW RD	ALPINE CA	91901
EDWARD P SCHLOEDER	CANDICE L NAGEL		23453 JAPATUL VALLEY RD	ALPINE CA	91901
ERIN L FEARS			23465 JAPATUL VALLEY RD	ALPINE CA	91901
MICHAEL A & KARRIE L CHAREST			23469 JAPATUL VALLEY RD	ALPINE CA	91901
JASON W FIELDS			23471 JAPATUL VALLEY RD	ALPINE CA	91901
NICOLE HOULIHAN			23475 JAPATUL VALLEY RD	ALPINE CA	91901
STEVEN W & CRISTEN L CARVER			23475 TRAPPERS HOLLOW RD	ALPINE CA	91901
MATHEW & LAURA C NICOLAYSEN			23479 JAPATUL VALLEY RD	ALPINE CA	91901
BRENDA L FOSTER	POLK TODD A		23480 JAPATUL VALLEY RD	ALPINE CA	91901
AXEL & SASHA NIELSEN			23485 JAPATUL VALLEY RD	ALPINE CA	91901
DAVID M & KATHLEEN A DOWNS			23487 JAPATUL RD	ALPINE CA	91901
LOUIS 2007 TRUST 04-05-07			23489 JAPATUL VALLEY RD	ALPINE CA	91901
BARNEY & PINEDA LUZ BARTELLE			23491 JAPATUL VALLEY RD	ALPINE CA	91901
CHARLES LANCEY			23497 JAPATUL VALLEY RD	ALPINE CA	91901



Owner Names			Owner Address	City/State	Zip Code
JAMES & DEBORAH HAYES			23499 TRAPPERS HOLLOW RD	ALPINE CA	91901
RODNEY & SANDRA L MOMINEE			23505 JAPATUL VALLEY RD	ALPINE CA	91901
SHERRON I MCVAY			23509 BELL BLUFF TRUCK TRL	ALPINE CA	91901
ANG FAMILY SURVIVORS 2002 TRUST			23510 BELL BLUFF TRUCK TRL	ALPINE CA	91901
RUSSELL C HEYL			23512 BELL BLUFF TRUCK TRL	ALPINE CA	91901
ELIZABETH A PARKER			23516 BELL BLUFF TRUCK TRL	ALPINE CA	91901
GORDON P & LORA J MORRIS			23522 BELL BLUFF TRUCK TRL	ALPINE CA	91901
MONICA COLEMAN			23523 OLD RANCH RD	ALPINE CA	91901
JAMES A & LYNN L SMITH			23524 BELL BLUFF TRUCK TRL	ALPINE CA	91901
JOHN E & BELINDA L BENSON TRS			23526 BELL BLUFF TRUCK TRL	ALPINE CA	91901
MICHAEL L & PATRICIA G THORPE TRUST 05-09-03			23531 OLD RANCH RD	ALPINE CA	91901
ANTHONY G & GEORGINA WEGNER			23609 JAPATUL VALLEY RD	ALPINE CA	91901
NICHOLAS G & CHRISTINE M SMITH			23613 JAPATUL VALLEY RD	ALPINE CA	91901
KEVIN & MONICA COLEMAN	KRISTINA COLEMAN		23613 OLD RANCH RD	ALPINE CA	91901
WILLIAM L & JEANNE C PITTMAN			23615 JAPATUL VALLEY RD	ALPINE CA	91901
BROWN FAMILY 2011 TRUST 04-21-11			23617 JAPATUL VALLEY RD	ALPINE CA	91901
STEPHEN C & MARY J TUCKER			23648 OLD RANCH RD	ALPINE CA	91901



Owner Names			Owner Address	City/State	Zip Code
JOHN D & JULIE A WILSON			23658 OLD RANCH RD	ALPINE CA	91901
GERALD R & DOROTHY INGRAM			23705 JAPATUL VALLEY RD	ALPINE CA	91901
HANSEN FAMILY TRUST 03-01-95			23758 JAPATUL VALLEY RD	ALPINE CA	91901
MICHAEL & HOFFA-RYE JENNIFER RYE			23820 JAPATUL VALLEY RD	ALPINE CA	91901
PATRICIA ROCKWOOD			23855 JAPATUL VALLEY RD	ALPINE CA	91901
GAIL A WESTER REVOCABLE TRUST 06-20-11			23861 JAPATUL VALLEY RD	ALPINE CA	91901
JOHN & LUCY OLIVIER			23864 JAPATUL VALLEY RD	ALPINE CA	91901
STEWART FAMILY TRUST 05-27-03			2445 ALPINE BLVD	ALPINE CA	91901
JOHN C & KELLY OMAHEN			2680 ELTINGE DR	ALPINE CA	91901
DAVID D & SONIA O SPAULDING			29474 CLEVELAND FOREST DR	CAMPO CA	91906
GLADYS E WILLIAMSON 2006 TRUST 05-30-06			3155 E VICTORIA DR	ALPINE CA	91901
CARYLYN LANDT TRUST 04-08-98	LANDT FAMILY TRUST 01-25-94 ET AL		3201 HERMAN AVE	SAN DIEGO CA	92104
NAVARRO LIVING TRUST 06-06-07			321 ALPINE TRAIL RD	ALPINE CA	91901
DANIEL P & MARY A CUMMINGS			390 FRONT ST	EL CAJON CA	92020
WADE G VANDUSEN TRUST 04-11-06			3972 ALBATROSS ST #209	SAN DIEGO CA	92103
NIELSEN RANCH TRUST 08-16-93			4186 JACKDAW ST	SAN DIEGO CA	92103
CAROL G CURLEY	MARVIN D TRETAKOFF	MARY C LEE TR	4517 MORAGA AVE	SAN DIEGO CA	92117



Owner Names			Owner Address	City/State	Zip Code
PATRICIA ROCKWOOD			483 JAPATUL VALLEY RD	ALPINE CA	91901
ERICKSON FAMILY TRUST 06-04-90			5 FIRST AMERICAN WAY	SANTA ANA CA	92707
DELVIN C & CHARITY HANSON	C/O DEL HANSON		5 PO BOX	ALPINE CA	91901
LINDA C HEYSER	SCOTT B LACOUR	NEDRA LACOUR	5630 WILLOWS RD	ALPINE CA	91901
JAMES E & LYNDA B GERNER	ROBERT & SIMONE CHAN	STEVEN R & LINDA K SINK ET AL	5706 BALTIMORE DR #373	LA MESA CA	91942
GAIL A WHITE TR	VISTA ESPERANZA RANCHO PARTNERSHIP	C/O WHITE   ROBINSON	591 CAMINO DE LA REINA #616	SAN DIEGO CA	92108
ROOT FAMILY TRUST 08-30-96			6102 JAPATUL VISTA LN	ALPINE CA	91901
FRITZ MARY A 2004 TRUST 03-16-04			6185 ALPINE BLVD	ALPINE CA	91901
ROBERT S & DEVEN WOODY			6187 ALPINE BLVD	ALPINE CA	91901
LAWRENCE R KEYES			6189 ALPINE BLVD	ALPINE CA	91901
LEONARD M NIELSEN LIVING TRUST 11-08-05			6191 ALPINE BLVD	ALPINE CA	91901
SCOTT M & RENEE L CREED			6195 ALPINE BLVD	ALPINE CA	91901
CANDACE L SCHWARTZ			6206 JAPATUL HIGHLANDS RD	ALPINE CA	91901
CURT COPHER			6212 JAPATUL HIGHLANDS RD	ALPINE CA	91901
ALAN J & CHERYL L HALLMARK			6220 JAPATUL HIGHLANDS RD	ALPINE CA	91901
MARVIN L & CARRIE J CHANDLER			6244 JAPATUL HIGHLANDS RD	ALPINE CA	91901
KRAUSIE FAMILY TRUST 12-04-08			6246 JAPATUL VISTA LN	ALPINE CA	91901
KAREN K KUNTZ LIVING	GARY T HOLMES		6248 CAMINITO LUISITO	SAN DIEGO CA	92111



Owner Names			Owner Address	City/State	Zip Code
TRUST 03-27-02					
FRED L CAMERON LIVING TRUST 08-14-96	MARTHA R MANSER		6250 JAPATUL HIGHLANDS RD	ALPINE CA	91901
DANIEL S TRUMAN			6335 JAPATUL HIGHLANDS RD	ALPINE CA	91901
KNOX FAMILY TRUST 05-26-89			6378 JAPATUL VISTA LN	ALPINE CA	91901
LEYVA FAMILY TRUST 06-28-05			6402 JAPATUL HIGHLANDS RD	ALPINE CA	91901
TROY & SUSAN FRYE			6404 JAPATUL HIGHLANDS RD	ALPINE CA	91901
JUDY A STRAUP	ORVILLE C & DEBRA WESCHE		6473 TESTIGO TRL	ALPINE CA	91901
WILLIAM S & EILEEN W PROCTOR			6476 JAPATUL HIGHLANDS RD	ALPINE CA	91901
MICHAEL & LINDA RAPHAEL			6487 JAPATUL HIGHLANDS RD	ALPINE CA	91901
RICHARD NICHOLS			6520 JAPATUL VISTA LN	ALPINE CA	91901
FRED E JR & DIANE K CASTRO FAMILY TRUST 02-25-05			6523 JAPATUL HIGHLANDS RD	ALPINE CA	91901
JENNIFER FORD LIVING TRUST 02-11-05			6643 JAPATUL VISTA LN	ALPINE CA	91901
DAVID E MOMINEE			6689 JAPATUL VALLEY RD	ALPINE CA	91901
ANDREW D & LISA M HEIN			6705 JAPATUL VISTA LN	ALPINE CA	91901
ROBERT B & SHARON L DENSMORE			6777 JAPATUL VISTA LN	ALPINE CA	91901
KIMBERLY S MENZIES			6789 JAPATUL VISTA LN	ALPINE CA	91901
JOHN M TVERBERG			7050 HORSETHIEF CYN	ALPINE CA	91901
MERRILL C DOYLE			741 BALBOA AVE	SAN DIEGO CA	92118
THOMAS G WADDELL			8382 MORNING MIST CT	SAN DIEGO CA	92119



Owner Names			Owner Address	City/State	Zip Code
G R E R R Y L L C	C/O GREGORY CHARLES PERRYMAN		90 N COAST HIGHWAY 101 #305	ENCINITAS CA	92024
ROBERT A PIERCE TRUST 02-10-09			9335 STEVENS RD	SANTEE CA	92071
ERICKSON PIERCE TRUST 08-02-07			945 DAISY AVE	CARLSBAD CA	92011
LARTIGAU TRUST I 04-07-90			LIEU DIT ST MARTIN	ST PIERRE FRANCE	37590
ARTHUR M & MARY E MAZZOLA TRUST 09-06-90			P O BOX 1	ALPINE CA	91903
JOHN VERTULLO			P O BOX 104	SOLANA BEACH CA	92075
ZACKARY B SUMMERS			P O BOX 1171	ALPINE CA	91903
MARGYE A VETTEL 2003 TRUST 12-29-03			P O BOX 1338	ALPINE CA	91903
MICHAEL CARNES			P O BOX 1521	ALPINE CA	91903
SUMMIT L L C WINDMILL			P O BOX 1587	LAKE SIDE CA	92040
ADELA GARCIA REVOCABLE LIVING 1993 TRUST	JOHN GARCIA JR REVOCABLE TRUST 08-03-12		P O BOX 1807	ALPINE CA	91903
DANIEL & ROBIN ERVIN TRUST 09-23-04			P O BOX 1839	JULIAN CA	92036
LOIS E LEFEBVRE EST			P O BOX 1839	JULIAN CA	92036
GARY & ARLENE STOLZ TRUST 01-09-02			P O BOX 1878	ALPINE CA	91903
JOLYNN M JEWETT			P O BOX 1890	ALPINE CA	91903
JOHNSON LIVING TRUST 04-18-96			P O BOX 190	DESCANSO CA	91916
GEORGE H CARRELL LIVING TRUST 08-04-03			P O BOX 191	DESCANSO CA	91916
ERIC A ZITO-SVENSSON & SHARON L A SVENSSON			P O BOX 1910	ALPINE CA	91903



Owner Names			Owner Address	City/State	Zip Code
MURPHY FAMILY TRUST	DENNIS J & NANCY A MURPHY		P O BOX 194	DESCANSO CA	91916
MICHAEL SHAFFER FAMILY TRUST 10-13-04	C/O EUGENE MALLIN		P O BOX 202	CARDIFF CA	92007
POULTER REVOCABLE LIVING TRUST 07-08-96			P O BOX 2101	LA MESA CA	91943
RENEE PROCTOR			P O BOX 2168	ALPINE CA	91903
INGALLS FAMILY TRUST 09-23-02			P O BOX 2188	ALPINE CA	91903
KIMBERLY K SERGENT			P O BOX 2230	ALPINE CA	91903
RICHARD P SCHAAF			P O BOX 2254	ALPINE CA	91903
THOMAS L & PAMELA A LAFF TRUST 11-01-02			P O BOX 2355	ALPINE CA	91903
ROBERT A & CLAUDEA A JONES			P O BOX 248	DESCANSO CA	91916
EILEEN M ERICKSON			P O BOX 2505	ALPINE CA	91903
MARIO J & KATHLEEN A MATRANGA			P O BOX 254	DESCANSO CA	91916
RICHARD & JANETTE SLAUGHTER			P O BOX 2552	ALPINE CA	91903
KINCAID FAMILY 1991 TRUST 03-08-91			P O BOX 2573	ALPINE CA	91903
BILL B BROWN			P O BOX 367	DESCANSO CA	91916
DAVID HOWE			P O BOX 399	DESCANSO CA	91916
LISA OCHOA			P O BOX 433	HALFWAY OR	97834
BOOKOUT FAMILY TRUST 03-23-06			P O BOX 453	DESCANSO CA	91916
WALKER FAMILY 1991 TRUST			P O BOX 476	DESCANSO CA	91916
DUB & JENNIFER RASCO			P O BOX 485	DESCANSO CA	91916
BADDOUR FAMILY	C/O JULIA BADDOUR		P O BOX 503	WATERTOWN	02471



Owner Names			Owner Address	City/State	Zip Code
SURVIVORS 1991 TRUST 07-26-91 ET AL				MA	
DEJANOVICH FAMILY TRUST 09-29-97			P O BOX 506	DESCANSO CA	91916
CYRIL P & AMY J HOULIHAN			P O BOX 520	DESCANSO CA	91916
GOODWIN FAMILY TRUST 11-14-78			P O BOX 575	DESCANSO CA	91916
GWENDOLYN L BOND TRUST 11-08-90			P O BOX 596	ALPINE CA	91903
LAWRENCE A & SANTINA M MATRANGA REVOCABLE TRUST 12-06-91			P O BOX 605	DESCANSO CA	91916
JERROLD L & DEBRA J KLOSKA			P O BOX 661	DESCANSO CA	91916
LE DENNIS FAMILY TRUST 12-06-04			P O BOX 668	ALPINE CA	91903
MICHAEL D & RHONDA M MARTIN			P O BOX 687	DESCANSO CA	91916
JOSEPH R ANDREWS			P O BOX 71	ALPINE CA	91903
ALISA ABERASTURY			P O BOX 7141	SAN DIEGO CA	92167
ANDREAS T & CHERYL L MYERS			P O BOX 723	DESCANSO CA	91916
HOLMES LIVING TRUST 1991 04-02-91			P O BOX 74	MT LAGUNA CA	91948
ROGER A JR & GISELLA STONIER			P O BOX 761	ALPINE CA	91903
DEAN R & DEBORAH S WILSON			P O BOX 81676	SAN DIEGO CA	92138
SCOTT G ZIOBRON TRUST 04-13-05			P O BOX 871	DESCANSO CA	91916
ANDERSON W & DIANNE C WACASER			P O BOX 878	DESCANSO CA	91916
DOROTHY E ROBINSON			P O BOX 911	ALPINE CA	91903



Owner Names			Owner Address	City/State	Zip Code
REVOCABLE TRUST 05-03-06					
GARY L JULEEN	CRAIG A & GUADALUPE G D JULEEN		P O BOX 925	ALPINE CA	91903
ORRIN M & CHARLOTTE R DAVIS			P O BOX 935	ALPINE CA	91903



## **Appendix J-5:**

### **Informational Open House Advertisement for Newspapers**



# **Informational Open House**

## **To Learn About the Suncrest Dynamic Reactive Support Project**

### ***What is the Suncrest Dynamic Reactive Support Project?***

The Suncrest Project will provide voltage support for the electric transmission system and enhance the ability to bring more renewable energy into Southern California. The project will be built, owned, and operated by NextEra Energy Transmission West, a leader in developing and operating energy transmission assets. The project consists of a new transmission facility that will interconnect with SDG&E's existing Suncrest substation.

### ***Where is the Project Located?***

Approximately 6 miles southeast of the community of Alpine, about 2 miles west of Japutul Valley Road and approximately 2 miles south of Interstate 8.



### ***What is an***

### ***Informational Open House?***

Members of the NextEra Energy project team will be present to discuss the project, and will be available to answer your questions.

**August 4, 2015**

**6:00-8:00 pm**

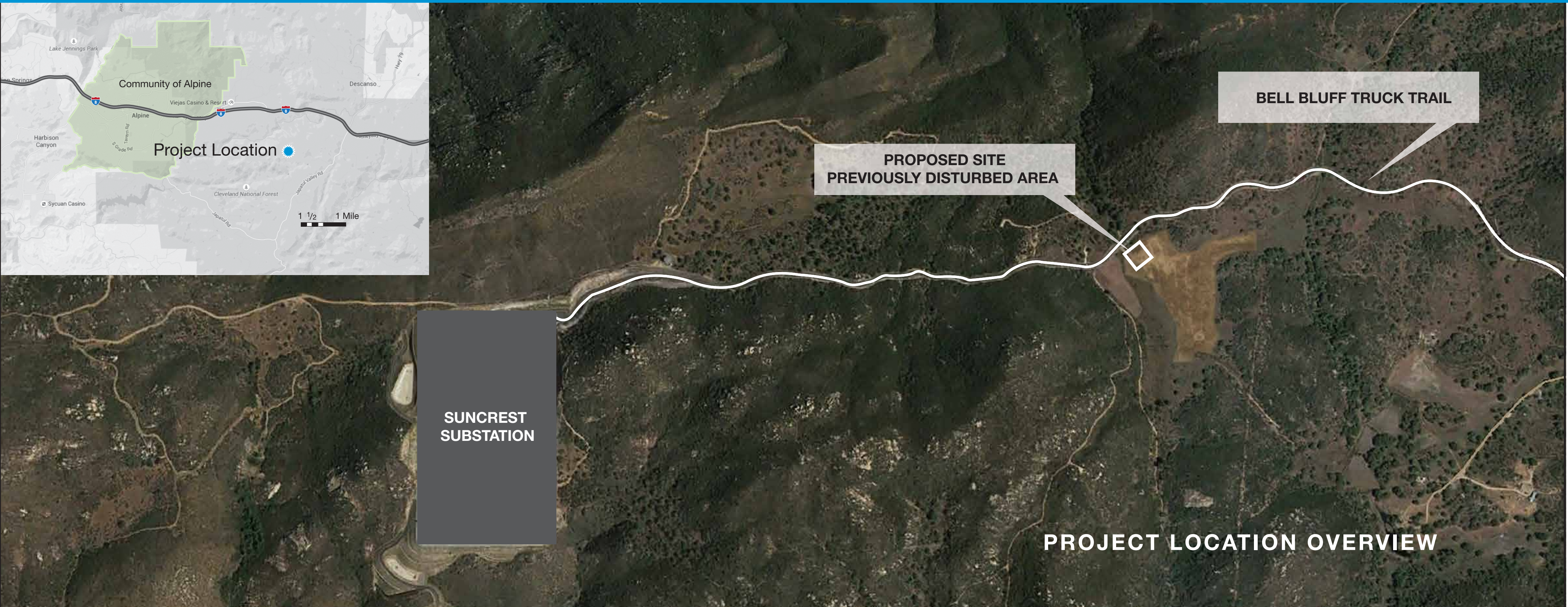
**Alpine Community Center, 1830 Alpine Boulevard, Alpine CA**



**Appendix J-6:**  
**Informational Open House Posters**



# SUNCREST DYNAMIC REACTIVE SUPPORT PROJECT OVERVIEW



ANTICIPATED PROJECT SCHEDULE	2014	2015	2016	2017
CAISO SOLICITATION	.....			
ENGINEERING/PERMITTING		.....	.....	
CONSTRUCTION			.....	.....

## LOCATION / SITE CHARACTERISTICS

- Located west of Japatul Valley Road on Bell Bluff Truck Trail
- Facility is expected to be an approximately two-acre fenced area
- Total project to be located on a six-acre site previously disturbed as part of the Sunrise Powerlink construction

## PROJECT APPLICANT

- NextEra Energy Transmission West (NEET West)
- No affiliation with SDG&E

## PROJECT COMPONENTS

- Static Volt Ampere Reactive Compensator (SVC), a technology that is used throughout the world, including California, to help stabilize the electrical grid and integrate renewable resources
- One mile, 230-kilovolt (kV) transmission line to be undergrounded beneath existing Bell Bluff Truck Trail
- Will interconnect with existing Suncrest substation owned and operated by SDG&E

## BENEFITS

- Will improve integration of renewables into Southern California
- Will provide greater voltage control and stability
- Will improve the reliability of the transmission grid by providing dynamic reactive support
- Will meet the project need in a cost-effective manner



PROJECT APPEARANCE SIMILAR TO A SMALL SUBSTATION



PROJECT SITE OVERVIEW: PREVIOUSLY DISTURBED SITE USED FOR SUNRISE POWERLINK STAGING AREA



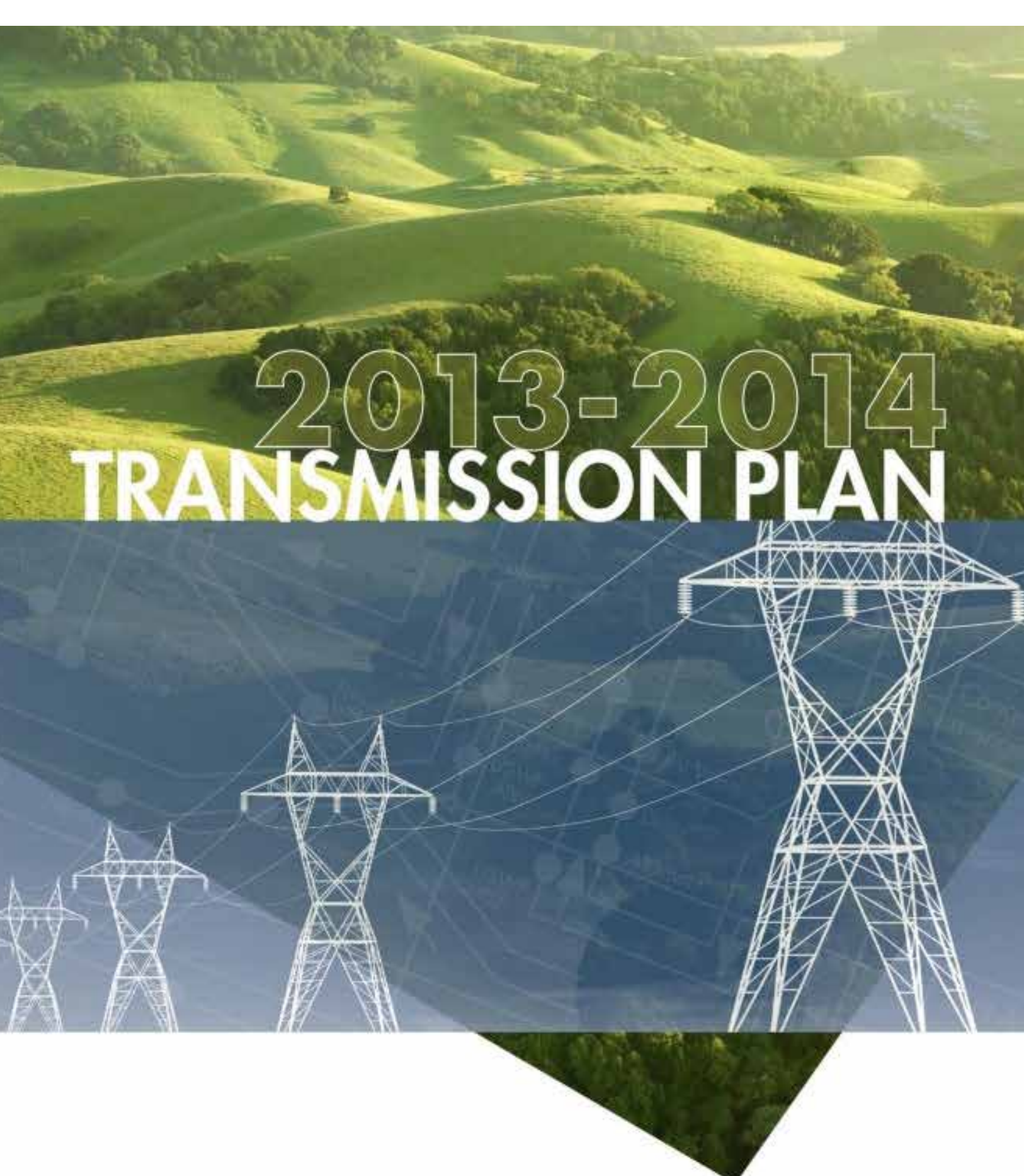
# WHY THE SUNCREST PROJECT IS NEEDED

## CAISO SELECTION PROCESS

- The CAISO Tariff specifies that CAISO's transmission planning process must include a competitive solicitation process for new, stand-alone regional transmission facilities needed for reliability, economic, and/or public policy driven reasons
- CAISO determined that the Suncrest Project was eligible for competitive solicitation
- In January 2015, CAISO selected NextEra Energy Transmission West (NEET West) as the Approved Project Sponsor to finance, construct, own, operate, and maintain the Suncrest Project
- CAISO selection report can be found at:  
<http://www.caiso.com/Documents/SuncrestProjectSponsorSelectionReport.pdf>

## PROJECT PURPOSE

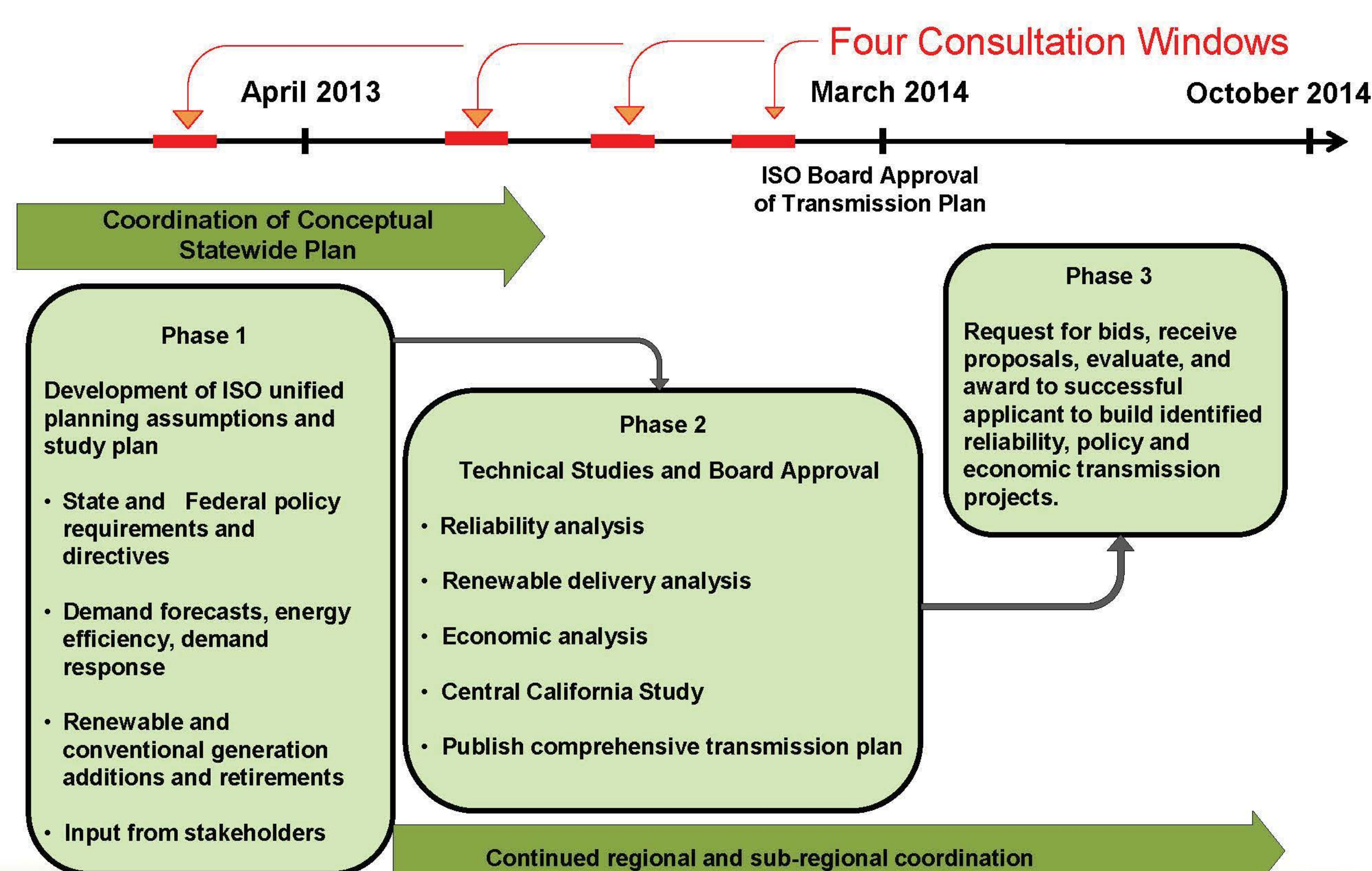
- CAISO's 2013—2014 transmission plan identified a policy-driven need for dynamic reactive power support connected to the Suncrest substation 230 kV bus to meet the 33 percent California Renewable Portfolio Standard
- CAISO governing board approved the Suncrest 230 kV 300 MVar dynamic reactive power support project on March 25, 2014 as part of its approval of the 2013—2014 transmission plan
- CAISO Planning Process can be viewed at:  
<http://www.caiso.com/planning/Pages/TransmissionPlanning/2013-2014TransmissionPlanningProcess.aspx>



July 16, 2014  
Prepared by: Infrastructure Development  
Approved by: ISO Board of Governors

## CAISO PROCESS

### 2013/2014 Transmission Planning Process





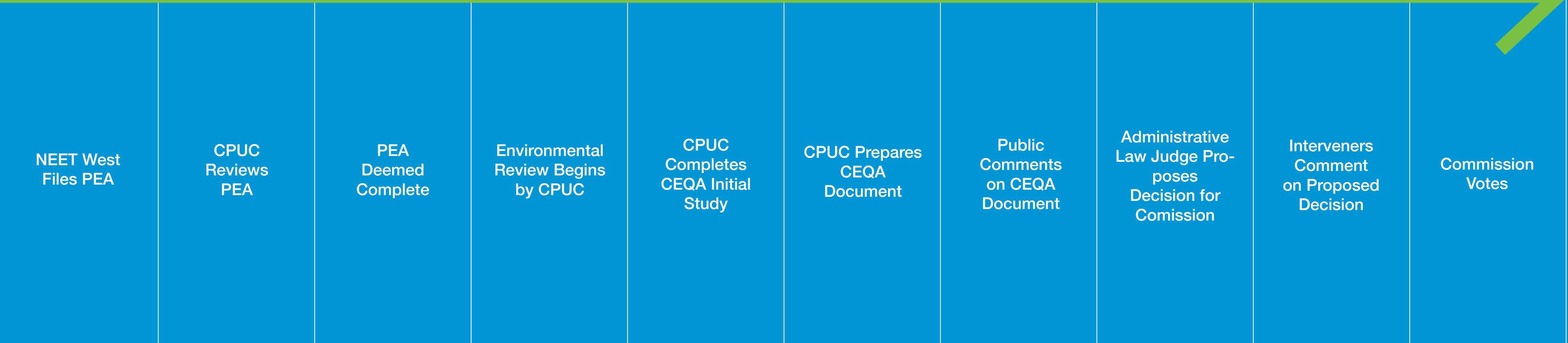
ENVIRONMENTAL PROJECT DESIGN AND SITING CONSIDERATIONS

- Located on a previously disturbed site to minimize environmental impacts
- Designed to minimize ground disturbance
- Underground transmission line to tie SVC to Suncrest substation
- Resource specialists retained from SWCA Environmental Consultants to evaluate potential environmental impacts
- Environmental resources addressed in Proponent’s Environmental Assessment (PEA) prepared by NextEra Energy Transmission West (NEET West)

ENVIRONMENTAL REVIEW PROCESS

- California Public Utilities Commission (CPUC), as lead agency under California Environmental Quality Act (CEQA), completes environmental review of PEA filing and Tribal Consultation

CPUC PROJECT PROCESSING STEPS





# NEXTERA ENERGY TRANSMISSION

## BUILDING TOMORROW'S ENERGY INFRASTRUCTURE



NEXTERA ENERGY TRANSMISSION HAS EXTENSIVE TRANSMISSION EXPERIENCE, SUCCESSFULLY COMPLETING PROJECTS IN DIFFERENT REGULATORY AND GEOGRAPHIC ENVIRONMENTS

### ABOUT NEXTERA ENERGY TRANSMISSION

- World-class transmission construction and operations team
- Recent construction experience on time and under budget
- Awarded the right to develop, finance, construct, own and operate two substation projects in California through its subsidiary, NextEra Energy Transmission West (NEET West)

### ABOUT NEXTERA ENERGY

- NextEra Energy, Inc. is a leading clean energy company
- Operates approximately 44,900 megawatts of generating capacity
- Approximately 13,800 employees in 27 states and Canada

**For more information, email: [Ask-NEET@NextEraEnergy.com](mailto:Ask-NEET@NextEraEnergy.com) or call 888.512.2446**

**You can also visit [www.NextEraEnergy.com](http://www.NextEraEnergy.com) and [www.lonestar-transmission.com](http://www.lonestar-transmission.com)**

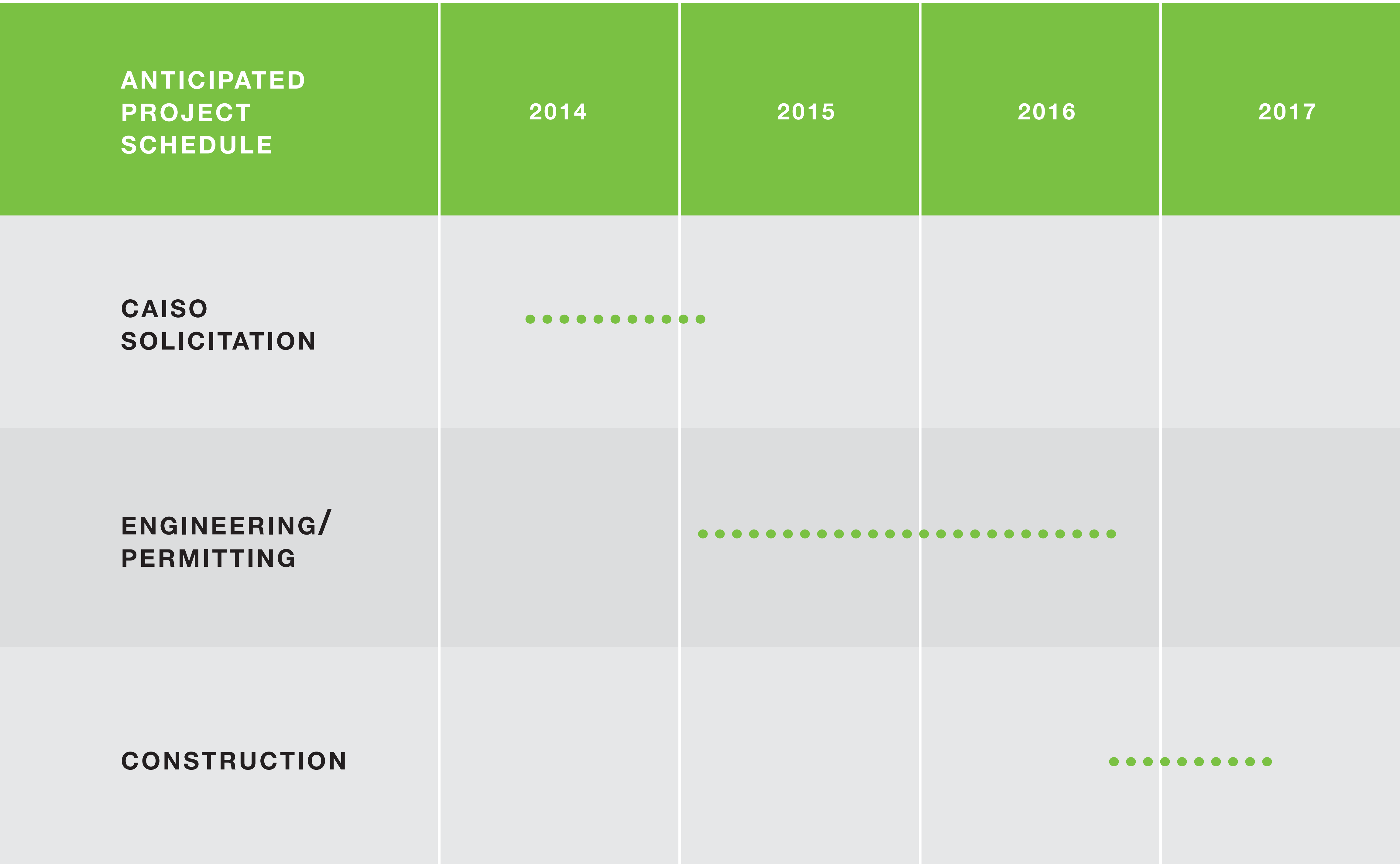


HOW TO STAY INFORMED

— SuncrestProject@NextEraEnergy.com

NEXT STEPS

- California Public Utilities Commission (CPUC) has jurisdiction over the Suncrest Project
- Suncrest Project will be evaluated under two separate, but parallel paths per CPUC procedures
  - » Certificate of Public Convenience and Necessity (CPCN) for project need and costs
  - » California Environmental Quality Act (CEQA) for environmental review
- Application and Proponent’s Environmental Assessment submittal to CPUC in August 2015
- Look for updates here:  
<http://www.cpuc.ca.gov/PUC/energy/Environment/Current+Projects/index.htm>
- CPUC will conduct scoping meetings following NextEra Energy Transmission West’s (NEET West) application being deemed complete





**Appendix K:**  
**List of Preparers**



## LIST OF PREPARERS

Team Member	Sections Prepared/Project Role
<b><i>Next Era Energy Transmission West LLC</i></b>	
Matt Valle	Vice President, Development
Michael Sheehan	Executive Director, Development
Kenneth Stein	Project Sponsor's Environmental Manager
Andy Flajole	Project Sponsor's Environmental Project Manager
Daniel Mayers	Director, Engineering & Construction
John Bulich	Manager, Engineering & Construction
Aziz Brott	Manager, Engineering & Construction
James Alligan	Project Director, Operations
Tracy Davis, Esq.	Counsel for NEET West
Amie Jamieson, Esq.	Counsel for NEET West
Scott Castro, Esq.	Counsel for NEET West
Seth Sheitelman, Esq.	Counsel for NEET West
Lisa A. Cottle, Esq., Winston & Strawn LLP	Counsel for NEET West
Chris A. Kolostov, Esq., Winston & Strawn LLP	Counsel for NEET West
<b><i>Sargent and Lundy</i></b>	
Darsey Moore	Engineering Project Manager
Andrew Steffen, Senior Engineer	Project Engineer
Jason Jocham, Senior Engineer	Project Engineer
<b><i>SWCA Environmental Consultants</i></b>	
<b>Project Manager</b>	
Megan Peterson, Permitting and Compliance Program Manager, Half Moon Bay Office Director, and Project Manager for PEA	Overall supervision of environmental analysis team, including resources studies, site selection, and PEA 1.0 PEA Summary 3.0 Project Description
<b>Quality Assurance/Quality Control</b>	
Steve Stielstra, Principal	High-level review of PEA
William Dietrich, Senior Environmental Planner	High-level review of resources studies and PEA
Amanda Tyrrell, Senior Environmental Project Manager	High-level review of PEA
<b>Technical Specialists</b>	
Jenny Addy, Environmental Specialist	4.1. Aesthetics
Lincoln Allen, Senior Biologist	4.9. Land Use and Planning



<b>Team Member</b>	<b>Sections Prepared/Project Role</b>
Alyssa Bell, Ph.D., Principal Investigator	Appendix F. Paleontological Resources Technical Report
Seth Dallmann, Biologist	4.13. Recreation
John Dietler, Ph.D., Cultural Resources Program Director	Appendix E. Cultural Resources Technical Report
William Dietrich, Senior Environmental Planner	Transmission planning aspects 2.0 Project Purpose and Need and Objectives 4.11. Population and Housing 4.15. Utilities 4.16. Cumulative Analysis 5.0 Detailed Discussion of Significant Impacts / Alternatives
Joanna Guest, Air Quality Specialist	4.3. Air Quality and Greenhouse Gas Emissions
Lee Hall, Paleontologist	4.5. Cultural Resources (See 4.6 Geology and Soils) Appendix F. Paleontological Resources Technical Report
Laura Hoffman, Cultural Resources Specialist	4.5. Cultural Resources Appendix E. Cultural Resources Technical Report
Juliana Lehnen, Project Planner/GIS Specialist	4.6. Geology and Soils 4.7. Hazards and Hazardous Materials 4.8. Hydrology and Water Quality 4.16. Cumulative Analysis Appendix L. FAA Notice Criteria Tool Results GIS and Document Graphics
Richard Montijo, Natural Resources Program Director	4.4. Biological Resources
Chelsea Murphy, Biologist	4.4. Biological Resources Appendix D. Biological Resources Technical Report
Steve O'Brien, Environmental Specialist	Appendix G. Phase I Environmental Site Assessment
Kimberly Oldehoeft, Wildlife Biologist	4.4. Biological Resources Appendix D. Biological Resources Technical Report
Brian Parkey, Senior Air Quality Specialist	4.3. Air Quality and Greenhouse Gas Emissions Appendix C. Air Quality Calculations
Ryan Rausch, Environmental Planner	4.1. Aesthetics Appendix B. Photographs of Key Observation Points
DeAnne Reitz, Environmental Specialist	Appendix G. Phase I Environmental Site Assessment
Pauline Roberts, Senior Biologist	4.4. Biological Resources Appendix D. Biological Resources Technical Report
Brad Sohm, Senior Air Quality Specialist/Environmental Planner	4.3. Air Quality and Greenhouse Gas Emissions Appendix C. Air Quality Calculations
Michael Sonenberg, Air Quality and Noise Specialist	4.10. Noise Appendix H. Noise Model and Baseline Survey
Allen Stutz, GIS Specialist	4.1. Aesthetics (simulations)
Ian Todd, Project Planner	4.2. Agriculture and Forest Resources 4.12. Public Services 4.13. Recreation 4.14. Transportation and Traffic 4.16. Cumulative Analysis 6.0 Other Process-Related Data Needs
Jason Wiener, Biologist/GIS Specialist	4.6. Geology and Soils 4.7. Hazards and Hazardous Materials 4.8. Hydrology and Water Quality GIS and Document Graphics
<b>Technical Editing</b>	
Jaimie Jones, Technical Editor	Technical Editing Document Compilation
Kari Chalker, Managing Editor	Technical Editing



## **Appendix L:**

### **FAA Notice Criteria Tool Results**





**Federal Aviation  
Administration**

The system will be going offline from 7 pm to 10 pm US/Eastern on Thursday July 30, 2015 for upgrades. We apologize for any inconvenience.

[« OE/AAA](#)

## Notice Criteria Tool

[Notice Criteria Tool - Desk Reference Guide V\\_2014.2.0](#)

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	<input type="text" value="32"/> Deg <input type="text" value="48"/> M <input type="text" value="41.19"/> S <input type="text" value="N"/> ▼
Longitude:	<input type="text" value="116"/> Deg <input type="text" value="40"/> M <input type="text" value="57.26"/> S <input type="text" value="W"/> ▼
Horizontal Datum:	<input type="text" value="NAD83"/> ▼
Site Elevation (SE):	<input type="text" value="3551"/> (nearest foot)
Structure Height (AGL):	<input type="text" value="95"/> (nearest foot)
Traverseway:	<input type="text" value="No Traverseway"/> ▼ (Additional height is added to certain structures under 77.9(c))
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes

### Results

You do not exceed Notice Criteria.