





California Public
Utilities Commission

Final Environmental Impact Report NextEra Energy Transmission West's Proposed Suncrest Dynamic Reactive Power Support Project

Volume 2 – Appendices

January 2018

SCH # 2016011004

Prepared by

Horizon
WATER and ENVIRONMENT

FINAL ENVIRONMENTAL IMPACT REPORT

Volume 2 – Appendices

CALIFORNIA PUBLIC UTILITIES COMMISSION

NextEra Energy Transmission West's Proposed Suncrest Dynamic Reactive Power Support Project

SCH #2016011004

Prepared for:

California Public Utilities Commission

505 Van Ness Avenue

San Francisco, CA 94102-3298

Prepared by:

Horizon Water and Environment, LLC

266 Grand Avenue, Suite 210

Oakland, California 94610

January 2018

Horizon Water and Environment. 2018.
NextEra Energy Transmission West's Proposed Suncrest Dynamic Reactive Power Support Project – Final Environmental Impact Report. January. (HWE 15.018) Oakland, CA.

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Appendix A

Notice of Preparation

Notice of Preparation

To: Responsible and Trustee Agencies *(Agency)*

(Address)

From: California Public Utilities Commission *(Agency)*

505 Van Ness Avenue *(Address)*

San Francisco, CA 94102-3298

Subject: **Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC**

The California Public Utilities Commission (CPUC) will be the lead agency and will prepare an environmental impact report (EIR) for the project identified below. We are requesting the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR and/or subsequent related environmental documents prepared by our agency when considering your permit or other approval for the project.

The project description, location, and potential environmental effects are contained in the attached materials. A copy of the initial study ☐ ***is*** ☒ ***is not*** attached.

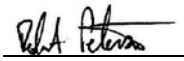
Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to suncrestproject@horizonh2o.com or Robert Peterson, CPUC, C/O Tom Engels, Horizon Water and Environment, 180 Grand Avenue, Suite 1405, Sacramento, CA 94612. Please include your name or the name of a contact person in your agency.

Project Title: Suncrest Dynamic Reactive Power Support Project

Project Applicant, if any: NextEra Energy Transmission West, LLC

Date: January 5, 2016

Signature: 

Title: Project Manager, Energy Division, Infrastructure Permitting and CEQA

Telephone: (844) 211-7510

Email: suncrestproject@horizonh2o.com

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Notice of Preparation

of an

Environmental Impact Report

for the

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298
Contact: Tom Engels
916/790-8548

January 5, 2016

INTRODUCTION

Purpose of the NOP

The California Public Utilities Commission (CPUC) is the lead agency for preparation and review of an environmental impact report (EIR) for NextEra Energy Transmission West, LLC's (NEET West's or the Applicant's) proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project). The Proposed Project would involve construction of a dynamic reactive power support facility and an approximately one-mile-long transmission line connecting to the existing Suncrest Substation in south-central San Diego County, near the community of Alpine.

This Notice of Preparation (NOP) presents general background information on the scoping process, the environmental issues to be addressed in the EIR, and the anticipated uses of the EIR. It also briefly describes the Proposed Project as currently envisioned. The project description is subject to refinement during the process of preparing the EIR, depending on, among other things, input received in comments responding to this NOP and revisions to the Proposed Project. The CPUC has prepared this NOP pursuant to Section 15082 of the State California Environmental Quality Act (CEQA) Guidelines.

Scope of the EIR

This EIR will evaluate potential environmental impacts of the Proposed Project. As the lead agency under CEQA, CPUC has determined that the Project may have a significant impact on the environment and has decided to prepare an EIR. Consistent with the basic purposes of CEQA (State CEQA Guidelines Section 15002[a]), the purposes of the EIR will be to:

1. Inform governmental decision makers and the public about the potential, significant environmental effects of the proposed activities;

2. Identify the ways that environmental damage can be avoided or significantly reduced;

3. Prevent significant, avoidable damage to the environment through the use of feasible alternatives or mitigation measures.

A preliminary environmental review for the Proposed Project indicated the possibility for several potentially significant impacts and issues, as described in Table 1.

Table 1: Summary of Possible Impacts and Issues

Resource Topic	Potentially Significant Impact/Issue
Biological Resources	• Impacts to wetlands and/or jurisdictional waters • Impacts to Hermes copper butterfly during Project construction
Cultural Resources	• Impacts to buried archaeological resources during Project construction
Hydrology & Water Quality	• Impacts to downstream water bodies from stormwater discharges during Project construction and operation • Impacts to hydrology and water quality during Project construction
Land Use	• Impacts on existing mitigation sites/conflicts with existing mitigation obligations related to the existing Suncrest Substation
Noise	• Noise impacts during construction
Public Services	• Adverse impacts related to fire protection service
Alternatives	• Concerns regarding inclusion/evaluation of a Project alternative co-located within existing Suncrest Substation site (i.e., concerns that such an alternative wouldn't be evaluated in an MND), which could have reduced environmental impacts

No significance determinations have been made regarding the possible impacts listed in Table 1. The analysis in the EIR ultimately will determine whether these impacts actually could occur, will determine their level of significance, and will propose feasible mitigation measures to reduce significant impacts. Thresholds for determining significant impacts will be based on applicable sections of the State CEQA Guidelines, regulatory agency standards, and the judgment of the CEQA lead agency, CPUC. In addition to the possible impacts identified in Table 1, the EIR will evaluate other potential impacts/resource topics, as described in Appendix G of the State CEQA Guidelines.

Public Involvement

The CPUC is soliciting the views of interested persons and agencies on the scope and content of the environmental information that is germane to the Proposed Project. A scoping meeting for the Proposed Project will be held as follows:

Thursday, January 21, 2016, 6 p.m. to 8 p.m.
Alpine Community Center, Sage Room
1830 Alpine Blvd.
Alpine, CA 91901

The scoping meeting will feature a presentation on the Proposed Project and environmental review process and an opportunity for interested members of the public to submit oral or written comments.

Written comments may be submitted any time during the scoping period. All available documents pertaining to the Proposed Project can be located at the following website: http://cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html. Because of the time limits mandated by state law, your written comments on the scope and content of the EIR must be ***received no later than February 8, 2016 at 5:00 p.m.*** Please send written comments to the CPUC, to the attention of Rob Peterson, CPUC, c/o Tom Engels, Horizon Water and Environment, 180 Grand Avenue, Suite 1405, Oakland, CA 94612. Please include the name and phone number of the contact person for your agency, if applicable. CPUC will consider and incorporate scoping comments on the Proposed Project in preparation of the EIR as appropriate.

PROJECT DESCRIPTION

Background and Need

The Proposed Project originates from the California Independent System Operator's (CAISO's) 2013-2014 transmission planning process, which identified a need for a 300-million volt-ampere reactive (megavar)[1] dynamic reactive device at the existing Suncrest Substation's 230 kilovolt (kV) bus[2] to meet California's 33% Renewable Portfolio Standard (CAISO 2014). CAISO determined that the retirement of the San Onofre Nuclear Generating Station and projected increases in renewable generating capacity in the Imperial Valley would cause loading and voltage stability issues in the transmission system in the area of the existing Suncrest Substation. CAISO conducted a competitive bid solicitation process for the Suncrest dynamic reactive facility and selected NEET West to construct the Proposed Project.

Following its selection by CAISO in January 2015 as the approved project sponsor, NEET West submitted to CPUC a Proponent's Environmental Assessment (PEA) in August 2015, as part of its application (A.15-08-027) for a Certificate of Public Convenience and Necessity (CPCN), as specified in CPUC General Order (G.O.) 131-D.

Project Objectives

The objectives of the Proposed Project as defined by the Applicant are as follows:

- Meet the CAISO's identified need for reactive support[1] at the Suncrest Substation's 230 kV bus;
- Improve and maintain the reliability of the transmission grid;
- Facilitate delivery of renewable energy generation from the Imperial Valley area to population centers to the west;
- Support achievement of the state's 33% Renewable Portfolio Standard.

[1] Volt-ampere reactive (var) is a unit by which reactive power is expressed in an alternating current (AC) electric power system. Reactive power exists in an AC circuit when the current and voltage are not in phase. In an electric transmission system, reactive power serves to support the voltage levels needed to maintain system reliability. Megavar means one million vars.

[2] A bus or busbar is a metallic strip or bar that conducts electricity within a substation or other electrical apparatus. Buses are often the connection points for incoming transmission lines into a substation.

Project Location

The Proposed Project is located in unincorporated south-central San Diego County, approximately 5.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail road. Figure 1 shows the Project location. The lands surrounding the Proposed Project are primarily undeveloped, with some rural-residential development present to the east and south, and the existing Suncrest Substation at the Project's western terminus. The nearest residence is approximately 0.6 mile to the southeast. Interstate-8 is located approximately 1.8 miles to the north of the Project area and Japatul Valley Road (State Highway 79) is approximately 1.2 miles to the southeast. The Proposed Project would be located on private property within the administrative boundary of the Cleveland National Forest.

Proposed Project

The Proposed Project includes two primary components: (1) a Static Var Compensator (SVC) facility, to be located approximately one mile east of the existing Suncrest Substation, and (2) a 230 kV transmission line from the proposed SVC facility to the existing substation. Figure 2 illustrates the primary project components.

SVC Facility

The proposed SVC facility would produce and consume reactive power for voltage support and would interconnect with the Suncrest bus via the proposed transmission line. The facility would be approximately 6 acres in total size (with a fenced area of approximately 2.58 acres) and would be located on an area previously used as a construction staging and materials storage area during construction of the Suncrest Substation (completed in 2012).

The SVC facility would include various structures/pieces of electrical equipment, such as power transformers, power circuit breakers, control buildings, capacitors, and reactors, all of which would be installed on concrete foundations. The four power transformers within the proposed SVC facility would each require a maximum of approximately 10,000 to 12,000 gallons of oil. The tallest structures within the SVC would be the lightning shielding masts, which would be approximately 75-feet-tall.

In addition to the electrical equipment, the SVC facility would include the following components: signage and lighting; access driveway improvements; a stormwater drainage system and detention basin; a retaining wall; approximately 7-foot-high chain link and barb wire security fencing; and transformer oil containment basins. The retaining wall would be installed on the east side of the SVC facility to minimize the potential for erosion and would be approximately 480 feet long and 15 feet tall at its highest point.

Transmission Line

The proposed 230 kV transmission line would be approximately one mile in length and would connect the proposed SVC facility to the existing Suncrest Substation. The proposed

transmission line would be installed primarily underground beneath Bell Bluff Truck Trail road, with the last approximately 300 feet of the line transitioning aboveground via an 85- to 95-foot tall riser pole to connect with the existing substation.

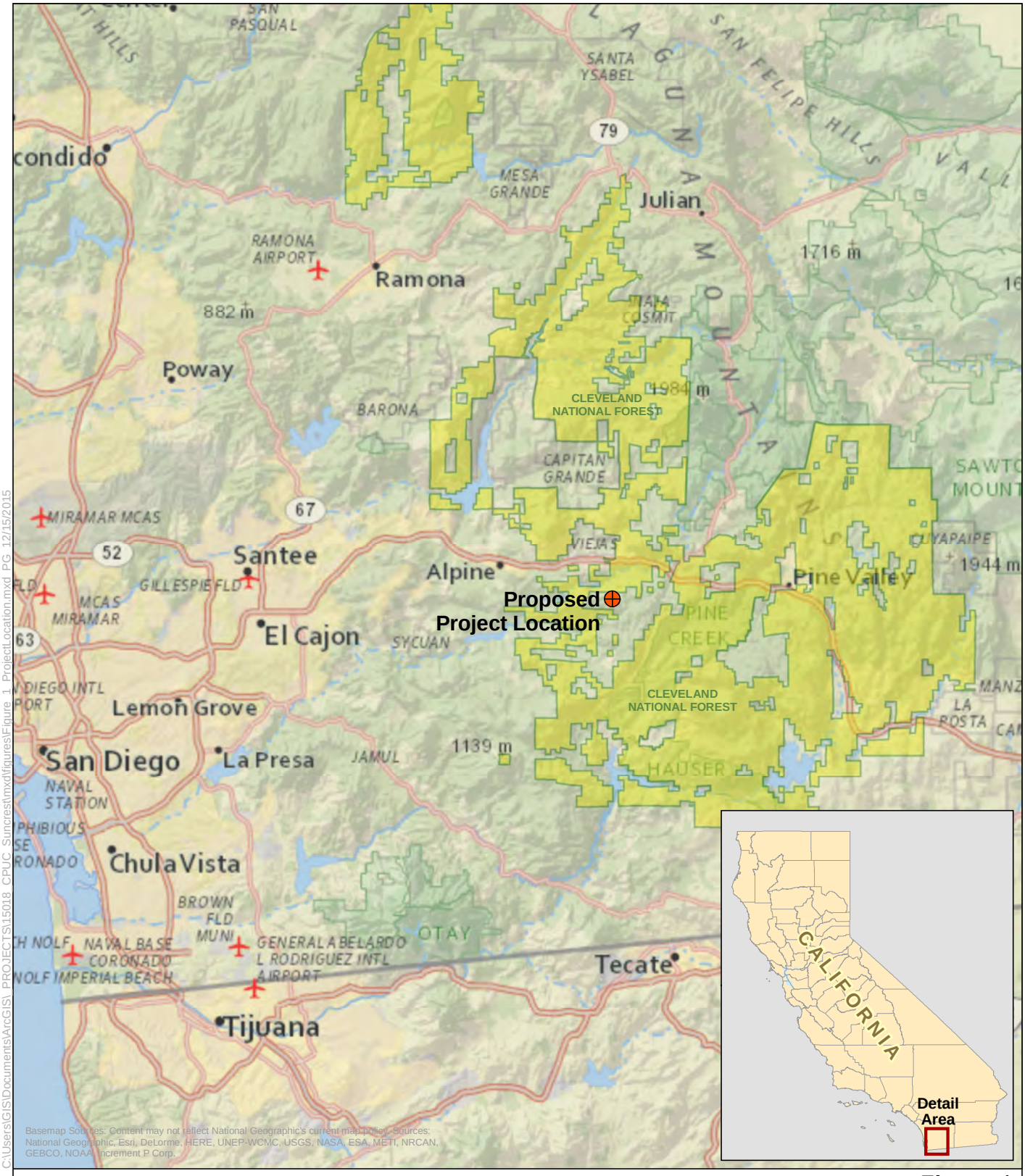
The underground transmission line would be installed in polyvinyl chloride (PVC) conduits within a concrete-encased duct bank system. The bottom of the duct bank would be approximately 5 feet below grade, and the duct bank would be approximately 30 inches wide by 24 inches tall. The underground transmission line would include up to five underground splice vaults spaced roughly every 900 feet to facilitate installation of the underground cables and operation and maintenance of the transmission line. The majority of the underground transmission line would be installed within Bell Bluff Truck Trail; however, installation of the splice vaults may require temporary disturbance outside of the roadbed.

The 85- to 95-foot riser pole, for transition of the transmission line to an overhead span and entry into the existing Suncrest Substation, would be installed north of Bell Bluff Truck Trail. The base of the riser pole would be approximately 7 feet in diameter and require an additional approximately 15-foot radius of permanent disturbance around the riser pole.

Project Construction

Construction of the SVC facility generally would include site clearing, grubbing, grading, and installation of foundations and electrical equipment. Construction of the underground transmission line would be anticipated to be concurrent with construction of the SVC and would follow a general process of utility line locating; survey; asphalt cutting of pavement; trench excavation; installation of duct bank and vaults; pavement restoration; installation of conductor cables and fiber optic cables (for communications for line relaying, SCADA, and other devices as required); and splicing and testing of the line. Grading for the SVC may result in up to 4,000 cubic yards of excess material, which would be hauled off site. In select locations, where material cannot be excavated using a backhoe and/or bulldozer, material removal may require scraping, ripping, drilling, hammering, cutting and localized low energy blasting. Construction of the Proposed Project would result in approximately 6.2 acres of temporary disturbance, accounting for staging area impacts and trenching for underground transmission line installation. When added to the permanent disturbance area of the SVC, total disturbance from the Proposed Project would be approximately 12.2 acres.

The project would take 10 months to construct and is targeted to be operational by June 2017. Typically, construction would occur 10 hours per day, 6 days per week, Monday through Saturday, between 7 a.m. and 7 p.m.; however, certain time-sensitive activities and/or activities which are not noise-intensive may occur outside these hours.



C:\Users\GIS\Documents\ArcGIS_PROJECTS\15018_CPUC_Suncrest\mxd\figures\Figure_1_ProjectLocation.mxd PG 12/15/2015

N

0 5 10

Miles

Proposed Project Location

Cleveland National Forest

Prepared by:

Horizon
WATER and ENVIRONMENT

Figure 1
Project Location

Suncrest Dynamic Reactive Power Support Project



N

0 500 1,000

Feet

Prepared by:

Horizon WATER and ENVIRONMENT

Project Components

- Project Area (limit of disturbance)
- Underground Transmission Line
- Overhead Transmission Line
- SVC Area
- SVC Footprint
- Parcel Boundary (with APN and Owner)

Figure 2
Project Overview

Suncrest Dynamic Reactive Power Support Project

References

CAISO. *See* California Independent System Operator.

California Independent System Operator. 2014. 2013-2014 Transmission Plan. Retrieved from: https://www.caiso.com/Documents/Board-Approved2013-2014TransmissionPlan_July162014.pdf. Accessed December 14, 2015.

Appendix B

Comments Received on the Notice of Preparation

Comment Letter #1

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

January 28, 2016

Rob Peterson, CPUC
c/o Tom Engels
Horizon Water and Environment
180 Grand Avenue, Suite 1405
Oakland, CA 94612
robert.peterson@cpuc.ca.gov
suncrestproject@horizonh2o.com

Dear Mr. Peterson:

Division of Water Quality Scoping Comments for the Suncrest Dynamic Reactive Power Support Project (Project) Proposed by NextEra Energy Transmission West, LLC

Please accept these comments in response to the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the subject Project, prepared by the California Public Utilities Commission (CPUC) and received at the State Water Resources Control Board (State Water Board) Division of Water Quality (DWQ) on January 7, 2016.

Authority

Pursuant to The Guidelines for the Implementation of the California Environmental Quality Act (Cal. Code Regs., tit. 14, sec. 1500 et seq.; hereinafter *CEQA Guidelines* or *Guidelines*), in particular, California Code of Regulations (CCR), title 14, section 15096, responsible agencies must specify the scope and content of the environmental information germane to their statutory responsibilities. The State Water Resources Control Board (State Water Board) is a responsible agency. Staff of the State Water Board has reviewed the NOP and considered the

proposed Project project's potential impacts to water quality and the beneficial use of waters of the State.

We have identified a number of potentially significant impacts to water quality that must be evaluated in the environmental review. Without adequate mitigation; Project implementation could result in significant adverse impacts to water quality and hydrology; thereby adversely affecting beneficial uses of waters of the State. Staff

State Water Board Staff has reviewed the NOP for the Project in light of previous personal communication via e-mail and teleconference, and requests that the following comments be incorporated in the CPUC's environmental review process.

Role of the Regional Water Boards and Basin Plans

State law assigns responsibility for protection of water quality in the affected regions to the Regional Water Boards. Any discharges of waste that may affect water quality and, ultimately, the beneficial uses of waters of the state may be regulated by the State Water Resources Control Board and the Regional Water Quality Control Boards (collectively, the Water Boards).

All waters of the state are protected under California law. All surface waters and groundwater are waters of the State and include, but are not limited to, aquifers, drainages, streams, washes, ponds, pools, and wetlands. Surface water bodies may be permanent, intermittent, ephemeral or seasonal.

Additional protection is provided for waters of the United States under the federal Clean Water Act (CWA). The water quality control plans (basin plans) for the affected regions contain policies that the Water Boards use with other laws and regulations to protect water quality. The basin plans provide guidance regarding water quality and how the Water Boards may regulate activities that have the potential to affect water quality within the regions.

Water Board staff request that the final environmental document refer to the basin plans and incorporate mitigation measures that are consistent with all applicable water quality standards, prohibitions, and provisions in the basin plans.

Permitting

A number of activities associated with the Project may require permits issued by the State Water Board or the San Diego Regional Water Quality Control Board (RWQCB). These permitting requirements include, but are not necessarily limited to, those described below.

A Clean Water Act, section 402, subdivision (p) stormwater permit, including a National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit, may be required for land disturbance associated with the Project. The NPDES permit requires the development of a Stormwater Pollution Prevention Plan and implementation of best management practices (BMPs). Industrial activities may require an NPDES General Industrial Stormwater Permit, obtained from the State Water Board, or individual stormwater permit obtained from the RWQCB.

Streambed alteration and/or discharge of fill material to a surface water may require a

Clean Water Act (CWA), section 401 water quality certification (WQC) for impacts to waters of the U.S., or dredge and fill Waste Discharge Requirements (WDRs) for impacts to "non-federal" waters of the state, or both. These permits would be issued by the RWQCB.

Determinations of the jurisdictional extent of the waters of the U.S. are made by the United States Army Corps of Engineers. Projects that have the potential to impact surface waters will require the appropriate jurisdictional determinations.

These determinations are necessary to discern if the proposed surface water impacts will be regulated under section 401 of the CWA or through dredge and fill WDRs issued by the Water Boards.

Additionally, waste discharge requirements (WDRs) for the discharge of waste in excess of water quality objectives may be required pursuant to California Code of Regulations (CCR), title 27 requirements.

We request that the environmental document list the permits that may be required, as outlined above, and identify the specific activities that may trigger these permitting actions in the appropriate sections of the environmental document.

Project proponents should continue to consult with the RWQCB to ensure that all regulatory obligations associated with all project alternatives are understood.

Beneficial Use Analyses

The DEIR should include a regional-scale map identifying all surface water resources potentially affected by the Project. These water resources should be tabulated and organized by waterbody type and described in detail in the appropriate sections of the DEIR.

We request that the DEIR identify and list the beneficial uses of the identified surface water resources, as outlined in the San Diego Regional Water Quality Control Plan (Basin Plan), and evaluate the Project's potential impacts to water quality with respect to those beneficial uses.

The environmental document must include alternatives to avoid those impacts or list specific mitigation measures that, when implemented, minimize unavoidable impacts to a less than significant level.

Project-Specific Comments

1. We understand that the Project must be placed within a limited distance from the existing Suncrest Substation in order to meet engineering limits, but alternatives to the precise location and placement of the proposed Dynamic Reactive Power Support structures do exist. All of those alternate locations should be described and analyzed in the Draft EIR (DEIR).

2. Location of the Project within the existing footprint of the Suncrest Substation is technically feasible, and should be fully considered in the DEIR. This alternative would have essentially no new impacts on the environment.

3. As we have stated before, DWQ's interest in this project stems from its potential impacts to the recently established Suncrest compensatory mitigation site which surrounds the Suncrest Substation. This mitigation site was set aside to compensate, in part, for impacts to waters of the State, including waters of the U.S., that were caused by the construction of the Sunrise Powerlink Project which included the Suncrest Substation. Therefore analysis of any project alternatives that could adversely affect the compensatory mitigation site's hydrology or ecological functions must be included in the Draft EIR.

4. Alternatives that would locate the Project off site from the Suncrest Substation, as described in the NOP, have the potential to adversely affect waters of the state, including waters of the U.S. through direct fill. In general, these types of impacts should be avoided whenever possible, and minimized when avoidance is not possible. When permanent unavoidable impacts would result from a project alternatives, these impacts should be clearly identified, and compensatory mitigation for any such permanent impacts should be provided in the mitigation measures for those alternatives.

5. Alternatives that would locate the Project off site from the Suncrest Substation, as described in the NOP, have the potential to adversely affect waters of the state, including waters of the U.S. through alteration of watershed functions. Impacts from previous development in the area would be exacerbated by a new, hardscape industrial facility. These potential impacts should be fully described in the DEIR, and mitigations for those impacts should be presented.

Mitigation for these impacts should consider the approaches found in the Revised Draft Strategy to Optimize Resource Management of Storm Water (Storm Water Strategy), which can be accessed at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/strategy_initiative.shtml

The final Project should include design elements that treat stormwater as a resource to be managed for multiple benefits. State Water Board staff are available to assist CPUC and Project proponents in development of alternatives that better achieve the goals of the Storm Water Strategy.

6. As described in comment 5 above, alternatives that would locate the Project off site from the Suncrest Substation, as described in the NOP, have the potential to adversely affect waters of the state, including waters of the U.S. through alteration of watershed functions. Those alternatives could include construction that would significantly excavate and re-build the existing access road, the Bell Bluff Truck Trail.

This road, in its current form, does not exhibit design features that would be consistent with the goals of the Storm Water Strategy mentioned in comment 5. If such alternatives that entail substantial excavation and re-construction of the road are described, mitigation for the impacts to waters of the state, including waters of the U.S. should include measures to re-configure the existing drainage system of the road.

We note that runoff is currently diverted and concentrated in a series of concrete lined V-ditches. Alternatives that moderate the rate and concentration of discharge into the affected watershed area should be analyzed as part of the development of alternatives.

In Conclusion

State Water Board staff thanks the CPUC for the proactive outreach to the Water Boards in the development of the Project to date. We look forward to cooperating with the CPUC and the Project proponents in development of a Draft EIR that provides a full and accurate analysis of all potential project impacts to waters of the state.

Please continue to list me as the State Water Board staff contact for the proposed Project.

Cliff Harvey, Environmental Scientist
Division of Water Quality, 401 Unit
State Water Resources Control Board
1001 I Street, 15th Floor
Sacramento, CA 95814
(916) 558-1709
clifford.harvey@waterboards.ca.gov

Sincerely,

Cliff Harvey

cc: Eric Becker, San Diego Regional Water Quality Control Board
eric.becker@waterboards.ca.gov

Chris Beegan, Division of Water Quality, Storm Water Planning Unit
chris.beegan@waterboards.ca.gov

Shanti Santulli, U.S. Army Corps of Engineers – Los Angeles District
shanti.a.santulli@usace.army.mil

Comment Letter #2

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

February 2, 2016

Mr. Robert Peterson, Project Manager
Infrastructure Permitting and CEQA, Energy Division
California Public Utilities Commission
505 Van Ness Ave.
San Francisco 94102
suncrestproject@horizonh20.com

Subject: Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project, Unincorporated San Diego County, San Diego County, California (SCH # 2016011004)

Dear Mr. Peterson:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Notice of Preparation (NOP) for the Suncrest Dynamic Reactive Power Support Project Draft Environmental Impact Report (DEIR). The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines § 15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code § 2050 *et seq.*) and Fish and Game Code section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) program. The County of San Diego (County) participates in the NCCP program through a signed Planning Agreement for the East County Multiple Species Conservation Program (MSCP).

The Suncrest Dynamic Reactive Power Support Project (Project) is located in unincorporated south-central San Diego County, approximately 5.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail Road. The lands surrounding the proposed Project are primarily undeveloped, with some rural-residential development to the east and south, and the existing Suncrest Substation at the Project's western terminus. The Project is located approximately 1.8 miles south of Interstate-8 and Japatul Valley Road (State Highway 79) is approximately 1.2 miles to the southeast. The Project would be located on private property within the administrative boundary of the Cleveland National Forest.

The Proposed Project includes two primary components: 1) a Static Var Compensator (SVC) facility, to be located approximately 1 mile east of the existing Suncrest Substation; and 2) a 230 kilovolt (kV) transmission line from the proposed SVC facility to the existing Suncrest substation.

The proposed SVC facility would produce and consume reactive power for voltage support and would interconnect with the Suncrest bus via the proposed transmission line. The facility would be approximately 6 acres in total size (with a fenced area of approximately 2.58 acres) and would be located on an area previously used as a construction staging and materials storage area during construction of the Suncrest Substation (completed in 2012).

The SVC facility would include various structures and electrical equipment, such as power transformers, power circuit breakers, control buildings, capacitors, and reactors, all of which would be installed on concrete foundations. The four power transformers within the proposed SVC facility would each require a maximum of approximately 10,000 to 12,000 gallons of oil. The tallest structures within the SVC would be the lightning shielding masts, which would be approximately 75-feet-tall.

In addition to the electrical equipment, the SVC facility would include the following components: signage and lighting; access driveway improvements; stormwater drainage system and detention basin; retaining wall; 7-foot-high chain link and barb wire security fencing; and transformer oil containment basins. A retaining wall would be installed on the east side of the SVC facility to minimize the potential for erosion and would be approximately 480 feet long and 15 feet tall at its highest point.

The proposed 230 kV transmission line would be approximately 1 mile in length and would connect the proposed SVC facility to the existing Suncrest Substation. The proposed transmission line would be installed primarily underground beneath Bell Bluff Truck Trail Road, with approximately 300 feet of the line transitioning aboveground via an 85- to 95-foot-tall riser pole connecting with the existing substation. The underground transmission line would be installed in polyvinyl chloride conduits within a concrete-encased duct bank system. The duct bank would be approximately 5 deep, and would be approximately 30 inches wide by 24 inches tall. The underground transmission line would include up to five underground splice vaults spaced roughly every 900 feet to facilitate installation of the underground cables and operation and maintenance of the transmission line. The majority of the underground transmission line would be installed within Bell Bluff Truck Trail; however, installation of the splice vaults may require temporary disturbance outside of the roadbed.

The 85- to 95-foot-tall riser pole, for transition of the transmission line to an overhead span and entry into the existing Suncrest Substation, would be installed north of Bell Bluff Truck Trail. The base of the riser pole would be approximately 7 feet in diameter and require an additional approximately 15 foot radius of permanent disturbance around the riser pole.

In total, the Project would impact 12.2 acres of land, 6.2 acres of temporary impacts and 6 acres of permanent impacts. Construction is projected to be completed within 10 months with a targeted operation period of June 2017.

The Department offers the following comments and recommendations to assist the California Public Utilities Commission (CPUC) in avoiding, minimizing, and adequately mitigating Project-related impacts to biological resources.

Specific Comments

Project Scope

1. The Project is proposed to be constructed on an active habitat restoration site associated with the construction of the Sunrise Powerlink's Suncrest substation. Pursuant to the Sunrise Powerlink Project Final Environmental Impact Report (FEIR) Mitigation Measure B-1a, a minimum of 5 years of success monitoring (or until successful restoration is achieved)

is required for "...all areas temporarily impacted by construction, such as tower construction sites, laydown/staging areas, temporary access and spur roads..." and by Condition 2.52 and 3.12 for impacts addressed under Sunrise Powerlink's Streambed Alteration Agreement (1600-2009-0365-R5). Currently, the Suncrest substation restoration is in its 4th year (fall 2012) of restoration efforts. The Department recommends that the DEIR analyze the need for siting the Project in an active restoration area rather than within previously developed locations. When evaluating the significance of impacting a restoration site, it is prudent to base that analysis on what the required condition of the land would have been following successful restoration pursuant to the restoration plan (see mitigation measures referenced above). For any development proposals within restoration areas, a fully restored habitat should be assumed when determining the baseline biological conditions for the DEIR's analysis.

Draft East County Plan

2. A Planning Agreement for the East County Multiple Species Conservation Program (MSCP) Plan was executed between the County of San Diego, the Department, and the U.S. Fish and Wildlife Service (USFWS) on November 18, 2008 and subsequently amended in May 2014 (Planning Agreement). The Planning Agreement guides the planning and preparation of the MSCP plan including defining the parties' goals and commitments, defining the scope of the conservation planning areas, and establishing an interim review process intended to meet the preliminary conservation objectives and reserve assemblage. The assemblage of the regional reserve system (as defined per the NCCP/Habitat Conservation Plan process) has been an ongoing process for well over a decade in San Diego County, led by not only the state (Department/CA State Parks) and federal (USFWS/Bureau Land Management/U.S. Forest Service) contingency, but also through partnerships with the local governments that have elected to work towards and adopt multi-species planning documents.

   While the CPUC is not a party to the East County MSCP Planning Agreement, the Project is located within a Focused Conservation Area, a reserve planning tool for developing the draft East County MSCP. At the core of this plan (and as it exists under adopted MSCP Subarea Plans) is the preservation of large blocks of contiguous habitat in exchange for the participating local jurisdictions receiving permitting authority to regulate loss of the covered species. The underlying expectation is that the preserve areas remain whole or, if affected by development, be made whole again by replacing the functions and values lost. In order to address these aforementioned concerns we encourage the CPUC to coordinate with the Department and the USFWS in identifying potential areas for habitat acquisition or develop opportunities for habitat restoration within eastern San Diego County, to offset direct impacts to environmentally sensitive lands from the Project. Additionally, the Department recommends that the DEIR include a discussion regarding the Project's conformance to the guidance provided in the Planning Agreement's Interim Review Process to ensure successful implementation of the Project and draft MSCP plan.

Jurisdictional Delineation

3. The Project is proposed to be built within the existing laydown yard of the Suncrest substation. As part of the permitting process associated with that project a jurisdictional

delineation (JD) identified multiple ephemeral drainages within the Department's jurisdiction. In order to document the current conditions, the Department recommends that a subsequent JD is performed for the Project. The Department recommends notification pursuant to Fish and Game Code section 1600 *et seq.* for any impact that will divert or obstruct the natural flow, or change or use any material from the bed, channel, or bank (which may include associated riparian resources) of any river, or stream (see comment 5 below).

Proposed Blasting

4. Multiple golden eagle (*Aquila chrysaetos*) territories are known within the Project vicinity. The NOP identifies "...hammering, cutting and localized low energy blasting" within the scope of potential Project related construction. The Department is concerned with the potential effects that the proposed blasting may have on golden eagle. As a fully protected species (Fish and Game Code § 3511), take (Fish and Game Code § 86) of Golden Eagle is prohibited in addition to protections already afforded by the federal Bald and Golden Eagle Protection Act (as amended, 16 U.S.C. § 668). The DEIR should analyze the potential effects of the Project development on golden eagle and explore feasible alternatives that avoid impacting or take of golden eagle.

General Comments

Streambeds and Riparian Habitats

5. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, Project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations. Mitigation measures to compensate for impacts to mature riparian corridors must be included in the DEIR and must compensate for the loss of function and value of a wildlife corridor.

   The Department also has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of any river, or stream, or use material from a river, or stream. For any such activities, the Project applicant (or "entity") must provide written notification to the Department pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, the Department determines whether a Lake and Streambed Alteration Agreement (LSA) with the applicant is required prior to conducting the proposed activities. The Department's issuance of a LSA for a Project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA may consider the lead agency's Environmental Impact Report for the Project. To minimize additional requirements by the Department pursuant to section 1600 *et seq.* and/or under CEQA, the document should fully

identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA.[1]

Threatened, Endangered, and Candidate Species

6. The Department considers adverse impacts to a species protected by the CESA, for the purposes of CEQA, to be significant without mitigation. As to CESA, take of any endangered, threatened, or candidate species that results from the Project is prohibited, except as authorized by state law (Fish and Game Code, §§ 2080, 2085, 2835). Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, and is not covered under an approved NCCP, the Department recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from the Department may include an incidental take permit (ITP) or a consistency determination in certain circumstances, among other options (Fish and Game Code §§ 2080.1, 2081, subds. (b),(c), and 2835). Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

7. To enable the Department to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DEIR.

   a) A complete discussion of the purpose and need for, and description of, the proposed Project, including all staging areas and access routes to the construction and staging areas.

   b) A range of feasible alternatives to ensure that alternatives to the proposed Project are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive biological resources, particularly wetlands. Specific alternative locations should be evaluated in areas with lower resource sensitivity where appropriate.

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1 A notification package for a LSA may be obtained by accessing the Department's web site at www.wildlife.ca.gov/habcon/1600.

Biological Resources within the Project's Area of Potential Effect

8. To provide a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats, the DEIR should include the following information.

   a) Per CEQA Guidelines, section 15125(c), information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis placed on resources that are rare or unique to the region.

   b) A thorough, recent floristic-based assessment of special status plants and natural communities, following the Department's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (see http://www.dfg.ca.gov/habcon/plant/). The Department recommends that floristic, alliance-based and/or association-based mapping and vegetation impact assessments be conducted at the Project site and neighboring vicinity. The Manual of California Vegetation, second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2008[2]). Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

   c) A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. The Department's California Natural Diversity Data Base in Sacramento should be contacted at www.wildlife.ca.gov/biogeodata/ to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

   d) An inventory of rare, threatened, endangered and other sensitive species on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the Project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

Analyses of the Potential Project-Related Impacts on the Biological Resources

9. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DEIR.

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2 Sawyer, J. O., T. Keeler-Wolf and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press, Sacramento.

a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage should also be included. The latter subject should address: project-related changes on drainage patterns on and downstream of the Project site; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site. The discussions should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and the potential resulting impacts on the habitat, if any, supported by the groundwater. Mitigation measures proposed to alleviate such impacts should be included.

b) Discussions regarding indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a NCCP). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR.

c) The zoning of areas for development Projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

d) A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

<u>Mitigation for the Project-related Biological Impacts</u>

10. The DEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from Project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.

11. The DEIR should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

12. For proposed preservation and/or restoration, the DEIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

13. In order to avoid impacts to nesting birds, the DEIR should require that clearing of vegetation, and when biologically warranted construction, occur outside of the peak avian breeding season which generally runs from February 1 through September 1 (as early as January 1 for some raptors). If Project construction is necessary during the bird breeding season a qualified biologist with experience in conducting bird breeding surveys should conduct weekly bird surveys for nesting birds, within three days prior to the work in the area, and ensure no nesting birds in the Project area would be impacted by the Project. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer should be a minimum width of 300 feet (500 feet for raptors), be delineated by temporary flagging, and remain in effect as long as construction is occurring or until the nest is no longer active. No Project construction shall occur within the flagged nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the Project. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

14. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

15. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

We appreciate the opportunity to comment on this NOP. Questions regarding this letter and further coordination on these issues should be directed to Eric Weiss at (858-467-4289) or eric.weiss@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager
South Coast Region

ec: State Clearinghouse, Sacramento
David Zoutendyk, U.S. Fish and Wildlife Service, Carlsbad

Literature Cited:

Community Conservation Program Plans and Habitat Conservation Plans. NCCP Planning Agreement No. 2810-2007-00205 October 29, 2008.

County of San Diego, 2013. North and East County MSCP Planning Agreement and related amendment. PA# 2810-2007-00205. Amendment to County of San Diego, the California Department of Fish and Wildlife and the United States Fish, and Wildlife Service Regarding the North and East County Multiple Species Conservation Program Plans: Natural Community Conservation Plans and Habitat Conservation Plans. November 15, 2013.

Comment Letter #3

County of San Diego

MARK WARDLAW
DIRECTOR
PHONE (858) 694-2962
FAX (858) 694-2555

PLANNING & DEVELOPMENT SERVICES
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123
www.sdcounty.ca.gov/pds

DARREN GRETLER
ASSISTANT DIRECTOR
PHONE (858) 694-2962
FAX (858) 694-2555

February 8, 2016

Robert Peterson
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Via email to: suncrestproject@horizonh20.com

COMMENTS ON NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT PROPOSED BY NEXTERA ENERGY TRANSMISSION WEST, LLC

Dear Mr. Peterson,

The County of San Diego (County) has received the California Public Utilities Commission's Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project (Project) and appreciates this opportunity to comment. County staff has completed their review and have the following comments regarding the Project:

Hazardous Materials

The Project is expected to require the storage of between 10,000 – 12,000 gallons of oil for the transformers. Typical transformer oils are hazardous substances under State law. This storage will require a ministerial Unified Program Facility Permit, issued by the County Department of Environmental Health. For questions related to this permit, please contact Wendy Martinez at 619-247-2008 or Wendy.Martinez@sdcounty.ca.gov.

Watershed Protection

For storm water quality standards, the 2007 MS4 Permit (Order No. R9-2007-0001) and the County of San Diego SUSMP, dated August 1, 2012, are currently in effect and may apply. Please note that the Project may need to comply with the recently adopted San Diego Municipal Storm Water Permit Order No. R9-2013-0001, (as amended by Order Nos. R9-2015-0001 and R9-2015-0100) if prior lawful approval is not established prior to the implementation of the BMP Design Manual and other development regulations related to the 2013 San Diego Municipal Storm Water Permit (Order No. R9-2013-0001). County staff will provide additional review comments during the draft EIR period.

The Project may generate potential storm water quality impacts onto unincorporated County of San Diego lands; therefore, the Project may need to consider the following items:

- Post-construction Best Management Practices (BMPs), Low Impact Development (LID), Source Control BMPs and hydromodification management plan (HMP) in accordance with the relevant San Diego Municipal Storm Water Permit (2007 MS4 Permit or 2013 MS4 Permit pending the time of project approval/construction).

- Construction BMPs and associated plans for conformance with the County of San Diego' Grading Ordinance, Watershed Protection Ordinance and State of California's Construction General Permit.

Parks and Recreation

The adopted Alpine Community Trails and Pathways Plan and Map, included in the County Trails Master Plan (CTMP), identifies proposed community trail alignment #23 as the Bell Bluff Trail (see attachment A). The trail locations shown on the maps on the CTMP represent general corridors and do not represent exact trail alignment locations. The Department of Parks and Recreation recommends coordination with the Alpine Community Planning Group regarding any proposed trail accommodation through the site.

Noise

The Project should be designed to comply with the County's Regulatory Section: Section 36.401 for operation and construction of the facilities.

Fire

County Fire Services has completed a review of the Fire Protection Plan prepared by Dudek, dated December 2015 and has provided the following comments to the Project applicant:

- Page 1, Footnote 1: Please update the timeline for the completion of the dissolution of the SDRFPD to be by mid-2016.
- It is stated in the FPP that there will be a 2,500 sq. ft. Control House (Sec. 1.1.2.2). Please specify in the FPP that the Control House will be non-combustible construction.
- Sec. 3.1.1 *Emergency Response*, Page 37: Please revise that initial response will be from the SDCFA Descanso Fire Station, which is staffed with CAL FIRE firefighter / paramedics via Schedule A contract with the SDCFA.
- Sec. 3.1.1 *Emergency Response*, Page 38, second paragraph: Replace this entire paragraph with discussion that the next due in will be the SDCFA Pine Valley Fire Station, which is staffed with CAL FIRE firefighter / paramedics via Schedule A contract with the SDCFA.
- Sec. 3.1.1 *Emergency Response*, Page 38: Provide discussion on how the applicant is to contract with a private fire industrial brigade to conduct operations on electrical-related fires within the facility (similar to SDG&E's contract with Capstone).

- Sec. 3.1.1 *Emergency Response—Emergency Services*: Revise this section to state that Mercy is the contract ambulance provider to this area. The Mercy ambulance is in the Alpine area during the day and at night is housed in the Descanso Fire Station.
- Sec. 3.2.1 *Fire and Maintenance Access* in FPP & Sec. 3.5 *Fire Access* in the Tech Report: Revise the discussion regarding gates to state that they are to be two feet wider than the access roads (gates 22' wide) and that the gates are to be setback 30' from Bell Bluff Truck Trail.
- Sec. 3.2.1 *Fire and Maintenance Access*: Revise the discussion regarding access roads to state that they are to be capable of supporting 75,000 lbs.
- Sec. 3.3 *Water*, Second Paragraph: Replace the sentence that begins "If a water tank is built next to the SVC location…" with "A 10,000 gallon water storage tank will be situated to the southwest of the northernmost access driveway and accessible by fire engines".
- Sec. 3.7 *Defensible Space and Vegetation Management* of the FPP & Sec. 4.2 *Fuels Management* of the Tech Report: Clearly state that a minimum of 100' of defensible space will be provided around the facility, which will include the first 50' being devoid of any vegetation.
- Sec. 4.0 *Mitigation Measures*, Item 2: Reference to Appendix G should be replaced by Appendix F.
- Please provide a Project Facilities Availability – Fire form with Section 1 completed and signed to our department for us to complete so that you may add it to Appendix C of the next revision of the FPP.

If you have any questions regarding these comments, please contact Danny Serrano, Land Use/Environmental Planner, at (858) 694-3680, or via email at Daniel.serrano@sdcounty.ca.gov.

Sincerely,

Joseph Farace, AICP
Group Program Manager
Advance Planning Division
Planning & Development Services

Attachment A: Bell Bluff Trail

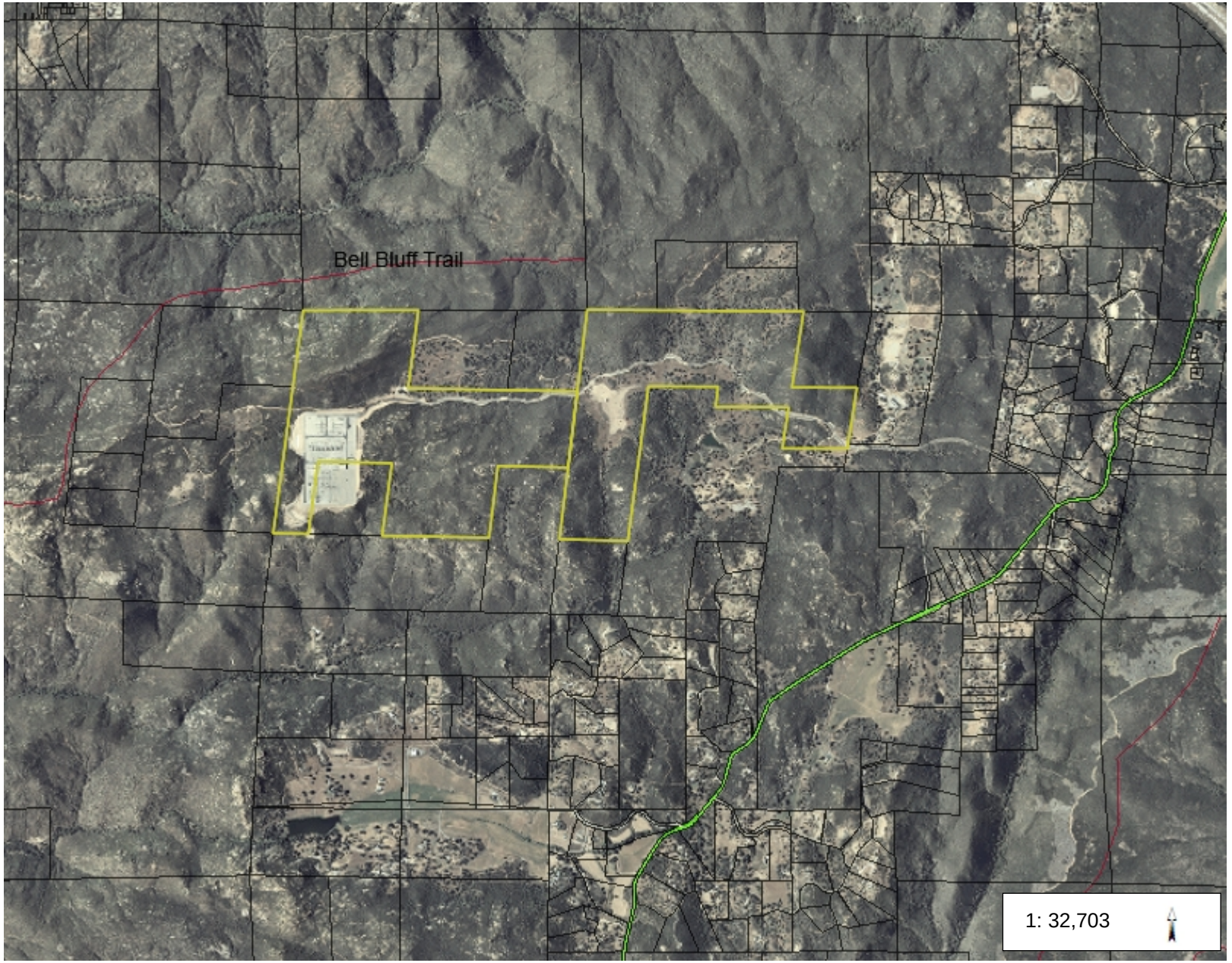
Email cc:

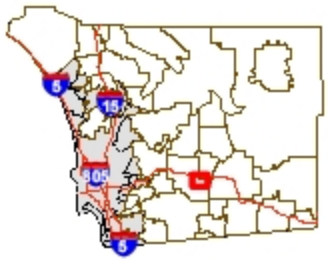
Adam Wilson, Policy Advisor, Board of Supervisors, District 2
Conor McGee, CAO Staff Officer, LUEG
Eric Lardy, Land Use/Environmental Planning Manager, Planning & Development Services
Ashley Smith, Land Use/Environmental Planner, Planning & Development Services
Nick Alex, Planner, Department of Public Works
Mary Wells Bennett, Department of Environmental Health
Marcus Lubich, Park Project Manager, Department of Parks and Recreation

Comment Letter #3

LUEG GIS
Land Use & Environment Group
Geographic Information Services

Bell Bluff Trail





Legend

- Parcels
- Circulation Element
  - Expressway/Freeway
  - Prime Arterial
  - Major Roads Series
  - Boulevard Series
  - Community Collector Series
  - Light Collector Series
  - Minor Collector Series
  - Local Public Roads
- Trails
  - Regional Regional
  - Community Trail
- Trail Easements

Notes

1.0 0 0.52 1.0 Miles

NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Planning and Development Services

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Comment Letter #4

ORA

Office of Ratepayer Advocates
California Public Utilities Commission

LINDA SERIZAWA
Interim Director

505 Van Ness Avenue
San Francisco, California 94102
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Fax: 415-703-2057
http://ora.ca.gov

February 8, 2016

Rob Peterson, Project Manager
Infrastructure Permitting and CEQA, Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Comments on the Notice of Preparation of an Environmental Impact Report for the Suncrest Reactive Power Support Project, Proposed by NextEra Energy Transmission West, LLC; Application (A.) 15-08-027

Dear Mr. Peterson:

The Office of Ratepayer Advocates (ORA) hereby submits the following comments to the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Suncrest Reactive Power Support Project (Project) proposed by NextEra Energy Transmission West, LLC (NextEra). ORA seeks to ensure that the EIR considers all the potential environmental impacts of the Project, including the difference between placing the Project outside the locational footprint of the Suncrest substation and inside the locational footprint. ORA believes that placing the Project inside the site of the Suncrest substation will prove the preferable alternative on environmental and other grounds, and requests that the Commission evaluate this among the alternatives considered.

Table 1 of the NOP identifies the summary of potential impacts and issues for the EIR and notes the following with respect to alternatives to the Project:

> Alternatives.
>
> - Concerns regarding inclusion, evaluation of a project alternative co-located within existing Suncrest substation site, (i.e. concerns that such an alternative wouldn't be evaluated in an MND,[1]) which could have induced environmental impacts.[2]

[1] Mitigated Negative Declaration, California Code of Regulations, Section 15070.

[2] Notice of Preparation of EIR, p. 3.

Locating the proposed Project within the site of the existing Suncrest substation mitigates significant impacts and should be studied even if the Commission decides to prepare an MND for the project. As well as being lead agency for California Environmental Quality Assessment (CEQA), the Commission is also the agency ultimately charged with determining if a project can be located within the site of the existing Suncrest substation[3]. Thus, ORA has requested that the scope of this proceeding include a determination of whether locating the proposed Project outside the existing Suncrest substation was based on the assumption that California Independent System Operator (CAISO) and/or San Diego Gas & Electric company (SDG&E) would need to authorize or approve co-locating the proposed Project within the Suncrest substation.[4]

Public Utilities Code, Section 762, in relevant part states:

> Whenever the commission, after a hearing, finds that additions, extensions, repairs, or improvements to, or changes in, the existing plant, equipment, apparatus, facilities, or other physical property of any public utility or of any two or more public utilities ought reasonably to be made, or that new structures should be erected, to promote the security or convenience of its employees or the public, or in any other way to secure adequate service or facilities, the commission shall make and serve an order directing that such additions, extensions, repairs, improvements, or changes be made or such structures be erected in the manner and within the time specified in the order. If the commission orders the erection of a new structure, it may also fix the site thereof. If the order requires joint action by two or more public utilities, the commission shall so notify them and shall fix a reasonable time within which they may agree upon the portion or division of the cost which each shall bear.

If co-location of the proposed Project and the Suncrest substation is not studied in this EIR, and the Commission ultimately determines that the project should be located inside the substation site, then another EIR would likely ensue to study the co-location alternative.

Therefore, ORA recommends that the following issues be included in the scope of the EIR:

1. Whether the proposed Project should be co-located within the footprint of the existing Suncrest Substation.

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[3] See Public Utilities Code, Section 762 et. seq; see also Public Utils. Code, Section 851 et seq.

[4] *Id.*; See also ORA's Response to NextEra's Application.

2. Whether the existing Suncrest substation needs to be expanded to accommodate inclusion of the proposed Project within its site or current footprint.

There is no need for the one mile 230 kV transmission line interconnecting the proposed Project and the existing Suncrest substation. Locating the Project within the footprint of the Suncrest substation would more effectively provide voltage support services to the Suncrest substation, operate more reliably and be easier to coordinate from an engineering standpoint. Co-locating the Project within the substation also costs less and might have less impact on the environment than building the Project outside the site of the substation.

Sincerely,

/s/ LINDA SERIZAWA
Linda Serizawa Interim Director,
Office of Ratepayer Advocates

Cc: Tom Engles, Horizontal Water and Environment, LLC
Administrative Law Judge Todd Edmister
Service List for A.15-08-027

Comment Letter #5

Adrianna B. Kripke
Senior Environmental Counsel

San Diego Gas & Electric Company
8330 Century Park Court, CP32C
San Diego, CA 92123
Tel: 858-654-1536
akripke@semprautilities.com

February 8, 2016

SENT BY EMAIL

Rob Peterson, California Public Utilities Commission
c/o Tom Engels, Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612
<suncrestproject@horizonh2o.com>

Re: San Diego Gas & Electric Company's Comments on the Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Dear Mr. Peterson:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Suncrest Dynamic Reactive Power Support Project (Proposed Project). San Diego Gas & Electric Company (SDG&E) agrees that the EIR should address the potentially significant impacts and issues listed in the NOP. SDG&E especially encourages the EIR's consideration of: (1) the Proposed Project's potential conflicts with SDG&E's ongoing, legally binding mitigation obligations for the Suncrest Substation; and (2) an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation.

I. The Proposed Project Should Not Conflict with SDG&E's Ongoing, Legally Binding Mitigation Obligations for the Suncrest Substation

The NOP's list of potentially significant impacts and issues includes "[i]mpacts on existing mitigation sites/conflicts with existing mitigation obligations related to the existing Suncrest Substation."[1] SDG&E owns and operates the Suncrest Substation and will continue to honor these ongoing, legally binding mitigation obligations. SDG&E therefore requests that the Proposed Project not conflict with any of these obligations, which include restoring habitat on the site of the Proposed Project and transferring nearby land to the U.S. Forest Service for conservation purposes.

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[1] NOP at 2.

II. SDG&E Requests Analysis of an Alternative that Locates an SDG&E-Owned Dynamic Reactive Device Within the Suncrest Substation

SDG&E requests that the EIR analyze an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation. This will help to meet the requirement in the California Environmental Quality Act (CEQA) Guidelines to analyze a "range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project."[2]

A. The Alternative Is Feasible

An alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation meets the criteria for inclusion in the alternatives analysis. This alternative is feasible, which the CEQA Guidelines define as meaning "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."[3]

The NOP states:

> The Proposed Project originates from the California Independent System Operator's (CAISO's) 2013-2014 transmission planning process, which identified a need for a 300-million volt-ampere reactive (megavar) dynamic reactive device at the existing Suncrest Substation's 230 kilovolt (kV) bus to meet California's 33% Renewable Portfolio Standard.[4]

SDG&E submitted a project sponsor bid to CAISO to locate an SDG&E-owned dynamic reactive device within the Suncrest Substation based on SDG&E's determination that doing so was feasible. While CAISO selected NextEra Energy Transmission West, LLC (NEET West) to be the project sponsor, CAISO emphasized in its selection report that it considered both NEET West and SDG&E "to be highly qualified to finance, construct, own, operate, and maintain" the device.[5] CAISO's selection report therefore confirms SDG&E's determination that locating an SDG&E-owned device within the substation is feasible.

---

2 Cal. Code Regs. tit. 14, § 15126.6(a).

3 *Id.* § 15364.

4 NOP at 4.

5 CAISO, Suncrest Reactive Power Project – Project Sponsor Selection Report at 1 (Jan. 6, 2015), *available at* https://www.caiso.com/Documents/SuncrestProjectSponsorSelectionReport.pdf.

In the Proponent's Environmental Assessment for the Proposed Project, NEET West stated correctly that SDG&E will not agree to NEET West's construction of the dynamic reactive device within the Suncrest Substation. NEET West then stated that its construction of the device within the substation would be infeasible due to issues with site control and timing.

While these issues affect the feasibility of NEET West's construction of the dynamic reactive device within the Suncrest Substation, they do not affect the feasibility of locating an SDG&E-owned device within the substation. As discussed below, an alternative that locates an SDG&E-owned device within the substation could avoid or substantially lessen any significant environmental effects from the Proposed Project.

SDG&E requests that the EIR analyze this alternative regardless of the ultimate conclusions about site control and timing. This will ensure that the EIR provides a complete analysis under CEQA of the Proposed Project's environmental impacts.

B. The Alternative Meets the Project Objectives

The NOP lists the Proposed Project's objectives as follows:

- Meet the CAISO's identified need for reactive support at the Suncrest Substation's 230 kV bus;
- Improve and maintain the reliability of the transmission grid;
- Facilitate delivery of renewable energy generation from the Imperial Valley area to population centers to the west;
- Support achievement of the state's 33% Renewable Portfolio Standard.[6]

An alternative that locates an SDG&E-owned device within the substation meets all these objectives.

C. The Alternative Could Avoid or Substantially Lessen Any Significant Environmental Effects

An alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation could avoid or substantially lessen any of significant environmental effects from the Proposed Project.

The Proposed Project would construct: (1) a Static Var Compensator facility approximately one mile east of the Suncrest Substation; and (2) a new, approximately one-mile

[6] NOP at 4.

230 kV transmission line, which would connect the Static Var Compensator facility to the substation. The Static Var Compensator facility would have a total footprint of approximately six acres, located in an area previously used for staging and storage during construction of the substation. The transmission line would be installed primarily underground beneath Bell Bluff Truck Trail road. The last approximately 300 feet would transition above ground at an 85- to 95-foot riser pole that would connect via SDG&E-owned overhead conductors to the 230 kV bus at the substation.

An alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation would not require any construction outside the substation footprint and would require only a minimal amount of new transmission conductors within the substation. Using the existing substation footprint, as well as avoiding construction of an approximately one-mile transmission line, could avoid or substantially lessen the potentially significant impacts identified in the NOP. These potentially significant impacts are for biological resources, cultural resources, hydrology and water quality, land use, noise, and public services.

For these reasons, the alternative analysis should include an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation. SDG&E looks forward to reviewing the alternatives analysis, as well as the analysis of potential conflicts with SDG&E's ongoing, legally binding mitigation obligations for the substation.

Thank you for considering these comments. Please contact me if you have any questions.

Sincerely,

Adrianna B. Kripke

Adrianna B. Kripke
Senior Environmental Counsel
San Diego Gas & Electric Company

cc: Wendy D. Johnson, Regulatory Business Manager, SDG&E

Comment Letter #6

California Public Utilities Commission

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Scoping Comment Form

Name:	[redacted]
Group/Organization (optional):	[redacted]
Mailing Address:	[redacted]
Telephone Number (optional):	[redacted]
Email (optional):	

SEND EIR REVIEW INFO

Comments/Issues:

(1) Reference the EPA Clean water act in EIR
(2) Send me a Copy of EIR
(3) Please EXplain the need for and the actual technical process used in Faculty.
(4) GASEOUS EMISSIONS, OZONE ETC.?
(5) Fire Dangers — FROM FACILITY PROCESS
(6) EXISTING SUBSTATION EIR EFFECT
(7) Need FOR Project?
8 MORE POWER THRU ALPINE + LUCERNEA?
ie Need MORE INFO TO Prevent Dangers.

Please use additional sheets if necessary.

Submit written comments (postmarked no later than February 8, 2016) to:

Mail: Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Email: suncrestproject@horizonh2o.com

Questions? Please contact us or visit our website:
http://www.cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html

Comment Letter #7

February 1, 2016

Rob Peterson, CPUC
% Tom Engels
Horizon Water and Environment
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Subject: Response to the Scoping Meeting on the Sun Crest Dynamic Reactive Power Support Project Meeting held in Alpine, CA January 21st 2016

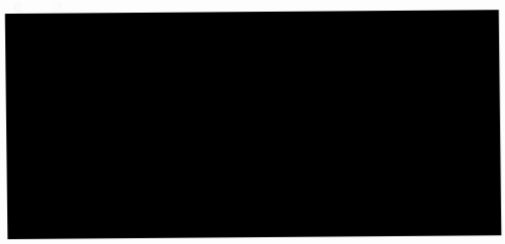
The meeting discussed adding another facility next to the existing Transformer Facility near Bell Bluff in Alpine. Both the present facility and the proposed facility used oil filled transformers and possibly capacitors. Both facilities in my opinion create a serious fire danger. The oil filled transformers and capacitors can explode due to internal shorting. In a Santa Ana wind condition the fire can spread to adjacent transformers.

The combustion can attach and flame-hold to the downstream side of adjacent transformers which act as bluff body flame-holders and create a long conflagration, which can create in wind conditions a firestorm which could burn Alpine Viejas Casino, the town of Alpine and perhaps El Cajon, California.

However, the fire danger can be mitigated by installing a steel containment barrier around the facilities to contain the fire, allow for suppression installation, prevent ignition from stray bullets and errant vehicles. Advanced Engineering will provide preliminary design for the two barriers as a public service in return for some Powerlink information.

The January 21st meeting mentioned that the new facility would allow about 20% power increase through Alpine. Alpine has just recovered from the destruction caused by routing the Powerlink through its main street.

We are opposed to the increase of power levels through Alpine California because of the increase in EMF radiation levels associated with it, and the danger to children from leukemia. Measured EMF levels on Alpine, Blvd. appear to exceed the levels that increase the risk of childhood leukemia as reported in the references contained in the attached study. (Study of EMF Levels on Alpine Blvd., In Alpine California before and after Sunrise Powerlink Energization, January 21st, 2016).



Comment Letter #7

January 21st 2016

Study of EMF Levels on Alpine Blvd. in Alpine, CA Before and After Sunrise Powerlink Energization

EMF measurements were taken along Alpine Blvd before and after the buried Powerlink cables were energized by Robie Faulkner and Michael Milligan of Alpine. Measurements were taken also inside an F150 truck on Alpine Blvd. at the same locations and on I8 E parallel to Alpine Blvd. The measurements taken inside the vehicle on Alpine Blvd. appear to be higher than measured on the roadside.

The reason the measurements were taken was to determine if levels may be harmful to health.

A synopsis of an Oxford University and Institute of Environmental Health in Stockholm Sweden studies are attached. The results of the study appear to indicate the risk of childhood leukemia increase with exposure to magnetic fields above .2 / .4 Micro Tesla.

It appears from the trend of the measurements taken and the information presented in the literature that children in Alpine may be at risk for leukemia.

We ask the Alpine Planning Group to ask the County of San Diego to examine the Alpine children for leukemia once a year as a precaution.





EMF measurements taken on Alpine Blvd with Lutron EMF Field Tester, Model EMF – 822A Measured in micro tesla for 30 sec.

Location, Alpine	Date 3-11-12 Before Pwrlnk	06-24-12 RD.	01-25-16 RD.	01-26-16 *Vehicle
Star Vly Rd.	.01	.22	.27	.12
Cranors house (SVR)	.02	.22	.01	. 9
Star Vly Rd. Mail Box	.1	.73	1.85 avg	.80
Alpine Blvd. Bridge	.3	.74	1.03 avg	.30
High School site	.6	.9	.155 avg	2.04
Albertsons	.2	1.7	1.01	1.75
Donatos	.2	.2	.36	1.06
4 Way Stop	.21	.38	.25	.18
Elementary School	.07	.27	.38 avg	.61
Tavern & Alpine Blvd	.03	.4	.43	.40
Peutz Vly Rd.	.015	1	.47	2.12

Note: Average measurements. Taken at center and side of road and averaged.

***Measurements taken in F150 Truck in West lane of Alpine Blvd.**

Note: Measurements were taken on I8 E inside F150 Truck parallel Alpine Blvd. Readings measured .03 to .06 micro tesla except for Victoria Dr. underpass .13 and bridge underpass .2 micro tesla

Comment Letter #7

Like most websites we use cookies to deliver a personalised service, you can read about them here. To use the website as intended please
ACCEPT COOKIES

Latest family update



Benji
Three-year-old Benji was waking up screaming with terrible leg pains. He was diagnosed with leukaemia. Although still undergoing treatment, he has started school and is loving it.

Related Topics

acute lymphoblastic leukaemia
acute myeloid leukaemia
bake club
brain and spinal tumours
brain tumour initiative
cancer treatments
childhood cancers
corporate partners
cycling
donate
funding research
fundraising stories
patient stories
running
supporting families
trekking

Press release: new power line study on link with childhood leukaemia

07 February 2014

Press release: Overhead power line study does not overturn existing link with childhood leukaemia
Press release: embargoed until 00.01 hrs Friday 7th February 2014

Children with Cancer UK notes the publication of the Bunch et al paper in the British Journal of Cancer today [i] and its further exploration of the association between residential proximity to high voltage overhead power lines and childhood leukaemia risk.

Researchers at the Childhood Cancer Research Group in Oxford extended their previous study of childhood leukaemia and proximity to power lines by including more recent data, cases and controls from Scotland, by considering 132 kV power lines as well as 275 kV and 400 kV and by looking at greater distances from the power lines. Their report published today concludes that the risk declines after the 1980s.

In 2005, the 'Draper Study' [ii], published in the British Medical Journal reported an increased risk of leukaemia in children born in England and Wales between 1962-1995 whose birth address fell within 600 metres of a high voltage power line.

Electric and magnetic fields (EMFs) are created by the presence of electricity. They are produced in varying degrees and strengths by all elements of the electricity supply system – from high-voltage power lines to domestic electrical appliances.

A doubling of the risk of childhood leukaemia with exposure to magnetic fields associated with the electricity supply above 0.3/0.4 microtesla is widely acknowledged. The robustness of this association has been re-affirmed in the recent EU SCENIHR draft Report [iii] and a new pooled analysis of international studies [iv].

Professor Denis Henshaw, Emeritus Professor of Human Radiation Effects at the University of Bristol and Scientific Advisor to Children with Cancer UK, said: "The report adds weight to the original 2005 findings that children living in proximity to power lines were, until after the 1980s, at increased risk of developing leukaemia.

"We are clear that this report does not alter the widely acknowledged robust association of power frequency magnetic fields with childhood leukaemia risk. That the risk now appears to have diminished is intriguing and at present we can only speculate as to why this may be. This paper highlights the clear need for further research."

Around 3,600 youngsters, including children and babies, are diagnosed with cancer every year in the UK. Children with Cancer UK funds life-saving research into the causes, prevention and treatment of childhood cancer and works to protect young lives through essential welfare and campaigning programmes.

ENDS

Notes to editors

1. For quotes or interviews and further information about the charity please contact Tina Price, PR Manager Email: tina@tinapriceconsultants.com Tel: 01258 861 221 Out of hours: 07966 239 092
2. Where possible, please include the contact details for more information: www.childrenwithcancer.org.uk or 020 7404 0808.

Comment Letter #7

Oxford Journals Medicine & Health American Jnl of Epidemiology Volume 138, Issue 7 Pp. 467-481

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Reducing cancer burden in the population: epidemiologic evidence to support policies, systems, and environmental changes

American Journal of Epidemiology
aje.oxfordjournals.org

Am. J. Epidemiol. (1993) 138 (7): 467-481

Magnetic Fields and Cancer in Children Residing Near Swedish High-voltage Power Lines

Maria Feychting and Michael Alhbom
Author Affiliations

Reprint requests to Maria Feychting, Institute of Environmental Medicine, Karolinska Institutet, Doktorsringen 18, Box 60208, S-104 01 Stockholm, Sweden

Received December 28, 1992.
Revision received June 10, 1993.

Abstract

A case-control study was conducted to test the hypothesis that exposure to magnetic fields of the type generated by high-voltage power lines increases cancer incidence in children. The study base consisted of everyone under age 16 years who had lived on a property located within 300 meters of any of the 220 and 400 kV power lines in Sweden during the period 1960-1985. Subjects were followed from their entry into the study base through 1985. A total of 142 cancer cases were identified through a record linkage to the Swedish Cancer Registry. There were 39 leukemia and 33 central nervous system tumor cases. A total of 558 controls were selected at random from the study base. Exposure was assessed by spot measurements and by calculations of the magnetic fields generated by the power lines, taking distance, line configuration, and load into account. Information about historical loads on the power lines was used to calculate the magnetic fields for the year closest in time to diagnosis. When historical calculations were used as exposure assessment for childhood leukemia with cutoff points at 0.1 and 0.2 microtesla (μT), the estimated relative risk increased over the two exposure levels and was estimated at 2.7 (95% confidence interval (CI) 1.0-6.3) for 0.2 μT and over; p for trend = 0.02. When the upper cutoff point was shifted to 0.3 μT, the relative risk was 3.8 (95% CI 1.4-9.3); p for trend = 0.005. These results persisted when adjustment for potential confounding factors was made. For central nervous system tumor, lymphoma, and all childhood cancers combined, there was no support for an association.

Key words child electromagnetic fields leukemia neoplasms

© 1993 by The Johns Hopkins University School of Hygiene and Public Health

Articles citing this article

A Pooled Analysis of Extremely Low-Frequency Magnetic Fields and Childhood Brain Tumors
Abstract Full Text (HTML) Full Text (PDF)

Exposure assessment and other challenges in non-ionizing radiation studies of childhood leukaemia
Abstract Full Text (HTML) Full Text (PDF)

Nighttime Exposure to Electromagnetic Fields and Childhood Leukemia: An Extended Pooled Analysis

Comment Letter #8

From: Peterson, Robert
To: Tom Engels
Subject: public scoping comment Fwd: Suncrest Dynamic Reactive Power Support Project
Date: Monday, February 08, 2016 7:26:56 PM

Sent by Android.

-------- Original Message --------
From: [redacted]
Sent: Monday, February 8, 2016 06:34 PM
To: "Peterson, Robert" <Robert.Peterson@cpuc.ca.gov>
Subject: Suncrest Dynamic Reactive Power Support Project

Rob Peterson, Public Utilities Commission Project Manager,
My name is [redacted] I reside at [redacted]. I have several concern related to the proposed addition of 1,700 Mega Watts of power to the Sunrise Power Link.

There has been completed a measurement of the EMF (radiation) currently being generated by the Sunrise Power Link. The study shows the current emissions are at a level known in Europe to cause Leukemia in children.

The amount of power which is attempting to be added to the Sunrise Power Link (1,700 Mega Watts) will increase the EMF exponentially along Alpine Boulevard where the residents walk and children play as well as wait for the school bus. The current EMF is damaging to children at existing levels. When additional power for approximately 85,000 new all electric homes is added to the Sunrise Power Link what will be the benefit be to the community of Alpine?

The Sunrise Power Link was promised by SDG&E to keep All our power bills low in San Diego, However every rate payer in San Diego county received a power rate increase due to the NEW 4 tier system of billing, which the PUC allowed. Prior the this new tier system there was peak and off peak power usage. Each and every time SDG&E has made promises they have been empty. As a member of the PUC you represent the citizens of the county NOT SDG&E. Please oppose the new power increase to the Sunrise Power Link. The health of Alpines' next generation depends on you.

Thank You for your time
[redacted]

Comment Letter #9

California Public Utilities Commission

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Scoping Comment Form

Name:	[redacted]
Group/Organization (optional):	
Mailing Address:	[redacted]
Telephone Number (optional):	[redacted]
Email (optional):	[redacted]

Comments/Issues: the proposed Dynamic Reactive Power Support System to be installed along the Bell Bluff truck trail within the Cleveland National Forrest is in direct opposition to the health of every resident of Alpine. the addition of 1,700 Mega Watts of electrical power will increase the EMF of the Sunrise Power link exponentially. 1,700 mega watts does not sound like much when glazed over by SDGE as well as contractor NextEra Energy transmission west, LLC. However that is power enough for 85,000 All electric Residences. It is also power enough for 850 Post Office processing & Distribution Centers Similar to the one located at 11251 Rancho Carmel Dr.

Please use additional sheets if necessary.

Submit written comments (postmarked no later than February 8, 2016) to:

Mail: Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Email: suncrestproject@horizonh2o.com

Questions? Please contact us or visit our website:
http://www.cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html

cc Diane Teeter

Comment Letter #10

[redacted]

February 9, 2016

Dianne Jacob
Supervisor, Second District

Dear Dianne,

I don't know if you received this from the PUC but the PUC wants to grant permission to NextEra Energy Transmission West LLC the right to construct a Static Var Compensator and a mile of 230 Volt transmission line in the same area as the existing Suncrest Substation in Japatul Valley.

Nowhere in the notice of the preparation of the EIR is a picture or description of what's proposed to be constructed so I thought you might be interested in what it looks like since it's made to sound so benign.

The pictures I've enclosed are of a similar unite located in El Cajon at SDG&E's office, and as you will note it's not a small thing.

Those of us that live in Japatul Valley and already are forced to look at the Suncrest Substation (that was to be screened by now, see enclosed 2011 email) and don't want another piece of power transmission equipment built that will further impede our views and further decrease property values.

This proposed construction in no way benefits San Diego or San Diego County much less the residents of Japatul Valley.

If left unchecked in 20 years we will be looking at an electrical facility of a magnitude that will be unstoppable. Allowing Sempra Energy a foot in the door is like opening the floodgates to whatever they want to do, and you know as well as I the PUC will go along.

What is your position and your plan regarding the preparation of the EIR?

[redacted]

CC: Robert Peterson, CPUC, C/O Tom Engels, Horizon Water and Environment

Comment Letter #10

RECEIV
JAN 12 2016
BY:

Notice of Preparation

To: Responsible and Trustee Agencies *(Agency)*

(Address)

From: California Public Utilities Commission *(Agency)*

505 Van Ness Avenue *(Address)*

San Francisco, CA 94102-3298

Subject: **Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC**

The California Public Utilities Commission (CPUC) will be the lead agency and will prepare an environmental impact report (EIR) for the project identified below. We are requesting the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR and/or subsequent related environmental documents prepared by our agency when considering your permit or other approval for the project.

The project description, location, and potential environmental effects are contained in the attached materials. A copy of the initial study ☐ ***is*** ☒ ***is not*** attached.

Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to suncrestproject@horizonh2o.com or Robert Peterson, CPUC, C/O Tom Engels, Horizon Water and Environment, 180 Grand Avenue, Suite 1405, Sacramento, CA 94612. Please include your name or the name of a contact person in your agency.

Project Title: Suncrest Dynamic Reactive Power Support Project

Project Applicant, if any: NextEra Energy Transmission West, LLC

Date: January 5, 2016

Signature: Rob Peterson

Title: Project Manager, Energy Division, Infrastructure Permitting and CEQA

Telephone: (844) 211-7510

Email: suncrestproject@horizonh2o.com

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Comment Letter #10

Notice of Preparation

of an

Environmental Impact Report

for the

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298
Contact: Tom Engels
916/790-8548

January 5, 2016

Comment Letter #10



Comment Letter #10



Comment Letter #10

DIANNE, 4 YEARS LATTER & NO SIGN OF A TREE !

2/9/16

EMAIL FROM 8/12

Thank you [redacted] however your response does not address my question, that is the EIR said the towers at the substation would blend in. If substation towers (the the parts that stick up above the transformers) were to blend in, you will note that's just not possible as the rise above the surrounding terrain(see my pictures). If your (Sempra) asking me to wait 30 to 50 years before the substation blends in with or is less visible assuming the trees continue to grow I will be dead.

If that's your premise it should have been disclosed to that effect in the EIR, why was it not?

The way I see it its a very clear statement that the "substation will blend in" what am I to do now that it doesn't?

Your welcom to come to my home and have a look for your self,, just give me a call [redacted]

Sincerely,

[redacted]

--- On Tue, 8/21/12, [redacted] wrote:

From: [redacted]

Subject: Status of visual screening at Suncrest Substation

To: [redacted]

Cc: [redacted]

Date: Tuesday, August 21, 2012, 7:19 PM

Hello [redacted]

Earlier this month you emailed CPUC regard screening of the Suncrest Substation as seen from your location on Japatula Valley Road.

I can report the following with regard to reducing visual impacts:

SDG&E has stained rock cut areas so they mimic and better blend with the natural landscape. Jute netting and hydroseeding have been applied where there is soil; shrubs, wildflowers, and grasses will take hold in these areas. On the manmade slope facing the valley, shrubs and other vegetation has been planted and are being irrigated. The retaining walls lower on this slope also have been stained. The chain link fence around the south side of the substation has had brown slats inserted into it to help obscure the lower elements of the substation.

OVER →

From your vantage point, the most significant action will occur this fall. With cooler weather, 42 additional trees will be planted. These will be Coulter pine (Pinus coulteri) and Mondell or Afghan pine (Pinus eldarica). As they grow, they will provide a dense foliage and will establish a substantial visual screen. They will be irrigated and monitored for success. However, as with many trees, it will take time for them to grow. The Coulter pine is a relatively slow grower, at about a foot per year for its first 20 years. The Mondell or Afghan pine grows more rapidly, as much as 3 to 6 feet per year when young, up to about 30-40 feet. While a Coulter pine near Julian measures nearly 130 tall with a spread of 60 feet, a typical height at maturity is 80 feet. The Afghan/Mondell pine reaches 30-50 feet in height and will be planted under the power

lines

entering/exiting the substation. Many of the trees will be planted near the top of the slope, but a number will be scattered on the slope as well.

Information on the trees can be found on the internet. See, for example:

Coulter pine -- http://www.conifers.org/pi/Pinus_coulteri.php

Afghan pine -- http://aces.nmsu.edu/county/donaana/mastergardener/documents/afghan-pine.pdf

Coulter pine:

Photo of Coulter pines near Santa Ysabel, Ca.

Mondell or Afghan pine:



Appendix C

Scoping Report

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Scoping Summary Report

Prepared for:

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Prepared by:

Horizon Water and Environment
180 Grand Avenue, Suite 1405
Oakland, CA 94612
Contact: Tom Engels
(916) 790-8548

March 2016

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Attachments

Attachment A Comment Letters Received
Attachment B Notice of Preparation and Newspaper Ads
Attachment C Scoping Meeting Materials and Meeting Notes

Scoping Summary

Background and Purpose

"Scoping" refers to the public outreach process used under the California Environmental Quality Act (CEQA) to determine the coverage and content of an environmental impact report (EIR). The scoping comment period offers an important opportunity for the public and agencies to review and comment during the early phases of the environmental compliance process. Scoping contributes to the selection of a range of alternatives to be considered in the EIR, and can also help to establish methods of analysis, identify the environmental effects that will be considered in detail, and develop mitigation measures to avoid or compensate for adverse effects. In some cases, it may also identify issues that the public feels do not warrant analysis.

This report describes the scoping process undertaken by California Public Utilities Commission (CPUC) staff for the Suncrest Dynamic Reactive Power Support Project (Proposed Project) proposed by NextEra Energy Transmission West, LLC (NEET West). It also summarizes agency and public comments received and identifies key issues for EIR analysis. All the comment letters received during the scoping report are reproduced in their entirety as attachments to this report. Personal identifying information of private citizen commenters has been redacted to protect their privacy.

Proposed Project Scoping Process

The scoping process is initiated when the lead agency issues a Notice of Preparation (NOP) announcing the beginning of the EIR process. The NOP for the Proposed Project was submitted to the State Clearinghouse, Office of Planning and Research and circulated to agencies and interested members of the public on January 5, 2016. The public review period lasted until February 8, 2016. As required by CEQA and the CEQA Guidelines, the NOP provided information on the background, goals, and objectives of the Proposed Project; announced preparation of, and requested public and agency comment on, the EIR; and provided information on the public scoping meeting to be held in support of the EIR. A copy of the NOP is included in the attachments (Attachment B) to this report.

On January 21, 2016, the CPUC conducted a public scoping meeting for the Proposed Project. The meeting was held from 6 pm to 8 pm at the Alpine Community Center located at 1830 Alpine Blvd. in Alpine, CA. The public meeting was publicized in local area newspapers and via direct mailings (i.e., through the NOP) to numerous households, offices, and agencies. Copies of the newspaper ads and the NOP are included in Attachment B. The mailing list for the NOP is not reproduced here out of consideration for the privacy of private citizens on the list.

The meeting format consisted of a presentation by CPUC and consultant staff followed by opportunities for attendees to ask questions and submit comments. Posters with basic information on the project were on display and CPUC and consultant staff were available before and after the meeting to answer questions and take comments. Written comment cards were provided to all meeting attendees, as well as information on how to access project documents and participate in the public review process going forward. Approximately 9 people attended the meeting in Alpine, including two members of the applicant (i.e., NEET West) team. Notes from the meeting are included in Attachment C.

Comments Received

In addition to the oral comments and questions provided at the scoping meeting (see meeting notes in Attachment C), CPUC received 10 scoping comment letters. Copies of all the comment letters received during the scoping period are included in Attachment A, and numbered according to the date received, with agency/utility letters first. The following public agencies and utilities submitted comments on the Proposed Project:

- State Water Resources Control Board (SWRCB) (Comment Letter #1)
- California Department of Fish and Wildlife (CDFW), South Coast Region (Comment Letter #2)
- County of San Diego, Planning and Development Services (Comment Letter #3)
- Office of Ratepayer Advocates (ORA), California Public Utilities Commission (Comment Letter #4)
- San Diego Gas & Electric Company (SDG&E) (Comment Letter #5)

The identities of the private citizens who submitted comments are not listed out of consideration for their privacy. The key concerns and comments contained in the scoping letters and expressed at the scoping meeting are summarized and categorized in the following section.

Comment Summary by Topic

To inform the environmental analysis and assist in the preparation of the EIR, the individual comments and concerns received during the scoping period were categorized as follows:

- ***CEQA Process***: Comments related to the formal environmental review process as outlined by CEQA and CEQA Guidelines, such as the length of the public review period.
- ***Project Description***: Comments related to specific aspects of the Proposed Project, such as Project design, schedule, or cost.

- ***Alternatives***: Comments related to potential alternatives to the Proposed Project, such as siting the facility at a different location or using alternative technologies or methods.

- ***Environmental Impacts***: Comments related to possible impacts on the physical environment, such as noise impacts during Project construction or operation, or possible effects on biological resources from Project components.

- ***Permitting***: Comments related to project permitting, such as information on required permits should the Proposed Project be approved.

Project scoping comments are organized into these categories and listed below. Where applicable, the public entity who submitted the comment is indicated in parentheses. Note: comments are summarized; see the full comment letters in Attachment A and the meeting notes in Attachment C for the full comments and additional detail.

CEQA Process

- Is this going to be a "fast-tracked" EIR? This has happened in the past.

- Are there time limits for submittal of comments?

- Where can we see the EIR?

Project Description

- List all permits that may be required for the Proposed Project and identify the specific activities that may trigger these permitting actions. (SWRCB)

- Include a complete discussion of the purpose and need for, and description of, the Proposed Project, including all staging areas and access routes to the construction and staging areas. (CDFW)

- What is the need for this project? Is it really necessary?

- Does the project use cooling water? Would it take any water out of the ground?

- Why didn't you put the facility closer to the wind mills?

- How much power goes through the existing substation?

- Is there an underground component to the Static Var Compensator (SVC) facility? How far down will excavation go?

- This facility will connect with renewable generation in Imperial Valley? Does that mean more energy will be coming through Alpine?

- Will blasting occur?
- How will the proposed facility be used in conjunction with the existing substation?
- Who owns the land right now?
- Are they going to be using helicopters?
- How much energy is/will be coming in from Imperial Valley? Is there 1,700 megawatts of stranded renewable energy out there?
- Why don't they just hook into that line going down to Calexico?
- Include pictures or visual simulations showing what the proposed facility will look like.

Alternatives

- Describe and analyze all alternate locations for the SVC facility. (SWRCB)
- Evaluate the need for siting the Project in an active restoration area. (CDFW)
- Include a range of feasible alternatives that avoid or otherwise minimize impacts to sensitive biological resources, particularly wetlands. (CDFW)
- Consider an alternative which would place the Project inside the existing Suncrest substation. (SWRCB, ORA) This alternative would have essentially no new environmental impacts. (SWRCB) This alternative also would be more effective in regulating voltage levels and more efficient from an operational/engineering perspective. (ORA)
- Describe whether locating the Proposed Project outside the existing Suncrest substation was based on the assumption that the California Independent System Operator and/or SDG&E would need to authorize or approve co-locating the Proposed Project within the existing substation. (ORA)
- See Public Utilities Code, Section 762, which grants CPUC the authority to order changes to the site of new structures, if it determines that such change(s) are in the public interest. Section 762 also grants the CPUC authority to require joint action between two or more public utilities. (ORA)
- Evaluate whether the existing substation would need to be expanded to accommodate inclusion of the Proposed Project within its current footprint. (ORA)
- Analyze an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest substation. This alternative is feasible, would meet all of the Project

objectives listed in the NOP, and would avoid or lessen the potentially significant impacts of the Proposed Project. (SDG&E)

Environmental Impacts

Aesthetics

- Consider potential impacts to views for residents in Japatul Valley.

Air Quality

- What will the Project's effect be on air emissions? What about ozone emissions?

Biological Resources

- Assume a fully restored habitat at the Wilson Laydown Yard restoration site when determining baseline biological conditions. (CDFW)
- Address potential impacts to Focused Conservation Areas pursuant to the East County Multiple Species Conservation Program (MSCP) Plan. (CDFW)
- Analyze potential effects of Project development on golden eagle, in particular from proposed blasting during construction, and explore feasible alternatives that avoid impacting or take of golden eagle. (CDFW)
- Include information on flora and fauna in the region, with special emphasis placed on resources that are rare or unique to the region. (CDFW)
- Include a thorough, recent floristic-based assessment of special status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. (CDFW)
- Include a current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. (CDFW)
- Include an inventory of rare, threatened, endangered and other sensitive species on site and within the area of potential effect. (CDFW)
- Discuss potential adverse impacts to biological resources from lighting, noise, human activity, exotic species, and altered drainage. (CDFW)
- Discuss indirect impacts on biological resources, including resources on nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands. (CDFW)
- Discuss how altered land uses from the Proposed Project could contribute to wildlife-human interactions or conflicts. (CDFW)

- Include measures to fully avoid and otherwise protect Rare Natural Communities from Project impacts. (CDFW)

- Include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. (CDFW)

- For any proposed preservation and/or restoration, include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. (CDFW)

- Conduct vegetation clearing and construction activities outside of the peak avian breeding season, which generally runs from February 1 through September 1. If construction is necessary during the bird breeding season, conduct appropriate bird breeding surveys and implement appropriate buffers to avoid or minimize impacts. (CDFW)

- Do not use relocation, salvage, and/or transportation as mitigation for impacts to rare, threatened, or endangered species. (CDFW)

- Any plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques, and should follow the format described in CDFW's scoping letter (see Comment Letter #1 in Attachment A). (CDFW)

- Have you done any fieldwork yet?

- What type of mitigation are you going to implement for impacts to biological resources?

- For the EIR, will they do bio surveys at night or just during the day? A lot of animals only come out at night.

Cultural Resources

- Why didn't the PUC do a cultural study?

- What about impacts to artifacts from blasting?

- Is this new project going to sanitize/clear away Native American sites and artifacts like SDG&E did?

Hazards

- Evaluate potential fire danger from the proposed SVC facility. The oil filled transformers and capacitors can explode due to internal shorting, and the fire could spread during Santa Ana wind conditions.

- Consider mitigation of the fire danger associated with the Proposed Project by using a steel containment barrier around the facilities.

- Evaluate potential effects on human health from electric and magnetic field (EMF) radiation resulting from increases in power load transmitted through Alpine caused by the Proposed Project. The January 21st scoping meeting mentioned that the new facility would allow about a 20% power increase through Alpine. Measured EMF levels in Alpine currently appear to exceed levels that increase the risk of childhood leukemia (see Comment Letter #7 in Attachment A for attached EMF studies provided by the commenter).

- The amount of power which may be added to the Sunrise Powerlink (1,700 megawatts) will increase the EMF radiation exponentially, and potentially exacerbate existing human health impacts.

- Will the Project increase fire danger?

- What about radiation effects (e.g., leukemia) from increase energy going through Alpine?

Hydrology and Water Quality

- Refer to the basin plans when evaluating potential impacts to water quality and incorporate mitigation measures that are consistent with all applicable water quality standards, prohibitions, and provisions in the basin plans. (SWRCB)

- Include a regional-scale map identifying all surface water resources potentially affected by the Proposed Project. (SWRCB)

- Identify and list the beneficial uses of the identified potentially affected surface water resources and evaluate the Project's potential impacts to water quality with respect to these beneficial uses. (SWRCB)

- Include alternatives or list mitigation measures that avoid or minimize any identified impacts to water quality to a less-than-significant level. (SWRCB)

- Evaluate potential adverse effects on the hydrology and ecological functions of compensatory mitigation sites for the Suncrest Substation, in light of the fact that the mitigation sites were set aside in part to compensate for impacts to waters of the U.S. caused by the construction of the Sunrise Powerlink Project, including the Suncrest Substation. (SWRCB)

- Avoid where possible impacts to waters of the state, including waters of the U.S. Provide compensatory mitigation for any permanent unavoidable impacts to waters of the state or U.S. when avoidance and/or minimization is not possible. (SWRCB)

- Evaluate potential adverse effects on waters of the state or U.S. through alteration of watershed functions, such as from addition of a new, hardscape industrial facility to the area. (SWRCB)

- Include in the final Project design elements that treat stormwater as a resource to be managed for multiple benefits in accordance with the SWRCB's Revised Draft Strategy to Optimize Resource Management of Storm Water (Storm Water Strategy). (SWRCB)

- Include measures to re-configure the existing drainage system of Bell Bluff Truck Trail, as this road does not currently exhibit design features that would be consistent with the SWRCB's Storm Water Strategy. (SWRCB)

- Conduct a jurisdiction wetland delineation (JD) for the Proposed Project. A JD conducted for the Suncrest substation project identified multiple ephemeral drainages in the area. (CDFW)

- Discuss potential changes in drainage patterns on and downstream of the Project site that could occur from the Proposed Project, including changes in the volume, velocity, or frequency of flows, or addition of polluted runoff. (CDFW)

- When evaluating potential storm water quality-related impacts, consider post-construction Best Management Practices (BMPs), Low Impact Development (LID), Source Control BMPs and hydromodification management plan (HMP) in accordance with the relevant San Diego Municipal Storm Water Permit (2007 MS4 Permit or 2013 MS4 Permit pending the time of project approval/construction). (County of San Diego)

- When evaluating potential storm water quality-related impacts, consider construction BMPs and associated plans for conformance with the County of San Diego's Grading Ordinance, Watershed Protection Ordinance, and State of California's Construction General Permit. (County of San Diego)

- Will the facility affect groundwater during construction or operation?

Land Use

- Evaluate impacts, and include a discussion related to the Project's conformance with the guidance provided in the East County MSCP Planning Agreement's Interim Review Process. (CDFW)

- Evaluate potential conflicts with the proposed community trail identified as Bell Bluff Trail in the Alpine Community Trails and Pathways Plan and Map, which is included in the San Diego County Trails Master Plan. (County of San Diego)

- Coordinate with Alpine Community Planning Group regarding any proposed trail accommodation through the site. (County of San Diego)

- Avoid conflicts with SDG&E's on-going, legally-binding mitigation obligations related to construction of the existing Suncrest substation. (SDG&E)

Noise

- Comply with San Diego County's Regulatory Section: Section 36.401 for construction and operation of the facilities with respect to noise. (County of San Diego)

Public Services

- Ensure the control house on the SVC site is constructed of non-combustible materials. (County of San Diego)

- Discuss how the applicant is to contract with a private industrial fire brigade to conduct operations on electrical-related fires within the facility. (County of San Diego)

- Ensure that the access gates to the facility are two feet wider than the access roads (i.e., gates are 22 feet wide) and that the gates are setback 30 feet from Bell Bluff Truck Trail. (County of San Diego)

- Ensure access roads are capable of supporting 75,000 pounds. (County of San Diego)

- Include in the project design a 10,000 gallon water storage tank, which is to be situated to the southwest of the northernmost access driveway and accessible by fire engines. (County of San Diego)

- Provide a minimum of 100 feet of defensible space around the facility, with the first 50 feet of space being devoid of any vegetation. (County of San Diego)

- Are you going to use contracted fire suppression services?

Recreation

- Evaluate potential impacts on the proposed community trail identified as Bell Bluff Trail in the adopted Alpine Community Trails and Pathways Plan and Map, included in the San Diego County Trails Master Plan. (County of San Diego)

Cumulative

- Evaluate cumulative impacts on biological resources and consider past, present, and future projects in light of their impacts on similar plant communities and wildlife habitats. (CDFW)

- Will there be more lines connecting into the Suncrest Substation in the future?

- How many of these types of facilities are they putting in?

Permitting

- A Clean Water Act, section 402, subdivision (p) stormwater permit, including a National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit, may be required for land disturbance associated with the Project. (SWRCB)

- The Project may require a Clean Water Act, section 401 water quality certification for impacts to waters of the U.S., or dredge and fill Waste Discharge Requirements for impacts to waters of the state, both of which would be issued by the applicable Regional Water Quality Control Board. (SWRCB)

- Notification pursuant to Fish and Game Code section 1600 et seq. is required for any impact that will divert or obstruct the natural flow, or change or use any material from the bed channel or bank of any river or stream (CDFW)

- If the Project will result in take of a threatened or endangered species under the California Endangered Species Act (CESA), and is not covered under an approved Natural Communities Conservation Plan, the Project proponent will need to obtain authorization, such as an incidental take permit (ITP), prior to implementing the Project. (CDFW)

- Storage of transformer oils as described in the NOP will require a ministerial Unified Program Facility Permit, issued by the County Department of Environmental Health. (County of San Diego)

- For storm water, the 2007 MS4 Permit (Order No. R9-2007-0001) and the County of San Diego SUSMP are currently in effect and may apply. The Project may also need to comply with the San Diego Municipal Storm Water Permit Order No. R9-2013-0001 (as amended by Order Nos. R9-2015-0001 and R9-2015-0100). (County of San Diego)

Attachment A

Comment Letters Received

Comment Letter #1

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

January 28, 2016

Rob Peterson, CPUC
c/o Tom Engels
Horizon Water and Environment
180 Grand Avenue, Suite 1405
Oakland, CA 94612
robert.peterson@cpuc.ca.gov
suncrestproject@horizonh2o.com

Dear Mr. Peterson:

Division of Water Quality Scoping Comments for the Suncrest Dynamic Reactive Power Support Project (Project) Proposed by NextEra Energy Transmission West, LLC

Please accept these comments in response to the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the subject Project, prepared by the California Public Utilities Commission (CPUC) and received at the State Water Resources Control Board (State Water Board) Division of Water Quality (DWQ) on January 7, 2016.

Authority

Pursuant to The Guidelines for the Implementation of the California Environmental Quality Act (Cal. Code Regs., tit. 14, sec. 1500 et seq.; hereinafter *CEQA Guidelines* or *Guidelines*), in particular, California Code of Regulations (CCR), title 14, section 15096, responsible agencies must specify the scope and content of the environmental information germane to their statutory responsibilities. The State Water Resources Control Board (State Water Board) is a responsible agency. Staff of the State Water Board has reviewed the NOP and considered the

proposed Project project's potential impacts to water quality and the beneficial use of waters of the State.

We have identified a number of potentially significant impacts to water quality that must be evaluated in the environmental review. Without adequate mitigation; Project implementation could result in significant adverse impacts to water quality and hydrology; thereby adversely affecting beneficial uses of waters of the State. Staff

State Water Board Staff has reviewed the NOP for the Project in light of previous personal communication via e-mail and teleconference, and requests that the following comments be incorporated in the CPUC's environmental review process.

Role of the Regional Water Boards and Basin Plans

State law assigns responsibility for protection of water quality in the affected regions to the Regional Water Boards. Any discharges of waste that may affect water quality and, ultimately, the beneficial uses of waters of the state may be regulated by the State Water Resources Control Board and the Regional Water Quality Control Boards (collectively, the Water Boards).

All waters of the state are protected under California law. All surface waters and groundwater are waters of the State and include, but are not limited to, aquifers, drainages, streams, washes, ponds, pools, and wetlands. Surface water bodies may be permanent, intermittent, ephemeral or seasonal.

Additional protection is provided for waters of the United States under the federal Clean Water Act (CWA). The water quality control plans (basin plans) for the affected regions contain policies that the Water Boards use with other laws and regulations to protect water quality. The basin plans provide guidance regarding water quality and how the Water Boards may regulate activities that have the potential to affect water quality within the regions.

Water Board staff request that the final environmental document refer to the basin plans and incorporate mitigation measures that are consistent with all applicable water quality standards, prohibitions, and provisions in the basin plans.

Permitting

A number of activities associated with the Project may require permits issued by the State Water Board or the San Diego Regional Water Quality Control Board (RWQCB). These permitting requirements include, but are not necessarily limited to, those described below.

A Clean Water Act, section 402, subdivision (p) stormwater permit, including a National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit, may be required for land disturbance associated with the Project. The NPDES permit requires the development of a Stormwater Pollution Prevention Plan and implementation of best management practices (BMPs). Industrial activities may require an NPDES General Industrial Stormwater Permit, obtained from the State Water Board, or individual stormwater permit obtained from the RWQCB.

Streambed alteration and/or discharge of fill material to a surface water may require a

Clean Water Act (CWA), section 401 water quality certification (WQC) for impacts to waters of the U.S., or dredge and fill Waste Discharge Requirements (WDRs) for impacts to "non-federal" waters of the state, or both. These permits would be issued by the RWQCB.

Determinations of the jurisdictional extent of the waters of the U.S. are made by the United States Army Corps of Engineers. Projects that have the potential to impact surface waters will require the appropriate jurisdictional determinations.

These determinations are necessary to discern if the proposed surface water impacts will be regulated under section 401 of the CWA or through dredge and fill WDRs issued by the Water Boards.

Additionally, waste discharge requirements (WDRs) for the discharge of waste in excess of water quality objectives may be required pursuant to California Code of Regulations (CCR), title 27 requirements.

We request that the environmental document list the permits that may be required, as outlined above, and identify the specific activities that may trigger these permitting actions in the appropriate sections of the environmental document.

Project proponents should continue to consult with the RWQCB to ensure that all regulatory obligations associated with all project alternatives are understood.

Beneficial Use Analyses

The DEIR should include a regional-scale map identifying all surface water resources potentially affected by the Project. These water resources should be tabulated and organized by waterbody type and described in detail in the appropriate sections of the DEIR.

We request that the DEIR identify and list the beneficial uses of the identified surface water resources, as outlined in the San Diego Regional Water Quality Control Plan (Basin Plan), and evaluate the Project's potential impacts to water quality with respect to those beneficial uses.

The environmental document must include alternatives to avoid those impacts or list specific mitigation measures that, when implemented, minimize unavoidable impacts to a less than significant level.

Project-Specific Comments

1. We understand that the Project must be placed within a limited distance from the existing Suncrest Substation in order to meet engineering limits, but alternatives to the precise location and placement of the proposed Dynamic Reactive Power Support structures do exist. All of those alternate locations should be described and analyzed in the Draft EIR (DEIR).

2. Location of the Project within the existing footprint of the Suncrest Substation is technically feasible, and should be fully considered in the DEIR. This alternative would have essentially no new impacts on the environment.

3. As we have stated before, DWQ's interest in this project stems from its potential impacts to the recently established Suncrest compensatory mitigation site which surrounds the Suncrest Substation. This mitigation site was set aside to compensate, in part, for impacts to waters of the State, including waters of the U.S., that were caused by the construction of the Sunrise Powerlink Project which included the Suncrest Substation. Therefore analysis of any project alternatives that could adversely affect the compensatory mitigation site's hydrology or ecological functions must be included in the Draft EIR.

4. Alternatives that would locate the Project off site from the Suncrest Substation, as described in the NOP, have the potential to adversely affect waters of the state, including waters of the U.S. through direct fill. In general, these types of impacts should be avoided whenever possible, and minimized when avoidance is not possible. When permanent unavoidable impacts would result from a project alternatives, these impacts should be clearly identified, and compensatory mitigation for any such permanent impacts should be provided in the mitigation measures for those alternatives.

5. Alternatives that would locate the Project off site from the Suncrest Substation, as described in the NOP, have the potential to adversely affect waters of the state, including waters of the U.S. through alteration of watershed functions. Impacts from previous development in the area would be exacerbated by a new, hardscape industrial facility. These potential impacts should be fully described in the DEIR, and mitigations for those impacts should be presented.

Mitigation for these impacts should consider the approaches found in the Revised Draft Strategy to Optimize Resource Management of Storm Water (Storm Water Strategy), which can be accessed at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/strategy_initiative.shtml

The final Project should include design elements that treat stormwater as a resource to be managed for multiple benefits. State Water Board staff are available to assist CPUC and Project proponents in development of alternatives that better achieve the goals of the Storm Water Strategy.

6. As described in comment 5 above, alternatives that would locate the Project off site from the Suncrest Substation, as described in the NOP, have the potential to adversely affect waters of the state, including waters of the U.S. through alteration of watershed functions. Those alternatives could include construction that would significantly excavate and re-build the existing access road, the Bell Bluff Truck Trail.

This road, in its current form, does not exhibit design features that would be consistent with the goals of the Storm Water Strategy mentioned in comment 5. If such alternatives that entail substantial excavation and re-construction of the road are described, mitigation for the impacts to waters of the state, including waters of the U.S. should include measures to re-configure the existing drainage system of the road.

We note that runoff is currently diverted and concentrated in a series of concrete lined V-ditches. Alternatives that moderate the rate and concentration of discharge into the affected watershed area should be analyzed as part of the development of alternatives.

In Conclusion

State Water Board staff thanks the CPUC for the proactive outreach to the Water Boards in the development of the Project to date. We look forward to cooperating with the CPUC and the Project proponents in development of a Draft EIR that provides a full and accurate analysis of all potential project impacts to waters of the state.

Please continue to list me as the State Water Board staff contact for the proposed Project.

Cliff Harvey, Environmental Scientist
Division of Water Quality, 401 Unit
State Water Resources Control Board
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Sincerely,

Cliff Harvey

cc: Eric Becker, San Diego Regional Water Quality Control Board
eric.becker@waterboards.ca.gov

Chris Beegan, Division of Water Quality, Storm Water Planning Unit
chris.beegan@waterboards.ca.gov

Shanti Santulli, U.S. Army Corps of Engineers – Los Angeles District
shanti.a.santulli@usace.army.mil

Comment Letter #2

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

February 2, 2016

Mr. Robert Peterson, Project Manager
Infrastructure Permitting and CEQA, Energy Division
California Public Utilities Commission
505 Van Ness Ave.
San Francisco 94102
suncrestproject@horizonh20.com

Subject: Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project, Unincorporated San Diego County, San Diego County, California (SCH # 2016011004)

Dear Mr. Peterson:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Notice of Preparation (NOP) for the Suncrest Dynamic Reactive Power Support Project Draft Environmental Impact Report (DEIR). The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines § 15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code § 2050 *et seq.*) and Fish and Game Code section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) program. The County of San Diego (County) participates in the NCCP program through a signed Planning Agreement for the East County Multiple Species Conservation Program (MSCP).

The Suncrest Dynamic Reactive Power Support Project (Project) is located in unincorporated south-central San Diego County, approximately 5.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail Road. The lands surrounding the proposed Project are primarily undeveloped, with some rural-residential development to the east and south, and the existing Suncrest Substation at the Project's western terminus. The Project is located approximately 1.8 miles south of Interstate-8 and Japatul Valley Road (State Highway 79) is approximately 1.2 miles to the southeast. The Project would be located on private property within the administrative boundary of the Cleveland National Forest.

The Proposed Project includes two primary components: 1) a Static Var Compensator (SVC) facility, to be located approximately 1 mile east of the existing Suncrest Substation; and 2) a 230 kilovolt (kV) transmission line from the proposed SVC facility to the existing Suncrest substation.

The proposed SVC facility would produce and consume reactive power for voltage support and would interconnect with the Suncrest bus via the proposed transmission line. The facility would be approximately 6 acres in total size (with a fenced area of approximately 2.58 acres) and would be located on an area previously used as a construction staging and materials storage area during construction of the Suncrest Substation (completed in 2012).

The SVC facility would include various structures and electrical equipment, such as power transformers, power circuit breakers, control buildings, capacitors, and reactors, all of which would be installed on concrete foundations. The four power transformers within the proposed SVC facility would each require a maximum of approximately 10,000 to 12,000 gallons of oil. The tallest structures within the SVC would be the lightning shielding masts, which would be approximately 75-feet-tall.

In addition to the electrical equipment, the SVC facility would include the following components: signage and lighting; access driveway improvements; stormwater drainage system and detention basin; retaining wall; 7-foot-high chain link and barb wire security fencing; and transformer oil containment basins. A retaining wall would be installed on the east side of the SVC facility to minimize the potential for erosion and would be approximately 480 feet long and 15 feet tall at its highest point.

The proposed 230 kV transmission line would be approximately 1 mile in length and would connect the proposed SVC facility to the existing Suncrest Substation. The proposed transmission line would be installed primarily underground beneath Bell Bluff Truck Trail Road, with approximately 300 feet of the line transitioning aboveground via an 85- to 95-foot-tall riser pole connecting with the existing substation. The underground transmission line would be installed in polyvinyl chloride conduits within a concrete-encased duct bank system. The duct bank would be approximately 5 deep, and would be approximately 30 inches wide by 24 inches tall. The underground transmission line would include up to five underground splice vaults spaced roughly every 900 feet to facilitate installation of the underground cables and operation and maintenance of the transmission line. The majority of the underground transmission line would be installed within Bell Bluff Truck Trail; however, installation of the splice vaults may require temporary disturbance outside of the roadbed.

The 85- to 95-foot-tall riser pole, for transition of the transmission line to an overhead span and entry into the existing Suncrest Substation, would be installed north of Bell Bluff Truck Trail. The base of the riser pole would be approximately 7 feet in diameter and require an additional approximately 15 foot radius of permanent disturbance around the riser pole.

In total, the Project would impact 12.2 acres of land, 6.2 acres of temporary impacts and 6 acres of permanent impacts. Construction is projected to be completed within 10 months with a targeted operation period of June 2017.

The Department offers the following comments and recommendations to assist the California Public Utilities Commission (CPUC) in avoiding, minimizing, and adequately mitigating Project-related impacts to biological resources.

Specific Comments

Project Scope

1. The Project is proposed to be constructed on an active habitat restoration site associated with the construction of the Sunrise Powerlink's Suncrest substation. Pursuant to the Sunrise Powerlink Project Final Environmental Impact Report (FEIR) Mitigation Measure B-1a, a minimum of 5 years of success monitoring (or until successful restoration is achieved)

is required for "...all areas temporarily impacted by construction, such as tower construction sites, laydown/staging areas, temporary access and spur roads..." and by Condition 2.52 and 3.12 for impacts addressed under Sunrise Powerlink's Streambed Alteration Agreement (1600-2009-0365-R5). Currently, the Suncrest substation restoration is in its 4th year (fall 2012) of restoration efforts. The Department recommends that the DEIR analyze the need for siting the Project in an active restoration area rather than within previously developed locations. When evaluating the significance of impacting a restoration site, it is prudent to base that analysis on what the required condition of the land would have been following successful restoration pursuant to the restoration plan (see mitigation measures referenced above). For any development proposals within restoration areas, a fully restored habitat should be assumed when determining the baseline biological conditions for the DEIR's analysis.

Draft East County Plan

2. A Planning Agreement for the East County Multiple Species Conservation Program (MSCP) Plan was executed between the County of San Diego, the Department, and the U.S. Fish and Wildlife Service (USFWS) on November 18, 2008 and subsequently amended in May 2014 (Planning Agreement). The Planning Agreement guides the planning and preparation of the MSCP plan including defining the parties' goals and commitments, defining the scope of the conservation planning areas, and establishing an interim review process intended to meet the preliminary conservation objectives and reserve assemblage. The assemblage of the regional reserve system (as defined per the NCCP/Habitat Conservation Plan process) has been an ongoing process for well over a decade in San Diego County, led by not only the state (Department/CA State Parks) and federal (USFWS/Bureau Land Management/U.S. Forest Service) contingency, but also through partnerships with the local governments that have elected to work towards and adopt multi-species planning documents.

   While the CPUC is not a party to the East County MSCP Planning Agreement, the Project is located within a Focused Conservation Area, a reserve planning tool for developing the draft East County MSCP. At the core of this plan (and as it exists under adopted MSCP Subarea Plans) is the preservation of large blocks of contiguous habitat in exchange for the participating local jurisdictions receiving permitting authority to regulate loss of the covered species. The underlying expectation is that the preserve areas remain whole or, if affected by development, be made whole again by replacing the functions and values lost. In order to address these aforementioned concerns we encourage the CPUC to coordinate with the Department and the USFWS in identifying potential areas for habitat acquisition or develop opportunities for habitat restoration within eastern San Diego County, to offset direct impacts to environmentally sensitive lands from the Project. Additionally, the Department recommends that the DEIR include a discussion regarding the Project's conformance to the guidance provided in the Planning Agreement's Interim Review Process to ensure successful implementation of the Project and draft MSCP plan.

Jurisdictional Delineation

3. The Project is proposed to be built within the existing laydown yard of the Suncrest substation. As part of the permitting process associated with that project a jurisdictional

delineation (JD) identified multiple ephemeral drainages within the Department's jurisdiction. In order to document the current conditions, the Department recommends that a subsequent JD is performed for the Project. The Department recommends notification pursuant to Fish and Game Code section 1600 *et seq.* for any impact that will divert or obstruct the natural flow, or change or use any material from the bed, channel, or bank (which may include associated riparian resources) of any river, or stream (see comment 5 below).

Proposed Blasting

4. Multiple golden eagle (*Aquila chrysaetos*) territories are known within the Project vicinity. The NOP identifies "...hammering, cutting and localized low energy blasting" within the scope of potential Project related construction. The Department is concerned with the potential effects that the proposed blasting may have on golden eagle. As a fully protected species (Fish and Game Code § 3511), take (Fish and Game Code § 86) of Golden Eagle is prohibited in addition to protections already afforded by the federal Bald and Golden Eagle Protection Act (as amended, 16 U.S.C. § 668). The DEIR should analyze the potential effects of the Project development on golden eagle and explore feasible alternatives that avoid impacting or take of golden eagle.

General Comments

Streambeds and Riparian Habitats

5. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, Project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations. Mitigation measures to compensate for impacts to mature riparian corridors must be included in the DEIR and must compensate for the loss of function and value of a wildlife corridor.

   The Department also has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of any river, or stream, or use material from a river, or stream. For any such activities, the Project applicant (or "entity") must provide written notification to the Department pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, the Department determines whether a Lake and Streambed Alteration Agreement (LSA) with the applicant is required prior to conducting the proposed activities. The Department's issuance of a LSA for a Project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA may consider the lead agency's Environmental Impact Report for the Project. To minimize additional requirements by the Department pursuant to section 1600 *et seq.* and/or under CEQA, the document should fully

identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA.[1]

Threatened, Endangered, and Candidate Species

6. The Department considers adverse impacts to a species protected by the CESA, for the purposes of CEQA, to be significant without mitigation. As to CESA, take of any endangered, threatened, or candidate species that results from the Project is prohibited, except as authorized by state law (Fish and Game Code, §§ 2080, 2085, 2835). Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, and is not covered under an approved NCCP, the Department recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from the Department may include an incidental take permit (ITP) or a consistency determination in certain circumstances, among other options (Fish and Game Code §§ 2080.1, 2081, subds. (b),(c), and 2835). Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

7. To enable the Department to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DEIR.

   a) A complete discussion of the purpose and need for, and description of, the proposed Project, including all staging areas and access routes to the construction and staging areas.

   b) A range of feasible alternatives to ensure that alternatives to the proposed Project are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive biological resources, particularly wetlands. Specific alternative locations should be evaluated in areas with lower resource sensitivity where appropriate.

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1 A notification package for a LSA may be obtained by accessing the Department's web site at www.wildlife.ca.gov/habcon/1600.

Biological Resources within the Project's Area of Potential Effect

8. To provide a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats, the DEIR should include the following information.

   a) Per CEQA Guidelines, section 15125(c), information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis placed on resources that are rare or unique to the region.

   b) A thorough, recent floristic-based assessment of special status plants and natural communities, following the Department's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (see http://www.dfg.ca.gov/habcon/plant/). The Department recommends that floristic, alliance-based and/or association-based mapping and vegetation impact assessments be conducted at the Project site and neighboring vicinity. The Manual of California Vegetation, second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2008[2]). Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

   c) A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. The Department's California Natural Diversity Data Base in Sacramento should be contacted at www.wildlife.ca.gov/biogeodata/ to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

   d) An inventory of rare, threatened, endangered and other sensitive species on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the Project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

Analyses of the Potential Project-Related Impacts on the Biological Resources

9. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DEIR.

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2 Sawyer, J. O., T. Keeler-Wolf and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press, Sacramento.

a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage should also be included. The latter subject should address: project-related changes on drainage patterns on and downstream of the Project site; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site. The discussions should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and the potential resulting impacts on the habitat, if any, supported by the groundwater. Mitigation measures proposed to alleviate such impacts should be included.

b) Discussions regarding indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a NCCP). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR.

c) The zoning of areas for development Projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

d) A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

<u>Mitigation for the Project-related Biological Impacts</u>

10. The DEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from Project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.

11. The DEIR should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

12. For proposed preservation and/or restoration, the DEIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

13. In order to avoid impacts to nesting birds, the DEIR should require that clearing of vegetation, and when biologically warranted construction, occur outside of the peak avian breeding season which generally runs from February 1 through September 1 (as early as January 1 for some raptors). If Project construction is necessary during the bird breeding season a qualified biologist with experience in conducting bird breeding surveys should conduct weekly bird surveys for nesting birds, within three days prior to the work in the area, and ensure no nesting birds in the Project area would be impacted by the Project. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer should be a minimum width of 300 feet (500 feet for raptors), be delineated by temporary flagging, and remain in effect as long as construction is occurring or until the nest is no longer active. No Project construction shall occur within the flagged nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the Project. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

14. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

15. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

We appreciate the opportunity to comment on this NOP. Questions regarding this letter and further coordination on these issues should be directed to Eric Weiss at (858-467-4289) or eric.weiss@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager
South Coast Region

ec: State Clearinghouse, Sacramento
David Zoutendyk, U.S. Fish and Wildlife Service, Carlsbad

Literature Cited:

Community Conservation Program Plans and Habitat Conservation Plans. NCCP Planning Agreement No. 2810-2007-00205 October 29, 2008.

County of San Diego, 2013. North and East County MSCP Planning Agreement and related amendment. PA# 2810-2007-00205. Amendment to County of San Diego, the California Department of Fish and Wildlife and the United States Fish, and Wildlife Service Regarding the North and East County Multiple Species Conservation Program Plans: Natural Community Conservation Plans and Habitat Conservation Plans. November 15, 2013.

Comment Letter #3

County of San Diego

MARK WARDLAW
DIRECTOR
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FAX (858) 694-2555

PLANNING & DEVELOPMENT SERVICES
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123
www.sdcounty.ca.gov/pds

DARREN GRETLER
ASSISTANT DIRECTOR
PHONE (858) 694-2962
FAX (858) 694-2555

February 8, 2016

Robert Peterson
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Via email to: suncrestproject@horizonh20.com

COMMENTS ON NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT PROPOSED BY NEXTERA ENERGY TRANSMISSION WEST, LLC

Dear Mr. Peterson,

The County of San Diego (County) has received the California Public Utilities Commission's Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project (Project) and appreciates this opportunity to comment. County staff has completed their review and have the following comments regarding the Project:

Hazardous Materials

The Project is expected to require the storage of between 10,000 – 12,000 gallons of oil for the transformers. Typical transformer oils are hazardous substances under State law. This storage will require a ministerial Unified Program Facility Permit, issued by the County Department of Environmental Health. For questions related to this permit, please contact Wendy Martinez at 619-247-2008 or Wendy.Martinez@sdcounty.ca.gov.

Watershed Protection

For storm water quality standards, the 2007 MS4 Permit (Order No. R9-2007-0001) and the County of San Diego SUSMP, dated August 1, 2012, are currently in effect and may apply. Please note that the Project may need to comply with the recently adopted San Diego Municipal Storm Water Permit Order No. R9-2013-0001, (as amended by Order Nos. R9-2015-0001 and R9-2015-0100) if prior lawful approval is not established prior to the implementation of the BMP Design Manual and other development regulations related to the 2013 San Diego Municipal Storm Water Permit (Order No. R9-2013-0001). County staff will provide additional review comments during the draft EIR period.

The Project may generate potential storm water quality impacts onto unincorporated County of San Diego lands; therefore, the Project may need to consider the following items:

- Post-construction Best Management Practices (BMPs), Low Impact Development (LID), Source Control BMPs and hydromodification management plan (HMP) in accordance with the relevant San Diego Municipal Storm Water Permit (2007 MS4 Permit or 2013 MS4 Permit pending the time of project approval/construction).

- Construction BMPs and associated plans for conformance with the County of San Diego' Grading Ordinance, Watershed Protection Ordinance and State of California's Construction General Permit.

Parks and Recreation

The adopted Alpine Community Trails and Pathways Plan and Map, included in the County Trails Master Plan (CTMP), identifies proposed community trail alignment #23 as the Bell Bluff Trail (see attachment A). The trail locations shown on the maps on the CTMP represent general corridors and do not represent exact trail alignment locations. The Department of Parks and Recreation recommends coordination with the Alpine Community Planning Group regarding any proposed trail accommodation through the site.

Noise

The Project should be designed to comply with the County's Regulatory Section: Section 36.401 for operation and construction of the facilities.

Fire

County Fire Services has completed a review of the Fire Protection Plan prepared by Dudek, dated December 2015 and has provided the following comments to the Project applicant:

- Page 1, Footnote 1: Please update the timeline for the completion of the dissolution of the SDRFPD to be by mid-2016.
- It is stated in the FPP that there will be a 2,500 sq. ft. Control House (Sec. 1.1.2.2). Please specify in the FPP that the Control House will be non-combustible construction.
- Sec. 3.1.1 *Emergency Response*, Page 37: Please revise that initial response will be from the SDCFA Descanso Fire Station, which is staffed with CAL FIRE firefighter / paramedics via Schedule A contract with the SDCFA.
- Sec. 3.1.1 *Emergency Response*, Page 38, second paragraph: Replace this entire paragraph with discussion that the next due in will be the SDCFA Pine Valley Fire Station, which is staffed with CAL FIRE firefighter / paramedics via Schedule A contract with the SDCFA.
- Sec. 3.1.1 *Emergency Response*, Page 38: Provide discussion on how the applicant is to contract with a private fire industrial brigade to conduct operations on electrical-related fires within the facility (similar to SDG&E's contract with Capstone).

- Sec. 3.1.1 *Emergency Response—Emergency Services*: Revise this section to state that Mercy is the contract ambulance provider to this area. The Mercy ambulance is in the Alpine area during the day and at night is housed in the Descanso Fire Station.
- Sec. 3.2.1 *Fire and Maintenance Access* in FPP & Sec. 3.5 *Fire Access* in the Tech Report: Revise the discussion regarding gates to state that they are to be two feet wider than the access roads (gates 22' wide) and that the gates are to be setback 30' from Bell Bluff Truck Trail.
- Sec. 3.2.1 *Fire and Maintenance Access*: Revise the discussion regarding access roads to state that they are to be capable of supporting 75,000 lbs.
- Sec. 3.3 *Water*, Second Paragraph: Replace the sentence that begins "If a water tank is built next to the SVC location…" with "A 10,000 gallon water storage tank will be situated to the southwest of the northernmost access driveway and accessible by fire engines".
- Sec. 3.7 *Defensible Space and Vegetation Management* of the FPP & Sec. 4.2 *Fuels Management* of the Tech Report: Clearly state that a minimum of 100' of defensible space will be provided around the facility, which will include the first 50' being devoid of any vegetation.
- Sec. 4.0 *Mitigation Measures*, Item 2: Reference to Appendix G should be replaced by Appendix F.
- Please provide a Project Facilities Availability – Fire form with Section 1 completed and signed to our department for us to complete so that you may add it to Appendix C of the next revision of the FPP.

If you have any questions regarding these comments, please contact Danny Serrano, Land Use/Environmental Planner, at (858) 694-3680, or via email at Daniel.serrano@sdcounty.ca.gov.

Sincerely,

for

Joseph Farace, AICP
Group Program Manager
Advance Planning Division
Planning & Development Services

Attachment A: Bell Bluff Trail

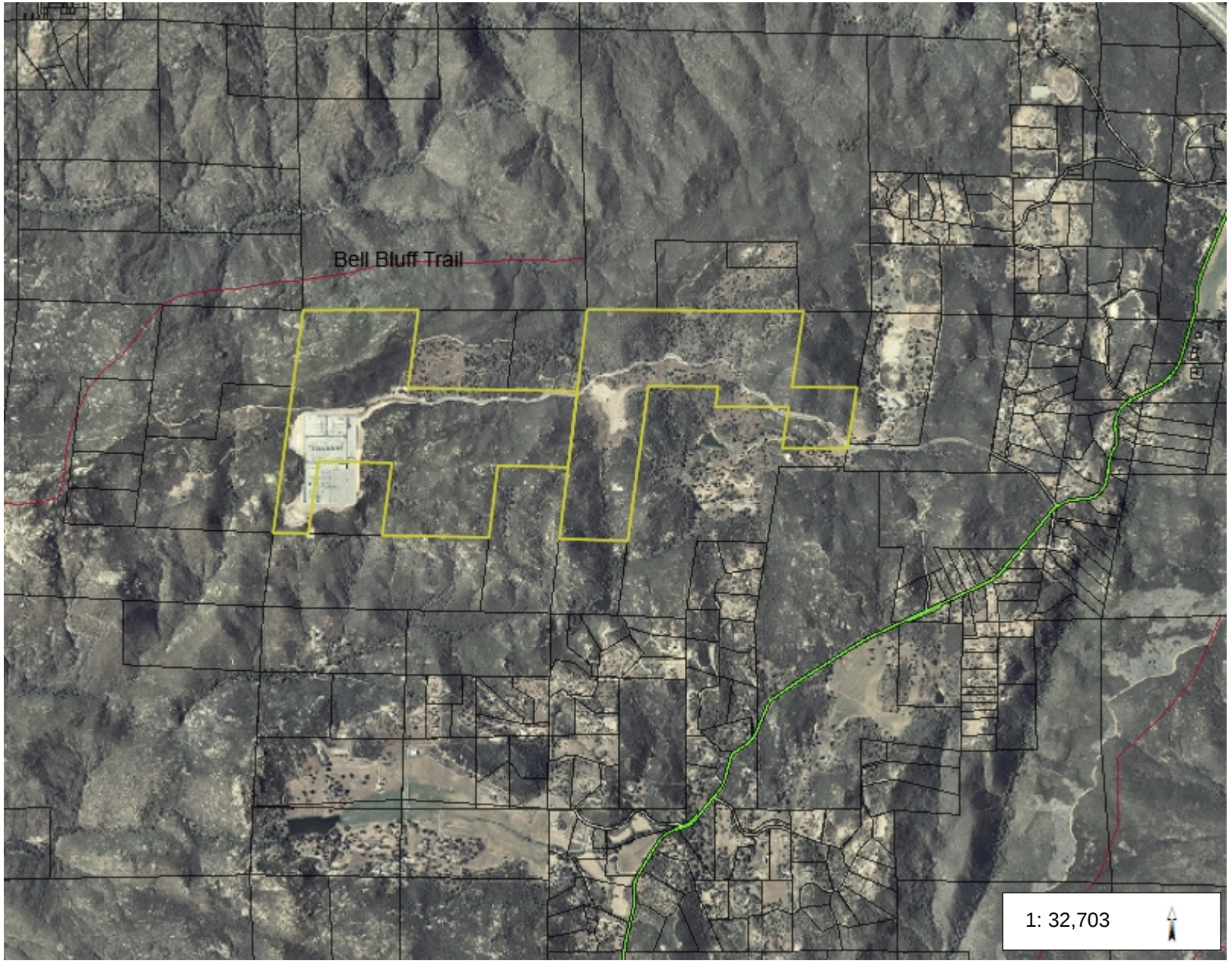
Email cc:

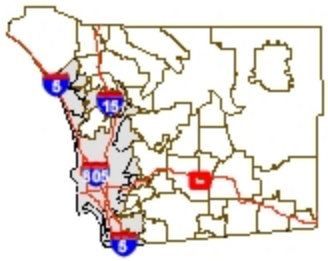
Adam Wilson, Policy Advisor, Board of Supervisors, District 2
Conor McGee, CAO Staff Officer, LUEG
Eric Lardy, Land Use/Environmental Planning Manager, Planning & Development Services
Ashley Smith, Land Use/Environmental Planner, Planning & Development Services
Nick Alex, Planner, Department of Public Works
Mary Wells Bennett, Department of Environmental Health
Marcus Lubich, Park Project Manager, Department of Parks and Recreation

Comment Letter #3

LUEG GIS
Land Use & Environment Group
Geographic Information Services

Bell Bluff Trail





Legend

- Parcels
- Circulation Element
  - Expressway/Freeway
  - Prime Arterial
  - Major Roads Series
  - Boulevard Series
  - Community Collector Series
  - Light Collector Series
  - Minor Collector Series
  - Local Public Roads
- Trails
  - Regional Regional
  - Community Trail
- Trail Easements

Notes

1.0 0 0.52 1.0 Miles

NAD_1983_StatePlane_California_VI_FIPS_0406_Feet
Planning and Development Services

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Comment Letter #4

ORA

Office of Ratepayer Advocates
California Public Utilities Commission

LINDA SERIZAWA
Interim Director

505 Van Ness Avenue
San Francisco, California 94102
Tel: 415-703-25250
Fax: 415-703-2057
http://ora.ca.gov

February 8, 2016

Rob Peterson, Project Manager
Infrastructure Permitting and CEQA, Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Comments on the Notice of Preparation of an Environmental Impact Report for the Suncrest Reactive Power Support Project, Proposed by NextEra Energy Transmission West, LLC; Application (A.) 15-08-027

Dear Mr. Peterson:

The Office of Ratepayer Advocates (ORA) hereby submits the following comments to the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Suncrest Reactive Power Support Project (Project) proposed by NextEra Energy Transmission West, LLC (NextEra). ORA seeks to ensure that the EIR considers all the potential environmental impacts of the Project, including the difference between placing the Project outside the locational footprint of the Suncrest substation and inside the locational footprint. ORA believes that placing the Project inside the site of the Suncrest substation will prove the preferable alternative on environmental and other grounds, and requests that the Commission evaluate this among the alternatives considered.

Table 1 of the NOP identifies the summary of potential impacts and issues for the EIR and notes the following with respect to alternatives to the Project:

> Alternatives.
>
> - Concerns regarding inclusion, evaluation of a project alternative co-located within existing Suncrest substation site, (i.e. concerns that such an alternative wouldn't be evaluated in an MND,[1]) which could have induced environmental impacts.[2]

[1] Mitigated Negative Declaration, California Code of Regulations, Section 15070.

[2] Notice of Preparation of EIR, p. 3.

Locating the proposed Project within the site of the existing Suncrest substation mitigates significant impacts and should be studied even if the Commission decides to prepare an MND for the project. As well as being lead agency for California Environmental Quality Assessment (CEQA), the Commission is also the agency ultimately charged with determining if a project can be located within the site of the existing Suncrest substation[3]. Thus, ORA has requested that the scope of this proceeding include a determination of whether locating the proposed Project outside the existing Suncrest substation was based on the assumption that California Independent System Operator (CAISO) and/or San Diego Gas & Electric company (SDG&E) would need to authorize or approve co-locating the proposed Project within the Suncrest substation.[4]

Public Utilities Code, Section 762, in relevant part states:

> Whenever the commission, after a hearing, finds that additions, extensions, repairs, or improvements to, or changes in, the existing plant, equipment, apparatus, facilities, or other physical property of any public utility or of any two or more public utilities ought reasonably to be made, or that new structures should be erected, to promote the security or convenience of its employees or the public, or in any other way to secure adequate service or facilities, the commission shall make and serve an order directing that such additions, extensions, repairs, improvements, or changes be made or such structures be erected in the manner and within the time specified in the order. If the commission orders the erection of a new structure, it may also fix the site thereof. If the order requires joint action by two or more public utilities, the commission shall so notify them and shall fix a reasonable time within which they may agree upon the portion or division of the cost which each shall bear.

If co-location of the proposed Project and the Suncrest substation is not studied in this EIR, and the Commission ultimately determines that the project should be located inside the substation site, then another EIR would likely ensue to study the co-location alternative.

Therefore, ORA recommends that the following issues be included in the scope of the EIR:

1. Whether the proposed Project should be co-located within the footprint of the existing Suncrest Substation.

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[3] See Public Utilities Code, Section 762 et. seq; see also Public Utils. Code, Section 851 et seq.

[4] *Id.*; See also ORA's Response to NextEra's Application.

2. Whether the existing Suncrest substation needs to be expanded to accommodate inclusion of the proposed Project within its site or current footprint.

There is no need for the one mile 230 kV transmission line interconnecting the proposed Project and the existing Suncrest substation. Locating the Project within the footprint of the Suncrest substation would more effectively provide voltage support services to the Suncrest substation, operate more reliably and be easier to coordinate from an engineering standpoint. Co-locating the Project within the substation also costs less and might have less impact on the environment than building the Project outside the site of the substation.

Sincerely,

/s/ LINDA SERIZAWA
Linda Serizawa Interim Director,
Office of Ratepayer Advocates

Cc: Tom Engles, Horizontal Water and Environment, LLC
Administrative Law Judge Todd Edmister
Service List for A.15-08-027

Comment Letter #5

Adrianna B. Kripke
Senior Environmental Counsel

San Diego Gas & Electric Company
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akripke@semprautilities.com

February 8, 2016

SENT BY EMAIL

Rob Peterson, California Public Utilities Commission
c/o Tom Engels, Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612
<suncrestproject@horizonh2o.com>

Re: San Diego Gas & Electric Company's Comments on the Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Dear Mr. Peterson:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Suncrest Dynamic Reactive Power Support Project (Proposed Project). San Diego Gas & Electric Company (SDG&E) agrees that the EIR should address the potentially significant impacts and issues listed in the NOP. SDG&E especially encourages the EIR's consideration of: (1) the Proposed Project's potential conflicts with SDG&E's ongoing, legally binding mitigation obligations for the Suncrest Substation; and (2) an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation.

I. The Proposed Project Should Not Conflict with SDG&E's Ongoing, Legally Binding Mitigation Obligations for the Suncrest Substation

The NOP's list of potentially significant impacts and issues includes "[i]mpacts on existing mitigation sites/conflicts with existing mitigation obligations related to the existing Suncrest Substation."[1] SDG&E owns and operates the Suncrest Substation and will continue to honor these ongoing, legally binding mitigation obligations. SDG&E therefore requests that the Proposed Project not conflict with any of these obligations, which include restoring habitat on the site of the Proposed Project and transferring nearby land to the U.S. Forest Service for conservation purposes.

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[1] NOP at 2.

II. SDG&E Requests Analysis of an Alternative that Locates an SDG&E-Owned Dynamic Reactive Device Within the Suncrest Substation

SDG&E requests that the EIR analyze an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation. This will help to meet the requirement in the California Environmental Quality Act (CEQA) Guidelines to analyze a "range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project."[2]

A. The Alternative Is Feasible

An alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation meets the criteria for inclusion in the alternatives analysis. This alternative is feasible, which the CEQA Guidelines define as meaning "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."[3]

The NOP states:

> The Proposed Project originates from the California Independent System Operator's (CAISO's) 2013-2014 transmission planning process, which identified a need for a 300-million volt-ampere reactive (megavar) dynamic reactive device at the existing Suncrest Substation's 230 kilovolt (kV) bus to meet California's 33% Renewable Portfolio Standard.[4]

SDG&E submitted a project sponsor bid to CAISO to locate an SDG&E-owned dynamic reactive device within the Suncrest Substation based on SDG&E's determination that doing so was feasible. While CAISO selected NextEra Energy Transmission West, LLC (NEET West) to be the project sponsor, CAISO emphasized in its selection report that it considered both NEET West and SDG&E "to be highly qualified to finance, construct, own, operate, and maintain" the device.[5] CAISO's selection report therefore confirms SDG&E's determination that locating an SDG&E-owned device within the substation is feasible.

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2 Cal. Code Regs. tit. 14, § 15126.6(a).

3 *Id.* § 15364.

4 NOP at 4.

5 CAISO, Suncrest Reactive Power Project – Project Sponsor Selection Report at 1 (Jan. 6, 2015), *available at* https://www.caiso.com/Documents/SuncrestProjectSponsorSelectionReport.pdf.

In the Proponent's Environmental Assessment for the Proposed Project, NEET West stated correctly that SDG&E will not agree to NEET West's construction of the dynamic reactive device within the Suncrest Substation. NEET West then stated that its construction of the device within the substation would be infeasible due to issues with site control and timing.

While these issues affect the feasibility of NEET West's construction of the dynamic reactive device within the Suncrest Substation, they do not affect the feasibility of locating an SDG&E-owned device within the substation. As discussed below, an alternative that locates an SDG&E-owned device within the substation could avoid or substantially lessen any significant environmental effects from the Proposed Project.

SDG&E requests that the EIR analyze this alternative regardless of the ultimate conclusions about site control and timing. This will ensure that the EIR provides a complete analysis under CEQA of the Proposed Project's environmental impacts.

B. The Alternative Meets the Project Objectives

The NOP lists the Proposed Project's objectives as follows:

- Meet the CAISO's identified need for reactive support at the Suncrest Substation's 230 kV bus;
- Improve and maintain the reliability of the transmission grid;
- Facilitate delivery of renewable energy generation from the Imperial Valley area to population centers to the west;
- Support achievement of the state's 33% Renewable Portfolio Standard.[6]

An alternative that locates an SDG&E-owned device within the substation meets all these objectives.

C. The Alternative Could Avoid or Substantially Lessen Any Significant Environmental Effects

An alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation could avoid or substantially lessen any of significant environmental effects from the Proposed Project.

The Proposed Project would construct: (1) a Static Var Compensator facility approximately one mile east of the Suncrest Substation; and (2) a new, approximately one-mile

[6] NOP at 4.

230 kV transmission line, which would connect the Static Var Compensator facility to the substation. The Static Var Compensator facility would have a total footprint of approximately six acres, located in an area previously used for staging and storage during construction of the substation. The transmission line would be installed primarily underground beneath Bell Bluff Truck Trail road. The last approximately 300 feet would transition above ground at an 85- to 95-foot riser pole that would connect via SDG&E-owned overhead conductors to the 230 kV bus at the substation.

An alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation would not require any construction outside the substation footprint and would require only a minimal amount of new transmission conductors within the substation. Using the existing substation footprint, as well as avoiding construction of an approximately one-mile transmission line, could avoid or substantially lessen the potentially significant impacts identified in the NOP. These potentially significant impacts are for biological resources, cultural resources, hydrology and water quality, land use, noise, and public services.

For these reasons, the alternative analysis should include an alternative that locates an SDG&E-owned dynamic reactive device within the Suncrest Substation. SDG&E looks forward to reviewing the alternatives analysis, as well as the analysis of potential conflicts with SDG&E's ongoing, legally binding mitigation obligations for the substation.

Thank you for considering these comments. Please contact me if you have any questions.

Sincerely,

Adrianna B. Kripke

Adrianna B. Kripke
Senior Environmental Counsel
San Diego Gas & Electric Company

cc: Wendy D. Johnson, Regulatory Business Manager, SDG&E

Comment Letter #6

California Public Utilities Commission

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Scoping Comment Form

Name:	[redacted]
Group/Organization (optional):	[redacted]
Mailing Address:	[redacted]
Telephone Number (optional):	[redacted]
Email (optional):	

SEND EIR REVIEW INFO

Comments/Issues:

(1) Reference the EPA Clean water act in EIR
(2) Send me a Copy of EIR
(3) Please EXplain the need for and the actual technical process used in Faculty.
(4) GASEOUS EMISSIONS, OZONE ETC.?
(5) Fire Dangers — FROM FACILITY PROCESS
(6) EXISTING SUBSTATION EIR EFFECT
(7) Need FOR Project?
8 MORE POWER THRU ALPINE + LUCERNEA?
ie Need MORE INFO TO Prevent Dangers.

Please use additional sheets if necessary.

Submit written comments (postmarked no later than February 8, 2016) to:

Mail: Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Email: suncrestproject@horizonh2o.com

Questions? Please contact us or visit our website:
http://www.cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html

Comment Letter #7

February 1, 2016

Rob Peterson, CPUC
% Tom Engels
Horizon Water and Environment
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Subject: Response to the Scoping Meeting on the Sun Crest Dynamic Reactive Power Support Project Meeting held in Alpine, CA January 21st 2016

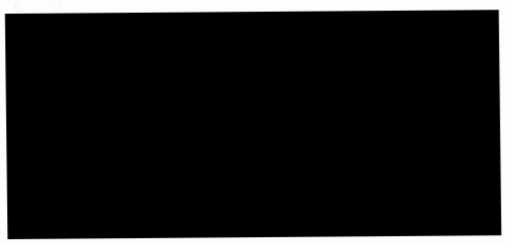
The meeting discussed adding another facility next to the existing Transformer Facility near Bell Bluff in Alpine. Both the present facility and the proposed facility used oil filled transformers and possibly capacitors. Both facilities in my opinion create a serious fire danger. The oil filled transformers and capacitors can explode due to internal shorting. In a Santa Ana wind condition the fire can spread to adjacent transformers.

The combustion can attach and flame-hold to the downstream side of adjacent transformers which act as bluff body flame-holders and create a long conflagration, which can create in wind conditions a firestorm which could burn Alpine Viejas Casino, the town of Alpine and perhaps El Cajon, California.

However, the fire danger can be mitigated by installing a steel containment barrier around the facilities to contain the fire, allow for suppression installation, prevent ignition from stray bullets and errant vehicles. Advanced Engineering will provide preliminary design for the two barriers as a public service in return for some Powerlink information.

The January 21st meeting mentioned that the new facility would allow about 20% power increase through Alpine. Alpine has just recovered from the destruction caused by routing the Powerlink through its main street.

We are opposed to the increase of power levels through Alpine California because of the increase in EMF radiation levels associated with it, and the danger to children from leukemia. Measured EMF levels on Alpine, Blvd. appear to exceed the levels that increase the risk of childhood leukemia as reported in the references contained in the attached study. (Study of EMF Levels on Alpine Blvd., In Alpine California before and after Sunrise Powerlink Energization, January 21st, 2016).



Comment Letter #7

January 21st 2016

Study of EMF Levels on Alpine Blvd. in Alpine, CA Before and After Sunrise Powerlink Energization

EMF measurements were taken along Alpine Blvd before and after the buried Powerlink cables were energized by Robie Faulkner and Michael Milligan of Alpine. Measurements were taken also inside an F150 truck on Alpine Blvd. at the same locations and on I8 E parallel to Alpine Blvd. The measurements taken inside the vehicle on Alpine Blvd. appear to be higher than measured on the roadside.

The reason the measurements were taken was to determine if levels may be harmful to health.

A synopsis of an Oxford University and Institute of Environmental Health in Stockholm Sweden studies are attached. The results of the study appear to indicate the risk of childhood leukemia increase with exposure to magnetic fields above .2 / .4 Micro Tesla.

It appears from the trend of the measurements taken and the information presented in the literature that children in Alpine may be at risk for leukemia.

We ask the Alpine Planning Group to ask the County of San Diego to examine the Alpine children for leukemia once a year as a precaution.





EMF measurements taken on Alpine Blvd with Lutron EMF Field Tester, Model EMF – 822A Measured in micro tesla for 30 sec.

Location, Alpine	Date 3-11-12 Before Pwrlnk	06-24-12 RD.	01-25-16 RD.	01-26-16 *Vehicle
Star Vly Rd.	.01	.22	.27	.12
Cranors house (SVR)	.02	.22	.01	. 9
Star Vly Rd. Mail Box	.1	.73	1.85 avg	.80
Alpine Blvd. Bridge	.3	.74	1.03 avg	.30
High School site	.6	.9	.155 avg	2.04
Albertsons	.2	1.7	1.01	1.75
Donatos	.2	.2	.36	1.06
4 Way Stop	.21	.38	.25	.18
Elementary School	.07	.27	.38 avg	.61
Tavern & Alpine Blvd	.03	.4	.43	.40
Peutz Vly Rd.	.015	1	.47	2.12

Note: Average measurements. Taken at center and side of road and averaged.

***Measurements taken in F150 Truck in West lane of Alpine Blvd.**

Note: Measurements were taken on I8 E inside F150 Truck parallel Alpine Blvd. Readings measured .03 to .06 micro tesla except for Victoria Dr. underpass .13 and bridge underpass .2 micro tesla

Comment Letter #7

Like most websites we use cookies to deliver a personalised service, you can read about them here. To use the website as intended please
ACCEPT COOKIES

Latest family update



Benji
Three-year-old Benji was waking up screaming with terrible leg pains. He was diagnosed with leukaemia. Although still undergoing treatment, he has started school and is loving it.

Related Topics

acute lymphoblastic leukaemia
acute myeloid leukaemia
bake club
brain and spinal tumours
brain tumour initiative
cancer treatments
childhood cancers
corporate partners
cycling
donate
funding research
fundraising stories
patient stories
running
supporting families
trekking

Press release: new power line study on link with childhood leukaemia

07 February 2014

Press release: Overhead power line study does not overturn existing link with childhood leukaemia
Press release: embargoed until 00.01 hrs Friday 7th February 2014

Children with Cancer UK notes the publication of the Bunch et al paper in the British Journal of Cancer today [i] and its further exploration of the association between residential proximity to high voltage overhead power lines and childhood leukaemia risk.

Researchers at the Childhood Cancer Research Group in Oxford extended their previous study of childhood leukaemia and proximity to power lines by including more recent data, cases and controls from Scotland, by considering 132 kV power lines as well as 275 kV and 400 kV and by looking at greater distances from the power lines. Their report published today concludes that the risk declines after the 1980s.

In 2005, the 'Draper Study' [ii], published in the British Medical Journal reported an increased risk of leukaemia in children born in England and Wales between 1962-1995 whose birth address fell within 600 metres of a high voltage power line.

Electric and magnetic fields (EMFs) are created by the presence of electricity. They are produced in varying degrees and strengths by all elements of the electricity supply system – from high-voltage power lines to domestic electrical appliances.

A doubling of the risk of childhood leukaemia with exposure to magnetic fields associated with the electricity supply above 0.3/0.4 microtesla is widely acknowledged. The robustness of this association has been re-affirmed in the recent EU SCENIHR draft Report [iii] and a new pooled analysis of international studies [iv].

Professor Denis Henshaw, Emeritus Professor of Human Radiation Effects at the University of Bristol and Scientific Advisor to Children with Cancer UK, said: "The report adds weight to the original 2005 findings that children living in proximity to power lines were, until after the 1980s, at increased risk of developing leukaemia.

"We are clear that this report does not alter the widely acknowledged robust association of power frequency magnetic fields with childhood leukaemia risk. That the risk now appears to have diminished is intriguing and at present we can only speculate as to why this may be. This paper highlights the clear need for further research."

Around 3,600 youngsters, including children and babies, are diagnosed with cancer every year in the UK. Children with Cancer UK funds life-saving research into the causes, prevention and treatment of childhood cancer and works to protect young lives through essential welfare and campaigning programmes.

ENDS

Notes to editors

1. For quotes or interviews and further information about the charity please contact Tina Price, PR Manager Email: tina@tinapriceconsultants.com Tel: 01258 861 221 Out of hours: 07966 239 092
2. Where possible, please include the contact details for more information: www.childrenwithcancer.org.uk or 020 7404 0808.

Comment Letter #7

Oxford Journals Medicine & Health American Jnl of Epidemiology Volume 138, Issue 7 Pp. 467-481

epidemiologic reviews
2017 THEME ISSUE
Click for more information
CALL FOR PAPERS
Reducing cancer burden in the population: epidemiologic evidence to support policies, systems, and environmental changes

American Journal of Epidemiology
aje.oxfordjournals.org

Am. J. Epidemiol. (1993) 138 (7): 467-481

Magnetic Fields and Cancer in Children Residing Near Swedish High-voltage Power Lines

Maria Feychting and Michael Alhbom
Author Affiliations

Reprint requests to Maria Feychting, Institute of Environmental Medicine, Karolinska Institutet, Doktorsringen 18, Box 60208, S-104 01 Stockholm, Sweden

Received December 28, 1992.
Revision received June 10, 1993.

Abstract

A case-control study was conducted to test the hypothesis that exposure to magnetic fields of the type generated by high-voltage power lines increases cancer incidence in children. The study base consisted of everyone under age 16 years who had lived on a property located within 300 meters of any of the 220 and 400 kV power lines in Sweden during the period 1960-1985. Subjects were followed from their entry into the study base through 1985. A total of 142 cancer cases were identified through a record linkage to the Swedish Cancer Registry. There were 39 leukemia and 33 central nervous system tumor cases. A total of 558 controls were selected at random from the study base. Exposure was assessed by spot measurements and by calculations of the magnetic fields generated by the power lines, taking distance, line configuration, and load into account. Information about historical loads on the power lines was used to calculate the magnetic fields for the year closest in time to diagnosis. When historical calculations were used as exposure assessment for childhood leukemia with cutoff points at 0.1 and 0.2 microtesla (μT), the estimated relative risk increased over the two exposure levels and was estimated at 2.7 (95% confidence interval (CI) 1.0-6.3) for 0.2 μT and over; p for trend = 0.02. When the upper cutoff point was shifted to 0.3 μT, the relative risk was 3.8 (95% CI 1.4-9.3); p for trend = 0.005. These results persisted when adjustment for potential confounding factors was made. For central nervous system tumor, lymphoma, and all childhood cancers combined, there was no support for an association.

Key words child electromagnetic fields leukemia neoplasms

© 1993 by The Johns Hopkins University School of Hygiene and Public Health

Articles citing this article

A Pooled Analysis of Extremely Low-Frequency Magnetic Fields and Childhood Brain Tumors
Abstract Full Text (HTML) Full Text (PDF)

Exposure assessment and other challenges in non-ionizing radiation studies of childhood leukaemia
Abstract Full Text (HTML) Full Text (PDF)

Nighttime Exposure to Electromagnetic Fields and Childhood Leukemia: An Extended Pooled Analysis

Comment Letter #8

From: Peterson, Robert
To: Tom Engels
Subject: public scoping comment Fwd: Suncrest Dynamic Reactive Power Support Project
Date: Monday, February 08, 2016 7:26:56 PM

Sent by Android.

-------- Original Message --------
From: [redacted]
Sent: Monday, February 8, 2016 06:34 PM
To: "Peterson, Robert" <Robert.Peterson@cpuc.ca.gov>
Subject: Suncrest Dynamic Reactive Power Support Project

Rob Peterson, Public Utilities Commission Project Manager,
My name is [redacted] I reside at [redacted]. I have several concern related to the proposed addition of 1,700 Mega Watts of power to the Sunrise Power Link.

There has been completed a measurement of the EMF (radiation) currently being generated by the Sunrise Power Link. The study shows the current emissions are at a level known in Europe to cause Leukemia in children.

The amount of power which is attempting to be added to the Sunrise Power Link (1,700 Mega Watts) will increase the EMF exponentially along Alpine Boulevard where the residents walk and children play as well as wait for the school bus. The current EMF is damaging to children at existing levels. When additional power for approximately 85,000 new all electric homes is added to the Sunrise Power Link what will be the benefit be to the community of Alpine?

The Sunrise Power Link was promised by SDG&E to keep All our power bills low in San Diego, However every rate payer in San Diego county received a power rate increase due to the NEW 4 tier system of billing, which the PUC allowed. Prior the this new tier system there was peak and off peak power usage. Each and every time SDG&E has made promises they have been empty. As a member of the PUC you represent the citizens of the county NOT SDG&E. Please oppose the new power increase to the Sunrise Power Link. The health of Alpines' next generation depends on you.

Thank You for your time
[redacted]

Comment Letter #9

California Public Utilities Commission

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Scoping Comment Form

Name:	[redacted]
Group/Organization (optional):	
Mailing Address:	[redacted]
Telephone Number (optional):	[redacted]
Email (optional):	[redacted]

Comments/Issues: the proposed Dynamic Reactive Power Support System to be installed along the Bell Bluff truck trail within the Cleveland National Forrest is in direct opposition to the health of every resident of Alpine. the addition of 1,700 Mega Watts of electrical power will increase the EMF of the Sunrise Power link exponentially. 1,700 mega watts does not sound like much when glazed over by SDGE as well as contractor NextEra Energy transmission west, LLC. However that is power enough for 85,000 All electric Residences. It is also power enough for 850 Post Office processing & Distribution Centers Similar to the one located at 11251 Rancho Carmel Dr.

Please use additional sheets if necessary.

Submit written comments (postmarked no later than February 8, 2016) to:

Mail: Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Email: suncrestproject@horizonh2o.com

Questions? Please contact us or visit our website:
http://www.cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html

cc Diane Teeter

Comment Letter #10

[redacted]

February 9, 2016

Dianne Jacob
Supervisor, Second District

Dear Dianne,

I don't know if you received this from the PUC but the PUC wants to grant permission to NextEra Energy Transmission West LLC the right to construct a Static Var Compensator and a mile of 230 Volt transmission line in the same area as the existing Suncrest Substation in Japatul Valley.

Nowhere in the notice of the preparation of the EIR is a picture or description of what's proposed to be constructed so I thought you might be interested in what it looks like since it's made to sound so benign.

The pictures I've enclosed are of a similar unite located in El Cajon at SDG&E's office, and as you will note it's not a small thing.

Those of us that live in Japatul Valley and already are forced to look at the Suncrest Substation (that was to be screened by now, see enclosed 2011 email) and don't want another piece of power transmission equipment built that will further impede our views and further decrease property values.

This proposed construction in no way benefits San Diego or San Diego County much less the residents of Japatul Valley.

If left unchecked in 20 years we will be looking at an electrical facility of a magnitude that will be unstoppable. Allowing Sempra Energy a foot in the door is like opening the floodgates to whatever they want to do, and you know as well as I the PUC will go along.

What is your position and your plan regarding the preparation of the EIR?

[redacted]

CC: Robert Peterson, CPUC, C/O Tom Engels, Horizon Water and Environment

Comment Letter #10

RECEIV
JAN 12 2016
BY:

Notice of Preparation

To: Responsible and Trustee Agencies *(Agency)*

(Address)

From: California Public Utilities Commission *(Agency)*

505 Van Ness Avenue *(Address)*

San Francisco, CA 94102-3298

Subject: **Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC**

The California Public Utilities Commission (CPUC) will be the lead agency and will prepare an environmental impact report (EIR) for the project identified below. We are requesting the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR and/or subsequent related environmental documents prepared by our agency when considering your permit or other approval for the project.

The project description, location, and potential environmental effects are contained in the attached materials. A copy of the initial study ☐ ***is*** ☒ ***is not*** attached.

Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to suncrestproject@horizonh2o.com or Robert Peterson, CPUC, C/O Tom Engels, Horizon Water and Environment, 180 Grand Avenue, Suite 1405, Sacramento, CA 94612. Please include your name or the name of a contact person in your agency.

Project Title: Suncrest Dynamic Reactive Power Support Project

Project Applicant, if any: NextEra Energy Transmission West, LLC

Date: January 5, 2016

Signature: Rob Peterson

Title: Project Manager, Energy Division, Infrastructure Permitting and CEQA

Telephone: (844) 211-7510

Email: suncrestproject@horizonh2o.com

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Comment Letter #10

Notice of Preparation

of an

Environmental Impact Report

for the

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298
Contact: Tom Engels
916/790-8548

January 5, 2016

Comment Letter #10



Comment Letter #10



Comment Letter #10

DIANNE, 4 YEARS LATTER & NO SIGN OF A TREE !

2/9/16

EMAIL FROM 8/12

Thank you [redacted] however your response does not address my question, that is the EIR said the towers at the substation would blend in. If substation towers (the the parts that stick up above the transformers) were to blend in, you will note that's just not possible as the rise above the surrounding terrain(see my pictures). If your (Sempra) asking me to wait 30 to 50 years before the substation blends in with or is less visible assuming the trees continue to grow I will be dead.

If that's your premise it should have been disclosed to that effect in the EIR, why was it not?

The way I see it its a very clear statement that the "substation will blend in" what am I to do now that it doesn't?

Your welcom to come to my home and have a look for your self,, just give me a call [redacted]

Sincerely,

[redacted]

--- On Tue, 8/21/12, [redacted] wrote:

From: [redacted]

Subject: Status of visual screening at Suncrest Substation

To: [redacted]

Cc: [redacted]

Date: Tuesday, August 21, 2012, 7:19 PM

Hello [redacted]

Earlier this month you emailed CPUC regard screening of the Suncrest Substation as seen from your location on Japatula Valley Road.

I can report the following with regard to reducing visual impacts:

SDG&E has stained rock cut areas so they mimic and better blend with the natural landscape. Jute netting and hydroseeding have been applied where there is soil; shrubs, wildflowers, and grasses will take hold in these areas. On the manmade slope facing the valley, shrubs and other vegetation has been planted and are being irrigated. The retaining walls lower on this slope also have been stained. The chain link fence around the south side of the substation has had brown slats inserted into it to help obscure the lower elements of the substation.

OVER →

From your vantage point, the most significant action will occur this fall. With cooler weather, 42 additional trees will be planted. These will be Coulter pine (Pinus coulteri) and Mondell or Afghan pine (Pinus eldarica). As they grow, they will provide a dense foliage and will establish a substantial visual screen. They will be irrigated and monitored for success. However, as with many trees, it will take time for them to grow. The Coulter pine is a relatively slow grower, at about a foot per year for its first 20 years. The Mondell or Afghan pine grows more rapidly, as much as 3 to 6 feet per year when young, up to about 30-40 feet. While a Coulter pine near Julian measures nearly 130 tall with a spread of 60 feet, a typical height at maturity is 80 feet. The Afghan/Mondell pine reaches 30-50 feet in height and will be planted under the power

lines

entering/exiting the substation. Many of the trees will be planted near the top of the slope, but a number will be scattered on the slope as well.

Information on the trees can be found on the internet. See, for example:

Coulter pine -- http://www.conifers.org/pi/Pinus_coulteri.php

Afghan pine -- http://aces.nmsu.edu/county/donaana/mastergardener/documents/afghan-pine.pdf

Coulter pine:

Photo of Coulter pines near Santa Ysabel, Ca.

Mondell or Afghan pine:



Attachment B

Notice of Preparation and Newspaper Ads

Notice of Preparation

To: Responsible and Trustee Agencies *(Agency)*

(Address)

From: California Public Utilities Commission *(Agency)*

505 Van Ness Avenue *(Address)*

San Francisco, CA 94102-3298

Subject: **Notice of Preparation of an Environmental Impact Report for the Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC**

The California Public Utilities Commission (CPUC) will be the lead agency and will prepare an environmental impact report (EIR) for the project identified below. We are requesting the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR and/or subsequent related environmental documents prepared by our agency when considering your permit or other approval for the project.

The project description, location, and potential environmental effects are contained in the attached materials. A copy of the initial study ☐ ***is*** ☒ ***is not*** attached.

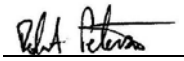
Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to suncrestproject@horizonh2o.com or Robert Peterson, CPUC, C/O Tom Engels, Horizon Water and Environment, 180 Grand Avenue, Suite 1405, Sacramento, CA 94612. Please include your name or the name of a contact person in your agency.

Project Title: Suncrest Dynamic Reactive Power Support Project

Project Applicant, if any: NextEra Energy Transmission West, LLC

Date: January 5, 2016

Signature: 

Title: Project Manager, Energy Division, Infrastructure Permitting and CEQA

Telephone: (844) 211-7510

Email: suncrestproject@horizonh2o.com

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Notice of Preparation

of an

Environmental Impact Report

for the

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298
Contact: Tom Engels
916/790-8548

January 5, 2016

INTRODUCTION

Purpose of the NOP

The California Public Utilities Commission (CPUC) is the lead agency for preparation and review of an environmental impact report (EIR) for NextEra Energy Transmission West, LLC's (NEET West's or the Applicant's) proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project). The Proposed Project would involve construction of a dynamic reactive power support facility and an approximately one-mile-long transmission line connecting to the existing Suncrest Substation in south-central San Diego County, near the community of Alpine.

This Notice of Preparation (NOP) presents general background information on the scoping process, the environmental issues to be addressed in the EIR, and the anticipated uses of the EIR. It also briefly describes the Proposed Project as currently envisioned. The project description is subject to refinement during the process of preparing the EIR, depending on, among other things, input received in comments responding to this NOP and revisions to the Proposed Project. The CPUC has prepared this NOP pursuant to Section 15082 of the State California Environmental Quality Act (CEQA) Guidelines.

Scope of the EIR

This EIR will evaluate potential environmental impacts of the Proposed Project. As the lead agency under CEQA, CPUC has determined that the Project may have a significant impact on the environment and has decided to prepare an EIR. Consistent with the basic purposes of CEQA (State CEQA Guidelines Section 15002[a]), the purposes of the EIR will be to:

1. Inform governmental decision makers and the public about the potential, significant environmental effects of the proposed activities;

2. Identify the ways that environmental damage can be avoided or significantly reduced;

3. Prevent significant, avoidable damage to the environment through the use of feasible alternatives or mitigation measures.

A preliminary environmental review for the Proposed Project indicated the possibility for several potentially significant impacts and issues, as described in Table 1.

Table 1: Summary of Possible Impacts and Issues

Resource Topic	Potentially Significant Impact/Issue
Biological Resources	• Impacts to wetlands and/or jurisdictional waters • Impacts to Hermes copper butterfly during Project construction
Cultural Resources	• Impacts to buried archaeological resources during Project construction
Hydrology & Water Quality	• Impacts to downstream water bodies from stormwater discharges during Project construction and operation • Impacts to hydrology and water quality during Project construction
Land Use	• Impacts on existing mitigation sites/conflicts with existing mitigation obligations related to the existing Suncrest Substation
Noise	• Noise impacts during construction
Public Services	• Adverse impacts related to fire protection service
Alternatives	• Concerns regarding inclusion/evaluation of a Project alternative co-located within existing Suncrest Substation site (i.e., concerns that such an alternative wouldn't be evaluated in an MND), which could have reduced environmental impacts

No significance determinations have been made regarding the possible impacts listed in Table 1. The analysis in the EIR ultimately will determine whether these impacts actually could occur, will determine their level of significance, and will propose feasible mitigation measures to reduce significant impacts. Thresholds for determining significant impacts will be based on applicable sections of the State CEQA Guidelines, regulatory agency standards, and the judgment of the CEQA lead agency, CPUC. In addition to the possible impacts identified in Table 1, the EIR will evaluate other potential impacts/resource topics, as described in Appendix G of the State CEQA Guidelines.

Public Involvement

The CPUC is soliciting the views of interested persons and agencies on the scope and content of the environmental information that is germane to the Proposed Project. A scoping meeting for the Proposed Project will be held as follows:

Thursday, January 21, 2016, 6 p.m. to 8 p.m.
Alpine Community Center, Sage Room
1830 Alpine Blvd.
Alpine, CA 91901

The scoping meeting will feature a presentation on the Proposed Project and environmental review process and an opportunity for interested members of the public to submit oral or written comments.

Written comments may be submitted any time during the scoping period. All available documents pertaining to the Proposed Project can be located at the following website: http://cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html. Because of the time limits mandated by state law, your written comments on the scope and content of the EIR must be ***received no later than February 8, 2016 at 5:00 p.m.*** Please send written comments to the CPUC, to the attention of Rob Peterson, CPUC, c/o Tom Engels, Horizon Water and Environment, 180 Grand Avenue, Suite 1405, Oakland, CA 94612. Please include the name and phone number of the contact person for your agency, if applicable. CPUC will consider and incorporate scoping comments on the Proposed Project in preparation of the EIR as appropriate.

PROJECT DESCRIPTION

Background and Need

The Proposed Project originates from the California Independent System Operator's (CAISO's) 2013-2014 transmission planning process, which identified a need for a 300-million volt-ampere reactive (megavar)[1] dynamic reactive device at the existing Suncrest Substation's 230 kilovolt (kV) bus[2] to meet California's 33% Renewable Portfolio Standard (CAISO 2014). CAISO determined that the retirement of the San Onofre Nuclear Generating Station and projected increases in renewable generating capacity in the Imperial Valley would cause loading and voltage stability issues in the transmission system in the area of the existing Suncrest Substation. CAISO conducted a competitive bid solicitation process for the Suncrest dynamic reactive facility and selected NEET West to construct the Proposed Project.

Following its selection by CAISO in January 2015 as the approved project sponsor, NEET West submitted to CPUC a Proponent's Environmental Assessment (PEA) in August 2015, as part of its application (A.15-08-027) for a Certificate of Public Convenience and Necessity (CPCN), as specified in CPUC General Order (G.O.) 131-D.

Project Objectives

The objectives of the Proposed Project as defined by the Applicant are as follows:

- Meet the CAISO's identified need for reactive support[1] at the Suncrest Substation's 230 kV bus;
- Improve and maintain the reliability of the transmission grid;
- Facilitate delivery of renewable energy generation from the Imperial Valley area to population centers to the west;
- Support achievement of the state's 33% Renewable Portfolio Standard.

[1] Volt-ampere reactive (var) is a unit by which reactive power is expressed in an alternating current (AC) electric power system. Reactive power exists in an AC circuit when the current and voltage are not in phase. In an electric transmission system, reactive power serves to support the voltage levels needed to maintain system reliability. Megavar means one million vars.

[2] A bus or busbar is a metallic strip or bar that conducts electricity within a substation or other electrical apparatus. Buses are often the connection points for incoming transmission lines into a substation.

Project Location

The Proposed Project is located in unincorporated south-central San Diego County, approximately 5.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail road. Figure 1 shows the Project location. The lands surrounding the Proposed Project are primarily undeveloped, with some rural-residential development present to the east and south, and the existing Suncrest Substation at the Project's western terminus. The nearest residence is approximately 0.6 mile to the southeast. Interstate-8 is located approximately 1.8 miles to the north of the Project area and Japatul Valley Road (State Highway 79) is approximately 1.2 miles to the southeast. The Proposed Project would be located on private property within the administrative boundary of the Cleveland National Forest.

Proposed Project

The Proposed Project includes two primary components: (1) a Static Var Compensator (SVC) facility, to be located approximately one mile east of the existing Suncrest Substation, and (2) a 230 kV transmission line from the proposed SVC facility to the existing substation. Figure 2 illustrates the primary project components.

SVC Facility

The proposed SVC facility would produce and consume reactive power for voltage support and would interconnect with the Suncrest bus via the proposed transmission line. The facility would be approximately 6 acres in total size (with a fenced area of approximately 2.58 acres) and would be located on an area previously used as a construction staging and materials storage area during construction of the Suncrest Substation (completed in 2012).

The SVC facility would include various structures/pieces of electrical equipment, such as power transformers, power circuit breakers, control buildings, capacitors, and reactors, all of which would be installed on concrete foundations. The four power transformers within the proposed SVC facility would each require a maximum of approximately 10,000 to 12,000 gallons of oil. The tallest structures within the SVC would be the lightning shielding masts, which would be approximately 75-feet-tall.

In addition to the electrical equipment, the SVC facility would include the following components: signage and lighting; access driveway improvements; a stormwater drainage system and detention basin; a retaining wall; approximately 7-foot-high chain link and barb wire security fencing; and transformer oil containment basins. The retaining wall would be installed on the east side of the SVC facility to minimize the potential for erosion and would be approximately 480 feet long and 15 feet tall at its highest point.

Transmission Line

The proposed 230 kV transmission line would be approximately one mile in length and would connect the proposed SVC facility to the existing Suncrest Substation. The proposed

transmission line would be installed primarily underground beneath Bell Bluff Truck Trail road, with the last approximately 300 feet of the line transitioning aboveground via an 85- to 95-foot tall riser pole to connect with the existing substation.

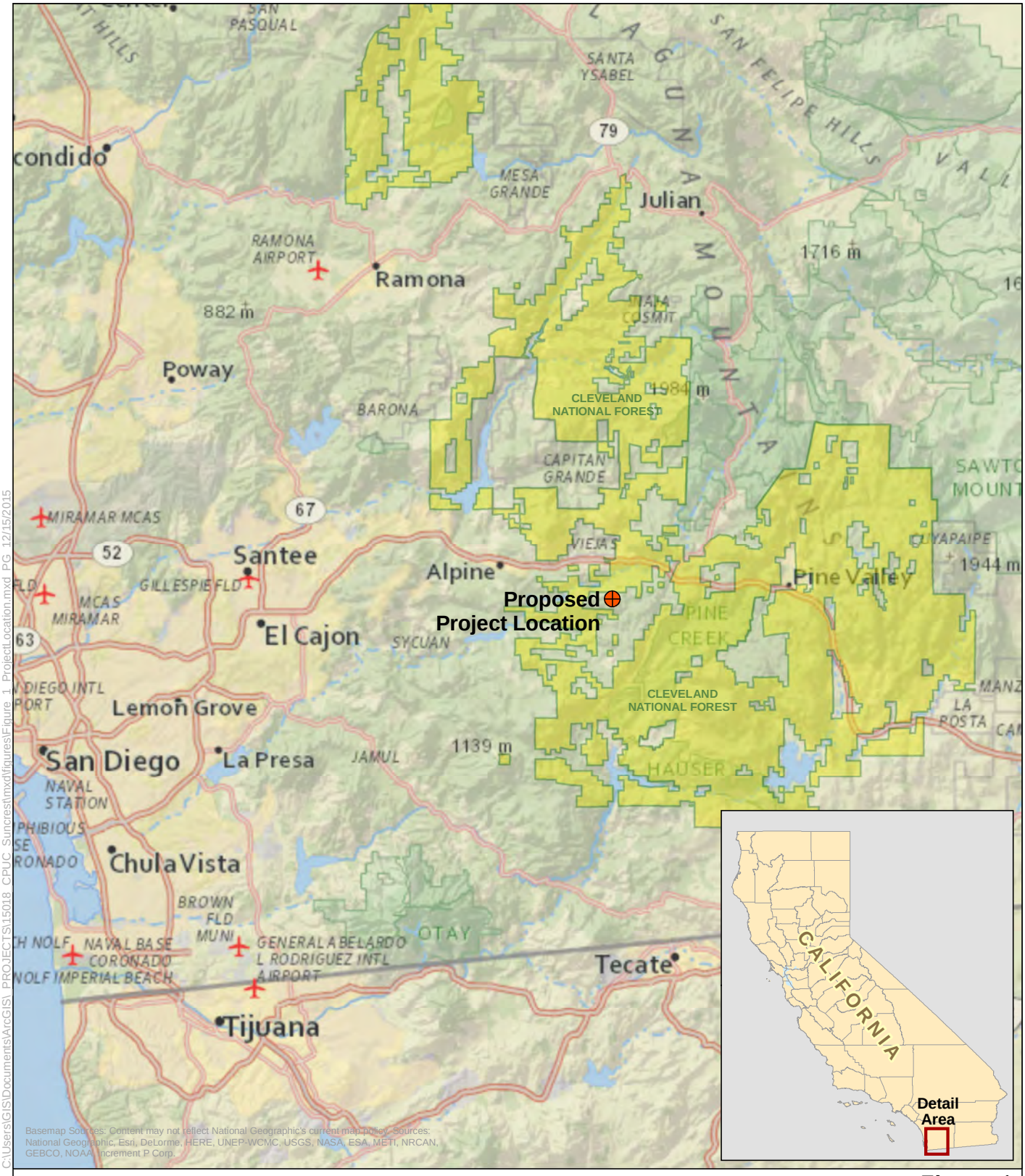
The underground transmission line would be installed in polyvinyl chloride (PVC) conduits within a concrete-encased duct bank system. The bottom of the duct bank would be approximately 5 feet below grade, and the duct bank would be approximately 30 inches wide by 24 inches tall. The underground transmission line would include up to five underground splice vaults spaced roughly every 900 feet to facilitate installation of the underground cables and operation and maintenance of the transmission line. The majority of the underground transmission line would be installed within Bell Bluff Truck Trail; however, installation of the splice vaults may require temporary disturbance outside of the roadbed.

The 85- to 95-foot riser pole, for transition of the transmission line to an overhead span and entry into the existing Suncrest Substation, would be installed north of Bell Bluff Truck Trail. The base of the riser pole would be approximately 7 feet in diameter and require an additional approximately 15-foot radius of permanent disturbance around the riser pole.

Project Construction

Construction of the SVC facility generally would include site clearing, grubbing, grading, and installation of foundations and electrical equipment. Construction of the underground transmission line would be anticipated to be concurrent with construction of the SVC and would follow a general process of utility line locating; survey; asphalt cutting of pavement; trench excavation; installation of duct bank and vaults; pavement restoration; installation of conductor cables and fiber optic cables (for communications for line relaying, SCADA, and other devices as required); and splicing and testing of the line. Grading for the SVC may result in up to 4,000 cubic yards of excess material, which would be hauled off site. In select locations, where material cannot be excavated using a backhoe and/or bulldozer, material removal may require scraping, ripping, drilling, hammering, cutting and localized low energy blasting. Construction of the Proposed Project would result in approximately 6.2 acres of temporary disturbance, accounting for staging area impacts and trenching for underground transmission line installation. When added to the permanent disturbance area of the SVC, total disturbance from the Proposed Project would be approximately 12.2 acres.

The project would take 10 months to construct and is targeted to be operational by June 2017. Typically, construction would occur 10 hours per day, 6 days per week, Monday through Saturday, between 7 a.m. and 7 p.m.; however, certain time-sensitive activities and/or activities which are not noise-intensive may occur outside these hours.



C:\Users\GIS\Documents\ArcGIS_PROJECTS\15018_CPUC_Suncrest\mxd\figures\Figure_1_ProjectLocation.mxd PG 12/15/2015

N

0 5 10

Miles

Proposed Project Location

Cleveland National Forest

Prepared by:

Horizon
WATER and ENVIRONMENT

Figure 1
Project Location

Suncrest Dynamic Reactive Power Support Project



N

0 500 1,000

Feet

Prepared by:

Horizon WATER and ENVIRONMENT

Project Components

- Project Area (limit of disturbance)
- Underground Transmission Line
- Overhead Transmission Line
- SVC Area
- SVC Footprint
- Parcel Boundary (with APN and Owner)

Figure 2
Project Overview

Suncrest Dynamic Reactive Power Support Project

References

CAISO. *See* California Independent System Operator.

California Independent System Operator. 2014. 2013-2014 Transmission Plan. Retrieved from: https://www.caiso.com/Documents/Board-Approved2013-2014TransmissionPlan_July162014.pdf. Accessed December 14, 2015.



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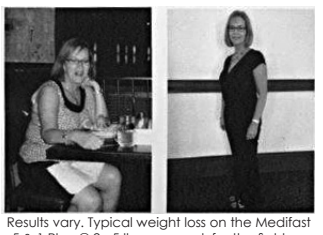
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Certified Health Coach #712834730
619-504-5663
laurenking.tsfl@gmail.com
www.laurenking.tsfl.com/explore

Local officials, SDG&E urge emergency preparedness during El Niño season

SDG&E announces $70,000 donation for emergency generators

SAN DIEGO — San Diego city and county officials, along with San Diego Gas & Electric, shared emergency preparedness plans and outreach efforts aimed at ensuring the needs of the county's most vulnerable residents are met before the next round of intense El Niño storms. Meteorologists are predicting that there could be another 60 days of rain activity leading to flooding, among other hazards.

"Being prepared for storms of this magnitude is critical," said Toni Atkins, California Assembly Speaker. "San Diego officials and businesses like SDG&E have set a fine example by collaborating on preparedness, response and recovery plans that will help keep the region safe."

SDG&E purchased 10,000 "SAFELY OUT KITS" from Citizen Voice to distribute to vulnerable members of the community such as the elderly and those with mobility issues. The kits are complete with materials that can be used if someone is homebound during an emergency. Distribution of the kits has already begun through a partnership with agencies like Elder Help, Meals-on-Wheels and American Medical Response.

"The cooperation among our region's first responders during last week's storms helped minimize property damage and kept San Diegans safe. I've directed City staff to continue to take aggressive action to prepare our community for more severe weather," said Mayor Kevin L. Faulconer. "El Niño is expected to bring more storms, so now is the time to prepare our families, homes and businesses before the next rains come. I'd like to thank SDG&E for partnering with us to help our most vulnerable residents make sure they can weather the storms."

SDG&E also announced a donation of $70,000 to the San Diego Regional Fire Foundation for the purchase of three emergency generators to be used at its San Diego County disaster shelters.

"Adding these generators will help ensure the continuation of life-saving services when our most vulnerable residents, such as those needing oxygen, find themselves evacuated to an emergency shelter," said Chairman Roberts. "I want to thank SDG&E for again stepping up to help fill a public safety need."

"With a shared vision of promoting public safety and helping those community members who need it the most, these donations were a natural fit for us at SDG&E," said Caroline Winn, chief energy delivery officer for SDG&E. "We believe that providing essential materials like these kits is another way to help first responders identity who needs help in an emergency. It's an honor to continue to support the Regional Fire Foundation and Citizen Voice in its mission to foster a safer city."

SDG&E is a regulated public utility that provides safe and reliable energy service to 3.4 million consumers through 1.4 million electric meters and 868,000 natural gas meters in San Diego and southern Orange counties. The utility's area spans 4,100 square miles. SDG&E is committed to creating ways to help customers save energy and money every day. SDG&E is a subsidiary of Sempra Energy (NYSE: SRE), a Fortune 500 energy services holding company based in San Diego. Connect with SDG&E's Customer Contact Center at 800-411-7343, on Twitter (@SDGE) and Facebook.

MOST WANTED LIST!

Alpine - Scenic 10-acre parcel with beautiful view. Owner will finance **$86,000**

Woodcreek Estates - 3 bd, 2 ba, 1400 s… PENDING …me on a corner lot, 2 car garage **$89,000**

Just listed! - Woodcreek Estates 3 bd, … SOLD …nufactured home. 2 car garage **$99,900**

Just Listed - Nice Lake Morena Village, … SOLD **$110,00**

Just Listed - 2 bd, 2 ba condo like new **$199,000-$209,000**

7.95-acre View Property - Water, septi… SOLD …way. Owner will finance **$219,000**

Descanso - Just listed! 3 bd, 2 ba, 169… SOLD …re lot! 2 fireplaces **$325,000**

Campo - Lake Morena Village, nice 4bd… SOLD …stom home, 2-car garage, carport. Fenced and gated, .32 acre **$329,000-$349,000**

Jamul - Single story ranch 3 br, 2 ba, 2… SOLD …20 acres. View of Loveland Reservoir **$359,900**

Alpine - Single story 3 br, 2 ba, 1672 sq… SOLD **$425,000**

Lakeside - 3 bd, 2 ba, 1586 sq.ft. single… SOLD **$459,900**

Alpine - Crown Hills, 3 bd, 2 ba, 1658 s… SOLD …place, hickory wood floors, infinity view yard, waterfall pond **$485,000**

Bank Owned! - 4 bd, 3 ba, 2386 sq.ft. home on 1.1 acres. Pool, remodeled, view **$551,200**

Ramona - Mt. Woodson gated commun… SOLD …ft. on .25 acre, granite counters **$560,000**

Alpine - Newer 4 bd, 3 ba, 2348 sq.ft. s… SOLD …8 acres, pool and spa **$579,900-$599,000**

Alpine - Just Listed - 4 br, 3.5 ba, 2813… SOLD … Pool, spa, 4-car garage, 2.34 acres **$625,000**

Alpine - Just listed! 5 bd, 4 ba, 3228 sq… SOLD …on 4.24 acres. Pool and spa, 3-car garage **$650,000-$699,000**

Alpine - Custom 4 br, 3.5 ba, 3200 sq.ft. … SOLD …tate on Sweetwater River. Many elaborate upgrades **$650,000**

Alpine - Spectacular 3 br, 2.5 ba, 2998 sq.ft. … PENDING …e. Resort style pool and spa, RV garage, 3-car, 2.06 acres, view to o… **$729,900**

Crest - Newer 4 bd, 4 ba, single story, 3… SOLD …2 acres. Pool and spa, 5-car garage **$769,600**

Rancho Palo Verde -Gated community, architect designed Mediterranean beauty, 6 bd, 6.5 ba, 5932 sq.ft. on 2.01 acres. Columns, arches, library plus well **$950,000**

Tentative Map Approved - 18-lot subdivision, walking distance to downtown Alpine **$989,500**



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Join us for a
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for the
Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

The California Public Utilities Commission (CPUC) invites you to attend a public scoping meeting on NextEra Energy Transmission West, LLC's (NEET West's) proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project). The Proposed Project would involve construction of a dynamic reactive power support facility and an approximately one-mile-long transmission line connecting to the existing Suncrest Substation in south-central San Diego County. The Proposed Project would be located off of and along Bell Bluff Truck Trail road, approximately 5.75 miles east of the community of Alpine. The CPUC is the lead agency for the Proposed Project under the California Environmental Quality Act (CEQA) and has decided to prepare an environmental impact report (EIR). The purpose of the meeting will be to provide information about the Proposed Project and to solicit input on the scope and content of the environmental information to be included in the EIR. Meeting attendees will have the opportunity to submit oral or written comments on the Proposed Project and identify any concerns or issues they would like to have considered in the EIR. The date, time, and location of the public scoping meeting will be as follows:

Thursday, January 21st, 2016, 6:00 pm – 8:00 pm
Alpine Community Center
1830 Alpine Blvd., Alpine, CA 91901

Will you need an accommodation in order to attend and/or participate in this event? If so, please contact Tom Engels, Horizon Water and Environment at (916) 790-8548. Auxiliary aides and services are available to individuals with disabilities upon request.

FIRE LOG

ALPINE FIRE PROTECTION DISTRICT

01/11/2016 13:41:32 2157 Arnold WY /72I EMS call, excluding vehicle
01/11/2016 13:48:50 1635 Foss RD EMS call, excluding vehicle
01/11/2016 19:58:46 1539 Tavern RD /65 EMS call, excluding vehicle
01/12/2016 19:25:00 2660 ALPINE BL /104 EMS call, excluding vehicle
01/13/2016 08:14:37 2001 Tavern RD EMS call, excluding vehicle
01/13/2016 10:31:10 2001 Tavern RD Gas leak (natural gas or LPG
01/13/2016 10:58:53 8770 Harb Canyon RD Gas leak (natural gas or LPG
01/13/2016 11:29:51 15542 OLDE HIGHWAY 80 /LA Disp & cancelled
01/13/2016 15:57:09 I-8 Wb Motor Vehicle Accident with
01/13/2016 16:55:30 2955 Alpine BL Auto Lock-out
01/14/2016 03:31:39 1364 Tavern RD EMS call, excluding vehicle
01/14/2016 03:58:21 948 Alpine Heights RD EMS call, excluding vehicle
01/14/2016 07:13:46 3116 Via Asoleado Dispatched & cancelled en ro
01/14/2016 13:17:56 2400 Alpine BL /7I Assist invalid
01/14/2016 15:56:37 3114 Victoria DR EMS call, excluding vehicle
01/15/2016 07:13:53 2302 Via Dieguenos
01/15/2016 08:30:53 1540 Alpine Terrace RD Person in distress, Other
01/15/2016 09:35:09 1364 Tavern RD EMS call, excluding vehicle
01/16/2016 13:55:08 Anderson Rd / E Victoria EMS call, excl vehicle
01/17/2016 09:51:36 17600 JAPATUL RD Dispatched & cancelled en ro
01/17/2016 16:51:24 2400 Alpine BL /130 EMS call, excluding vehicle
10/13/2012 08:19:15 1849 Alpine BL EMS call, excluding vehicle
10/13/2012 14:03:16 1180 Alpine Heights RD Disp & cancelled en ro
10/13/2012 19:54:22 1750 Arnold WY /96 EMS call, excluding vehicle
10/13/2012 20:08:42 2636 Alpine BL /B EMS call, excluding vehicle
10/14/2012 01:53:19 0 I-8 Eb 622 No Incident found on arrival
10/14/2012 13:42:21 2411 Victoria Meadows DR EMS call, excluding



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Volunteers Needed for California's Road Charge Pilot

Report outlines statewide pilot to study potential long-term replacement for the state's gas tax

SACRAMENTO – California is actively seeking 5,000 volunteers to take part in a free study that could shape the way drivers are charged for road usage. Called for by the Legislature in 2014, the Road Charge Pilot Program will produce information for further study on the concept of a "road charge" program. State officials aim to recruit a large number of volunteers reflective of the vast geographic and socioeconomic diversity of the state.

The California Road Charge Technical Advisory Committee released its final recommendations for the statewide road charge pilot study—a system where drivers could pay for road maintenance and repairs based on the number of miles they drive, rather than how much gas they consume. Senate Bill (SB) 1077, signed by the Governor in September 2014, called for the pilot program. The free pilot program will inform the Legislature's decision on whether moving forward with a full-scale permanent road charge program, potentially replacing the gas tax, is worthwhile. The state's current transportation funding system relies on revenue from fuel taxes, which continue to decline with fluctuating gas prices, increased use of hybrid and electric vehicles and overall improvements in new vehicles' fuel economy.

Volunteer participation and feedback will be vital in fine-tuning the proposed program that could eventually tie highway funding with road usage rather than gas tax proceeds. Volunteer drivers will be able to choose from one of several mileage reporting methods that California will be testing. Volunteering is free and no actual money will be exchanged. Participants will have the choice of submitting mock payments via mail or a secure website for testing purposes. Volunteers can enroll at www.CaliforniaRoadChargePilot.com.

"Our recommendations reflect the input we received from hundreds of stakeholders and individuals that represent every region of the state," said Jim Madaffer, Chair of the Technical Advisory Committee. "While this endeavor has been rigorous, it resulted in the unique opportunity to examine a per-mile road charge mechanism as a potential long term solution to the issue of declining transportation revenue facing California."

Caltrans maintains 50,000 lane-miles of highway and nearly 13,000 state-owned bridges. However, the state's current fuel excise tax is sufficient to fund only $2.3 billion of work, leaving $5.7 billion in unfunded repairs each year. If this trend continues, the transportation funding gap will continue to grow and road maintenance and repair needs will continue to escalate.

"The gas tax is outdated and no longer capable of meeting all of our future transportation revenue needs," said Will Kempton, Executive Director of the California Transportation Commission. "The pilot is an excellent opportunity to study road charging and should provide the Legislature the data it needs to better determine whether and how this idea might work in California."

At the conclusion of the pilot, the California State Transportation Agency will issue a report with its findings to the Legislature, the Road Charge Technical Advisory Committee, and the California Transportation Commission. Following receipt of that report, the Commission will make its recommendations regarding the pilot program to the Legislature, which will consider whether to proceed with implementing a road charge system in California.

More information about the California Road Charge Pilot Program and participant volunteer information is available at www.CaliforniaRoadChargePilot.com.

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The San Diego Union-Tribune

PROOF OF PUBLICATION

STATE OF CALIFORNIA
COUNTY of San Diego

The Undersigned, declares under penalty of perjury under the laws of the State of California: That he/she is the resident of the County of San Diego. That he/she is and at all times herein mentioned was a citizen of the United States, over the age of twenty-one years, and that he/she is not a party to, nor interested in the above entitled matter; that he/she is Chief Clerk for the publisher of

The San Diego Union-Tribune

a newspaper of general circulation, printed and published daily in the City of San Diego, County of San Diego, and which newspaper is published for the dissemination of local news and intelligence of a general character, and which newspaper at all the times herein mentioned had and still has a bona fide subscription list of paying subscribers, and which newspaper has been established, printed and published at regular intervals in the said City of San Diego, County of San Diego, for a period exceeding one year next preceding the date of publication of the notice hereinafter referred to, and which newspaper is not devoted to nor published for the interests, entertainment or instruction of a particular class, profession, trade, calling, race, or denomination, or any number of same; that the notice of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

January 15, 2016

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated in the City of San Diego, California
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PUBLIC NOTICE

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Attachment C

Meeting Materials and Meeting Notes



CPUC SCOPING MEETING FOR DRAFT ENVIRONMENTAL IMPACT REPORT

NEET West Energy Transmission West, LLC Suncrest Dynamic Reactive Power Support Project

Application No. 15-08-027 California Public Utilities Commission January 21, 2016

Horizon WATER and ENVIRONMENT

Purpose of Scoping Meeting

- Overview of the California Public Utilities Commission (CPUC) **application review** processes
- Describe the proposed NextEra Energy Transmission West (NEET West), LLC **Suncrest Project**
- To allow the public and agencies to provide input on the scope and content of the proposed project's Draft EIR
- Scoping comments inform the scope and nature of the CEQA environmental analysis.

Roles

California Public Utilities Commission (CPUC)
Lead Agency under CEQA

Horizon Water and Environment
Environmental Contractor for CPUC

NextEra Energy Transmission West, LLC (NEET West)
Project Applicant

CPUC Process

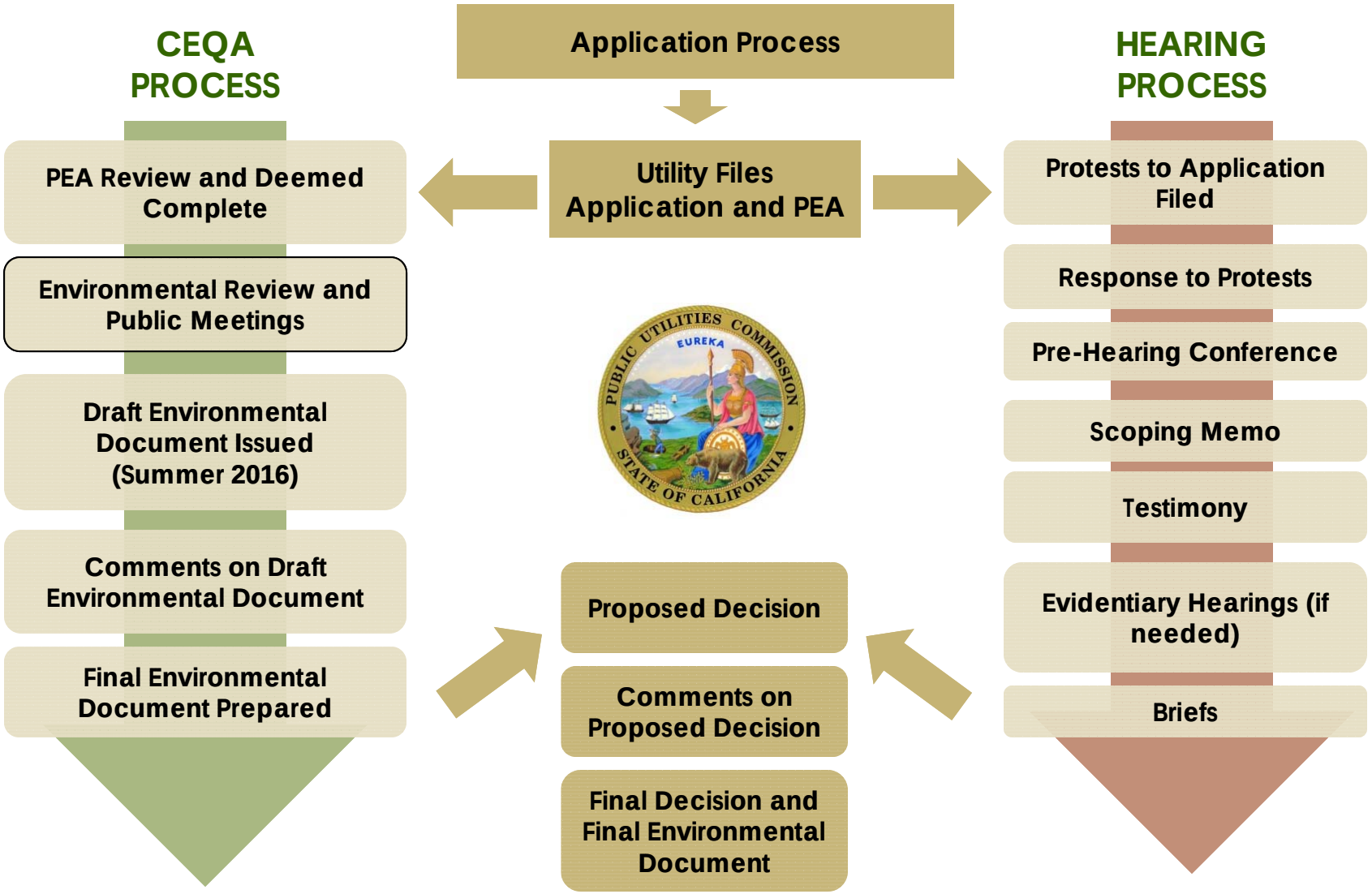
- Investor-owned utilities must submit a permit application to CPUC for construction of certain infrastructure listed under Public Utilities Code Section 1001
- NEET West filed an Application consisting of:
  - Application for Certificate of Public Convenience and Necessity for the proposed project
  - A Proponent's Environmental Assessment (PEA)
- CPUC has authority to approve or deny the Application
- CPUC permit application review involves:
  - Environmental Review (CEQA)
  - CPUC Proceeding

CEQA Overview

Basic purposes of CEQA (State CEQA Guidelines, Section 15002):

- Inform governmental decision makers and public about potential significant environmental effects of proposed activities.
- Identify ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to environment by requiring changes in projects through use of alternatives or mitigation measures when governmental agency finds changes to be feasible.
- Disclose to public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

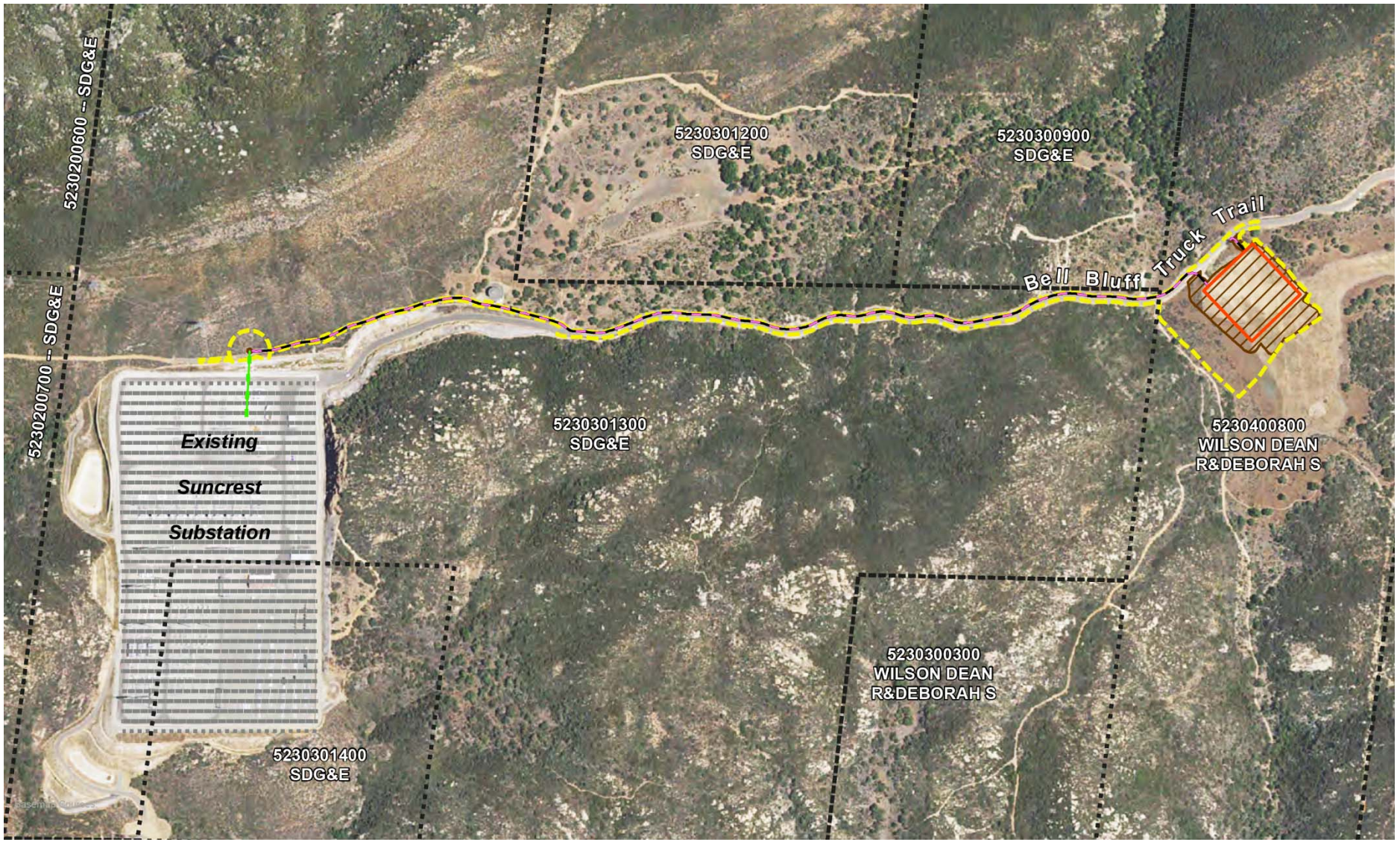
CPUC Processes



Summary of Applicant's Project Objectives

- Meet the CAISO's identified need for reactive support at the Suncrest Substation's 230 kV bus;
- Improve and maintain the reliability of the transmission grid;
- Facilitate delivery of renewable energy generation from the Imperial Valley area to population centers to the west; and
- Support achievement of the state's Renewable Portfolio Standard.

Where is the Proposed Project?



Simulation of the Proposed Project (looking east)



Proposed Project Components

SVC Facility

- Approximately 6 acres total disturbance
- Contained within approximately 2.6 acres (fenced)

230 kV Transmission Line

- Approximately 1 mile in length
- Beneath Bell Bluff Truck Trail

Overhead Transmission Span

- Approximately 300 feet in length
- Would terminate into the existing San Diego Gas & Electric Suncrest Substation

Project Construction Overview

Construction Schedule	• About 10 months from start to finish • Anticipated to begin 2016/2017
Workforce	• Up to 64 workers during peak construction
Work Hours	• Monday to Saturday, 7 a.m. to 7 p.m. • Certain time-sensitive activities may occur outside these hours
Equipment	• Variety of general construction vehicles • Possible blasting

CEQA Draft EIR

TOPICS:

- Aesthetics
- Agriculture and forestry resources
- Air quality/greenhouse gas emissions
- Biological resources
- Cultural resources
- Geology and soils
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Mineral resources
- Noise
- Population and housing
- Public services (fire, police, schools, parks)
- Recreation
- Transportation and traffic
- Utilities and service systems (water, wastewater, solid waste)

Potential Environmental Issues

Resource	Issues
Biological Resources	• Wetlands • Hermes copper butterfly
Cultural Resources	• Potential buried archaeological resources
Hydrology/Water Quality	• Stormwater discharges
Land Use	• Existing nearby mitigation sites
Noise	• Construction noise (including blasting)
Public Services	• Fire protection services
Alternatives	• Existing Suncrest Substation

How Can You Provide Comments?

- Informal oral comments and questions tonight
- Preferred: Fill out a comment card to submit written comments and questions tonight
- Preferred: Submit comments after this meeting by mail, phone, or email

Mail	Voice Mail	Email
Mr. Rob Peterson CPUC c/o Horizon Water and Environment 180 Grand Avenue, Suite 1405 Oakland, CA 94612	(844) 211-7510	suncrestproject@horizonh2o.com

- Comments due by 5:00 p.m. on February 8, 2016

For more information, go to:
http://www.cpuc.ca.gov/Environment/info/horizonh2o/suncrest/index.html

California Public Utilities Commission

Suncrest Dynamic Reactive Power Support Project Proposed by NextEra Energy Transmission West, LLC

Scoping Comment Form

Name:
Group/Organization (optional):
Mailing Address:
Telephone Number (optional):
Email (optional):

Comments/Issues:

Please use additional sheets if necessary.

Submit written comments (postmarked no later than February 8, 2016) to:

Mail: Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

Email: suncrestproject@horizonh2o.com

Questions? Please contact us or visit our website:
http://www.cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html

Place
Stamp
Here

Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

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CPUC Suncrest Scoping Meeting – Thursday, January 21, 2016

- Does the PUC provide legal support for residents to sue SDG&E?
- Where is NextEra from? In California?
    - Andy: NextEra is headquartered in Florida, but have facilities/operations all over North America. Already have $4.5 billion in infrastructure in CA, but this is their first foray into the transmission sector
- What is the need for this project?
- Have you done environmental impact studies? Done any fieldwork? Where is the documentation for this?
    - Yes. NextEra has done fieldwork already. Paperwork is in the PEA.
- Will this facility affect groundwater? Construction/operation?
    - This will be considered in the EIR.
- Does the project use cooling water? Would it take any water out of the ground?
- What about ozone emissions?
- How come the CPUC didn't do an environmental study? Viejas requested a cultural study in August 2014 but it was denied.
    - CPUC hasn't approved anything; CPUC is currently at the beginning of its environmental review process.
- Why didn't you put the facility closer to the wind mills?
    - Andy: CAISO functional specs required it at its current proposed location.
- Are you looking at the existing Suncrest Substation EIR? Will you be cosigning it?
    - Andy: Believes Viejas is talking about the possible lithic scatters in project area. They requested additional testing, but NextEra didn't have authorization to conduct testing.
- What about fire danger? Air emissions? Want to know the details of the project to know possible effects.
- Is there really a need for this project? SDG&E said Sunrise Powerlink was not necessary but would be nice to have. They built it to transport electricity from Mexico, and it resulted in rate increases.
    - EIR will address need for the project, but will not discuss rates.
- Community often does not benefit from these types of projects. San Diego County has highest number of Native Americans in state (?), and there is different value/perspective of the backcountry here.
- EMF radiation effects? Need to know the detailed process inside these facilities.
- This facility will connect with to renewable generation in Imperial Valley? Does that mean more energy coming through Alpine? What about radiation effects? Leukemia?
- Why did SDG&E refer to the Suncrest Substation as 100 acres when you say its 40 acres? Your figure's not to scale.
- Is this new project going to sanitize/clear away Native American sites/artifacts like SDG&E did?
    - Think we have a better chance of capturing impacts in this case with a smaller site.
- This device supposed to be 230 kV? SDG&E facility had a lot of misinformation.
- How much power goes through the existing substation?
- Is there an underground component to the SVC? How far down will excavation go?
- Will blasting occur? What would happen to artifacts?

    - It's possible some artifacts could be destroyed during blasting if it's required. Want to document what is there and continue to work with the tribe.
- What about fire danger? Big explosion when Suncrest Substation was started.
- What about using these two facilities together? Technical details of process? Is it dangerous?
- In 2012, SDG&E had a north line and another line. Would there be additional lines connected to it [Suncrest Substation] in the future? Think more money will be coming into this area. What are CPUC's long-term goals? This looks like a transfer.
    - In other words, are you asking: is this a small piece of a bigger pie? If it is, this will have to be discussed in the EIR, because that is required by CEQA/case law.
- Those boxes in the picture look like air filters filtering air underground.
    - Those are transformers. Nothing operates below grade.
- Is there always an EIR done for projects? Down at a lake; bottom of Lake Jennings, where there was a small transformer yard that's quadrupled in size with lines going over I-8.
- It's been proposed to have a line on Proser (?) Mountain; worried about ongoing SDG&E construction plus this project. Proser (?) Mountain is part of the reservation. Will you build another one of these as SDG&E continues to build?
    - Andy: CAISO determines that. NEET competition drives down cost in the long run.
- 1,700 MW of stranded power out there? Renewable? Do you know how many homes that would actually power? 2 MW for 10 city blocks. How much energy is/will be coming in from Imperial Valley?
- Why don't they just hook into the line that goes down to Calexico?
- 130 miles from here to desert – so how many of these are they putting in?
    - Rob: Putting similar facilities in Talega, San Luis Rey, etc. In this area, only one.
- Are they going to be using helicopters?
    - No.
- I know there're a lot of biological resources in that area. What type of mitigation are you going to implement?
    - Tom: We're going to be working with all the state/federal wildlife and water agencies. Will be working with the tribe on cultural and other resources.
- In EIR, do they do bio surveys at night or just during the day? A lot of animals only come out at night.
    - Tom: Will work with biologists plus agencies who have a good idea of what animals are out there. Other agencies may use the EIR to issue permits.
- Who owns the land right now?
    - Currently privately owned. NextEra has a deal with the landowner.
    - Andy wants to point out that it's possible the permits Tom mentioned (i.e., USACE, CDFW, etc.) might not be required for the project; might not be a nexus with these agencies.
- There are a lot of animals out there: pheasant, chuck, four types of rattlesnake, etc. SDG&E didn't look at any of these.
- Is this going to be a "fast-tracked" EIR? This has happened in the past.
- NOP says there's a time limit for comments, so you are implementing time limits?
    - Rob: Time limits are mandated by CEQA, but we will work with you.
- Where can we see the EIR?

    - Will be posted on the project website or you can put your name on the sign-in sheet or submit a comment and we'll notify you.
- If this project causes fire it could burn up the whole county. Very high fire risk in this area.
- Diane Jacobs at County didn't know about this project until yesterday.
    - Andy: We have met with fire officials at all levels. Have draft fire construction plan.
- Are you going to use contracted fire suppression services?
    - Andy: County will provide fire support, but we will make sure there are no impacts services. Project unlikely to cause fire. We are more worried about wildfire burning up the facility.
- What about indirect type effects: need for ancillary fire support on standby. Many gallons of fuel were transported/stored for helicopter for Suncrest. What if this fuel were to explode or spill?
- So you're cleaning up power so it can go over to San Diego?
- SDG&E has actually caused fires people's electrical panels/systems in Alpine.
- So SDG&E didn't do their job right. They should have had this type of facility in their station already.
- 500 kV is just the wire size; actual voltage/corona/amperage may be much higher. Volts could be in the millions. When they kick the power up, cell coverage can go out in wide area.
- Dean [property owner]: restoration at the site looks nearly complete. As much vegetation out there as there was before the SDG&E staging.

Appendix D

Electric and Magnetic Fields Management Plan

Appendix G

Electric and Magnetic Fields Management Plan

Suncrest Dynamic Reactive Power Support Project

NextEra Energy Transmission West, LLC

I. Executive Summary

NextEra Energy Transmission West, LLC ("NEET West") provides this Field Management Plan ("FMP") with its application requesting a certificate of public convenience and necessity ("Application") for its proposed Suncrest Dynamic Reactive Power Support Project ("Suncrest SVC Project"). The Suncrest Project will be located in San Diego County. The Suncrest SVC Project consists of two primary components:

- A 230 kV, +300/-100 megavars ("Mvar") dynamic reactive power support facility that will be interconnected to the San Diego Gas & Electric Company ("SDG&E") 500/230 kV Suncrest Substation ("SVC Facility"); and
- An approximately one-mile, single-circuit, underground, 230 kV transmission line that will connect the SVC facility to the Suncrest Substation ("Underground Transmission Line").

NEET West provides this FMP consistent with the California Public Utilities Commission ("CPUC" or "Commission") General Order 131-D, Section X.A, which requires an application for a certificate of public convenience and necessity to "describe the measures taken or proposed by the utility to reduce the potential exposure to electric and magnetic fields ["EMF"] generated by the proposed facilities."

As described below, because the Suncrest Project will be constructed in an undeveloped area, approximately 0.81 miles from the nearest residence, CPUC policy would require only "no-cost" design options to mitigate EMF exposure if the Commission's EMF requirements applied to the project. However, the CPUC has approved EMF guidelines for utilities in California (the "Guidelines"), which exempt projects that are located exclusively adjacent to undeveloped land, including land under the jurisdiction of National Park Service, the State Department of Parks and

Recreation, U.S. Forest Service, or Bureau of Land Management, from the low- or no-cost mitigation evaluation.[1] The Suncrest Project is located on undeveloped, privately-owned land within the administrative boundary[2] of the United States Forest Service Cleveland National Forest, *i.e.*, is located exclusively adjacent to undeveloped land, and therefore is exempt under the Guidelines.

Notwithstanding NEET West's view about this exemption, and without waiving any arguments related to the applicability of the exemption to this or other projects, NEET West evaluated EMF mitigation measures in its design and construction plan and adopted certain no-cost mitigation options. The no-cost EMF mitigation design options that have been included in the Suncrest Project design are as follows:

- Locate high current devices, such as transformers, capacitors, and reactors near the center of the SVC Facility to the extent practicable.
- Locate the SVC Facility fencing so as to maximize the distance between the EMF generating equipment and the property fence to the extent practicable.
- Arrange the underground 230 kV transmission cables in a triangular configuration and install these cables at a minimum of 36 inches below grade where practicable.

NEET West's plan to incorporate the above design options is consistent with the CPUC's EMF policy and with all other applicable national and state standards for new electrical facilities.

[1] *See, e.g., Revised Electric and Magnetic Fields (EMF) Design Guidelines of San Diego Gas & Electric Company*, Advice Letter 1810-E, Section 3.4 (effective August 25, 2006).

[2] An area encompassing all the National Forest System lands administered by an administrative unit. The area encompasses private lands (over which the U.S. Forest Service has no jurisdiction), other governmental agency lands, and may contain National Forest System lands within the proclaimed boundaries of another administrative unit.

II. Project Description

The Suncrest SVC Project is located in an unincorporated portion of south central San Diego County approximately 3.78 miles southwest of the community of Descanso and approximately 3.36 miles southeast of the community of Alpine. The Suncrest SVC Project location is shown in the map attached to NEET West's Application as Appendix B.

The Suncrest SVC Project has two primary components, as described above: (1) the SVC Facility, which is a new +300/-100 Mvar SVC facility with a rated real power output of 0 MW, and a nominal terminal voltage of 230 kV, along with related equipment; and (2) the Underground Transmission Line, which is an approximately one-mile, 230 kV single-circuit, underground transmission line that will connect the SVC Facility to the existing Suncrest Substation. These two primary components will provide continuous reactive power response that improves and maintains the reliability of the transmission grid and increases the deliverability of renewable power.

Within the SVC Facility, NEET West's SVC consists of a thyristor-controlled reactor ("TCR"), thyristor-switched capacitors, and harmonic filters operating at medium-voltage. This configuration represents the topology most prevalent in large transmission SVC applications in the U.S. The TCR provides the Vernier (smooth) control of the SVC across its entire dynamic range. Because the TCR generates harmonics, harmonic filters are used to keep the harmonic generation of the SVC below the Institute of Electrical and Electronic Engineers - 519 specified guidelines. The harmonic filters continuously provide capacitive reactive power when energized, so the Mvar contribution of the filters must be absorbed by the TCR at or around zero Mvar output. The harmonic filters provide the flexibility to use a small portion of the SVC output to regulate steady-state voltage changes in the transmission system.

The SVC Facility will be located within an approximately six-acre parcel of privately owned land in the location shown in the map attached as Appendix B ("Project Site"). NEET West has entered into an option agreement to obtain the six-acre site to use for the Project Site and, prior to construction, will obtain fee ownership of the Project Site. The Project Site was previously disturbed. To NEET West's knowledge, as early as 1953, the Project Site appears to have been cleared for livestock grazing purposes. From 1953 onward, the Project Site remained largely cleared of dense or woody vegetation, consisting predominantly of grasses and forbs, likely due to grazing activities. During construction of the Sunrise Powerlink Transmission Project ("Sunrise Powerlink Project"), the Project Site was used by SDG&E as a materials staging area and was completely cleared of vegetation. Following completion of construction of the Sunrise Powerlink Project, the Project Site has been in a process of being revegetated, including active planting and restoration activities by SDG&E, and has largely been undisturbed during such revegetation. Access to the SVC Facility will be via two new approximately 20-foot-wide by 70-foot-long access drives to facilitate construction, operation, and maintenance. These access drives will be located within the Project Site.

The Underground Transmission Line will consist of an approximately one-mile 230 kV transmission line that connects the SVC Facility to the Suncrest Substation. The transmission line will be installed underground within a private, existing paved road known as the Bell Bluff Truck Trail that is owned individually by SDG&E and a private landowner on parcels APN 523-030-130 and 523-040-080, respectively,[3] and that provides access to the Suncrest Substation. 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

[3] Parcel APN 523-040-080 is the parcel on which the Project Site is located.

properties. The vast majority of construction activities will occur within the curbs of Bell Bluff Truck Trail, with a fraction of temporary disturbance outside the curbs. The location of the Underground Transmission Line is shown on the map in Appendix B. A detailed description of the Suncrest SVC Project is provided in Chapter 2 (Mayers) of the NEET West Testimony.

NEET West expects to complete construction and achieve operation of the Suncrest Project by May 30, 2017, which aligns with the California Independent System Operator Corporation's ("CAISO") required in-service date of June 1, 2017.

III. CPUC EMF Guidance

A. CPUC Policy on EMF

In 1993, the CPUC adopted an EMF policy for electric utility facilities and power lines.[4] Because the Commission concluded there was no reliable scientific basis for adverse health effects from power frequency EMF, the Commission declined to adopt a specific numerical standard for EMF exposure.[5] The Commission instead established a "no-cost and low-cost" EMF policy for California's regulated electric utilities that required new and upgraded facilities to implement no-cost or low-cost (meaning in the range of four percent of the total project cost) measures to mitigate EMF to the extent such measures were approved as part of the certification process.[6] For a mitigation measure to be implemented, it would need to achieve a noticeable reduction in EMF exposure, although the Commission declined to specify a numerical standard.[7]

In 2004, the Commission opened a rulemaking docket to determine whether there were improvements that should be made to the EMF policy established in 1993. In 2006, the Commission issued Decision 06-01-042, which affirmed the prior finding that a direct link

[4] Decision 93-11-013 *10-11.
[5] *Id.* at *11.
[6] *Id.* at *81.
[7] *Id.* at *15.

between exposure to EMF and human health effects has yet to be proven, despite numerous studies, including a research program ordered by the Commission and conducted by the Department of Health Services.[8] The Commission reaffirmed its existing policy of low-cost/no-cost principles to mitigating EMF exposure and set a target for low-cost EMF reductions (those that cost less than 4% of the total project cost) to show a 15% or greater reduction at the utility right-of-way.[9] The decision also addressed the mitigation measures to be required in different land use contexts and determined that low-cost measures were not required in undeveloped areas.[10] Only no-cost mitigation measures are required in undeveloped lands.[11]

The Commission's 2006 order found that a utility workshop should be held to develop standard approaches for design guidelines, including the development of a standard table showing EMF mitigation measures and costs.[12] California utilities subsequently filed standardized EMF design Guidelines that the Commission approved as advice letters.[13] The Guidelines describe CPUC EMF policy, describe methods for reducing magnetic fields, and outline the FMP process.

B. Applicability of EMF Mitigation Requirements to the Suncrest SVC Project

As described above, the Suncrest SVC Project is located on undeveloped, privately-owned land that is within the administrative boundary of the U.S. Forest Service Cleveland National Forest and approximately 0.81 miles from the nearest residence. Therefore, to the extent the EMF requirements were deemed to be applicable to the Suncrest SVC Project, only

[8] Decision 06-01-042 at 19.
[9] *Id.* at 1, 10, 19.
[10] *Id.* at 9.
[11] *Id.* at 20.
[12] *Id.* at 21.
[13] *See, e.g., Revised Electric and Magnetic Fields (EMF) Design Guidelines of San Diego Gas & Electric Company*, Advice Letter 1810-E (effective August 25, 2006); *Revised Electric and Magnetic Fields (EMF) Design Guidelines of Southern California Edison Company*, Advice Letter 2018-E (effective August 25, 2006).

no-cost mitigation measures would be required for the Suncrest SVC Project. However, the Guidelines provide an exemption for "Projects located exclusively adjacent to undeveloped land—including land under the jurisdiction of the National Park Service, the State Department of Parks and Recreation, U.S. Forest Service, or Bureau of Land Management" from the low- or no-cost mitigation evaluation.[14] Because the Suncrest SVC Project is located on undeveloped privately-owned land and is exclusively adjacent to undeveloped land that is under the jurisdiction of the U.S. Forest Service, the Suncrest SVC Project would fall under this exemption and an FMP is not required for the project. Notwithstanding NEET West's view about this exemption, and without waiving any arguments related to the applicability of the exemption to this or other projects, NEET West evaluated EMF mitigation measures in its design and construction plan and adopted certain no-cost mitigation options, as detailed below.

IV. Evaluation of Magnetic Field Reduction Design Options

NEET West evaluated methods to reduce the magnetic field strength levels and adopted the following measures in the project design:

1. Locate high current devices, such as transformers, capacitors, and reactors near the center of the SVC Facility to the extent practicable.
2. Locate the SVC Facility fencing so as to maximize the distance between the EMF generating equipment and the property fence to the extent practicable.
3. Arrange the underground 230 kV transmission cables in a triangular configuration and install these cables at a minimum of 36 inches below grade where practicable.

[14] *Revised Electric and Magnetic Fields (EMF) Design Guidelines of San Diego Gas & Electric Company*, Advice Letter 1810-E, Section 3.4 (effective August 25, 2006).

The table below outlines all EMF measures evaluated by NEET West, whether the measure was adopted, and if not, why not.

No.	Magnetic Field Measures Evaluated for Suncrest SVC Project	Measure Adopted? (Yes/No)	Reason(s) if not Adopted?
No-Cost Measures			
1	Locate high-current devices such as transformers, capacitors, and reactors near the center of the SVC Facility to the extent practicable.	Yes	
2	Locate the SVC Facility fencing so as to maximize the distance between the EMF generating equipment and the property fence to the extent practicable.	Yes	
3	Arrange the cables in a triangular configuration and install these cables at a minimum of 36 inches below grade where practicable.	Yes*	*Certain in-ground obstacles along the route may require a flat configuration for the cables
Other Measures			
4	Purchase additional property to increase the setback distance from the property boundary.	No	Additional property cannot be obtained. Even if additional property were available, this is not a no-cost option
5	Increase the burial depth of the duct bank.	No	Due to existing rock conditions, increasing the burial depth is not a no-cost option
6	Decrease cable spacing with use of a special cable spacer.	No	Decreasing the cable spacing further would require a special concrete mix and/or additional thermal backfill and would therefore not be a no-cost option

Appendix E

Air Quality and Greenhouse Gas Emissions Calculations

Note: This appendix presents construction emissions calculations. Refer to the PEA for operational emissions.

Suncrest Reactive Power Support Project

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	90.00	1000sqft	12.21	90,000.00	0

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage set to 12.59

Construction Phase - Construction Schedule updated to reflect current best case start date

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 - 3,600 cubic yards of spoils will need to be hauled offsite = 450 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 3 diesel engine standards

Area Mitigation - Low VOC paint

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.3976	15.3772	8.4453	0.0226	0.3634	0.6377	1.0010	0.1242	0.5914	0.7156	0.0000	2,045.7701	2,045.7701	0.4738	0.0000	2,055.7197
2018	0.0180	0.1928	0.1129	3.2000e-004	0.0133	7.6400e-003	0.0209	1.9300e-003	7.0300e-003	8.9600e-003	0.0000	28.7444	28.7444	7.5000e-003	0.0000	28.9018
Total	**1.4157**	**15.5701**	**8.5582**	**0.0230**	**0.3766**	**0.6453**	**1.0220**	**0.1261**	**0.5984**	**0.7245**	**0.0000**	**2,074.5145**	**2,074.5145**	**0.4813**	**0.0000**	**2,084.6215**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5050	9.4280	10.7610	0.0226	0.2895	0.3712	0.6606	0.0889	0.3696	0.4584	0.0000	2,045.7682	2,045.7682	0.4738	0.0000	2,055.7178
2018	7.3200e-003	0.1347	0.1609	3.2000e-004	7.0100e-003	5.1100e-003	0.0121	1.2500e-003	5.0900e-003	6.3400e-003	0.0000	28.7443	28.7443	7.5000e-003	0.0000	28.9018
Total	**0.5123**	**9.5627**	**10.9219**	**0.0230**	**0.2965**	**0.3763**	**0.6728**	**0.0901**	**0.3747**	**0.4648**	**0.0000**	**2,074.5125**	**2,074.5125**	**0.4813**	**0.0000**	**2,084.6196**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**63.81**	**38.58**	**-27.62**	**0.00**	**21.28**	**41.69**	**34.17**	**28.57**	**37.39**	**35.85**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Field Survey	Site Preparation	3/1/2017	3/15/2017	7	15	Surveying includes setting up survey equipment, taking measurements, and installing stakes
2	SDG&E Site preparation	Site Preparation	4/1/2017	5/31/2017	7	61	SDG&E Site preparation phase
3	SVC Site Grading	Grading	4/1/2017	4/30/2017	7	30	Site earthwork and grading.
4	Trenching	Trenching	4/1/2017	7/10/2017	7	101	Trench will be approximately 30" wide by 60" deep.
5	Set SVC Substation Foundations	Building Construction	5/1/2017	6/20/2017	7	51	Auguring holes, removing soil, and foundation forming.
6	Material delivery	Building Construction	5/7/2017	8/15/2017	7	101	Material haul, transporting material to the site.
7	Substation construction	Building Construction	5/31/2017	10/8/2017	7	131	Install equipment, structural steel and bus work.
8	Structure Erection	Building Construction	6/1/2017	8/14/2017	7	75	SDG&E Suncrest Substation Structure and Equipment erection
9	Install Vaults	Building Construction	7/11/2017	8/9/2017	7	30	Excavate hole for vault, install vault sections, backfill with concrete
10	Install Transmission line foundations	Building Construction	7/31/2017	8/31/2017	7	32	Foundation installation includes auguring holes, remove soil and foundation formation,
11	Install duct package	Building Construction	8/10/2017	9/28/2017	7	50	Install approximately 100 feet of duct/day
12	Wire Stringing	Building Construction	8/15/2017	9/4/2017	5	15	Wire Stringing into SDG&E Suncrest Substation
13	Transformer & SVC Delivery	Building Construction	8/16/2017	8/30/2017	7	15	Install transformer and SVC
14	Pull cable	Building Construction	9/29/2017	10/19/2017	7	21	6 pulls at 850feet each
15	Install cable splices	Building Construction	10/20/2017	11/20/2017	7	32	Install cable splice. Assume 16 hours/day
16	Right of way restoration and cleanup	Site Preparation	11/13/2017	1/13/2018	7	62	Restore back to natural state, removing culverts, restoring original grade, seeding area with native plants
17	Test cable splices	Building Construction	11/21/2017	11/22/2017	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	450.00	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	10.00	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	10.00	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	23.00	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 cleanu	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 - 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					0.0000	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total	**4.5000e-004**	**5.1500e-003**	**6.6500e-003**	**2.0000e-005**	**1.5100e-003**	**9.0000e-005**	**1.6000e-003**	**4.1000e-004**	**8.0000e-005**	**4.9000e-004**	**0.0000**	**2.2753**	**2.2753**	**6.0000e-005**	**0.0000**	**2.2765**

3.2 Field Survey - 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					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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction 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
Total	**4.5000e-004**	**5.1500e-003**	**6.6500e-003**	**2.0000e-005**	**1.5100e-003**	**9.0000e-005**	**1.6000e-003**	**4.1000e-004**	**8.0000e-005**	**4.9000e-004**	**0.0000**	**2.2753**	**2.2753**	**6.0000e-005**	**0.0000**	**2.2765**

3.3 SDG&E Site preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1083	1.2423	0.6200	1.6700e-003		0.0472	0.0472		0.0435	0.0435	0.0000	154.4257	154.4257	0.0473	0.0000	155.4194
Total	**0.1083**	**1.2423**	**0.6200**	**1.6700e-003**	**0.0000**	**0.0472**	**0.0472**	**0.0000**	**0.0435**	**0.0435**	**0.0000**	**154.4257**	**154.4257**	**0.0473**	**0.0000**	**155.4194**

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	7.5000e-003	0.1312	0.0559	4.2000e-004	0.0123	2.2800e-003	0.0146	3.5200e-003	2.0900e-003	5.6200e-003	0.0000	37.6325	37.6325	2.5000e-004	0.0000	37.6377
Worker	2.0700e-003	6.1200e-003	0.0543	1.6000e-004	0.0132	9.0000e-005	0.0133	3.5200e-003	8.0000e-005	3.6000e-003	0.0000	11.5904	11.5904	5.6000e-004	0.0000	11.6022
Total	**9.5700e-003**	**0.1374**	**0.1102**	**5.8000e-004**	**0.0256**	**2.3700e-003**	**0.0279**	**7.0400e-003**	**2.1700e-003**	**9.2200e-003**	**0.0000**	**49.2229**	**49.2229**	**8.1000e-004**	**0.0000**	**49.2399**

3.3 SDG&E Site preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					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	0.0408	0.7892	0.9164	1.6700e-003		0.0306	0.0306		0.0306	0.0306	0.0000	154.4256	154.4256	0.0473	0.0000	155.4192
Total	**0.0408**	**0.7892**	**0.9164**	**1.6700e-003**	**0.0000**	**0.0306**	**0.0306**	**0.0000**	**0.0306**	**0.0306**	**0.0000**	**154.4256**	**154.4256**	**0.0473**	**0.0000**	**155.4192**

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	7.5000e-003	0.1312	0.0559	4.2000e-004	0.0123	2.2800e-003	0.0146	3.5200e-003	2.0900e-003	5.6200e-003	0.0000	37.6325	37.6325	2.5000e-004	0.0000	37.6377
Worker	2.0700e-003	6.1200e-003	0.0543	1.6000e-004	0.0132	9.0000e-005	0.0133	3.5200e-003	8.0000e-005	3.6000e-003	0.0000	11.5904	11.5904	5.6000e-004	0.0000	11.6022
Total	**9.5700e-003**	**0.1374**	**0.1102**	**5.8000e-004**	**0.0256**	**2.3700e-003**	**0.0279**	**7.0400e-003**	**2.1700e-003**	**9.2200e-003**	**0.0000**	**49.2229**	**49.2229**	**8.1000e-004**	**0.0000**	**49.2399**

3.4 SVC Site Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1108	0.0000	0.1108	0.0569	0.0000	0.0569	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0798	0.8286	0.4729	7.9000e-004		0.0396	0.0396		0.0366	0.0366	0.0000	71.7000	71.7000	0.0208	0.0000	72.1360
Total	**0.0798**	**0.8286**	**0.4729**	**7.9000e-004**	**0.1108**	**0.0396**	**0.1504**	**0.0569**	**0.0366**	**0.0935**	**0.0000**	**71.7000**	**71.7000**	**0.0208**	**0.0000**	**72.1360**

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	9.6600e-003	0.1784	0.0834	5.4000e-004	0.0125	2.4400e-003	0.0149	3.4200e-003	2.2400e-003	5.6600e-003	0.0000	48.3099	48.3099	3.2000e-004	0.0000	48.3166
Vendor	6.6800e-003	0.1117	0.0527	3.5000e-004	0.0104	1.9200e-003	0.0123	2.9700e-003	1.7700e-003	4.7400e-003	0.0000	31.8067	31.8067	2.1000e-004	0.0000	31.8111
Worker	2.0300e-003	6.0200e-003	0.0534	1.6000e-004	0.0130	9.0000e-005	0.0131	3.4600e-003	8.0000e-005	3.5400e-003	0.0000	11.4004	11.4004	5.5000e-004	0.0000	11.4120
Total	**0.0184**	**0.2961**	**0.1895**	**1.0500e-003**	**0.0359**	**4.4500e-003**	**0.0403**	**9.8500e-003**	**4.0900e-003**	**0.0139**	**0.0000**	**91.5170**	**91.5170**	**1.0800e-003**	**0.0000**	**91.5397**

3.4 SVC Site Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					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	0.0173	0.3426	0.4203	7.9000e-004		0.0153	0.0153		0.0153	0.0153	0.0000	71.6999	71.6999	0.0208	0.0000	72.1359
Total	**0.0173**	**0.3426**	**0.4203**	**7.9000e-004**	**0.0432**	**0.0153**	**0.0586**	**0.0222**	**0.0153**	**0.0375**	**0.0000**	**71.6999**	**71.6999**	**0.0208**	**0.0000**	**72.1359**

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	9.6600e-003	0.1784	0.0834	5.4000e-004	0.0125	2.4400e-003	0.0149	3.4200e-003	2.2400e-003	5.6600e-003	0.0000	48.3099	48.3099	3.2000e-004	0.0000	48.3166
Vendor	6.6800e-003	0.1117	0.0527	3.5000e-004	0.0104	1.9200e-003	0.0123	2.9700e-003	1.7700e-003	4.7400e-003	0.0000	31.8067	31.8067	2.1000e-004	0.0000	31.8111
Worker	2.0300e-003	6.0200e-003	0.0534	1.6000e-004	0.0130	9.0000e-005	0.0131	3.4600e-003	8.0000e-005	3.5400e-003	0.0000	11.4004	11.4004	5.5000e-004	0.0000	11.4120
Total	**0.0184**	**0.2961**	**0.1895**	**1.0500e-003**	**0.0359**	**4.4500e-003**	**0.0403**	**9.8500e-003**	**4.0900e-003**	**0.0139**	**0.0000**	**91.5170**	**91.5170**	**1.0800e-003**	**0.0000**	**91.5397**

3.5 Trenching - 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	0.1136	1.1399	0.6394	1.2900e-003		0.0620	0.0620		0.0571	0.0571	0.0000	118.9766	118.9766	0.0358	0.0000	119.7277
Total	**0.1136**	**1.1399**	**0.6394**	**1.2900e-003**		**0.0620**	**0.0620**		**0.0571**	**0.0571**	**0.0000**	**118.9766**	**118.9766**	**0.0358**	**0.0000**	**119.7277**

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	1.9000e-003	5.6300e-003	0.0500	1.5000e-004	0.0122	8.0000e-005	0.0123	3.2300e-003	7.0000e-005	3.3100e-003	0.0000	10.6615	10.6615	5.2000e-004	0.0000	10.6723
Total	**1.9000e-003**	**5.6300e-003**	**0.0500**	**1.5000e-004**	**0.0122**	**8.0000e-005**	**0.0123**	**3.2300e-003**	**7.0000e-005**	**3.3100e-003**	**0.0000**	**10.6615**	**10.6615**	**5.2000e-004**	**0.0000**	**10.6723**

3.5 Trenching - 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	0.0305	0.6241	0.7526	1.2900e-003		0.0311	0.0311		0.0311	0.0311	0.0000	118.9765	118.9765	0.0358	0.0000	119.7276
Total	**0.0305**	**0.6241**	**0.7526**	**1.2900e-003**		**0.0311**	**0.0311**		**0.0311**	**0.0311**	**0.0000**	**118.9765**	**118.9765**	**0.0358**	**0.0000**	**119.7276**

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	1.9000e-003	5.6300e-003	0.0500	1.5000e-004	0.0122	8.0000e-005	0.0123	3.2300e-003	7.0000e-005	3.3100e-003	0.0000	10.6615	10.6615	5.2000e-004	0.0000	10.6723
Total	**1.9000e-003**	**5.6300e-003**	**0.0500**	**1.5000e-004**	**0.0122**	**8.0000e-005**	**0.0123**	**3.2300e-003**	**7.0000e-005**	**3.3100e-003**	**0.0000**	**10.6615**	**10.6615**	**5.2000e-004**	**0.0000**	**10.6723**

3.6 Set SVC Substation 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	0.0639	0.6888	0.4018	9.3000e-004		0.0303	0.0303		0.0285	0.0285	0.0000	85.2935	85.2935	0.0229	0.0000	85.7741
Total	**0.0639**	**0.6888**	**0.4018**	**9.3000e-004**		**0.0303**	**0.0303**		**0.0285**	**0.0285**	**0.0000**	**85.2935**	**85.2935**	**0.0229**	**0.0000**	**85.7741**

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	1.8900e-003	0.0316	0.0149	1.0000e-004	2.9400e-003	5.4000e-004	3.4900e-003	8.4000e-004	5.0000e-004	1.3400e-003	0.0000	9.0119	9.0119	6.0000e-005	0.0000	9.0132
Worker	1.1500e-003	3.4100e-003	0.0303	9.0000e-005	7.3800e-003	5.0000e-005	7.4300e-003	1.9600e-003	5.0000e-005	2.0000e-003	0.0000	6.4602	6.4602	3.1000e-004	0.0000	6.4668
Total	**3.0400e-003**	**0.0351**	**0.0452**	**1.9000e-004**	**0.0103**	**5.9000e-004**	**0.0109**	**2.8000e-003**	**5.5000e-004**	**3.3400e-003**	**0.0000**	**15.4721**	**15.4721**	**3.7000e-004**	**0.0000**	**15.4799**

3.6 Set SVC Substation 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	0.0221	0.4396	0.5445	9.3000e-004		0.0199	0.0199		0.0199	0.0199	0.0000	85.2934	85.2934	0.0229	0.0000	85.7740
Total	**0.0221**	**0.4396**	**0.5445**	**9.3000e-004**		**0.0199**	**0.0199**		**0.0199**	**0.0199**	**0.0000**	**85.2934**	**85.2934**	**0.0229**	**0.0000**	**85.7740**

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	1.8900e-003	0.0316	0.0149	1.0000e-004	2.9400e-003	5.4000e-004	3.4900e-003	8.4000e-004	5.0000e-004	1.3400e-003	0.0000	9.0119	9.0119	6.0000e-005	0.0000	9.0132
Worker	1.1500e-003	3.4100e-003	0.0303	9.0000e-005	7.3800e-003	5.0000e-005	7.4300e-003	1.9600e-003	5.0000e-005	2.0000e-003	0.0000	6.4602	6.4602	3.1000e-004	0.0000	6.4668
Total	**3.0400e-003**	**0.0351**	**0.0452**	**1.9000e-004**	**0.0103**	**5.9000e-004**	**0.0109**	**2.8000e-003**	**5.5000e-004**	**3.3400e-003**	**0.0000**	**15.4721**	**15.4721**	**3.7000e-004**	**0.0000**	**15.4799**

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	0.0576	0.6393	0.2890	5.0000e-004		0.0336	0.0336		0.0309	0.0309	0.0000	46.6431	46.6431	0.0143	0.0000	46.9432
Total	**0.0576**	**0.6393**	**0.2890**	**5.0000e-004**		**0.0336**	**0.0336**		**0.0309**	**0.0309**	**0.0000**	**46.6431**	**46.6431**	**0.0143**	**0.0000**	**46.9432**

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	1.8700e-003	0.0313	0.0148	1.0000e-004	2.9200e-003	5.4000e-004	3.4500e-003	8.3000e-004	5.0000e-004	1.3300e-003	0.0000	8.9236	8.9236	6.0000e-005	0.0000	8.9248
Worker	1.1400e-003	3.3800e-003	0.0300	9.0000e-005	7.3000e-003	5.0000e-005	7.3500e-003	1.9400e-003	4.0000e-005	1.9800e-003	0.0000	6.3969	6.3969	3.1000e-004	0.0000	6.4034
Total	**3.0100e-003**	**0.0347**	**0.0448**	**1.9000e-004**	**0.0102**	**5.9000e-004**	**0.0108**	**2.7700e-003**	**5.4000e-004**	**3.3100e-003**	**0.0000**	**15.3204**	**15.3204**	**3.7000e-004**	**0.0000**	**15.3282**

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	0.0123	0.2512	0.3003	5.0000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	46.6430	46.6430	0.0143	0.0000	46.9431
Total	**0.0123**	**0.2512**	**0.3003**	**5.0000e-004**		**0.0122**	**0.0122**		**0.0122**	**0.0122**	**0.0000**	**46.6430**	**46.6430**	**0.0143**	**0.0000**	**46.9431**

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	1.8700e-003	0.0313	0.0148	1.0000e-004	2.9200e-003	5.4000e-004	3.4500e-003	8.3000e-004	5.0000e-004	1.3300e-003	0.0000	8.9236	8.9236	6.0000e-005	0.0000	8.9248
Worker	1.1400e-003	3.3800e-003	0.0300	9.0000e-005	7.3000e-003	5.0000e-005	7.3500e-003	1.9400e-003	4.0000e-005	1.9800e-003	0.0000	6.3969	6.3969	3.1000e-004	0.0000	6.4034
Total	**3.0100e-003**	**0.0347**	**0.0448**	**1.9000e-004**	**0.0102**	**5.9000e-004**	**0.0108**	**2.7700e-003**	**5.4000e-004**	**3.3100e-003**	**0.0000**	**15.3204**	**15.3204**	**3.7000e-004**	**0.0000**	**15.3282**

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	0.2978	3.2427	1.6163	4.0700e-003		0.1351	0.1351		0.1259	0.1259	0.0000	374.6253	374.6253	0.1064	0.0000	376.8605
Total	**0.2978**	**3.2427**	**1.6163**	**4.0700e-003**		**0.1351**	**0.1351**		**0.1259**	**0.1259**	**0.0000**	**374.6253**	**374.6253**	**0.1064**	**0.0000**	**376.8605**

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	0.0146	0.2438	0.1151	7.7000e-004	0.0227	4.2000e-003	0.0269	6.4800e-003	3.8600e-003	0.0103	0.0000	69.4447	69.4447	4.6000e-004	0.0000	69.4543
Worker	3.9500e-003	0.0117	0.1037	3.0000e-004	0.0253	1.7000e-004	0.0254	6.7100e-003	1.5000e-004	6.8600e-003	0.0000	22.1252	22.1252	1.0700e-003	0.0000	22.1477
Total	**0.0185**	**0.2555**	**0.2188**	**1.0700e-003**	**0.0480**	**4.3700e-003**	**0.0523**	**0.0132**	**4.0100e-003**	**0.0172**	**0.0000**	**91.5698**	**91.5698**	**1.5300e-003**	**0.0000**	**91.6020**

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	0.0977	1.9246	2.2102	4.0700e-003		0.0805	0.0805		0.0805	0.0805	0.0000	374.6249	374.6249	0.1064	0.0000	376.8601
Total	**0.0977**	**1.9246**	**2.2102**	**4.0700e-003**		**0.0805**	**0.0805**		**0.0805**	**0.0805**	**0.0000**	**374.6249**	**374.6249**	**0.1064**	**0.0000**	**376.8601**

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	0.0146	0.2438	0.1151	7.7000e-004	0.0227	4.2000e-003	0.0269	6.4800e-003	3.8600e-003	0.0103	0.0000	69.4447	69.4447	4.6000e-004	0.0000	69.4543
Worker	3.9500e-003	0.0117	0.1037	3.0000e-004	0.0253	1.7000e-004	0.0254	6.7100e-003	1.5000e-004	6.8600e-003	0.0000	22.1252	22.1252	1.0700e-003	0.0000	22.1477
Total	**0.0185**	**0.2555**	**0.2188**	**1.0700e-003**	**0.0480**	**4.3700e-003**	**0.0523**	**0.0132**	**4.0100e-003**	**0.0172**	**0.0000**	**91.5698**	**91.5698**	**1.5300e-003**	**0.0000**	**91.6020**

3.9 Structure Erection - 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	0.2591	2.8615	1.3913	3.6200e-003		0.1151	0.1151		0.1068	0.1068	0.0000	334.2677	334.2677	0.0976	0.0000	336.3182
Total	**0.2591**	**2.8615**	**1.3913**	**3.6200e-003**		**0.1151**	**0.1151**		**0.1068**	**0.1068**	**0.0000**	**334.2677**	**334.2677**	**0.0976**	**0.0000**	**336.3182**

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	0.0125	0.2094	0.0988	6.6000e-004	0.0195	3.6000e-003	0.0231	5.5700e-003	3.3200e-003	8.8800e-003	0.0000	59.6376	59.6376	3.9000e-004	0.0000	59.6458
Worker	2.8300e-003	8.3600e-003	0.0742	2.2000e-004	0.0181	1.2000e-004	0.0182	4.8000e-003	1.1000e-004	4.9100e-003	0.0000	15.8339	15.8339	7.7000e-004	0.0000	15.8500
Total	**0.0154**	**0.2177**	**0.1730**	**8.8000e-004**	**0.0376**	**3.7200e-003**	**0.0413**	**0.0104**	**3.4300e-003**	**0.0138**	**0.0000**	**75.4715**	**75.4715**	**1.1600e-003**	**0.0000**	**75.4958**

3.9 Structure Erection - 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	0.0876	1.7123	1.9486	3.6200e-003		0.0691	0.0691		0.0691	0.0691	0.0000	334.2673	334.2673	0.0976	0.0000	336.3178
Total	**0.0876**	**1.7123**	**1.9486**	**3.6200e-003**		**0.0691**	**0.0691**		**0.0691**	**0.0691**	**0.0000**	**334.2673**	**334.2673**	**0.0976**	**0.0000**	**336.3178**

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	0.0125	0.2094	0.0988	6.6000e-004	0.0195	3.6000e-003	0.0231	5.5700e-003	3.3200e-003	8.8800e-003	0.0000	59.6376	59.6376	3.9000e-004	0.0000	59.6458
Worker	2.8300e-003	8.3600e-003	0.0742	2.2000e-004	0.0181	1.2000e-004	0.0182	4.8000e-003	1.1000e-004	4.9100e-003	0.0000	15.8339	15.8339	7.7000e-004	0.0000	15.8500
Total	**0.0154**	**0.2177**	**0.1730**	**8.8000e-004**	**0.0376**	**3.7200e-003**	**0.0413**	**0.0104**	**3.4300e-003**	**0.0138**	**0.0000**	**75.4715**	**75.4715**	**1.1600e-003**	**0.0000**	**75.4958**

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	0.0635	0.6772	0.3650	9.0000e-004		0.0293	0.0293		0.0274	0.0274	0.0000	82.4883	82.4883	0.0234	0.0000	82.9789
Total	**0.0635**	**0.6772**	**0.3650**	**9.0000e-004**		**0.0293**	**0.0293**		**0.0274**	**0.0274**	**0.0000**	**82.4883**	**82.4883**	**0.0234**	**0.0000**	**82.9789**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-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
Total	**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**

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	0.0215	0.4274	0.4968	9.0000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	82.4882	82.4882	0.0234	0.0000	82.9788
Total	**0.0215**	**0.4274**	**0.4968**	**9.0000e-004**		**0.0187**	**0.0187**		**0.0187**	**0.0187**	**0.0000**	**82.4882**	**82.4882**	**0.0234**	**0.0000**	**82.9788**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-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
Total	**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**

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	0.0659	0.7231	0.3856	9.8000e-004		0.0296	0.0296		0.0276	0.0276	0.0000	90.0535	90.0535	0.0256	0.0000	90.5902
Total	**0.0659**	**0.7231**	**0.3856**	**9.8000e-004**		**0.0296**	**0.0296**		**0.0276**	**0.0276**	**0.0000**	**90.0535**	**90.0535**	**0.0256**	**0.0000**	**90.5902**

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	5.8600e-003	0.1073	0.0411	3.4000e-004	0.0102	1.8700e-003	0.0120	2.9000e-003	1.7200e-003	4.6300e-003	0.0000	30.9523	30.9523	2.0000e-004	0.0000	30.9565
Worker	1.2100e-003	3.5700e-003	0.0317	9.0000e-005	7.7100e-003	5.0000e-005	7.7700e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.7558	6.7558	3.3000e-004	0.0000	6.7627
Total	**7.0700e-003**	**0.1108**	**0.0728**	**4.3000e-004**	**0.0179**	**1.9200e-003**	**0.0198**	**4.9500e-003**	**1.7700e-003**	**6.7300e-003**	**0.0000**	**37.7081**	**37.7081**	**5.3000e-004**	**0.0000**	**37.7192**

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	0.0235	0.4621	0.5456	9.8000e-004		0.0194	0.0194		0.0194	0.0194	0.0000	90.0534	90.0534	0.0256	0.0000	90.5901
Total	**0.0235**	**0.4621**	**0.5456**	**9.8000e-004**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**90.0534**	**90.0534**	**0.0256**	**0.0000**	**90.5901**

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	5.8600e-003	0.1073	0.0411	3.4000e-004	0.0102	1.8700e-003	0.0120	2.9000e-003	1.7200e-003	4.6300e-003	0.0000	30.9523	30.9523	2.0000e-004	0.0000	30.9565
Worker	1.2100e-003	3.5700e-003	0.0317	9.0000e-005	7.7100e-003	5.0000e-005	7.7700e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.7558	6.7558	3.3000e-004	0.0000	6.7627
Total	**7.0700e-003**	**0.1108**	**0.0728**	**4.3000e-004**	**0.0179**	**1.9200e-003**	**0.0198**	**4.9500e-003**	**1.7700e-003**	**6.7300e-003**	**0.0000**	**37.7081**	**37.7081**	**5.3000e-004**	**0.0000**	**37.7192**

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
Total	**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**

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
Total	**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**

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	0.0184	0.3666	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
Total	**0.0184**	**0.3666**	**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**

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
Total	**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**

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	0.0281	0.3123	0.1568	4.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	37.4960	37.4960	0.0115	0.0000	37.7373
Total	**0.0281**	**0.3123**	**0.1568**	**4.0000e-004**		**0.0127**	**0.0127**		**0.0117**	**0.0117**	**0.0000**	**37.4960**	**37.4960**	**0.0115**	**0.0000**	**37.7373**

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	1.6700e-003	0.0279	0.0132	9.0000e-005	2.6000e-003	4.8000e-004	3.0800e-003	7.4000e-004	4.4000e-004	1.1800e-003	0.0000	7.9517	7.9517	5.0000e-005	0.0000	7.9528
Worker	1.3000e-003	3.8500e-003	0.0341	1.0000e-004	8.3200e-003	6.0000e-005	8.3700e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	7.2836	7.2836	3.5000e-004	0.0000	7.2910
Total	**2.9700e-003**	**0.0318**	**0.0473**	**1.9000e-004**	**0.0109**	**5.4000e-004**	**0.0115**	**2.9500e-003**	**4.9000e-004**	**3.4400e-003**	**0.0000**	**15.2353**	**15.2353**	**4.0000e-004**	**0.0000**	**15.2438**

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	9.8900e-003	0.1937	0.2208	4.0000e-004		7.8700e-003	7.8700e-003		7.8700e-003	7.8700e-003	0.0000	37.4960	37.4960	0.0115	0.0000	37.7372
Total	**9.8900e-003**	**0.1937**	**0.2208**	**4.0000e-004**		**7.8700e-003**	**7.8700e-003**		**7.8700e-003**	**7.8700e-003**	**0.0000**	**37.4960**	**37.4960**	**0.0115**	**0.0000**	**37.7372**

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	1.6700e-003	0.0279	0.0132	9.0000e-005	2.6000e-003	4.8000e-004	3.0800e-003	7.4000e-004	4.4000e-004	1.1800e-003	0.0000	7.9517	7.9517	5.0000e-005	0.0000	7.9528
Worker	1.3000e-003	3.8500e-003	0.0341	1.0000e-004	8.3200e-003	6.0000e-005	8.3700e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	7.2836	7.2836	3.5000e-004	0.0000	7.2910
Total	**2.9700e-003**	**0.0318**	**0.0473**	**1.9000e-004**	**0.0109**	**5.4000e-004**	**0.0115**	**2.9500e-003**	**4.9000e-004**	**3.4400e-003**	**0.0000**	**15.2353**	**15.2353**	**4.0000e-004**	**0.0000**	**15.2438**

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
Total	**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**

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
Total	**5.6000e-004**	**5.4900e-003**	**9.6200e-003**	**3.0000e-005**	**2.2400e-003**	**9.0000e-005**	**2.3300e-003**	**6.0000e-004**	**8.0000e-005**	**6.9000e-004**	**0.0000**	**2.9087**	**2.9087**	**9.0000e-005**	**0.0000**	**2.9105**

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	5.0000e-004	0.0104	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
Total	**5.0000e-004**	**0.0104**	**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**

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
Total	**5.6000e-004**	**5.4900e-003**	**9.6200e-003**	**3.0000e-005**	**2.2400e-003**	**9.0000e-005**	**2.3300e-003**	**6.0000e-004**	**8.0000e-005**	**6.9000e-004**	**0.0000**	**2.9087**	**2.9087**	**9.0000e-005**	**0.0000**	**2.9105**

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
Total	**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**

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
Total	**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**

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	6.6900e-003	0.1379	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
Total	**6.6900e-003**	**0.1379**	**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**

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
Total	**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**

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
Total	**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**

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
Total	**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**

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	4.5200e-003	0.0875	0.1395	1.8000e-004		4.2200e-003	4.2200e-003		4.2200e-003	4.2200e-003	0.0000	17.0479	17.0479	5.2200e-003	0.0000	17.1576
Total	**4.5200e-003**	**0.0875**	**0.1395**	**1.8000e-004**		**4.2200e-003**	**4.2200e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**17.0479**	**17.0479**	**5.2200e-003**	**0.0000**	**17.1576**

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
Total	**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**

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	0.0735	0.8115	0.4135	9.8000e-004		0.0337	0.0337		0.0310	0.0310	0.0000	91.0699	91.0699	0.0279	0.0000	91.6559
Total	**0.0735**	**0.8115**	**0.4135**	**9.8000e-004**	**0.0103**	**0.0337**	**0.0440**	**1.1100e-003**	**0.0310**	**0.0321**	**0.0000**	**91.0699**	**91.0699**	**0.0279**	**0.0000**	**91.6559**

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	2.7300e-003	0.0456	0.0215	1.4000e-004	4.2400e-003	7.8000e-004	5.0300e-003	1.2100e-003	7.2000e-004	1.9300e-003	0.0000	12.9877	12.9877	9.0000e-005	0.0000	12.9895
Worker	1.1100e-003	3.2800e-003	0.0291	9.0000e-005	7.0900e-003	5.0000e-005	7.1300e-003	1.8800e-003	4.0000e-005	1.9300e-003	0.0000	6.2069	6.2069	3.0000e-004	0.0000	6.2132
Total	**3.8400e-003**	**0.0489**	**0.0506**	**2.3000e-004**	**0.0113**	**8.3000e-004**	**0.0122**	**3.0900e-003**	**7.6000e-004**	**3.8600e-003**	**0.0000**	**19.1946**	**19.1946**	**3.9000e-004**	**0.0000**	**19.2027**

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	0.0240	0.4642	0.5597	9.8000e-004		0.0185	0.0185		0.0185	0.0185	0.0000	91.0698	91.0698	0.0279	0.0000	91.6558
Total	**0.0240**	**0.4642**	**0.5597**	**9.8000e-004**	**4.0100e-003**	**0.0185**	**0.0225**	**4.3000e-004**	**0.0185**	**0.0189**	**0.0000**	**91.0698**	**91.0698**	**0.0279**	**0.0000**	**91.6558**

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	2.7300e-003	0.0456	0.0215	1.4000e-004	4.2400e-003	7.8000e-004	5.0300e-003	1.2100e-003	7.2000e-004	1.9300e-003	0.0000	12.9877	12.9877	9.0000e-005	0.0000	12.9895
Worker	1.1100e-003	3.2800e-003	0.0291	9.0000e-005	7.0900e-003	5.0000e-005	7.1300e-003	1.8800e-003	4.0000e-005	1.9300e-003	0.0000	6.2069	6.2069	3.0000e-004	0.0000	6.2132
Total	**3.8400e-003**	**0.0489**	**0.0506**	**2.3000e-004**	**0.0113**	**8.3000e-004**	**0.0122**	**3.0900e-003**	**7.6000e-004**	**3.8600e-003**	**0.0000**	**19.1946**	**19.1946**	**3.9000e-004**	**0.0000**	**19.2027**

3.17 Right of way restoration and cleanup - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0103	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	0.0171	0.1813	0.1005	2.6000e-004		7.4400e-003	7.4400e-003		6.8400e-003	6.8400e-003	0.0000	23.7731	23.7731	7.4000e-003	0.0000	23.9285
Total	**0.0171**	**0.1813**	**0.1005**	**2.6000e-004**	**0.0103**	**7.4400e-003**	**0.0177**	**1.1100e-003**	**6.8400e-003**	**7.9500e-003**	**0.0000**	**23.7731**	**23.7731**	**7.4000e-003**	**0.0000**	**23.9285**

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	6.9000e-004	0.0108	5.4100e-003	4.0000e-005	1.1300e-003	1.9000e-004	1.3200e-003	3.2000e-004	1.8000e-004	5.0000e-004	0.0000	3.3864	3.3864	2.0000e-005	0.0000	3.3869
Worker	2.6000e-004	7.9000e-004	6.9600e-003	2.0000e-005	1.8800e-003	1.0000e-005	1.8900e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.5849	1.5849	7.0000e-005	0.0000	1.5864
Total	**9.5000e-004**	**0.0116**	**0.0124**	**6.0000e-005**	**3.0100e-003**	**2.0000e-004**	**3.2100e-003**	**8.2000e-004**	**1.9000e-004**	**1.0100e-003**	**0.0000**	**4.9713**	**4.9713**	**9.0000e-005**	**0.0000**	**4.9733**

3.17 Right of way restoration and cleanup - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	6.3700e-003	0.1232	0.1485	2.6000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003	0.0000	23.7731	23.7731	7.4000e-003	0.0000	23.9285
Total	**6.3700e-003**	**0.1232**	**0.1485**	**2.6000e-004**	**4.0100e-003**	**4.9000e-003**	**8.9100e-003**	**4.3000e-004**	**4.9000e-003**	**5.3300e-003**	**0.0000**	**23.7731**	**23.7731**	**7.4000e-003**	**0.0000**	**23.9285**

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	6.9000e-004	0.0108	5.4100e-003	4.0000e-005	1.1300e-003	1.9000e-004	1.3200e-003	3.2000e-004	1.8000e-004	5.0000e-004	0.0000	3.3864	3.3864	2.0000e-005	0.0000	3.3869
Worker	2.6000e-004	7.9000e-004	6.9600e-003	2.0000e-005	1.8800e-003	1.0000e-005	1.8900e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.5849	1.5849	7.0000e-005	0.0000	1.5864
Total	**9.5000e-004**	**0.0116**	**0.0124**	**6.0000e-005**	**3.0100e-003**	**2.0000e-004**	**3.2100e-003**	**8.2000e-004**	**1.9000e-004**	**1.0100e-003**	**0.0000**	**4.9713**	**4.9713**	**9.0000e-005**	**0.0000**	**4.9733**

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
Total	**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**

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
Total	**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**

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	8.0000e-005	1.7900e-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
Total	**8.0000e-005**	**1.7900e-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**

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
Total	**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**

4.0 Operational Detail - Mobile

Suncrest Reactive Power Support Project

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	90.00	1000sqft	12.21	90,000.00	0

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage set to 12.59

Construction Phase - Construction Schedule updated to reflect current best case start date

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 - 3,600 cubic yards of spoils will need to be hauled offsite = 450 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 3 diesel engine standards

Area Mitigation - Low VOC paint

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					
2017	22.1775	245.5549	130.4634	0.3645	10.9370	9.9003	16.7285	4.7613	9.2044	10.1289	0.0000	36,433.3340	36,433.3340	8.5663	0.0000	36,613.2263
2018	2.7745	29.5957	17.4059	0.0496	0.8046	1.1757	1.9802	0.1647	1.0817	1.2464	0.0000	4,889.7468	4,889.7468	1.2714	0.0000	4,916.4470
Total	**24.9520**	**275.1506**	**147.8693**	**0.4142**	**11.7415**	**11.0759**	**18.7088**	**4.9260**	**10.2860**	**11.3753**	**0.0000**	**41,323.0807**	**41,323.0807**	**9.8377**	**0.0000**	**41,529.6733**

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					
2017	8.2001	154.1352	173.4033	0.3645	6.4300	6.0730	9.4480	2.4488	6.0491	6.9737	0.0000	36,433.3339	36,433.3339	8.5663	0.0000	36,613.2263
2018	1.1255	20.6565	24.7835	0.0496	0.6023	0.7855	1.3878	0.1429	0.7830	0.9258	0.0000	4,889.7468	4,889.7468	1.2714	0.0000	4,916.4470
Total	**9.3256**	**174.7917**	**198.1868**	**0.4142**	**7.0324**	**6.8585**	**10.8358**	**2.5917**	**6.8321**	**7.8995**	**0.0000**	**41,323.0807**	**41,323.0807**	**9.8377**	**0.0000**	**41,529.6733**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**62.63**	**36.47**	**-34.03**	**0.00**	**40.11**	**38.08**	**42.08**	**47.39**	**33.58**	**30.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Field Survey	Site Preparation	3/1/2017	3/15/2017	7	15	Surveying includes setting up survey equipment, taking measurements, and installing stakes
2	SDG&E Site preparation	Site Preparation	4/1/2017	5/31/2017	7	61	SDG&E Site preparation phase
3	SVC Site Grading	Grading	4/1/2017	4/30/2017	7	30	Site earthwork and grading.
4	Trenching	Trenching	4/1/2017	7/10/2017	7	101	Trench will be approximately 30" wide by 60" deep.
5	Set SVC Substation Foundations	Building Construction	5/1/2017	6/20/2017	7	51	Auguring holes, removing soil, and foundation forming.
6	Material delivery	Building Construction	5/7/2017	8/15/2017	7	101	Material haul, transporting material to the site.
7	Substation construction	Building Construction	5/31/2017	10/8/2017	7	131	Install equipment, structural steel and bus work.
8	Structure Erection	Building Construction	6/1/2017	8/14/2017	7	75	SDG&E Suncrest Substation Structure and Equipment erection
9	Install Vaults	Building Construction	7/11/2017	8/9/2017	7	30	Excavate hole for vault, install vault sections, backfill with concrete
10	Install Transmission line foundations	Building Construction	7/31/2017	8/31/2017	7	32	Foundation installation includes auguring holes, remove soil and foundation formation,
11	Install duct package	Building Construction	8/10/2017	9/28/2017	7	50	Install approximately 100 feet of duct/day
12	Wire Stringing	Building Construction	8/15/2017	9/4/2017	5	15	Wire Stringing into SDG&E Suncrest Substation
13	Transformer & SVC Delivery	Building Construction	8/16/2017	8/30/2017	7	15	Install transformer and SVC
14	Pull cable	Building Construction	9/29/2017	10/19/2017	7	21	6 pulls at 850feet each
15	Install cable splices	Building Construction	10/20/2017	11/20/2017	7	32	Install cable splice. Assume 16 hours/day
16	Right of way restoration and cleanup	Site Preparation	11/13/2017	1/13/2018	7	62	Restore back to natural state, removing culverts, restoring original grade, seeding area with native plants
17	Test cable splices	Building Construction	11/21/2017	11/22/2017	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	450.00	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	10.00	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	10.00	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	23.00	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 cleanu	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 - 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					0.0000	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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
Total	**0.0599**	**0.6581**	**0.9159**	**3.8000e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**342.2076**	**342.2076**	**8.0500e-003**		**342.3766**

3.2 Field Survey - 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					0.0000	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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
Total	**0.0599**	**0.6581**	**0.9159**	**3.8000e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**342.2076**	**342.2076**	**8.0500e-003**		**342.3766**

3.3 SDG&E Site preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	3.5494	40.7294	20.3274	0.0546		1.5485	1.5485		1.4246	1.4246		5,581.1553	5,581.1553	1.7101		5,617.0665
Total	**3.5494**	**40.7294**	**20.3274**	**0.0546**	**0.0000**	**1.5485**	**1.5485**	**0.0000**	**1.4246**	**1.4246**		**5,581.1553**	**5,581.1553**	**1.7101**		**5,617.0665**

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	0.2421	4.1431	1.7173	0.0137	0.4123	0.0746	0.4869	0.1175	0.0686	0.1861		1,360.4689	1,360.4689	8.8900e-003		1,360.6557
Worker	0.0706	0.1816	1.9402	5.5100e-003	0.4445	2.8800e-003	0.4474	0.1179	2.6600e-003	0.1205		442.0470	442.0470	0.0203		442.4734
Total	**0.3126**	**4.3247**	**3.6574**	**0.0192**	**0.8568**	**0.0775**	**0.9343**	**0.2353**	**0.0713**	**0.3066**		**1,802.5159**	**1,802.5159**	**0.0292**		**1,803.1291**

3.3 SDG&E Site preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3385	25.8768	30.0449	0.0546		1.0043	1.0043		1.0043	1.0043	0.0000	5,581.1553	5,581.1553	1.7101		5,617.0665
Total	**1.3385**	**25.8768**	**30.0449**	**0.0546**	**0.0000**	**1.0043**	**1.0043**	**0.0000**	**1.0043**	**1.0043**	**0.0000**	**5,581.1553**	**5,581.1553**	**1.7101**		**5,617.0665**

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	0.2421	4.1431	1.7173	0.0137	0.4123	0.0746	0.4869	0.1175	0.0686	0.1861		1,360.4689	1,360.4689	8.8900e-003		1,360.6557
Worker	0.0706	0.1816	1.9402	5.5100e-003	0.4445	2.8800e-003	0.4474	0.1179	2.6600e-003	0.1205		442.0470	442.0470	0.0203		442.4734
Total	**0.3126**	**4.3247**	**3.6574**	**0.0192**	**0.8568**	**0.0775**	**0.9343**	**0.2353**	**0.0713**	**0.3066**		**1,802.5159**	**1,802.5159**	**0.0292**		**1,803.1291**

3.4 SVC Site Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3884	0.0000	7.3884	3.7910	0.0000	3.7910			0.0000			0.0000
Off-Road	5.3189	55.2405	31.5294	0.0526		2.6408	2.6408		2.4404	2.4404		5,269.0463	5,269.0463	1.5258		5,301.0871
Total	**5.3189**	**55.2405**	**31.5294**	**0.0526**	**7.3884**	**2.6408**	**10.0293**	**3.7910**	**2.4404**	**6.2314**		**5,269.0463**	**5,269.0463**	**1.5258**		**5,301.0871**

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	0.6263	11.4586	5.0000	0.0357	0.8488	0.1626	1.0114	0.2324	0.1496	0.3819		3,551.2691	3,551.2691	0.0233		3,551.7575
Vendor	0.4361	7.1706	3.2304	0.0236	0.7069	0.1281	0.8350	0.2014	0.1178	0.3193		2,338.3028	2,338.3028	0.0154		2,338.6254
Worker	0.1411	0.3632	3.8804	0.0110	0.8890	5.7600e-003	0.8948	0.2357	5.3100e-003	0.2410		884.0940	884.0940	0.0406		884.9468
Total	**1.2036**	**18.9923**	**12.1107**	**0.0703**	**2.4447**	**0.2964**	**2.7411**	**0.6695**	**0.2727**	**0.9422**		**6,773.6658**	**6,773.6658**	**0.0792**		**6,775.3298**

3.4 SVC Site Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8815	0.0000	2.8815	1.4785	0.0000	1.4785			0.0000			0.0000
Off-Road	1.1513	22.8390	28.0224	0.0526		1.0220	1.0220		1.0220	1.0220	0.0000	5,269.0463	5,269.0463	1.5258		5,301.0871
Total	**1.1513**	**22.8390**	**28.0224**	**0.0526**	**2.8815**	**1.0220**	**3.9035**	**1.4785**	**1.0220**	**2.5005**	**0.0000**	**5,269.0463**	**5,269.0463**	**1.5258**		**5,301.0871**

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	0.6263	11.4586	5.0000	0.0357	0.8488	0.1626	1.0114	0.2324	0.1496	0.3819		3,551.2691	3,551.2691	0.0233		3,551.7575
Vendor	0.4361	7.1706	3.2304	0.0236	0.7069	0.1281	0.8350	0.2014	0.1178	0.3193		2,338.3028	2,338.3028	0.0154		2,338.6254
Worker	0.1411	0.3632	3.8804	0.0110	0.8890	5.7600e-003	0.8948	0.2357	5.3100e-003	0.2410		884.0940	884.0940	0.0406		884.9468
Total	**1.2036**	**18.9923**	**12.1107**	**0.0703**	**2.4447**	**0.2964**	**2.7411**	**0.6695**	**0.2727**	**0.9422**		**6,773.6658**	**6,773.6658**	**0.0792**		**6,775.3298**

3.5 Trenching - 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	2.2496	22.5721	12.6621	0.0256		1.2268	1.2268		1.1305	1.1305		2,597.0155	2,597.0155	0.7807		2,613.4100
Total	**2.2496**	**22.5721**	**12.6621**	**0.0256**		**1.2268**	**1.2268**		**1.1305**	**1.1305**		**2,597.0155**	**2,597.0155**	**0.7807**		**2,613.4100**

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
Total	**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**

3.5 Trenching - 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	0.6029	12.3586	14.9031	0.0256		0.6161	0.6161		0.6161	0.6161	0.0000	2,597.0155	2,597.0155	0.7807		2,613.4100
Total	**0.6029**	**12.3586**	**14.9031**	**0.0256**		**0.6161**	**0.6161**		**0.6161**	**0.6161**	**0.0000**	**2,597.0155**	**2,597.0155**	**0.7807**		**2,613.4100**

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
Total	**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**

3.6 Set SVC Substation 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	2.5066	27.0099	15.7578	0.0366		1.1896	1.1896		1.1184	1.1184		3,687.0578	3,687.0578	0.9892		3,707.8318
Total	**2.5066**	**27.0099**	**15.7578**	**0.0366**		**1.1896**	**1.1896**		**1.1184**	**1.1184**		**3,687.0578**	**3,687.0578**	**0.9892**		**3,707.8318**

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	0.0727	1.1951	0.5384	3.9300e-003	0.1178	0.0213	0.1392	0.0336	0.0196	0.0532		389.7171	389.7171	2.5600e-003		389.7709
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
Total	**0.1197**	**1.3162**	**1.8319**	**7.6000e-003**	**0.4142**	**0.0233**	**0.4374**	**0.1121**	**0.0214**	**0.1336**		**684.4151**	**684.4151**	**0.0161**		**684.7532**

3.6 Set SVC Substation 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	0.8679	17.2390	21.3531	0.0366		0.7798	0.7798		0.7798	0.7798	0.0000	3,687.0578	3,687.0578	0.9892		3,707.8318
Total	**0.8679**	**17.2390**	**21.3531**	**0.0366**		**0.7798**	**0.7798**		**0.7798**	**0.7798**	**0.0000**	**3,687.0578**	**3,687.0578**	**0.9892**		**3,707.8318**

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	0.0727	1.1951	0.5384	3.9300e-003	0.1178	0.0213	0.1392	0.0336	0.0196	0.0532		389.7171	389.7171	2.5600e-003		389.7709
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
Total	**0.1197**	**1.3162**	**1.8319**	**7.6000e-003**	**0.4142**	**0.0233**	**0.4374**	**0.1121**	**0.0214**	**0.1336**		**684.4151**	**684.4151**	**0.0161**		**684.7532**

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
Total	**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**

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
Total	**0.0599**	**0.6581**	**0.9159**	**3.8000e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**342.2076**	**342.2076**	**8.0500e-003**		**342.3766**

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	0.2444	4.9738	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
Total	**0.2444**	**4.9738**	**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**

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
Total	**0.0599**	**0.6581**	**0.9159**	**3.8000e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**342.2076**	**342.2076**	**8.0500e-003**		**342.3766**

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
Total	**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**

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
Total	**0.2808**	**3.7467**	**3.3398**	**0.0167**	**0.7486**	**0.0666**	**0.8152**	**0.2055**	**0.0613**	**0.2668**		**1,562.0820**	**1,562.0820**	**0.0257**		**1,562.6224**

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	1.4917	29.3832	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
Total	**1.4917**	**29.3832**	**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**

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		1,169.1514	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
Total	**0.2808**	**3.7467**	**3.3398**	**0.0167**	**0.7486**	**0.0666**	**0.8152**	**0.2055**	**0.0613**	**0.2668**		**1,562.0820**	**1,562.0820**	**0.0257**		**1,562.6224**

3.9 Structure Erection - 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	6.9092	76.3061	37.1009	0.0966		3.0680	3.0680		2.8466	2.8466		9,825.7886	9,825.7886	2.8701		9,886.0615
Total	**6.9092**	**76.3061**	**37.1009**	**0.0966**		**3.0680**	**3.0680**		**2.8466**	**2.8466**		**9,825.7886**	**9,825.7886**	**2.8701**		**9,886.0615**

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	0.3271	5.3779	2.4228	0.0177	0.5302	0.0961	0.6262	0.1511	0.0884	0.2394		1,753.7271	1,753.7271	0.0115		1,753.9691
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
Total	**0.4055**	**5.5797**	**4.5786**	**0.0238**	**1.0241**	**0.0993**	**1.1234**	**0.2820**	**0.0913**	**0.3733**		**2,244.8904**	**2,244.8904**	**0.0341**		**2,245.6062**

3.9 Structure Erection - 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	2.3346	45.6616	51.9620	0.0966		1.8425	1.8425		1.8425	1.8425	0.0000	9,825.7886	9,825.7886	2.8701		9,886.0615
Total	**2.3346**	**45.6616**	**51.9620**	**0.0966**		**1.8425**	**1.8425**		**1.8425**	**1.8425**	**0.0000**	**9,825.7886**	**9,825.7886**	**2.8701**		**9,886.0615**

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	0.3271	5.3779	2.4228	0.0177	0.5302	0.0961	0.6262	0.1511	0.0884	0.2394		1,753.7271	1,753.7271	0.0115		1,753.9691
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
Total	**0.4055**	**5.5797**	**4.5786**	**0.0238**	**1.0241**	**0.0993**	**1.1234**	**0.2820**	**0.0913**	**0.3733**		**2,244.8904**	**2,244.8904**	**0.0341**		**2,245.6062**

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		6,061.8499	6,061.8499	1.7169		6,097.9043
Total	**4.2360**	**45.1478**	**24.3359**	**0.0598**		**1.9556**	**1.9556**		**1.8231**	**1.8231**		**6,061.8499**	**6,061.8499**	**1.7169**		**6,097.9043**

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
Total	**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**

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	1.4329	28.4950	33.1220	0.0598		1.2471	1.2471		1.2471	1.2471	0.0000	6,061.8499	6,061.8499	1.7169		6,097.9043
Total	**1.4329**	**28.4950**	**33.1220**	**0.0598**		**1.2471**	**1.2471**		**1.2471**	**1.2471**	**0.0000**	**6,061.8499**	**6,061.8499**	**1.7169**		**6,097.9043**

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
Total	**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**

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
Total	**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**

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	0.0784	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
Total	**0.4411**	**6.6556**	**4.6156**	**0.0276**	**1.1418**	**0.1203**	**1.2621**	**0.3155**	**0.1107**	**0.4262**		**2,623.9844**	**2,623.9844**	**0.0364**		**2,624.7497**

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	1.4700	28.8807	34.1012	0.0612		1.2148	1.2148		1.2148	1.2148	0.0000	6,204.1899	6,204.1899	1.7605		6,241.1601
Total	**1.4700**	**28.8807**	**34.1012**	**0.0612**		**1.2148**	**1.2148**		**1.2148**	**1.2148**	**0.0000**	**6,204.1899**	**6,204.1899**	**1.7605**		**6,241.1601**

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	0.0784	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
Total	**0.4411**	**6.6556**	**4.6156**	**0.0276**	**1.1418**	**0.1203**	**1.2621**	**0.3155**	**0.1107**	**0.4262**		**2,623.9844**	**2,623.9844**	**0.0364**		**2,624.7497**

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
Total	**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**

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
Total	**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**

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	0.7347	14.6655	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
Total	**0.7347**	**14.6655**	**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**

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
Total	**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**

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		5,510.9701	5,510.9701	1.6886		5,546.4297
Total	**3.7469**	**41.6453**	**20.9069**	**0.0539**		**1.6980**	**1.6980**		**1.5622**	**1.5622**		**5,510.9701**	**5,510.9701**	**1.6886**		**5,546.4297**

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	0.1803	0.4640	4.9583	0.0141	1.1360	7.3600e-003	1.1434	0.3012	6.7900e-003	0.3080		1,129.6756	1,129.6756	0.0519		1,130.7654
Total	**0.3984**	**4.0493**	**6.5735**	**0.0259**	**1.4895**	**0.0714**	**1.5608**	**0.4019**	**0.0657**	**0.4676**		**2,298.8270**	**2,298.8270**	**0.0596**		**2,300.0781**

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	1.3187	25.8264	29.4413	0.0539		1.0493	1.0493		1.0493	1.0493	0.0000	5,510.9701	5,510.9701	1.6886		5,546.4297
Total	**1.3187**	**25.8264**	**29.4413**	**0.0539**		**1.0493**	**1.0493**		**1.0493**	**1.0493**	**0.0000**	**5,510.9701**	**5,510.9701**	**1.6886**		**5,546.4297**

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		1,169.1514	1,169.1514	7.6800e-003		1,169.3127
Worker	0.1803	0.4640	4.9583	0.0141	1.1360	7.3600e-003	1.1434	0.3012	6.7900e-003	0.3080		1,129.6756	1,129.6756	0.0519		1,130.7654
Total	**0.3984**	**4.0493**	**6.5735**	**0.0259**	**1.4895**	**0.0714**	**1.5608**	**0.4019**	**0.0657**	**0.4676**		**2,298.8270**	**2,298.8270**	**0.0596**		**2,300.0781**

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
Total	**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**

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
Total	**0.0755**	**0.6984**	**1.3471**	**5.0200e-003**	**0.3059**	**0.0123**	**0.3181**	**0.0823**	**0.0113**	**0.0936**		**440.4402**	**440.4402**	**0.0126**		**440.7040**

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	0.0671	1.3801	1.6711	2.7300e-003		0.0698	0.0698		0.0698	0.0698	0.0000	279.8447	279.8447	0.0857		281.6453
Total	**0.0671**	**1.3801**	**1.6711**	**2.7300e-003**		**0.0698**	**0.0698**		**0.0698**	**0.0698**	**0.0000**	**279.8447**	**279.8447**	**0.0857**		**281.6453**

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
Total	**0.0755**	**0.6984**	**1.3471**	**5.0200e-003**	**0.3059**	**0.0123**	**0.3181**	**0.0823**	**0.0113**	**0.0936**		**440.4402**	**440.4402**	**0.0126**		**440.7040**

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
Total	**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**

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
Total	**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**

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	0.6369	13.1349	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
Total	**0.6369**	**13.1349**	**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**

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
Total	**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**

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
Total	**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**

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
Total	**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**

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	0.2828	5.4666	8.7183	0.0115		0.2639	0.2639		0.2639	0.2639	0.0000	1,174.5068	1,174.5068	0.3599		1,182.0640
Total	**0.2828**	**5.4666**	**8.7183**	**0.0115**		**0.2639**	**0.2639**		**0.2639**	**0.2639**	**0.0000**	**1,174.5068**	**1,174.5068**	**0.3599**		**1,182.0640**

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
Total	**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**

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
Total	**3.0017**	**33.1222**	**16.8754**	**0.0401**	**0.3315**	**1.3747**	**1.7062**	**0.0358**	**1.2647**	**1.3005**		**4,097.4456**	**4,097.4456**	**1.2555**		**4,123.8100**

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
Total	**0.1561**	**1.9137**	**2.1011**	**9.5600e-003**	**0.4731**	**0.0339**	**0.5070**	**0.1289**	**0.0312**	**0.1602**		**879.2737**	**879.2737**	**0.0174**		**879.6386**

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	0.9800	18.9475	22.8457	0.0401		0.7539	0.7539		0.7539	0.7539	0.0000	4,097.4456	4,097.4456	1.2555		4,123.8100
Total	**0.9800**	**18.9475**	**22.8457**	**0.0401**	**0.1293**	**0.7539**	**0.8831**	**0.0140**	**0.7539**	**0.7678**	**0.0000**	**4,097.4456**	**4,097.4456**	**1.2555**		**4,123.8100**

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
Total	**0.1561**	**1.9137**	**2.1011**	**9.5600e-003**	**0.4731**	**0.0339**	**0.5070**	**0.1289**	**0.0312**	**0.1602**		**879.2737**	**879.2737**	**0.0174**		**879.6386**

3.17 Right of way restoration and cleanup - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3315	0.0000	0.3315	0.0358	0.0000	0.0358			0.0000			0.0000
Off-Road	2.6291	27.8867	15.4682	0.0401		1.1441	1.1441		1.0525	1.0525		4,031.5962	4,031.5962	1.2551		4,057.9531
Total	**2.6291**	**27.8867**	**15.4682**	**0.0401**	**0.3315**	**1.1441**	**1.4756**	**0.0358**	**1.0525**	**1.0883**		**4,031.5962**	**4,031.5962**	**1.2551**		**4,057.9531**

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	0.1040	1.5983	0.7644	5.8800e-003	0.1767	0.0298	0.2065	0.0504	0.0274	0.0777		574.5110	574.5110	3.7300e-003		574.5893
Worker	0.0415	0.1106	1.1734	3.6700e-003	0.2964	1.8700e-003	0.2982	0.0786	1.7300e-003	0.0803		283.6396	283.6396	0.0126		283.9047
Total	**0.1455**	**1.7090**	**1.9378**	**9.5500e-003**	**0.4731**	**0.0316**	**0.5047**	**0.1289**	**0.0291**	**0.1580**		**858.1506**	**858.1506**	**0.0164**		**858.4940**

3.17 Right of way restoration and cleanup - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1293	0.0000	0.1293	0.0140	0.0000	0.0140			0.0000			0.0000
Off-Road	0.9800	18.9475	22.8457	0.0401		0.7539	0.7539		0.7539	0.7539	0.0000	4,031.5962	4,031.5962	1.2551		4,057.9531
Total	**0.9800**	**18.9475**	**22.8457**	**0.0401**	**0.1293**	**0.7539**	**0.8831**	**0.0140**	**0.7539**	**0.7678**	**0.0000**	**4,031.5962**	**4,031.5962**	**1.2551**		**4,057.9531**

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	0.1040	1.5983	0.7644	5.8800e-003	0.1767	0.0298	0.2065	0.0504	0.0274	0.0777		574.5110	574.5110	3.7300e-003		574.5893
Worker	0.0415	0.1106	1.1734	3.6700e-003	0.2964	1.8700e-003	0.2982	0.0786	1.7300e-003	0.0803		283.6396	283.6396	0.0126		283.9047
Total	**0.1455**	**1.7090**	**1.9378**	**9.5500e-003**	**0.4731**	**0.0316**	**0.5047**	**0.1289**	**0.0291**	**0.1580**		**858.1506**	**858.1506**	**0.0164**		**858.4940**

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
Total	**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**

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
Total	**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**

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	0.0783	1.7868	2.4129	3.1600e-003		0.1252	0.1252		0.1252	0.1252	0.0000	323.5275	323.5275	0.0991		325.6092
Total	**0.0783**	**1.7868**	**2.4129**	**3.1600e-003**		**0.1252**	**0.1252**		**0.1252**	**0.1252**	**0.0000**	**323.5275**	**323.5275**	**0.0991**		**325.6092**

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
Total	**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**

Suncrest Reactive Power Support Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	90.00	1000sqft	12.21	90,000.00	0

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage set to 12.59

Construction Phase - Construction Schedule updated to reflect current best case start date

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 - 3,600 cubic yards of spoils will need to be hauled offsite = 450 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 3 diesel engine standards

Area Mitigation - Low VOC paint

2.0 Emissions Summary

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					
2017	22.2026	246.1979	130.4859	0.3631	10.9370	9.9005	16.7289	4.7613	9.2046	10.1292	0.0000	36,320.1719	36,320.1719	8.5664	0.0000	36,500.0663
2018	2.7775	29.6638	17.3939	0.0494	0.8046	1.1757	1.9803	0.1647	1.0817	1.2464	0.0000	4,871.6543	4,871.6543	1.2715	0.0000	4,898.3549
Total	**24.9801**	**275.8617**	**147.8798**	**0.4125**	**11.7415**	**11.0762**	**18.7091**	**4.9260**	**10.2863**	**11.3756**	**0.0000**	**41,191.8262**	**41,191.8262**	**9.8379**	**0.0000**	**41,398.4212**

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					
2017	8.2252	154.7782	173.4257	0.3631	6.4300	6.0733	9.4483	2.4488	6.0493	6.9739	0.0000	36,320.1718	36,320.1718	8.5664	0.0000	36,500.0663
2018	1.1284	20.7245	24.7715	0.0494	0.6023	0.7855	1.3879	0.1429	0.7830	0.9259	0.0000	4,871.6543	4,871.6543	1.2715	0.0000	4,898.3549
Total	**9.3536**	**175.5027**	**198.1972**	**0.4125**	**7.0324**	**6.8588**	**10.8362**	**2.5917**	**6.8323**	**7.8998**	**0.0000**	**41,191.8262**	**41,191.8262**	**9.8379**	**0.0000**	**41,398.4212**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**62.56**	**36.38**	**-34.03**	**0.00**	**40.11**	**38.08**	**42.08**	**47.39**	**33.58**	**30.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Field Survey	Site Preparation	3/1/2017	3/15/2017	7	15	Surveying includes setting up survey equipment, taking measurements, and installing stakes
2	SDG&E Site preparation	Site Preparation	4/1/2017	5/31/2017	7	61	SDG&E Site preparation phase
3	SVC Site Grading	Grading	4/1/2017	4/30/2017	7	30	Site earthwork and grading.
4	Trenching	Trenching	4/1/2017	7/10/2017	7	101	Trench will be approximately 30" wide by 60" deep.
5	Set SVC Substation Foundations	Building Construction	5/1/2017	6/20/2017	7	51	Auguring holes, removing soil, and foundation forming.
6	Material delivery	Building Construction	5/7/2017	8/15/2017	7	101	Material haul, transporting material to the site.
7	Substation construction	Building Construction	5/31/2017	10/8/2017	7	131	Install equipment, structural steel and bus work.
8	Structure Erection	Building Construction	6/1/2017	8/14/2017	7	75	SDG&E Suncrest Substation Structure and Equipment erection
9	Install Vaults	Building Construction	7/11/2017	8/9/2017	7	30	Excavate hole for vault, install vault sections, backfill with concrete
10	Install Transmission line foundations	Building Construction	7/31/2017	8/31/2017	7	32	Foundation installation includes auguring holes, remove soil and foundation formation,
11	Install duct package	Building Construction	8/10/2017	9/28/2017	7	50	Install approximately 100 feet of duct/day
12	Wire Stringing	Building Construction	8/15/2017	9/4/2017	5	15	Wire Stringing into SDG&E Suncrest Substation
13	Transformer & SVC Delivery	Building Construction	8/16/2017	8/30/2017	7	15	Install transformer and SVC
14	Pull cable	Building Construction	9/29/2017	10/19/2017	7	21	6 pulls at 850feet each
15	Install cable splices	Building Construction	10/20/2017	11/20/2017	7	32	Install cable splice. Assume 16 hours/day
16	Right of way restoration and cleanup	Site Preparation	11/13/2017	1/13/2018	7	62	Restore back to natural state, removing culverts, restoring original grade, seeding area with native plants
17	Test cable splices	Building Construction	11/21/2017	11/22/2017	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	450.00	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	10.00	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	10.00	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	23.00	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 cleanu	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 - 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					0.0000	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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
Total	**0.0610**	**0.6859**	**0.8920**	**3.6800e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**332.9127**	**332.9127**	**8.0600e-003**		**333.0818**

3.2 Field Survey - 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					0.0000	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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
Total	**0.0610**	**0.6859**	**0.8920**	**3.6800e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**332.9127**	**332.9127**	**8.0600e-003**		**333.0818**

3.3 SDG&E Site preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	3.5494	40.7294	20.3274	0.0546		1.5485	1.5485		1.4246	1.4246		5,581.1553	5,581.1553	1.7101		5,617.0665
Total	**3.5494**	**40.7294**	**20.3274**	**0.0546**	**0.0000**	**1.5485**	**1.5485**	**0.0000**	**1.4246**	**1.4246**		**5,581.1553**	**5,581.1553**	**1.7101**		**5,617.0665**

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	0.2487	4.2871	1.8921	0.0137	0.4123	0.0747	0.4870	0.1175	0.0687	0.1862		1,359.5669	1,359.5669	8.9200e-003		1,359.7542
Worker	0.0698	0.2036	1.7611	5.1600e-003	0.4445	2.8800e-003	0.4474	0.1179	2.6600e-003	0.1205		414.7036	414.7036	0.0203		415.1300
Total	**0.3185**	**4.4907**	**3.6532**	**0.0189**	**0.8568**	**0.0775**	**0.9344**	**0.2353**	**0.0714**	**0.3067**		**1,774.2705**	**1,774.2705**	**0.0292**		**1,774.8842**

3.3 SDG&E Site preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3385	25.8768	30.0449	0.0546		1.0043	1.0043		1.0043	1.0043	0.0000	5,581.1553	5,581.1553	1.7101		5,617.0665
Total	**1.3385**	**25.8768**	**30.0449**	**0.0546**	**0.0000**	**1.0043**	**1.0043**	**0.0000**	**1.0043**	**1.0043**	**0.0000**	**5,581.1553**	**5,581.1553**	**1.7101**		**5,617.0665**

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	0.2487	4.2871	1.8921	0.0137	0.4123	0.0747	0.4870	0.1175	0.0687	0.1862		1,359.5669	1,359.5669	8.9200e-003		1,359.7542
Worker	0.0698	0.2036	1.7611	5.1600e-003	0.4445	2.8800e-003	0.4474	0.1179	2.6600e-003	0.1205		414.7036	414.7036	0.0203		415.1300
Total	**0.3185**	**4.4907**	**3.6532**	**0.0189**	**0.8568**	**0.0775**	**0.9344**	**0.2353**	**0.0714**	**0.3067**		**1,774.2705**	**1,774.2705**	**0.0292**		**1,774.8842**

3.4 SVC Site Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3884	0.0000	7.3884	3.7910	0.0000	3.7910			0.0000			0.0000
Off-Road	5.3189	55.2405	31.5294	0.0526		2.6408	2.6408		2.4404	2.4404		5,269.0463	5,269.0463	1.5258		5,301.0871
Total	**5.3189**	**55.2405**	**31.5294**	**0.0526**	**7.3884**	**2.6408**	**10.0293**	**3.7910**	**2.4404**	**6.2314**		**5,269.0463**	**5,269.0463**	**1.5258**		**5,301.0871**

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	0.6559	11.8521	5.8379	0.0357	0.8488	0.1627	1.0115	0.2324	0.1497	0.3820		3,548.6590	3,548.6590	0.0234		3,549.1497
Vendor	0.4526	7.4163	3.6590	0.0235	0.7069	0.1282	0.8351	0.2014	0.1180	0.3194		2,336.1379	2,336.1379	0.0154		2,336.4618
Worker	0.1396	0.4072	3.5222	0.0103	0.8890	5.7600e-003	0.8948	0.2357	5.3100e-003	0.2410		829.4071	829.4071	0.0406		830.2600
Total	**1.2481**	**19.6756**	**13.0191**	**0.0696**	**2.4447**	**0.2967**	**2.7414**	**0.6695**	**0.2730**	**0.9424**		**6,714.2041**	**6,714.2041**	**0.0794**		**6,715.8715**

3.4 SVC Site Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8815	0.0000	2.8815	1.4785	0.0000	1.4785			0.0000			0.0000
Off-Road	1.1513	22.8390	28.0224	0.0526		1.0220	1.0220		1.0220	1.0220	0.0000	5,269.0463	5,269.0463	1.5258		5,301.0871
Total	**1.1513**	**22.8390**	**28.0224**	**0.0526**	**2.8815**	**1.0220**	**3.9035**	**1.4785**	**1.0220**	**2.5005**	**0.0000**	**5,269.0463**	**5,269.0463**	**1.5258**		**5,301.0871**

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	0.6559	11.8521	5.8379	0.0357	0.8488	0.1627	1.0115	0.2324	0.1497	0.3820		3,548.6590	3,548.6590	0.0234		3,549.1497
Vendor	0.4526	7.4163	3.6590	0.0235	0.7069	0.1282	0.8351	0.2014	0.1180	0.3194		2,336.1379	2,336.1379	0.0154		2,336.4618
Worker	0.1396	0.4072	3.5222	0.0103	0.8890	5.7600e-003	0.8948	0.2357	5.3100e-003	0.2410		829.4071	829.4071	0.0406		830.2600
Total	**1.2481**	**19.6756**	**13.0191**	**0.0696**	**2.4447**	**0.2967**	**2.7414**	**0.6695**	**0.2730**	**0.9424**		**6,714.2041**	**6,714.2041**	**0.0794**		**6,715.8715**

3.5 Trenching - 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	2.2496	22.5721	12.6621	0.0256		1.2268	1.2268		1.1305	1.1305		2,597.0155	2,597.0155	0.7807		2,613.4100
Total	**2.2496**	**22.5721**	**12.6621**	**0.0256**		**1.2268**	**1.2268**		**1.1305**	**1.1305**		**2,597.0155**	**2,597.0155**	**0.7807**		**2,613.4100**

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
Total	**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**

3.5 Trenching - 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	0.6029	12.3586	14.9031	0.0256		0.6161	0.6161		0.6161	0.6161	0.0000	2,597.0155	2,597.0155	0.7807		2,613.4100
Total	**0.6029**	**12.3586**	**14.9031**	**0.0256**		**0.6161**	**0.6161**		**0.6161**	**0.6161**	**0.0000**	**2,597.0155**	**2,597.0155**	**0.7807**		**2,613.4100**

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
Total	**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**

3.6 Set SVC Substation 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	2.5066	27.0099	15.7578	0.0366		1.1896	1.1896		1.1184	1.1184		3,687.0578	3,687.0578	0.9892		3,707.8318
Total	**2.5066**	**27.0099**	**15.7578**	**0.0366**		**1.1896**	**1.1896**		**1.1184**	**1.1184**		**3,687.0578**	**3,687.0578**	**0.9892**		**3,707.8318**

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	0.0754	1.2361	0.6098	3.9200e-003	0.1178	0.0214	0.1392	0.0336	0.0197	0.0532		389.3563	389.3563	2.5700e-003		389.4103
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
Total	**0.1220**	**1.3718**	**1.7839**	**7.3600e-003**	**0.4142**	**0.0233**	**0.4375**	**0.1121**	**0.0214**	**0.1336**		**665.8254**	**665.8254**	**0.0161**		**666.1636**

3.6 Set SVC Substation 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	0.8679	17.2390	21.3531	0.0366		0.7798	0.7798		0.7798	0.7798	0.0000	3,687.0578	3,687.0578	0.9892		3,707.8318
Total	**0.8679**	**17.2390**	**21.3531**	**0.0366**		**0.7798**	**0.7798**		**0.7798**	**0.7798**	**0.0000**	**3,687.0578**	**3,687.0578**	**0.9892**		**3,707.8318**

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	0.0754	1.2361	0.6098	3.9200e-003	0.1178	0.0214	0.1392	0.0336	0.0197	0.0532		389.3563	389.3563	2.5700e-003		389.4103
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
Total	**0.1220**	**1.3718**	**1.7839**	**7.3600e-003**	**0.4142**	**0.0233**	**0.4375**	**0.1121**	**0.0214**	**0.1336**		**665.8254**	**665.8254**	**0.0161**		**666.1636**

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
Total	**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**

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
Total	**0.0610**	**0.6859**	**0.8920**	**3.6800e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**332.9127**	**332.9127**	**8.0600e-003**		**333.0818**

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	0.2444	4.9738	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
Total	**0.2444**	**4.9738**	**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**

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
Total	**0.0610**	**0.6859**	**0.8920**	**3.6800e-003**	**0.2071**	**0.0116**	**0.2187**	**0.0561**	**0.0107**	**0.0668**		**332.9127**	**332.9127**	**8.0600e-003**		**333.0818**

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
Total	**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**

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
Total	**0.2883**	**3.8891**	**3.3949**	**0.0164**	**0.7486**	**0.0667**	**0.8153**	**0.2055**	**0.0613**	**0.2668**		**1,536.6944**	**1,536.6944**	**0.0258**		**1,537.2353**

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	1.4917	29.3832	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
Total	**1.4917**	**29.3832**	**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**

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
Total	**0.2883**	**3.8891**	**3.3949**	**0.0164**	**0.7486**	**0.0667**	**0.8153**	**0.2055**	**0.0613**	**0.2668**		**1,536.6944**	**1,536.6944**	**0.0258**		**1,537.2353**

3.9 Structure Erection - 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	6.9092	76.3061	37.1009	0.0966		3.0680	3.0680		2.8466	2.8466		9,825.7886	9,825.7886	2.8701		9,886.0615
Total	**6.9092**	**76.3061**	**37.1009**	**0.0966**		**3.0680**	**3.0680**		**2.8466**	**2.8466**		**9,825.7886**	**9,825.7886**	**2.8701**		**9,886.0615**

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	0.3394	5.5622	2.7443	0.0177	0.5302	0.0962	0.6264	0.1511	0.0885	0.2395		1,752.1035	1,752.1035	0.0116		1,752.3464
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
Total	**0.4170**	**5.7885**	**4.7010**	**0.0234**	**1.0241**	**0.0994**	**1.1235**	**0.2820**	**0.0914**	**0.3734**		**2,212.8852**	**2,212.8852**	**0.0341**		**2,213.6019**

3.9 Structure Erection - 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	2.3346	45.6616	51.9620	0.0966		1.8425	1.8425		1.8425	1.8425	0.0000	9,825.7886	9,825.7886	2.8701		9,886.0615
Total	**2.3346**	**45.6616**	**51.9620**	**0.0966**		**1.8425**	**1.8425**		**1.8425**	**1.8425**	**0.0000**	**9,825.7886**	**9,825.7886**	**2.8701**		**9,886.0615**

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	0.3394	5.5622	2.7443	0.0177	0.5302	0.0962	0.6264	0.1511	0.0885	0.2395		1,752.1035	1,752.1035	0.0116		1,752.3464
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
Total	**0.4170**	**5.7885**	**4.7010**	**0.0234**	**1.0241**	**0.0994**	**1.1235**	**0.2820**	**0.0914**	**0.3734**		**2,212.8852**	**2,212.8852**	**0.0341**		**2,213.6019**

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		6,061.8499	6,061.8499	1.7169		6,097.9043
Total	**4.2360**	**45.1478**	**24.3359**	**0.0598**		**1.9556**	**1.9556**		**1.8231**	**1.8231**		**6,061.8499**	**6,061.8499**	**1.7169**		**6,097.9043**

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
Total	**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**

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	1.4329	28.4950	33.1220	0.0598		1.2471	1.2471		1.2471	1.2471	0.0000	6,061.8499	6,061.8499	1.7169		6,097.9043
Total	**1.4329**	**28.4950**	**33.1220**	**0.0598**		**1.2471**	**1.2471**		**1.2471**	**1.2471**	**0.0000**	**6,061.8499**	**6,061.8499**	**1.7169**		**6,097.9043**

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
Total	**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**

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
Total	**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**

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	0.0776	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
Total	**0.4465**	**6.9073**	**4.5839**	**0.0272**	**1.1418**	**0.1204**	**1.2621**	**0.3155**	**0.1107**	**0.4263**		**2,592.7008**	**2,592.7008**	**0.0365**		**2,593.4666**

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	1.4700	28.8807	34.1012	0.0612		1.2148	1.2148		1.2148	1.2148	0.0000	6,204.1899	6,204.1899	1.7605		6,241.1601
Total	**1.4700**	**28.8807**	**34.1012**	**0.0612**		**1.2148**	**1.2148**		**1.2148**	**1.2148**	**0.0000**	**6,204.1899**	**6,204.1899**	**1.7605**		**6,241.1601**

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	0.0776	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
Total	**0.4465**	**6.9073**	**4.5839**	**0.0272**	**1.1418**	**0.1204**	**1.2621**	**0.3155**	**0.1107**	**0.4263**		**2,592.7008**	**2,592.7008**	**0.0365**		**2,593.4666**

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
Total	**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**

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
Total	**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**

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	0.7347	14.6655	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
Total	**0.7347**	**14.6655**	**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**

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
Total	**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**

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		5,510.9701	5,510.9701	1.6886		5,546.4297
Total	**3.7469**	**41.6453**	**20.9069**	**0.0539**		**1.6980**	**1.6980**		**1.5622**	**1.5622**		**5,510.9701**	**5,510.9701**	**1.6886**		**5,546.4297**

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	0.1784	0.5204	4.5006	0.0132	1.1360	7.3600e-003	1.1434	0.3012	6.7900e-003	0.3080		1,059.7980	1,059.7980	0.0519		1,060.8878
Total	**0.4047**	**4.2285**	**6.3301**	**0.0250**	**1.4895**	**0.0715**	**1.5609**	**0.4019**	**0.0658**	**0.4677**		**2,227.8670**	**2,227.8670**	**0.0596**		**2,229.1187**

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	1.3187	25.8264	29.4413	0.0539		1.0493	1.0493		1.0493	1.0493	0.0000	5,510.9701	5,510.9701	1.6886		5,546.4297
Total	**1.3187**	**25.8264**	**29.4413**	**0.0539**		**1.0493**	**1.0493**		**1.0493**	**1.0493**	**0.0000**	**5,510.9701**	**5,510.9701**	**1.6886**		**5,546.4297**

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	0.1784	0.5204	4.5006	0.0132	1.1360	7.3600e-003	1.1434	0.3012	6.7900e-003	0.3080		1,059.7980	1,059.7980	0.0519		1,060.8878
Total	**0.4047**	**4.2285**	**6.3301**	**0.0250**	**1.4895**	**0.0715**	**1.5609**	**0.4019**	**0.0658**	**0.4677**		**2,227.8670**	**2,227.8670**	**0.0596**		**2,229.1187**

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
Total	**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**

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
Total	**0.0765**	**0.7312**	**1.2833**	**4.8300e-003**	**0.3059**	**0.0123**	**0.3182**	**0.0823**	**0.0113**	**0.0936**		**425.0690**	**425.0690**	**0.0126**		**425.3329**

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	0.0671	1.3801	1.6711	2.7300e-003		0.0698	0.0698		0.0698	0.0698	0.0000	279.8447	279.8447	0.0857		281.6453
Total	**0.0671**	**1.3801**	**1.6711**	**2.7300e-003**		**0.0698**	**0.0698**		**0.0698**	**0.0698**	**0.0000**	**279.8447**	**279.8447**	**0.0857**		**281.6453**

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
Total	**0.0765**	**0.7312**	**1.2833**	**4.8300e-003**	**0.3059**	**0.0123**	**0.3182**	**0.0823**	**0.0113**	**0.0936**		**425.0690**	**425.0690**	**0.0126**		**425.3329**

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
Total	**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**

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
Total	**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**

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	0.6369	13.1349	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
Total	**0.6369**	**13.1349**	**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**

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
Total	**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**

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
Total	**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**

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
Total	**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**

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	0.2828	5.4666	8.7183	0.0115		0.2639	0.2639		0.2639	0.2639	0.0000	1,174.5068	1,174.5068	0.3599		1,182.0640
Total	**0.2828**	**5.4666**	**8.7183**	**0.0115**		**0.2639**	**0.2639**		**0.2639**	**0.2639**	**0.0000**	**1,174.5068**	**1,174.5068**	**0.3599**		**1,182.0640**

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
Total	**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**

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
Total	**3.0017**	**33.1222**	**16.8754**	**0.0401**	**0.3315**	**1.3747**	**1.7062**	**0.0358**	**1.2647**	**1.3005**		**4,097.4456**	**4,097.4456**	**1.2555**		**4,123.8100**

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
Total	**0.1597**	**1.9898**	**2.0888**	**9.3300e-003**	**0.4731**	**0.0340**	**0.5071**	**0.1289**	**0.0313**	**0.1602**		**860.5035**	**860.5035**	**0.0174**		**860.8688**

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	0.9800	18.9475	22.8457	0.0401		0.7539	0.7539		0.7539	0.7539	0.0000	4,097.4456	4,097.4456	1.2555		4,123.8100
Total	**0.9800**	**18.9475**	**22.8457**	**0.0401**	**0.1293**	**0.7539**	**0.8831**	**0.0140**	**0.7539**	**0.7678**	**0.0000**	**4,097.4456**	**4,097.4456**	**1.2555**		**4,123.8100**

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
Total	**0.1597**	**1.9898**	**2.0888**	**9.3300e-003**	**0.4731**	**0.0340**	**0.5071**	**0.1289**	**0.0313**	**0.1602**		**860.5035**	**860.5035**	**0.0174**		**860.8688**

3.17 Right of way restoration and cleanup - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3315	0.0000	0.3315	0.0358	0.0000	0.0358			0.0000			0.0000
Off-Road	2.6291	27.8867	15.4682	0.0401		1.1441	1.1441		1.0525	1.0525		4,031.5962	4,031.5962	1.2551		4,057.9531
Total	**2.6291**	**27.8867**	**15.4682**	**0.0401**	**0.3315**	**1.1441**	**1.4756**	**0.0358**	**1.0525**	**1.0883**		**4,031.5962**	**4,031.5962**	**1.2551**		**4,057.9531**

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	0.1077	1.6530	0.8681	5.8800e-003	0.1767	0.0298	0.2065	0.0504	0.0274	0.0778		573.9778	573.9778	3.7400e-003		574.0564
Worker	0.0407	0.1241	1.0576	3.4400e-003	0.2964	1.8700e-003	0.2982	0.0786	1.7300e-003	0.0803		266.0804	266.0804	0.0126		266.3455
Total	**0.1484**	**1.7770**	**1.9257**	**9.3200e-003**	**0.4731**	**0.0317**	**0.5047**	**0.1289**	**0.0291**	**0.1581**		**840.0582**	**840.0582**	**0.0164**		**840.4018**

3.17 Right of way restoration and cleanup - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1293	0.0000	0.1293	0.0140	0.0000	0.0140			0.0000			0.0000
Off-Road	0.9800	18.9475	22.8457	0.0401		0.7539	0.7539		0.7539	0.7539	0.0000	4,031.5962	4,031.5962	1.2551		4,057.9531
Total	**0.9800**	**18.9475**	**22.8457**	**0.0401**	**0.1293**	**0.7539**	**0.8831**	**0.0140**	**0.7539**	**0.7678**	**0.0000**	**4,031.5962**	**4,031.5962**	**1.2551**		**4,057.9531**

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	0.1077	1.6530	0.8681	5.8800e-003	0.1767	0.0298	0.2065	0.0504	0.0274	0.0778		573.9778	573.9778	3.7400e-003		574.0564
Worker	0.0407	0.1241	1.0576	3.4400e-003	0.2964	1.8700e-003	0.2982	0.0786	1.7300e-003	0.0803		266.0804	266.0804	0.0126		266.3455
Total	**0.1484**	**1.7770**	**1.9257**	**9.3200e-003**	**0.4731**	**0.0317**	**0.5047**	**0.1289**	**0.0291**	**0.1581**		**840.0582**	**840.0582**	**0.0164**		**840.4018**

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
Total	**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**

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
Total	**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**

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	0.0783	1.7868	2.4129	3.1600e-003		0.1252	0.1252		0.1252	0.1252	0.0000	323.5275	323.5275	0.0991		325.6092
Total	**0.0783**	**1.7868**	**2.4129**	**3.1600e-003**		**0.1252**	**0.1252**		**0.1252**	**0.1252**	**0.0000**	**323.5275**	**323.5275**	**0.0991**		**325.6092**

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
Total	**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**

Appendix F

Biological Resources – Supporting Documentation

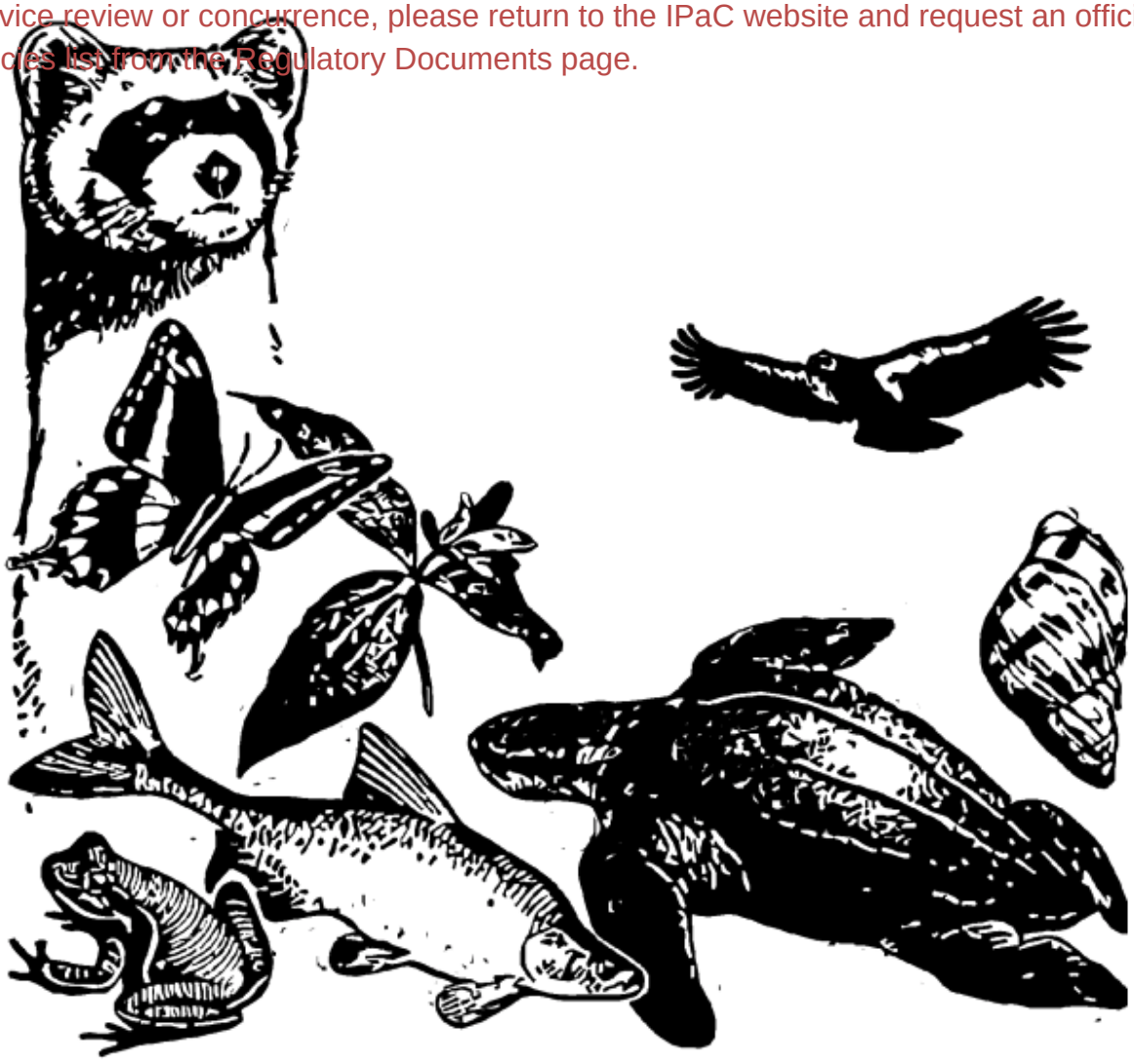
U.S. Fish & Wildlife Service

Suncrest Dynamic Reactive Power Support Project

IPaC Trust Resources Report

Generated July 21, 2016 06:15 PM MDT, IPaC v3.0.8

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

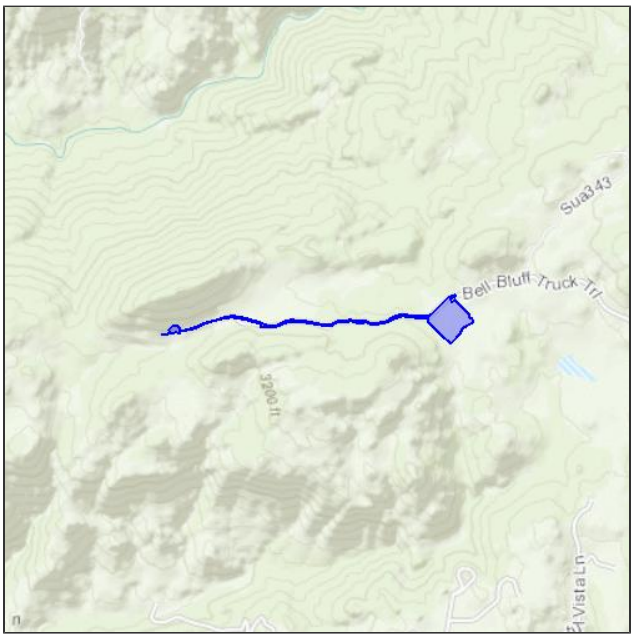
Suncrest Dynamic Reactive Power Support Project

LOCATION

San Diego County, California

IPAC LINK

https://ecos.fws.gov/ipac/project/4IZSQ-2TDX5-FMPN4-HAK4P-TTC52Q



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Amphibians

Arroyo (=arroyo Southwestern) Toad Anaxyrus californicus — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=D020

Birds

California Condor Gymnogyps californianus — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B002

Coastal California Gnatcatcher Polioptila californica californica — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08X

Least Bell's Vireo Vireo bellii pusillus — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B067

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B094

Flowering Plants

San Diego Thornmint Acanthomintha ilicifolia — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q00E

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Bell's Sparrow Amphispiza belli — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HE

Bell's Vireo Vireo bellii — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JX

Black-chinned Sparrow Spizella atrogularis — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IR

Brewer's Sparrow Spizella breweri — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

Cactus Wren Campylorhynchus brunneicapillus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FZ

California Spotted Owl Strix occidentalis occidentalis — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08L

Costa's Hummingbird Calypte costae — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO

Lawrence's Goldfinch Carduelis lawrencei — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8

Least Bittern Ixobrychus exilis
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL

Mountain Plover Charadrius montanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Red-crowned Parrot Amazona viridigenalis — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0GO

Rufous-crowned Sparrow Aimophila ruficeps — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MX

Sage Thrasher Oreoscoptes montanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ID

Short-billed Dowitcher Limnodromus griseus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JK

Western Grebe aechmophorus occidentalis — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Williamson's Sapsucker Sphyrapicus thyroideus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FX

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

This location overlaps all or part of the following wetlands:

Riverine

R4SBA

A full description for each wetland code can be found at the National Wetlands Inventory website: http://107.20.228.18/decoders/wetlands.aspx

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Alpine (3211677) OR Barrett Lake (3211666) OR Cuyamaca Peak (3211685) OR Descanso (3211675) OR Dulzura (3211667) OR El Cajon Mtn. (3211687) OR Morena Reservoir (3211665) OR Tule Springs (3211686) OR Viejas Mountain (3211676))

Suncrest Dynamic Reactive Power Support Project

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acanthomintha ilicifolia San Diego thorn-mint	PDLAM01010	Threatened	Endangered	G1	S1	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S2S3	WL
Ambrosia monogyra singlewhorl burrobrush	PDAST50010	None	None	G5	S2	2B.2
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos otayensis Otay manzanita	PDERI040Y0	None	None	G2	S2	1B.2
Artemisia palmeri San Diego sagewort	PDAST0S160	None	None	G3G4	S3?	4.2
Artemisiospiza belli belli Bell's sage sparrow	ABPBX97021	None	None	G5T2T4	S2?	WL
Aspidoscelis hyperythra orangethroat whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus deanei Dean's milk-vetch	PDFAB0F2R0	None	None	G1	S1	1B.1
Astragalus douglasii var. perstrictus Jacumba milk-vetch	PDFAB0F303	None	None	G5T2?	S2?	1B.2
Astragalus oocarpus San Diego milk-vetch	PDFAB0F6B0	None	None	G2?	S2?	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Baccharis vanessae Encinitas baccharis	PDAST0W0P0	Threatened	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bloomeria clevelandii San Diego goldenstar	PMLIL1H010	None	None	G2	S2	1B.1
Boechera hirshbergiae Hirshberg's rockcress	PDBRA064D0	None	None	G1Q	S1	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Brodiaea orcuttii Orcutt's brodiaea	PMLIL0C0B0	None	None	G2	S2	1B.1
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Callophrys thornei Thorne's hairstreak	IILEPE2150	None	None	G1	S1	
Calochortus dunnii Dunn's mariposa-lily	PMLIL0D0C0	None	Rare	G2G3	S2S3	1B.2
Caulanthus simulans Payson's jewelflower	PDBRA0M0H0	None	None	G4	S4	4.2
Ceanothus cyaneus Lakeside ceanothus	PDRHA04070	None	None	G2	S2	1B.2
Ceanothus otayensis Otay Mountain ceanothus	PDRHA04430	None	None	G1G2	S1	1B.2
Chaenactis parishii Parish's chaenactis	PDAST200D0	None	None	G3G4	S3	1B.3
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	SSC
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Charina trivirgata rosy boa	ARADA01020	None	None	G4G5	S3S4	
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Clarkia delicata delicate clarkia	PDONA050D0	None	None	G3	S3	1B.2
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G2	S2	1B.2
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cylindropuntia californica var. californica snake cholla	PDCAC0D2Y1	None	None	G3T2	S1	1B.1
Deinandra conjugens Otay tarplant	PDAST4R070	Threatened	Endangered	G1	S1	1B.1
Deinandra floribunda Tecate tarplant	PDAST4R0B0	None	None	G2	S2	1B.2
Delphinium hesperium ssp. cuyamacae Cuyamaca larkspur	PDRAN0B0U1	None	Rare	G4T2	S2	1B.2
Downingia concolor var. brevior Cuyamaca Lake downingia	PDCAM06041	None	Endangered	G4T1	S1	1B.1
Dudleya variegata variegated dudleya	PDCRA040R0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Ericameria cuneata var. macrocephala Laguna Mountains goldenbush	PDAST3L062	None	None	G5T3	S3	1B.3
Ericameria palmeri var. palmeri Palmer's goldenbush	PDAST3L0C1	None	None	G4T2?	S2	1B.1
Eriogonum evanidum vanishing wild buckwheat	PDPGN08780	None	None	G2	S1	1B.1
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Euphorbia abramsiana Abrams' spurge	PDEUP0D010	None	None	G4	S2	2B.2
Euphydryas editha quino quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Ferocactus viridescens San Diego barrel cactus	PDCAC08060	None	None	G3?	S2S3	2B.1
Fraxinus parryi chaparral ash	PDOLE040K0	None	None	G3?	S1	2B.2
Fremontodendron mexicanum Mexican flannelbush	PDSTE03020	Endangered	Rare	G1	S1	1B.1
Geraea viscida sticky geraea	PDAST42020	None	None	G3	S3	2B.3
Githopsis diffusa ssp. filicaulis Mission Canyon bluecup	PDCAM07023	None	None	G5T1Q	S1	3.1
Grindelia hallii San Diego gumplant	PDAST470D4	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Halictus harmonius haromonius halictid bee	IIHYM75010	None	None	G1	S1	
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Helminthoglypta milleri peak shoulderband	IMGASC2560	None	None	G1	S1	
Hesperocyparis forbesii Tecate cypress	PGCUP040C0	None	None	G2	S2	1B.1
Hesperocyparis stephensonii Cuyamaca cypress	PGCUP040B0	None	None	G1	S1	1B.1
Heuchera brevistaminea Laguna Mountains alumroot	PDSAX0E050	None	None	G3	S3	1B.3
Heuchera rubescens var. versicolor San Diego County alumroot	PDSAX0E106	None	None	G5T4	S2	3.3
Horkelia truncata Ramona horkelia	PDROS0W0G0	None	None	G3	S3	1B.3
Hulsea californica San Diego sunflower	PDAST4Z030	None	None	G3	S3	1B.3
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Iva hayesiana San Diego marsh-elder	PDAST580A0	None	None	G3?	S2	2B.2
Juncus luciensis Santa Lucia dwarf rush	PMJUN013J0	None	None	G3	S3	1B.2
Lampropeltis zonata (pulchra) California mountain kingsnake (San Diego population)	ARADB19063	None	None	G4G5	S1S2	WL
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lepechinia ganderi Gander's pitcher sage	PDLAM0V040	None	None	G3?	S3	1B.3
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lewisia brachycalyx short-sepaled lewisia	PDPOR04010	None	None	G4	S2	2B.2
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Limnanthes alba ssp. parishii Parish's meadowfoam	PDLIM02052	None	Endangered	G3T2T3	S2S3	1B.2
Linanthus bellus desert beauty	PDPLM09070	None	None	G2G3	S2	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Linanthus orcuttii Orcutt's linanthus	PDPLM090X0	None	None	G3	S2	1B.3
Lycaena hermes Hermes copper butterfly	IILEPC1160	Candidate	None	G1	S1	
Macrotus californicus California leaf-nosed bat	AMACB01010	None	None	G4	S3	SSC
Monardella hypoleuca ssp. lanata felt-leaved monardella	PDLAM180A2	None	None	G4T3	S3	1B.2
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Myotis ciliolabrum western small-footed myotis	AMACC01140	None	None	G5	S3	
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis volans long-legged myotis	AMACC01110	None	None	G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Navarretia peninsularis Baja navarretia	PDPLM0C0L0	None	None	G3	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nolina interrata Dehesa nolina	PMAGA08070	None	Endangered	G2	S2	1B.1
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Packera ganderi Gander's ragwort	PDAST8H1F0	None	Rare	G2	S2	1B.2
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plestiodon skiltonianus interparietalis Coronado Island skink	ARACH01114	None	None	G5T2T3Q	S1S2	WL
Poa atropurpurea San Bernardino blue grass	PMPOA4Z0A0	Endangered	None	G2	S2	1B.2
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Ribes canthariforme Moreno currant	PDGRO02070	None	None	G2	S2	1B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rubus glaucifolius var. ganderi Cuyamaca raspberry	PDROS1K2N1	None	None	G5T1Q	S1	3.1
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
Salvia munzii Munz's sage	PDLAM1S140	None	None	G2	S2	2B.2
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Selaginella eremophila desert spike-moss	PPSEL010G0	None	None	G4	S2S3	2B.2
Senna covesii Cove's cassia	PDFAB491X0	None	None	G5	S3	2B.2
Sibaropsis hammittii Hammitt's clay-cress	PDBRA32010	None	None	G2	S2	1B.2
Sidalcea neomexicana Salt Spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Interior Cypress Forest Southern Interior Cypress Forest	CTT83230CA	None	None	G2	S2.1	
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Sphenopholis obtusata prairie wedge grass	PMPOA5T030	None	None	G5	S2	2B.2
Stemodia durantifolia purple stemodia	PDSCR1U010	None	None	G5	S2	2B.1
Streptanthus bernardinus Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
Streptanthus campestris southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tetracoccus dioicus Parry's tetracoccus	PDEUP1C010	None	None	G3?	S2	1B.2
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Thermopsis californica var. semota velvety false lupine	PDFAB3Z013	None	None	G4T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						

Record Count: 124

CNPS California Native Plant Society Rare and Endangered Plant Inventory

Plant List

110 matches found. *Click on scientific name for details*

Search Criteria

Found in 9 Quads around 32116G6

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Acanthomintha ilicifolia	San Diego thorn-mint	Lamiaceae	annual herb	1B.1	S1	G1
Ambrosia monogyra	singlewhorl burrobrush	Asteraceae	perennial shrub	2B.2	S2	G5
Ambrosia pumila	San Diego ambrosia	Asteraceae	perennial rhizomatous herb	1B.1	S1	G1
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5?T3T4
Arctostaphylos otayensis	Otay manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G2
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	4.2	S3?	G3G4
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	4.2	S4	G4
Astragalus deanei	Dean's milk-vetch	Fabaceae	perennial herb	1B.1	S1	G1
Astragalus douglasii var. perstrictus	Jacumba milk-vetch	Fabaceae	perennial herb	1B.2	S2?	G5T2?
Astragalus oocarpus	San Diego milk-vetch	Fabaceae	perennial herb	1B.2	S2?	G2?
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	1B.2	S2	G4
Ayenia compacta	California ayenia	Malvaceae	perennial herb	2B.3	S3	G4
Baccharis vanessae	Encinitas baccharis	Asteraceae	perennial deciduous shrub	1B.1	S1	G1
Bloomeria clevelandii	San Diego goldenstar	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
Boechera hirshbergiae	Hirshberg's rockcress	Brassicaceae	perennial herb	1B.2	S1	G1Q
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S4	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.2	S3?	G3?
Calochortus dunnii	Dunn's mariposa lily	Liliaceae	perennial bulbiferous herb	1B.2	S2S3	G2G3
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	3	S4	G4
Carex obispoensis	San Luis Obispo sedge	Cyperaceae	perennial rhizomatous herb	1B.2	S2S3	G2G3
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	4.2	S4	G4
Ceanothus cyaneus	Lakeside ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	S2	G2
Ceanothus otayensis	Otay Mountain ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	S1	G1G2

Ceanothus verrucosus	wart-stemmed ceanothus	Rhamnaceae	perennial evergreen shrub	2B.2	S2	G3
Chaenactis parishii	Parish's chaenactis	Asteraceae	perennial herb	1B.3	S3	G3G4
Chamaebatia australis	southern mountain misery	Rosaceae	perennial evergreen shrub	4.2	S4	G4
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	4.2	S3	G3
Chorizanthe polygonoides var. longispina	long-spined spineflower	Polygonaceae	annual herb	1B.2	S3	G5T3
Clarkia delicata	delicate clarkia	Onagraceae	annual herb	1B.2	S3	G3
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	1B.2	S2	G2
Comarostaphylis diversifolia ssp. diversifolia	summer holly	Ericaceae	perennial evergreen shrub	1B.2	S2	G3T2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cordylanthus rigidus ssp. brevibracteatus	short-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	4.3	S4	G5T4
Cylindropuntia californica var. californica	snake cholla	Cactaceae	perennial stem succulent	1B.1	S1	G3T2
Deinandra conjugens	Otay tarplant	Asteraceae	annual herb	1B.1	S1	G1
Deinandra floribunda	Tecate tarplant	Asteraceae	annual herb	1B.2	S2	G2
Delphinium hesperium ssp. cuyamacae	Cuyamaca larkspur	Ranunculaceae	perennial herb	1B.2	S2	G4T2
Delphinium parishii ssp. subglobosum	Colorado Desert larkspur	Ranunculaceae	perennial herb	4.3	S4	G4T4
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	4.2	S3S4	G3G4
Downingia concolor var. brevior	Cuyamaca Lake downingia	Campanulaceae	annual herb	1B.1	S1	G4T1
Dudleya variegata	variegated dudleya	Crassulaceae	perennial herb	1B.2	S2	G2
Ericameria cuneata var. macrocephala	Laguna Mountains goldenbush	Asteraceae	perennial shrub	1B.3	S3	G5T3
Ericameria palmeri var. palmeri	Palmer's goldenbush	Asteraceae	perennial evergreen shrub	1B.1	S2	G4T2?
Eriogonum evanidum	vanishing wild buckwheat	Polygonaceae	annual herb	1B.1	S1	G2
Euphorbia abramsiana	Abrams' spurge	Euphorbiaceae	annual herb	2B.2	S2	G4
Ferocactus viridescens	San Diego barrel cactus	Cactaceae	perennial stem succulent	2B.1	S2S3	G3?
Fraxinus parryi	chaparral ash	Oleaceae	perennial shrub	2B.2	S1	G3?
Fremontodendron mexicanum	Mexican flannelbush	Malvaceae	perennial evergreen shrub	1B.1	S1	G1
Geraea viscida	sticky geraea	Asteraceae	perennial herb	2B.3	S3	G3
Githopsis diffusa ssp. filicaulis	Mission Canyon bluecup	Campanulaceae	annual herb	3.1	S1	G5T2T3
Grindelia hallii	San Diego gumplant	Asteraceae	perennial herb	1B.2	S2	G2
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	4.2	S3	G4
Hesperocyparis forbesii	Tecate cypress	Cupressaceae	perennial evergreen tree	1B.1	S2	G2
Hesperocyparis stephensonii	Cuyamaca cypress	Cupressaceae	perennial evergreen tree	1B.1	S1	G1
Heuchera brevistaminea	Laguna Mountains alumroot	Saxifragaceae	perennial rhizomatous herb	1B.3	S3	G3

Heuchera rubescens var. versicolor	San Diego County alumroot	Saxifragaceae	perennial rhizomatous herb	3.3	S2	G5T4
Holocarpha virgata ssp. elongata	graceful tarplant	Asteraceae	annual herb	4.2	S3	G5T3
Horkelia truncata	Ramona horkelia	Rosaceae	perennial herb	1B.3	S3	G3
Hulsea californica	San Diego sunflower	Asteraceae	perennial herb	1B.3	S3	G3
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	1B.2	S2	G3G5T2T3
Iva hayesiana	San Diego marsh-elder	Asteraceae	perennial herb	2B.2	S2	G3?
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	4.2	S4	G5T5
Juncus luciensis	Santa Lucia dwarf rush	Juncaceae	annual herb	1B.2	S3	G3
Lathyrus splendens	pride-of-California	Fabaceae	perennial herb	4.3	S4	G5
Lepechinia ganderi	Gander's pitcher sage	Lamiaceae	perennial shrub	1B.3	S3	G3?
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	4.3	S3	G5T3
Lewisia brachycalyx	short-sepaled lewisia	Montiaceae	perennial herb	2B.2	S2	G4
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	1B.2	S3	G3
Limnanthes alba ssp. parishii	Parish's meadowfoam	Limnanthaceae	annual herb	1B.2	S2S3	G3T2T3
Linanthus bellus	desert beauty	Polemoniaceae	annual herb	2B.1	S2	G2G3
Linanthus orcuttii	Orcutt's linanthus	Polemoniaceae	annual herb	1B.3	S2	G3
Microseris douglasii ssp. platycarpha	small-flowered microseris	Asteraceae	annual herb	4.2	S4	G4T4
Mimulus clevelandii	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	4.2	S4	G4
Mimulus diffusus	Palomar monkeyflower	Phrymaceae	annual herb	4.3	S3	G4Q
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Lamiaceae	perennial rhizomatous herb	1B.2	S3	G4T3
Monardella macrantha ssp. hallii	Hall's monardella	Lamiaceae	perennial rhizomatous herb	1B.3	S3	G5T3
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	3.1	S2	G5T2Q
Navarretia peninsularis	Baja navarretia	Polemoniaceae	annual herb	1B.2	S2	G3
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	1B.2	S3	G3
Nolina interrata	Dehesa nolina	Ruscaceae	perennial herb	1B.1	S2	G2
Packera ganderi	Gander's ragwort	Asteraceae	perennial herb	1B.2	S2	G2
Pentachaeta aurea ssp. aurea	golden-rayed pentachaeta	Asteraceae	annual herb	4.2	S3	G4T3
Pickeringia montana var. tomentosa	woolly chaparral-pea	Fabaceae	evergreen shrub	4.3	S3S4	G5T3T4
Piperia colemanii	Coleman's rein orchid	Orchidaceae	perennial herb	4.3	S4	G4
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	4.2	S3	G3
Plagiobryoides vinosula	wine-colored tufa moss	Bryaceae	moss	4.2	S2	G3G4
Poa atropurpurea	San Bernardino blue grass	Poaceae	perennial rhizomatous herb	1B.2	S2	G2
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	perennial deciduous shrub	4.3	S4	G5T4
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	1B.1	S3	G3

Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	4.2	S3	G3
Ribes canthariforme	Moreno currant	Grossulariaceae	perennial deciduous shrub	1B.3	S2	G2
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	4.2	S4	G4
Rubus glaucifolius var. ganderi	Cuyamaca raspberry	Rosaceae	perennial evergreen shrub	3.1	S1	G5T1Q
Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	4.3	S4	G4
Salvia munzii	Munz's sage	Lamiaceae	perennial evergreen shrub	2B.2	S2	G2
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	1B.2	S3	G4T3
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb	4.1	S3	G3G4
Senna covesii	Coves' cassia	Fabaceae	perennial herb	2B.2	S3	G5
Sibaropsis hammittii	Hammitt's clay-cress	Brassicaceae	annual herb	1B.2	S2	G2
Sphenopholis obtusata	prairie wedge grass	Poaceae	perennial herb	2B.2	S2	G5
Stemodia durantifolia	purple stemodia	Plantaginaceae	perennial herb	2B.1	S2	G5
Stipa diegoensis	San Diego County needle grass	Poaceae	perennial herb	4.2	S4	G4
Streptanthus bernardinus	Laguna Mountains jewelflower	Brassicaceae	perennial herb	4.3	S3S4	G3G4
Streptanthus campestris	southern jewelflower	Brassicaceae	perennial herb	1B.3	S3	G3
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	1B.2	S2	G3?
Thermopsis californica var. semota	velvety false lupine	Fabaceae	perennial rhizomatous herb	1B.2	S2	G4T2
Viguiera laciniata	San Diego County viguiera	Asteraceae	perennial shrub	4.2	S4	G4
Xanthisma junceum	rush-like bristleweed	Asteraceae	perennial herb	4.3	S4	G5

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Appendix G

Cultural Resource Technical Report

SUNCREST DYNAMIC REACTIVE POWER SUPPORT PROJECT CULTURAL RESOURCES TECHNICAL REPORT

August 2015, Revised November 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).

For Public Distribution – Confidential Information Redacted

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

Prepared for

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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; Revised November 12, 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~~ full-time monitoring of construction activities by a qualified archaeological and Native American monitors; 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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Appendix C. Native American Coordination Documentation
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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

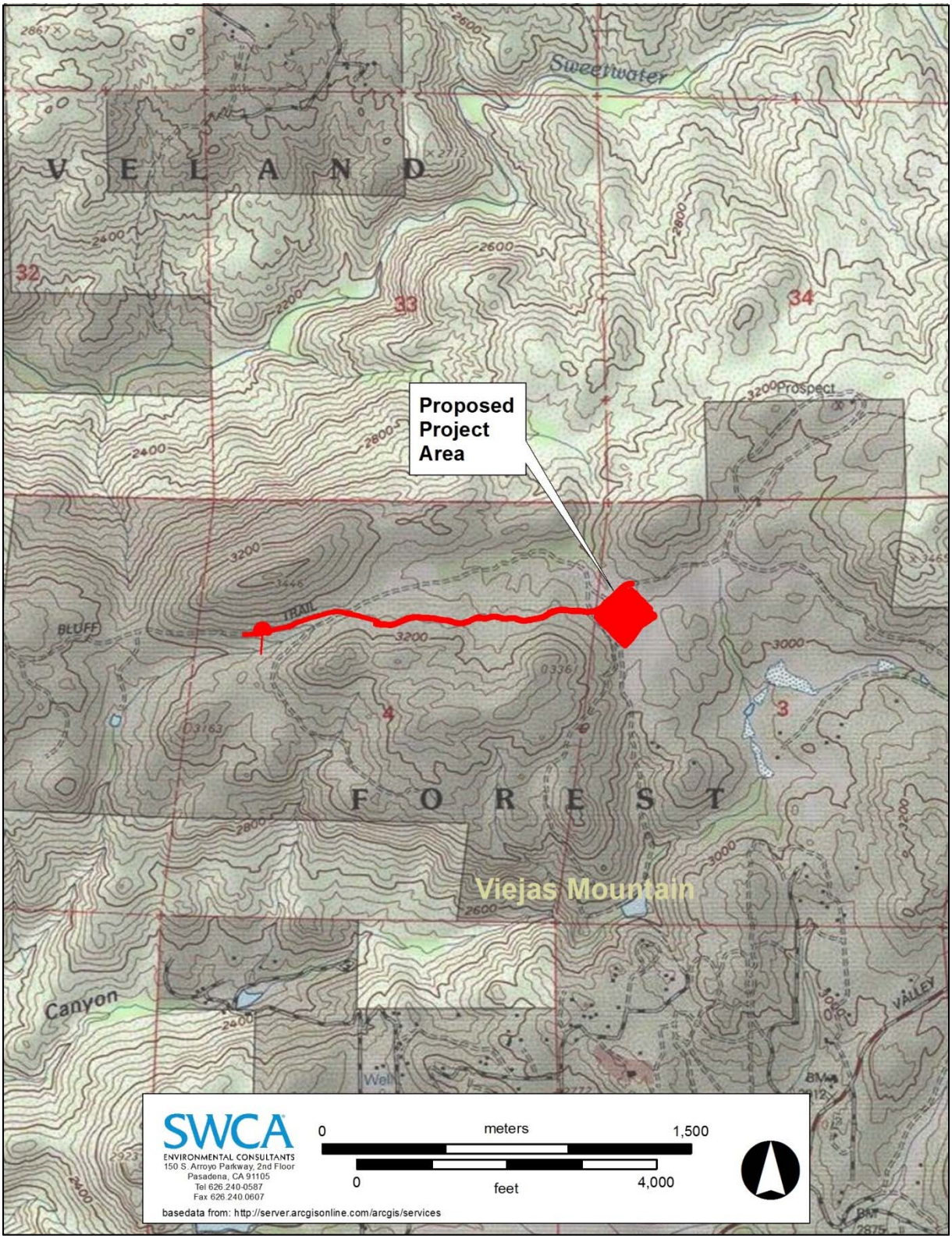


Figure 3. Proposed Project Area, Cultural Resources Survey Area, and Records Search Area

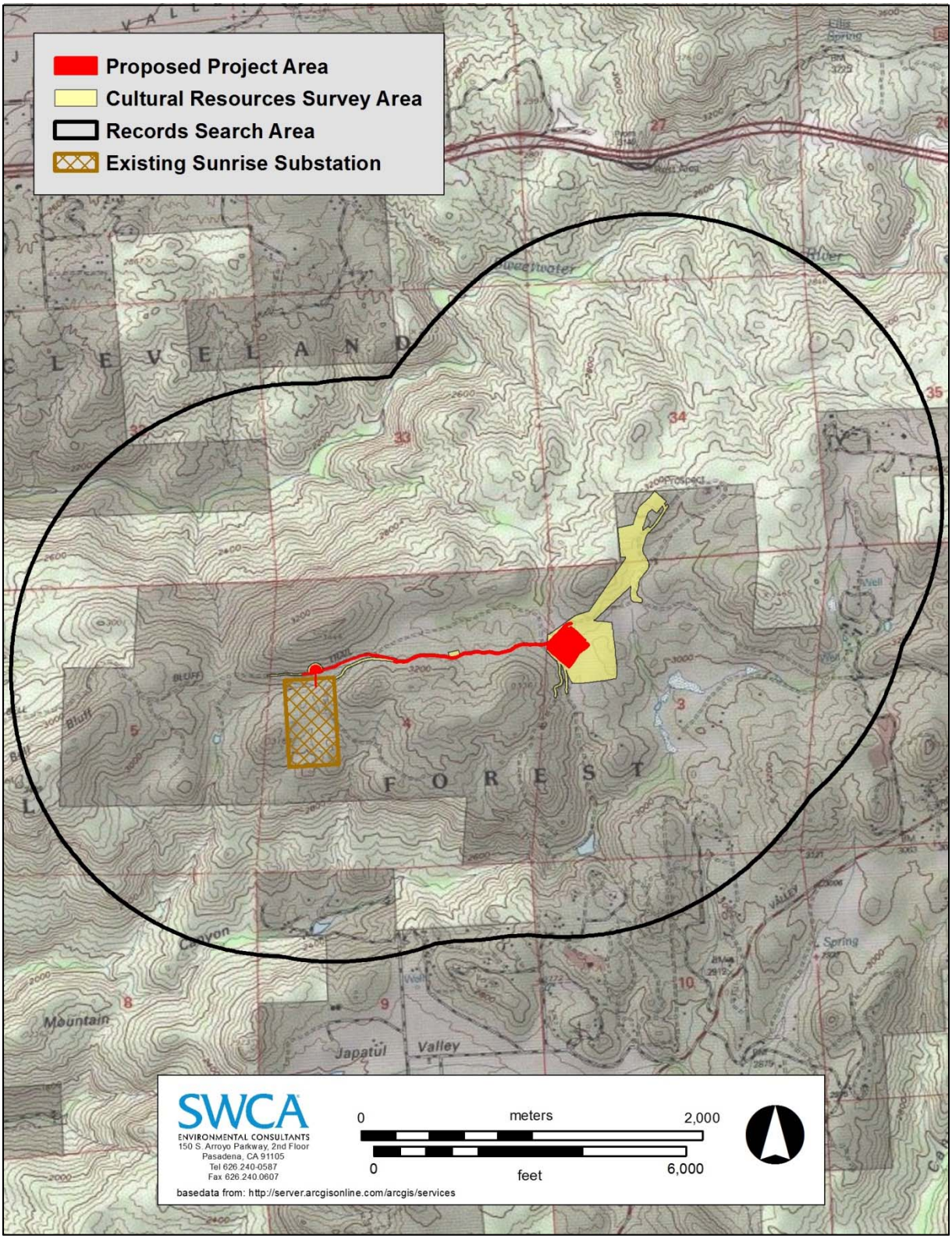
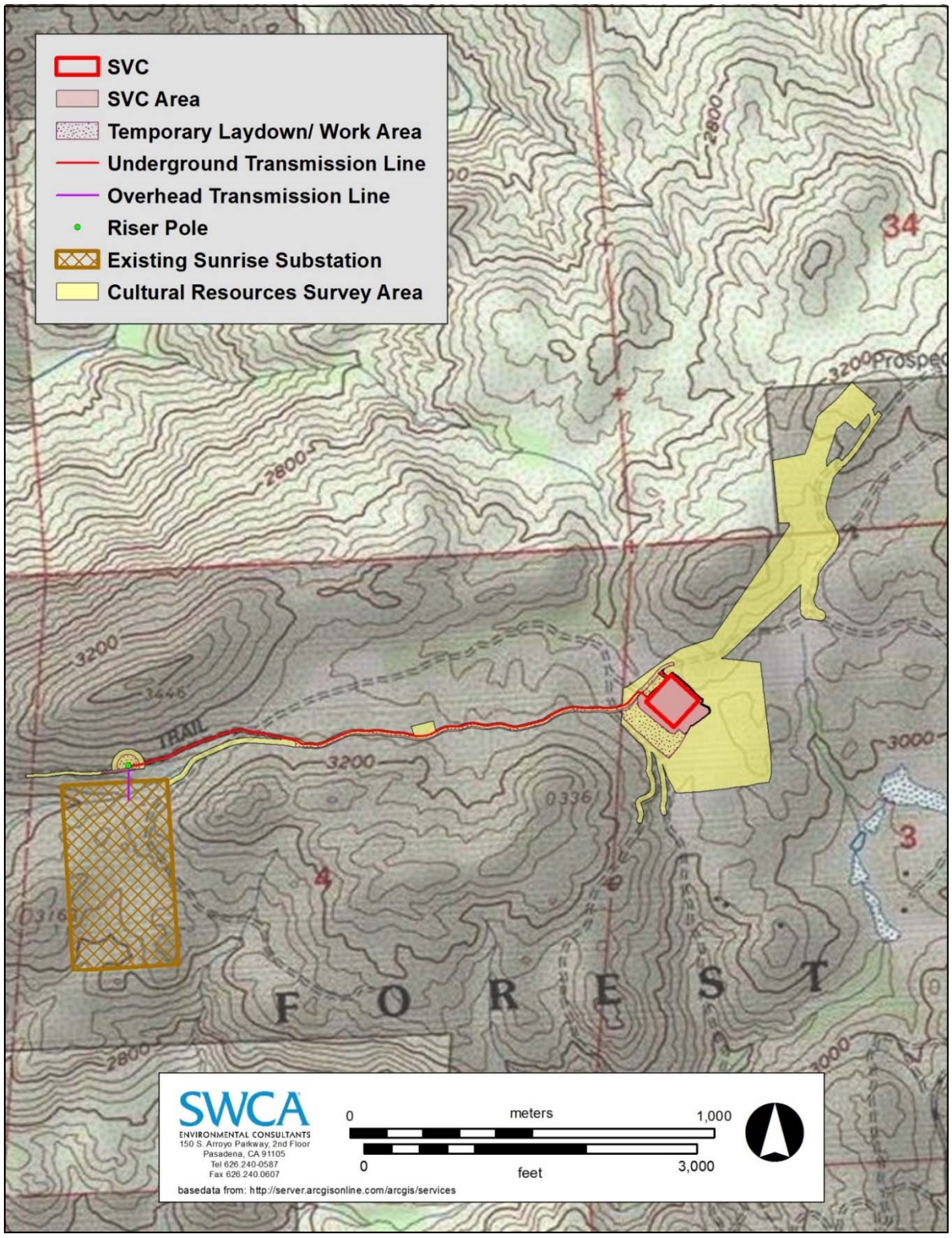


Figure 4. Major Proposed Project Components and Cultural Resources Survey Area



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 is not anticipated at the SVC site, but may be required for transmission line and splice vault excavations on less than 10 percent of the transmission line. ~~may occur during excavation for approximately 15 to 20 percent of the proposed underground transmission line.~~ 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 exaction 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 polices 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 discuses 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 discuses 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. Other than the SVC location, most of the Proposed Project Area is located on or adjacent to slopes where the depositional context is not conducive to sediment accumulation. 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 is 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 residentially 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 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, Cuyapaipe, 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 Purisima Concepción de la Virgén Santisima 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 ranchero 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
Ewiiaapaayp Tribal Office Robert Pinto Sr., Chairperson 4054 Willows Road Alpine, CA 91901 wmicklin@leaningrock.net (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 Rhunter1948@yahoo.com (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 ssilva@sycuan-nsn.gov (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 jhagen@vlejas-nsn.gov (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 sbanegas50@gmail.com (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

Native American Contact	Letter Sent	Follow-Ups	Results
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 jhagen@viejas-nsn.gov (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.
Ewiiaapaayp Tribal Office Will Micklin, Executive Director 4054 Willows Road Alpine, CA 91901 wmicklin@leaningrock.net (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 frbrown@viejas-nsn.gov (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 cjlinton73@aol.com (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 bernicepaipa@gmail.com	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

Native American Contact	Letter Sent	Follow-Ups	Results
Iipay 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 kimbactad@gmail.com (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.

In addition to reviewing the results of the SCIC records search, SWCA contacted SDG&E to request copies of reports for archaeological monitoring conducted as part of the Sunrise Powerlink Project.

SDG&E provided one report, which was reviewed for information pertaining to resources located in the Records Search Area (Kyle and Williams 2013).

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 SCIC 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. Two of these studies are cultural resources surveys that were conducted within the Proposed Project Area within the last 10 years (SD-12046 and SD-12711). One additional study (Kyle and Williams 2013) was not included in the SCIC results but was provided to SWCA by SDG&E; this study documents the results of cultural resources monitoring during construction of the Sunrise Powerlink. Details pertaining to these investigations are presented in Table 2.

Table 2. Prior Cultural Resource Studies within the Records Search Area

Report Number	Author	Year	Study Title	Proximity to Survey Area	Proximity to Proposed Project Area
SD-00293	Carrico, Richard	Unknown	*Archaeological Investigation of TPM 13476 Willows Road Alpine, California*	Outside	Outside

Table 2. Prior Cultural Resource Studies within the Records Search Area

Report Number	Author	Year	Study Title	Proximity to Survey Area	Proximity to Proposed Project Area
SD-00614	Fink, Gary R.	1974	*Archaeological Survey for the Proposed Descanso Landfill, Descanso, California, Project No. UJ0112*	Outside	Outside
SD-00617	Fink, Gary R.	1973	*Archaeological Survey of the Descanso Landfill Site*	Outside	Outside
SD-01261	Isham, Dana	1974	*An Archaeological Survey of Some Rock Circles in the Japatul Valley, San Diego County, California.*	Outside	Outside
SD-01551	Swenson, James D., and Phillip J. Wilke	1980	*An Assessment of Cultural Resources Located on the Viejas Indian Reservation, San Diego County, California*	Outside	Outside
SD-01648	Welch, Patrick	1977	*Archaeological Reconnaissance of the Proposed Alpine Recreational Vehicle Park*	Outside	Outside
SD-02116	TMI Environmental Services	1989	*Draft Environmental Impact Report Tully General Plan Amendment Alpine Community Plan Update (GPA 89-03)*	Outside	Outside
SD-04221	Crouthamel, Steven J.	1994	*An Archaeological Survey of the Viejas Indian Reservation of 10 Scattered Housing Sites, CA 80-60, in the Viejas Mtn, Quad (7.5 minute)*	Outside	Outside
SD-05851	Crouthamel, Steven J.	1991	*Archaeological Site Survey of the Viejas Indian Reservation, San Diego County, California, Proposed House Sites CA 80-56*	Outside	Outside
SD-06425	Carrico, Richard	1990	*Historic Resources Inventory Sweetwater Valley*	Within	Within
SD-07107	Welch, Pat	1977	*An Archaeological Survey of the Claus Property, Escondido*	Outside	Outside
SD-07825	Nighabhlain, Sinead, and Drew Pallette	2000	*Archaeology Survey for the Viejas Water Distribution System Improvement Project Viejas Indian Reservation, California*	Outside	Outside
SD-07827	Nighabhlain, Sinead, and Drew Pallette	2000	*Cultural Resource Survey of Four Properties for the Viejas Fee-To-Trust Transfer Application, Alpine, California*	Outside	Outside

Table 2. Prior Cultural Resource Studies within the Records Search Area

Report Number	Author	Year	Study Title	Proximity to Survey Area	Proximity to Proposed Project Area
SD-10217	Rosen, Martin D., and Lori Harrington	2005	*Qwest Viejas Relocation Project Historic Property Survey Report and Negative Archaeological Survey Report*	Outside	Outside
SD-10476	Carrico, Richard L.	1974	*Archaeological Reconnaissance of Rezone Request R74-53*	Outside	Outside
SD-10551	Arrington, Cindy	2006	*Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California*	Outside	Outside
SD-10997	Carrico, Richard L., Theodore G. Cooley, and Laura J. Barrie	2003	*Final Archaeological Overview for the Cleveland National Forest, California*	Within	Within
SD-11977	SWCA Environmental Consultants	2008	*Final Cultural Resources Survey of Alternatives for the Sunrise Powerlink Project in Imperial, Orange, Riverside, and San Diego Counties, California*	Within	Within
SD-12046	Noah, Anna C.	2008	*Cultural Resources Study of the Modified Route D Substation and Access Road for the SDG&E Sunrise Powerlink Project, San Diego County, California*	Within	Within
SD-12181	Mitchell, Patricia	2009	*Sunrise Powerlink Incident Report of Findings*	Outside	Outside
SD-12711	Garcia-Herbst, Arleen, David Iversen, Don Laylander, and Brian Williams	2010	*Final Inventory Report of the Cultural Resources Within the Approved San Diego Gas & Electric Sunrise Powerlink Final Environmentally Superior Southern Route, San Diego and Imperial Counties, California*	Within	Within
N/A (Report provided by SDG&E, Kyle and Williams 2013)	Kyle, Carolyn and Brian Williams	2013	*Archaeological Resources Monitoring Results for Construction of San Diego Gas & Electric's Sunrise Powerlink Project, San Diego and Imperial Counties, California*	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, which was determined not eligible for the CRHR and NRHP by the CPUC (Kyle and Williams 2013). Details pertaining to these sites are presented in Table 3.

Two additional prehistoric archaeological sites in the immediate vicinity of the Proposed Project Area (P-37-029773/CA-SDI-19036 and P-37-031970/CA-SDI-20239) have been evaluated and determined not eligible for the CRHR and NRHP by the CPUC and the Bureau of Land Management as part of the Sunrise Powerlink. Site P-37-029773/CA-SDI-19036 is a large site which includes lithic scatters, ground stone, bedrock mortars, and hearths. Prehistoric archaeological site P-37-029774/CA-SDI-19037, which was originally recorded as a separate site, was incorporated into CA-SDI-19036 prior to evaluation. Although the site records indicate it was originally recommended eligible, CA-SDI-19036 was evaluated and determined not eligible prior to construction of the Suncrest Substation; some subsurface materials were recovered during construction monitoring at the site, but this did not affect the evaluation (Kyle and Williams 2013). Site P-37-031970/CA-SDI-20239 is a small flaked and ground stone scatter with no identified intact subsurface component; the site was evaluated prior to construction of the Suncrest Substation and determined not eligible (Kyle and Williams 2013).

Table 3. Previously Recorded Cultural Resources within the Records Search Area

Primary Number	Trinomial	Type	Resource Description	CRHR/NRHP/ SHL Eligibility Status	Recorded By and Year	Proximity to Survey Area	Proximity to Proposed Project Area
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~~ Not 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 (subsumed into CA-SDI-19036)	Prehistoric site	Bedrock milling features and lithic scatter	Not evaluated individually; found not eligible for NRHP/CRHR as part of CA-SDI-19036	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

Primary Number	Trinomial	Type	Resource Description	CRHR/NRHP/ SHL Eligibility Status	Recorded By and Year	Proximity to Survey Area	Proximity to Proposed Project Area
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-19793~~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	Not eligible for NRHP/CRHR~~Unknown~~	Piek, L., B. Williams, and B. Comeau 2011	Within	Within
P-37-031970	CA-SDI-20239	Prehistoric site	Lithic scatter	Not eligible for NRHP/CRHR~~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 adjacent areas, as well as 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 underground transmission line is located primarily within Bell Bluff Truck Trail, and~~;~~ 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

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
–	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

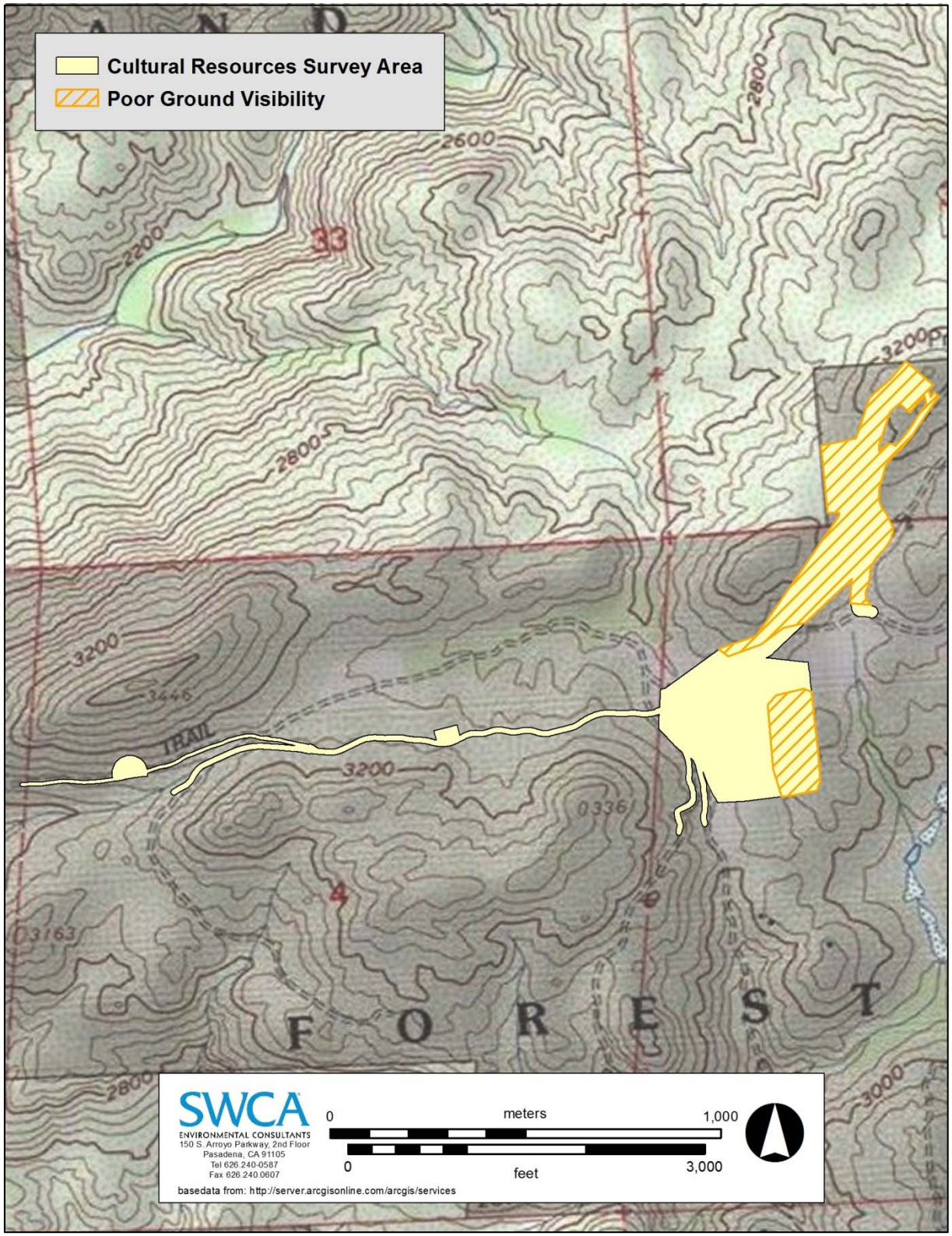


Figure 6. Overview of SVC Location, View to the East



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.

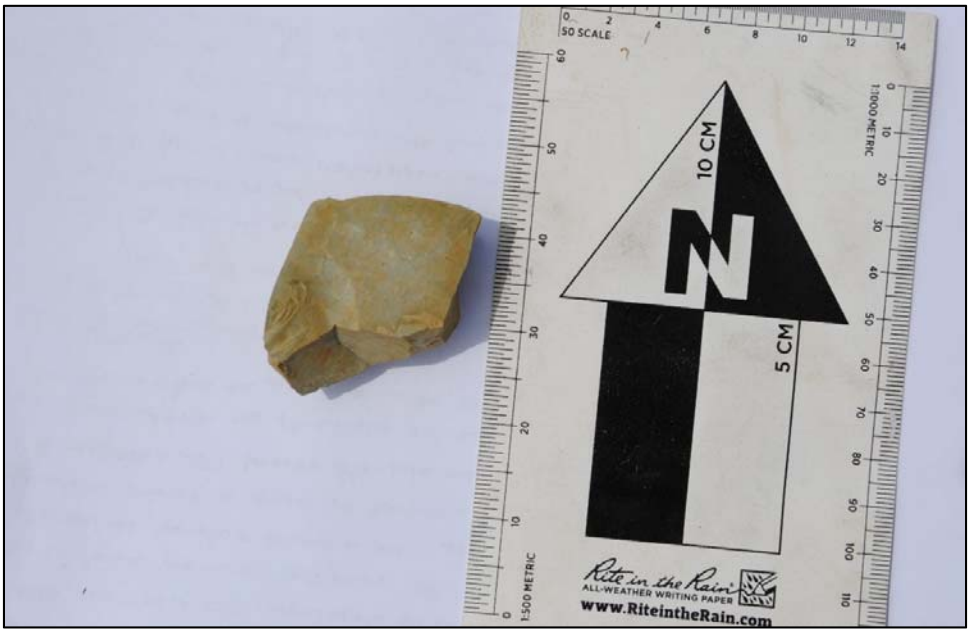
The granite outcrop is oriented north-south and was originally measured in 2008 to be 0.7 × 1.0 × 0.3 m (2 feet 3 ½ inches × 3 feet 3 ⅜ inches × 1 foot). Upon measuring the outcrop for the 2015 site update,

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 × 20 centimeters (cm) (3 $^{1}/_{8}$ inches × 7 $^{7}/_{8}$ 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 × 3.7 cm (2 inches × 1 $^{7}/_{16}$ inches) and is 2.7 cm (1 $^{1}/_{16}$ 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 [$^{13}/_{16}$ 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 × 17 m (101 feet 8 ½ inches × 55 feet 9 $^{3}/_{8}$ inches)
Proximity to Proposed Project Area: Within

Site CA-SDI-20166 (P-37-031744) is a bedrock milling station measuring 31 × 17 m (101 feet 8 ½ inches × 55 feet 9 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 × 8 × 1 m (49 feet 2 ½ inches × 26 feet 3 inches × 3 feet 3 3/8 inches) with one partially exfoliated slick measuring 33 × 19 cm (1 foot 11 7/8 inches × 7 ½ 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 × 1.2 m (3 feet 7 $^{11}/_{16}$ inches × 3 feet 7 $^{11}/_{16}$ inches) (Figure 15). Feature 1021 is located on the west end of a large, raised, and partially exfoliated granite outcrop that measures 14 × 3 × 2.3 m (45 feet 11 $^{3}/_{16}$ inches × 9 feet 10 $^{3}/_{16}$ inches × 7 feet 6 $^{5}/_{8}$ 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 $^{3}/_{8}$ inches × 22 feet 11 $^{5}/_{8}$ 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 $^{3}/_{8}$ inches × 22 feet 11 $^{5}/_{8}$ 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 × 40 cm (1 foot 7 $^{11}/_{16}$ inches × 1 foot 3 ¾ inches), located on a granite outcrop oriented north-south and measuring 1.20 × 0.80 × 0.05 m (3 feet 11 ¼ inches × 2 feet 7 $^{7}/_{16}$ inches × 1 foot 7 $^{11}/_{16}$ 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 ($^{13}/_{16}$ 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 $^{3}/_{16}$ inches × 52 feet 5 $^{7}/_{8}$ 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 $^{3}/_{16}$ inches × 52 feet 5 $^{7}/_{8}$ 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						-	
Size Total				**2**	**2**		**4**	**4**

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 × 1.0 m (4 feet 11 inches × 3 feet 3 $^{3}/_{8}$ 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						-
Size Total			**4**	**3**			**7**

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 × 1.0 m (6 feet 6 ¾ inches × 3 feet 3 $^{3}/_{8}$ 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						-	
Size Total			**1**	**6**	**1**		**8**	**8**

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 stone debitage, 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 identified debitage 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 $^{15}/_{16}$ inches] long) gravel and cobble inclusions and few boulder-sized rocks (up to 30 cm [11 $^{13}/_{16}$ 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 $^{7}/_{8}$ inches × 65 feet 7 $^{7}/_{16}$ 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 $^{7}/_{8}$ inches × 65 feet 7 $^{7}/_{16}$ 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 × 2.7 m (18 feet ½ inch × 8 feet 10 $^{5}/_{16}$ inches). The worked surface of the feature measures 1.15 × 1.0 m (3 feet 9 ¼ inches × 3 feet 3 $^{3}/_{8}$ 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 [$^{13}/_{16}$ 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 × 12 m (49 feet 2 ½ inches × 39 feet 4 $^{7}/_{16}$ 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 × 12 m (49 feet 2 ½ inches × 39 feet 4 $^{7}/_{16}$ 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 (Pigniolo 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 on debitage 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

Isolate Number	Time Period	Description	Date Range	References	Intersecting Project Components
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

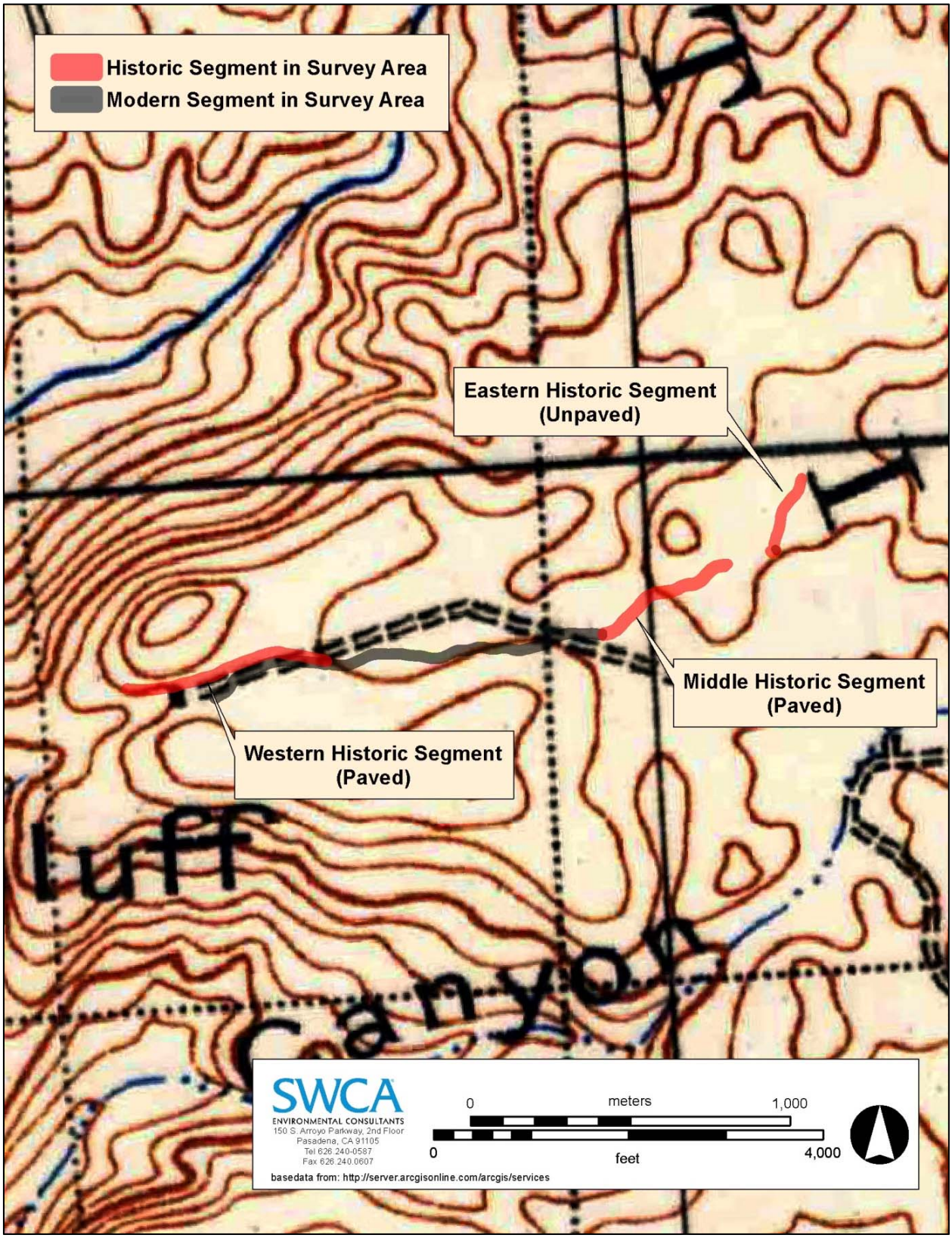


Figure 29. Segments of Bell Bluff Truck Trail in the Survey Area on a 1944 USGS Topographic Map

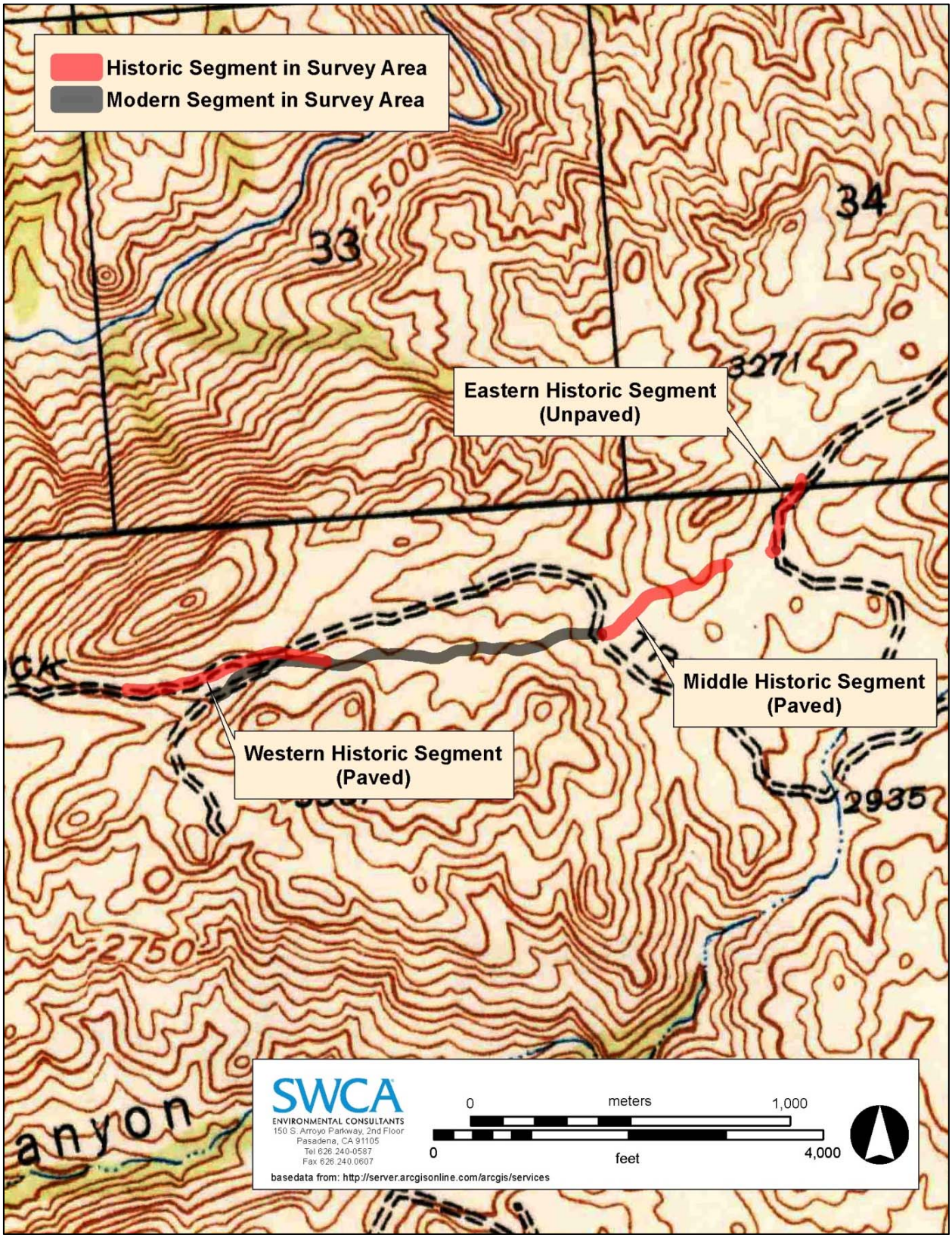
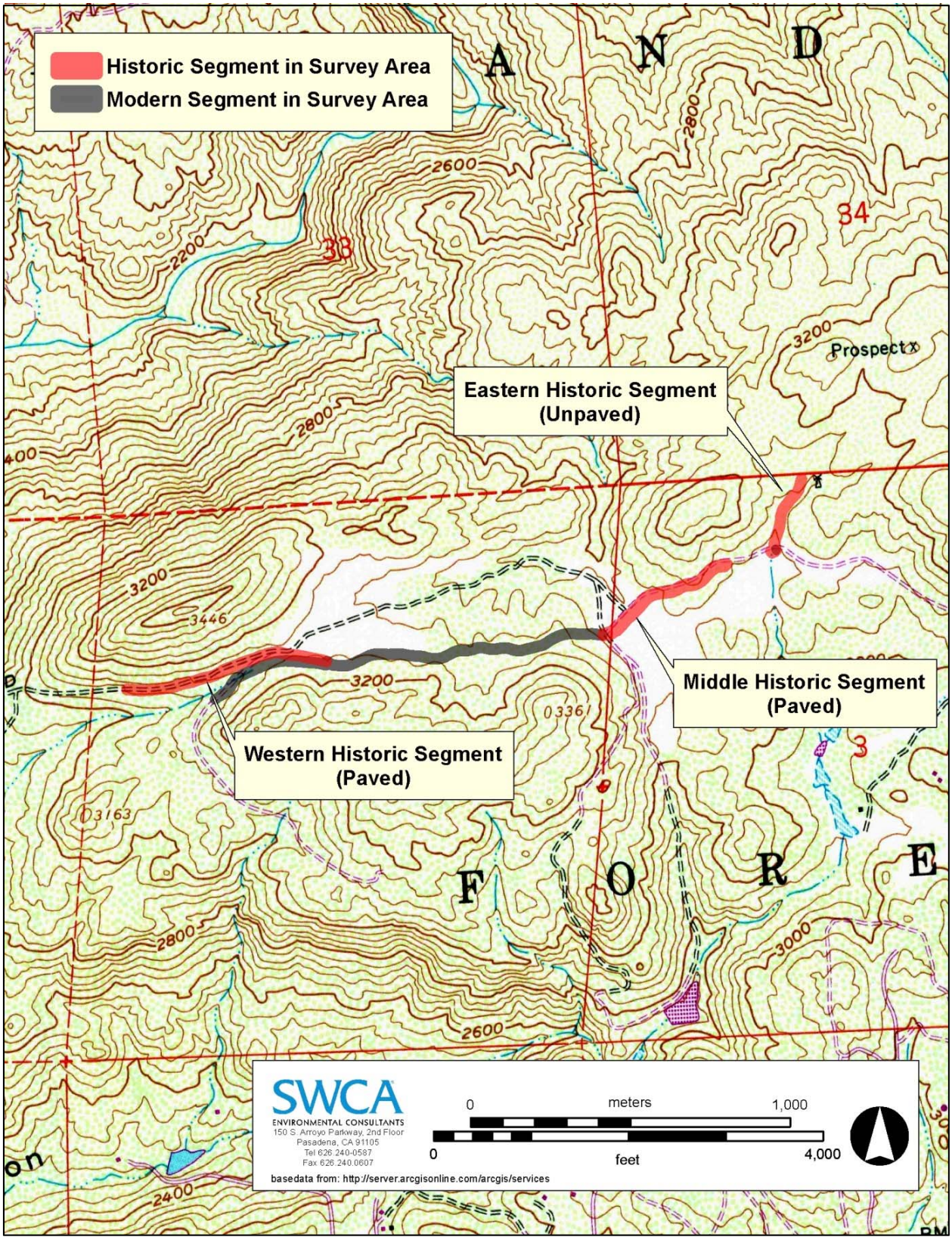


Figure 30. Segments of Bell Bluff Truck Trail in the Survey Area on a 1960 USGS Topographic Map; Photorevised in 1983



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

Primary Number	Trinomial or Temporary Number	Resource Type	Intersecting Project Components	Evaluation	Management Recommendation
	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).

The results of SWCA's survey and research indicate that it is unlikely that intact, subsurface archaeological deposits are present in the Proposed Project Area. As noted above, the SVC location has

been disturbed down to a depth of 24 inches as part of recent construction activities. The majority of the proposed underground transmission line will be located within the paved roadbed of Bell Bluff Truck Trail. Further, with the exception of the SVC site, most of the Proposed Project Area is located on slopes where the depositional context is not conducive to sediment accumulation, reducing the possibility of encountering buried deposits. Prehistoric sites in the vicinity of the project consist primarily of lithic and ground stone scatters, bedrock milling stations, or a combination of these. These types of sites typically do not have buried deposits. Of the three sites in the project vicinity that have been evaluated, two (CA-SDI-20166 and CA-SDI-20239) did not have a buried component, and the buried component of the remaining site (CA-SDI-19036) was not significant.

Further, the survey coverage of the Proposed Project Area is excellent, and it is likely that any resources present have been identified. In addition to the current study, three cultural resources studies have been conducted within the Proposed Project Area since 2008: these include two cultural resources surveys (Garcia-Herbst et. al 2010 and Noah 2008) and one construction monitoring project (Kyle and Williams 2013).

Based on background research, 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 excavations for the underground electrical transmission line in areas where~~in~~ standard excavation methods are not feasible, such as within bedrock, which is highly unlikely to contain archaeological deposits. NEET West anticipates that majority of the site can be excavated by conventional methods, although a minimal amount of hydraulic hammering or blasting may be required. 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~~Qualified archaeological and Native American monitors will be retained to conduct ~~periodic spot checking~~ full-time monitoring of initial ground disturbing activities within the Proposed Project Area. 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~~ monitoring 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~~ continue beyond initial ground disturbance.

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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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	
RSID:	964
RUSH:	yes
Hours:	1
Spatial Features:	47
Address-Mapped Shapes:	no
Digital Database Records:	0
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	105

This is not an invoice. Please pay from the monthly billing statement

Appendix C.
Native American Coordination Documentation

From:	Laura Hoffman
To:	nahc@nahc.ca.gov
Cc:	Megan Peterson; Flajole, Andy (Andy.Flajole@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, 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



SWCA®
ENVIRONMENTAL CONSULTANTS
60 Stone Pine Road, Suite 201
Half Moon Bay, CA 94109

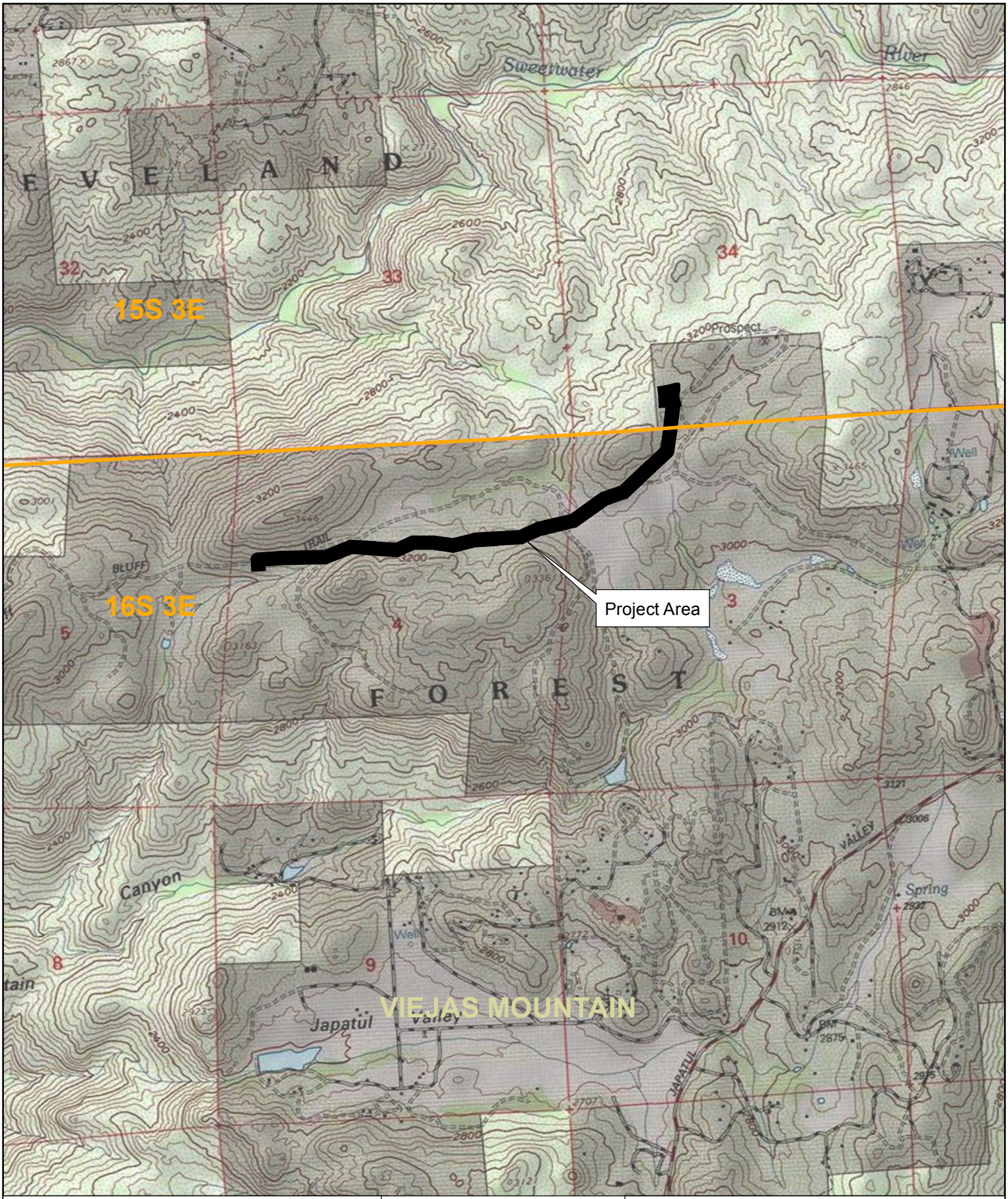
Project Vicinity Map

Suncrest Reactive Power Support Project

San Diego County — California

Project No.	Date	Scale	Figure/Drawing No.
32001	3-11-15	As Shown	1

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SWCA®
ENVIRONMENTAL CONSULTANTS
60 Stone Pine Road, Suite 201
Half Moon Bay, CA 94109

Project Location Map

Suncrest Reactive Power Support Project

San Diego County California

Project No.	Date	Scale	Figure/Drawing No.
32001	3-11-15	1:24,000	2

Path: N:\Projects\032001_NEET Suncrest Reactive Power Project\032001_NEET_Suncrest_Reactive_Power_ Project_NAHC_2.mxd

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

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

Katy Sanchez
Associate Government Program Analyst

Native American Contact List
San Diego County
April 20, 2015

Ewiiaapaayp Tribal Office
Robert Pinto Sr., Chairperson
4054 Willows Road Diegueno/Kumeyaay
Alpine , CA 91901
wmicklin@leaningrock.net
(619) 445-6315

(619) 445-9126 Fax

Jamul Indian Village
Raymond Hunter, Chairperson
P.O. Box 612 Diegueno/Kumeyaay
Jamul , CA 91935
Rhunter1948@yahoo.com
(619) 669-4785

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court Diegueno/Kumeyaay
El Cajon , CA 92019
ssilva@sycuan-nsn.gov
(619) 445-2613

(619) 445-1927 Fax

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775 Diegueno-Kwaaymii
Pine Valley , CA 91962 Kumeyaay
(619) 709-4207

Viejas Band of Kumeyaay Indians
Anthony R. Pico, Chairperson
P.O. Box 908 Diegueno/Kumeyaay
Alpine , CA 91903
jhagen@viejas-nsn.gov
(619) 445-3810

(619) 445-5337 Fax

Kumeyaay Cultural Repatriation Committee
Steve Banegas, Spokesperson
1095 Barona Road Diegueno/Kumeyaay
Lakeside , CA 92040
sbanegas50@gmail.com
(619) 742-5587

(619) 443-0681 Fax

Kumeyaay Cultural Historic Committee
Ron Christman
56 Viejas Grade Road Diegueno/Kumeyaay
Alpine , CA 91901
(619) 445-0385

Viejas Band of Kumeyaay Indians
ATTN: Julie Hagen, Cultural Resources
P.O. Box 908 Diegueno/Kumeyaay
Alpine , CA 91903
jhagen@viejas-nsn.gov
(619) 445-3810
(619) 445-5337

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

Ewiiaapaayp Tribal Office
Will Micklin, Executive Director
4054 Willows Road Diegueno/Kumeyaay
Alpine , CA 91901
wmicklin@leaningrock.net
(619) 445-6315

(619) 445-9126 Fax

Inter-Tribal Cultural Resource Protection Council
Frank Brown, Coordinator
240 Brown Road Diegueno/Kumeyaay
Alpine , CA 91901
frbrown@viejas-nsn.gov
(619) 884-6437

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

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 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

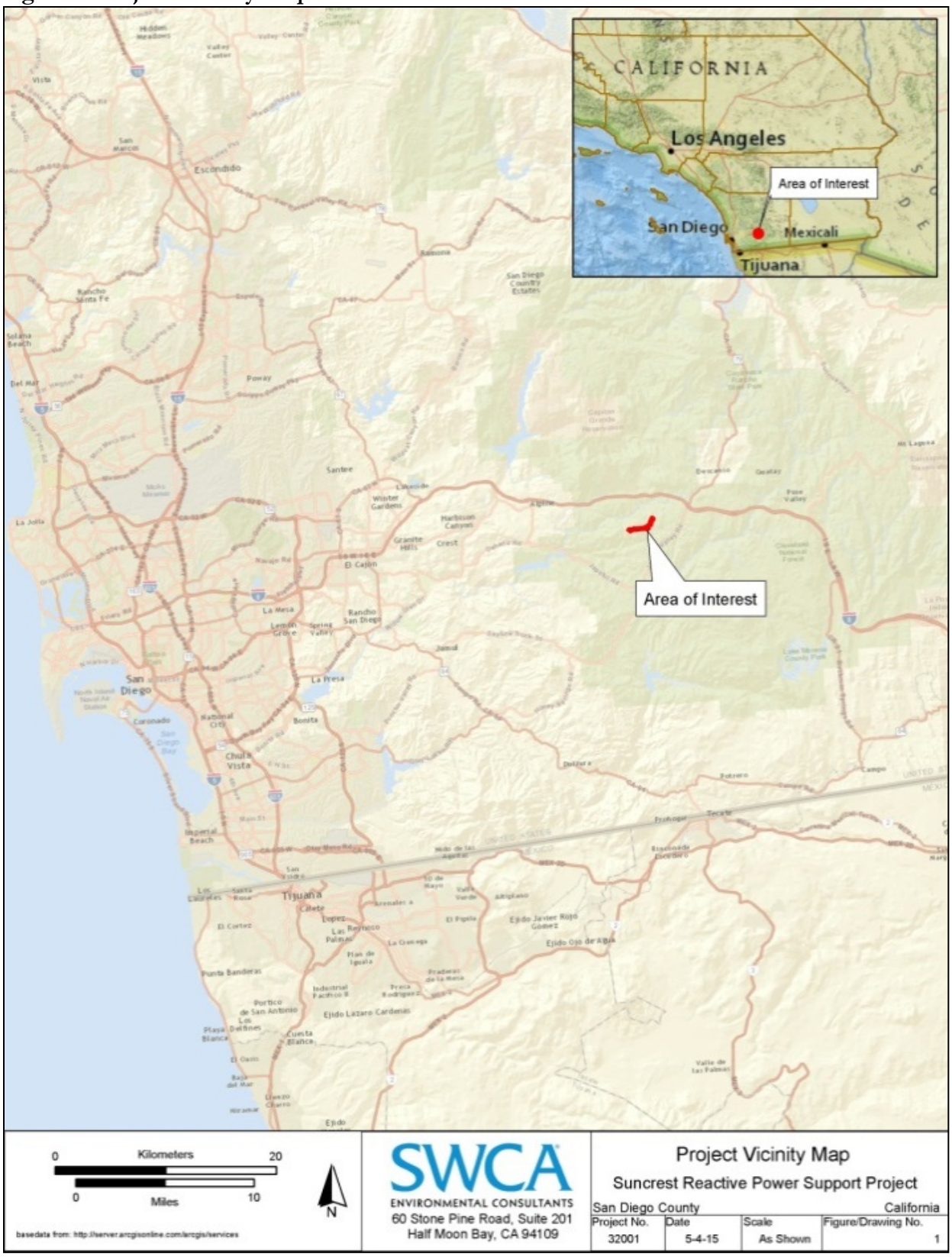
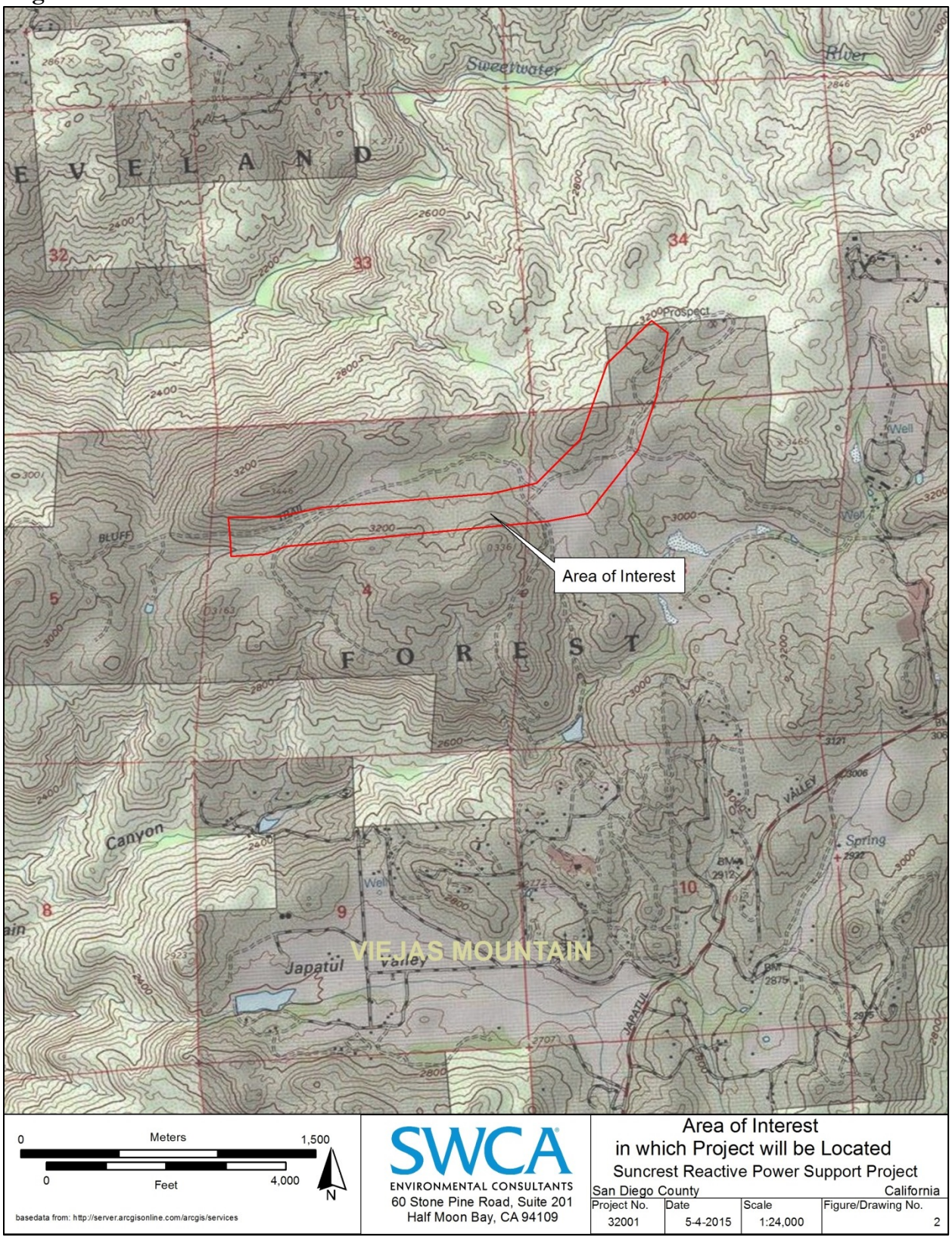


Figure 2: Area of Interest



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

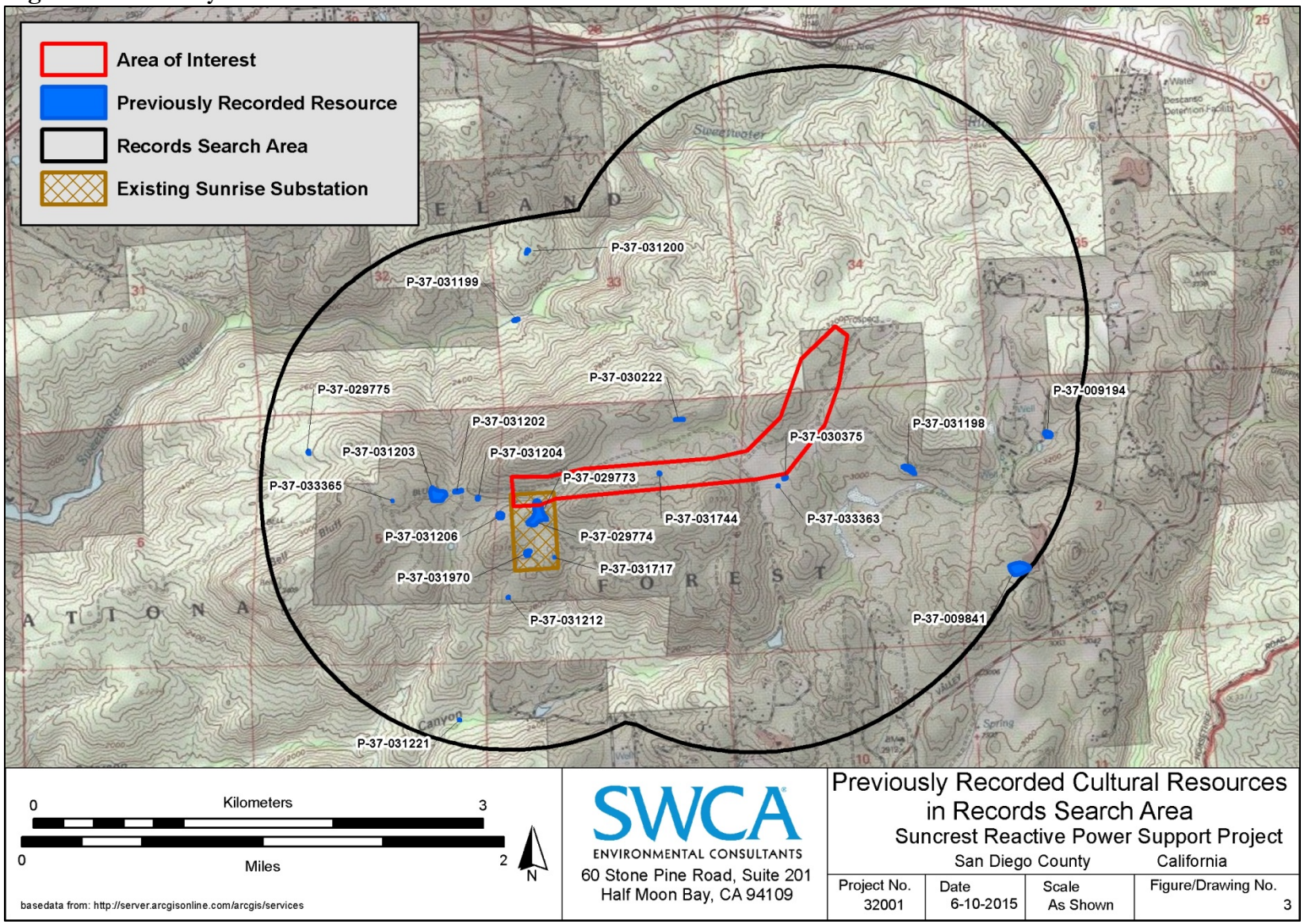


Table 1. Previously Recorded Cultural Resources in the Area of Interest

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

Primary Number	Trinomial	Type	Resource Description	CRHR/NRHP/ SHL Eligibility Status	Recorded By and Year	Proximity to Area of Interest
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 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
Cc:	Megan Peterson; Flajole, Andy (Andy.Flajole@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, 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
Cc: Megan Peterson; Flajole, Andy (Andy.Flajole@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, 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



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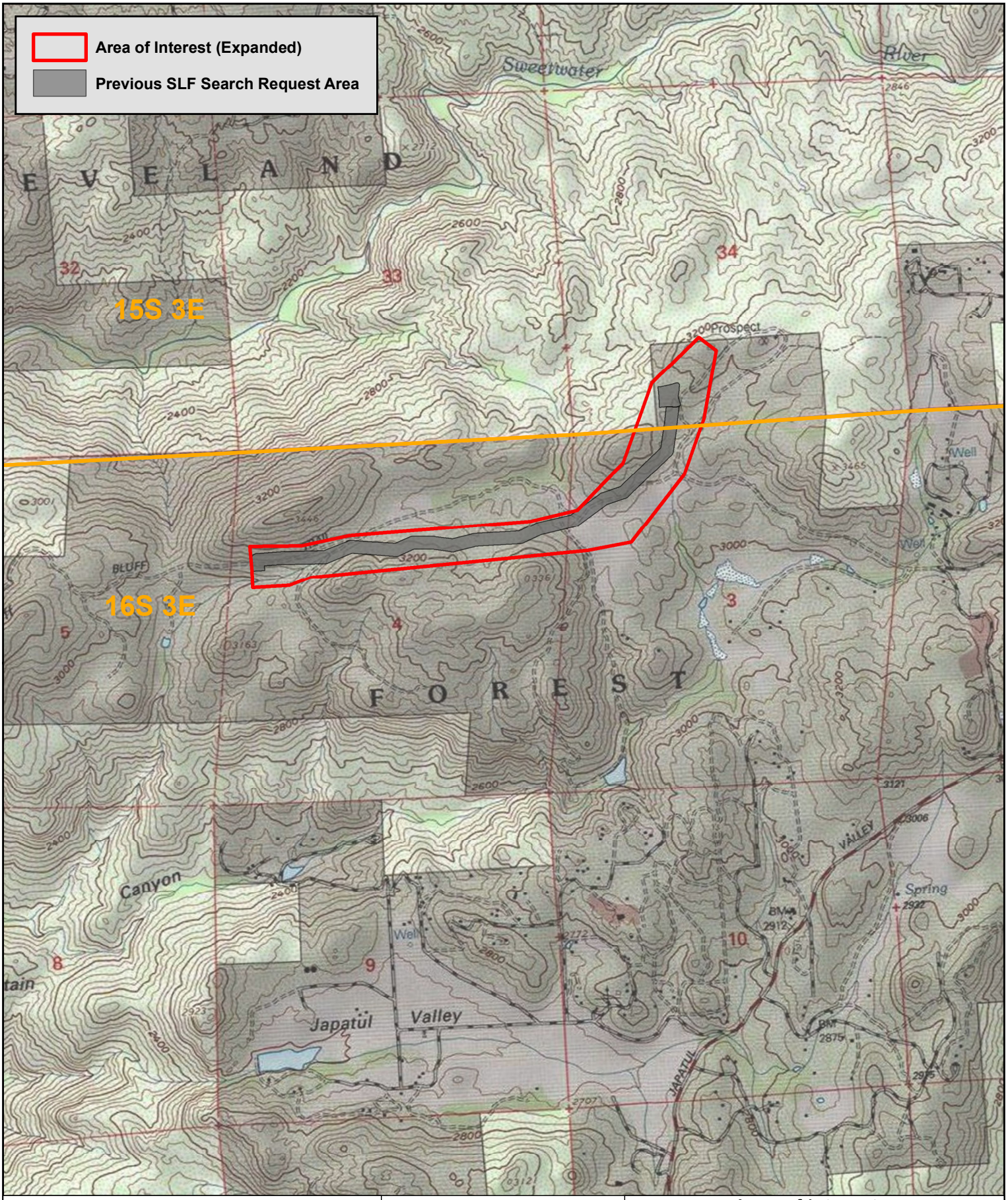
Project Vicinity Map

Suncrest Reactive Power Support Project

San Diego County — California

Project No.	Date	Scale	Figure/Drawing No.
32001	6-22-15	As Shown	1

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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

Path: N:\Projects\032001_NEET Suncrest Reactive Power Project\MXD\CRPR\032001_NEET_Suncrest_Reactive_Power_ Project_NAHC_Location_SLF2.mxd



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 H

Geotechnical Investigation Report

KLEINFELDER
Bright People. Right Solutions.

September 11, 2015
Project No. 20160674.001A

Ms. Darsey Moore
Sargent & Lundy, LLC
55 East Monroe Street
Chicago, Illinois 60603

Subject: **Geotechnical Investigation**
Proposed Suncrest SVC Substation
And Transmission Line
Alpine, California

Dear Ms. Moore:

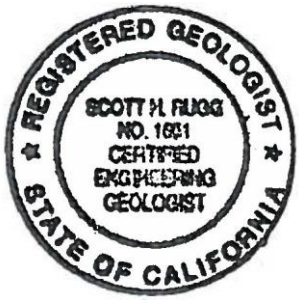
This report presents the results of our geotechnical engineering investigation for the proposed Suncrest SVC Substation and Transmission Line.

We appreciate this opportunity to be of service and look forward to continue working with you in the future. If you have any questions about this report or need additional services please contact us at (619) 831-4533.

Respectfully submitted,

KLEINFELDER





Kevin M. Crennan, GE 2511
Senior Geotechnical Engineer

Scott Rugg, CEG 1651
Project Engineering Geologist

KMC:SR:ws

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550 West C Street, Suite 1200, San Diego, CA 92101 p | 619.831.4600 f | 619.232.1039

GEOTECHNICAL INVESTIGATION
PROPOSED SUNCREST SVC SUBSTATION AND TRANSMISSION LINE
ALPINE, CALIFORNIA
20160674.001A

SEPTEMBER 11, 2015

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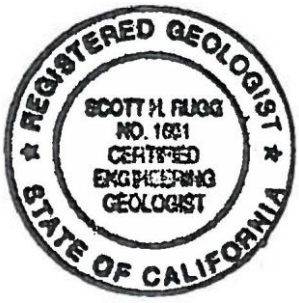
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A Report Prepared for:

Ms. Darsey Moore
Sargent & Lundy, LLC
55 East Monroe Street
Chicago, Illinois 60603

GEOTECHNICAL INVESTIGATION
PROPOSED SUNCREST SVC SUBSTATION
AND TRANSMISSION LINE
ALPINE, CALIFORNIA

Prepared by:



Scott Rugg, CEG 1651
Project Engineering Geologist

Reviewed by:



Kevin M. Crennan, GE 2511
Senior Geotechnical Engineer

KLEINFELDER
550 West C Street, Suite 1200
San Diego, California 92101
Phone: 619-831-4600
Fax: 619-232-1039

September 11, 2015
20160674.001A

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1 INTRODUCTION

This geotechnical report is for the proposed Suncrest SVC Substation and Transmission Line to be located east of Alpine, California. The project is located in an area just east of the existing 500kV Suncrest Substation operated by San Diego Gas and Electric (SDG&E). The location of the project is shown on the attached Vicinity Map, Figure 1. The latitude and longitude coordinates of the SVC Substation are:

Latitude: 32.8122°N

Longitude: 116.6665°W

The proposed transmission line extends approximately 1 mile west from SVC Substation where it will tie into the SDG&E Suncrest Substation. Figure 2, shows the Site Plan for the transmission line alignment and SVC substation.

1.1 EXISTING SITE CONDITIONS

The proposed SVC substation site is roughly square in shape and located on the south side of Bell Bluff Truck Trail, approximately 1.9 miles west of the intersection with Japatul Valley Road and 0.8 miles east of Suncrest Substation. It occupies an area of approximately 6 acres of vacant land which was previously used as a materials lay down yard during construction of the Sunrise Power Link project. The site is currently undergoing restoration with regrown of native vegetation.

The topography of the substation site slopes generally downward from the northeast toward the southwest. The elevation ranges from a high of approximately 3087 feet MSL (above mean sea level) on the northeast to a low of approximately 3047 feet MSL at the southwest corner, for a total differential of about 40 feet

The approximate 1-mile long underground transmission line is planned to be buried in an approximate 6-foot deep trench along the northern side of Bell Bluff Truck Trail. The roadway is overlaid with asphalt pavement and generally rises in elevation from the substation site toward the west, a total of approximately 100 feet near the large water tank adjacent to the SDG&E Suncrest substation.

The paved access road adjacent to the proposed transmission line was constructed by primarily cutting into a northerly descending slope, resulting in cut slopes of varying height along with some isolated fill area. Vegetation is typically moderate to thick adjacent to the road.

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1.2 PROJECT DESCRIPTION

The proposed project will consist of the construction of a new 230kV static var compensator (SVC) substation and approximately 1 mile of underground transmission line which will connect the SVC substation to the existing SDG&E 500kV Suncrest Substation. The substation will be roughly square with side lengths on the order of 330 to 340 feet and the transmission line will extend about 1 mile to the west. The location of the SVC substation and transmission line alignment are shown on Figure 2. Grading for the SVC substation pad will consist of cut/fill type earthwork construction by removing natural material mostly from the east side of the site and placing the excavated soils along the west and southwest sides of the site. A preliminary grading plan for the site by Sargent & Lundy indicates finish elevations ranging from approximately 3,062 feet to 3,064 feet MSL. The grading will result in cuts on the east side of the pad having a maximum depth of approximately 20 feet and fill slopes up to about 10 feet at the southwest. A retaining wall is proposed along the northeastern side of the substation to limit the amount of ground disturbance which would result from a permanent cut slope. The wall will range in height from about 2 feet at the ends to 15 feet in the center. A diversion ditch will be located along the western side of the substation with maximum cuts up to about 13 feet.

Low-impact development (LID)/hydromodification for storm water drainage design will include a storm water detention basin adjacent to the southernmost side of the substation pad. Preliminary plans indicate the basin bottom will be on the order of 200 feet in length and have a bottom elevation of 3,056 feet and a crest elevation of 3,061 feet MSL. This will require cuts up to about 17 feet on the northeast corner and fill up to about 5 feet on the southwest.

The substation will include various types of equipment including an SVC compensator. Details of the equipment and SVC compensator were not provided at the time of this study.

The transmission line will be placed in an approximate 5-foot deep by 30-inch wide trench along the north side of Bell Bluff Truck Trail. A 230kV single circuit duct with four 6-inch and four 2-inch conduits will be constructed in the bottom of the trench. The transmission line will extend up a new steel monopole at the west end of the undergrounding to transfer it aerially into the SDG&E Suncrest Substation.

1.3 PURPOSE AND SCOPE OF SERVICES

The purpose of our geotechnical and geologic engineering services was to evaluate the soil and geologic conditions at the site and provide conclusions and recommendations for design of the

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proposed development. The recommendations for the SVC substation are only preliminary since final design and construction will be performed by and EPC contractor.

The scope of our services for the project consisted of:

- Review of the applicable previous reports, maps and aerial photography for the area.
- A geologic reconnaissance of the project area.
- Field exploration of the subsurface conditions by drilling nine borings, five refraction survey lines, two resistivity surveys, and one infiltration test;
- Laboratory testing of selected samples of soil and geologic materials;
- Engineering analysis of field and laboratory data; and
- Preparation of this report presenting our compiled findings, conclusions, and recommendations.

The recommendations contained within this report are subject to the limitations presented in Section 6.0. An information sheet prepared by ASFE (the Association of Engineering Firms Practicing in the Geosciences) is also included in Appendix D. We recommend that all individuals using this report read the limitations along with the attached document.

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2 METHODS OF STUDY

2.1 BACKGROUND DATA REVIEW

We reviewed readily-available published and unpublished geologic literature and aerial photographs in our files and available agency data published on the internet. In addition, we reviewed the December 21, 2009 geotechnical report prepared by URS for the existing SDG&E Suncrest Substation, as well as planning documents provided by the client. The documents reviewed are presented in Section 7, References.

The URS boring which is pertinent to the current project is B-04 located along Bell Bluff Truck Trail upslope from the existing Suncrest Substation. The boring was drilled by hollow stem auger to a depth of 10 feet and then rock cored to a total depth of 50 feet. This boring is close to the proposed pole which will connect the western end of the underground transmission line to the overhead line into the substation. Of particular note, the rock was highly weathered with a quality designation (RQD) of 0 between depth of 13 and 28 feet. The rock then became moderately weathered at 28 feet and slightly weathered at 30 feet, with RQD of 40, 73, 90, 90 and 92 for the approximate 5-foot intervals between 28 and 50 feet. Laboratory unconfined compressive strength results were 26, 1,949 and 12,871 psi at depths of 10.4, 15.6 and 30 feet, respectively. Two P-wave seismic refraction surveys were also performed in the western portion of the transmission line. These refraction surveys indicate P-wave velocities between 4,600 and 4,800 within the upper approximate 20 feet. However, it should be noted this is an average velocity and it is likely that this generalized layer actually consists of lower over higher velocities. The report did not contain other useful subsurface information pertaining to the proposed substation or underground transmission line. Logs of borings and with photographs of the core are included in Appendix A.2 along with the seismic refraction lines.

2.2 FIELD INVESTIGATION

The subsurface conditions at the substation site were investigated by drilling four exploratory geotechnical borings, and performing one infiltration test and two pairs of resistivity surveys. The substation borings were drilled to depths of approximately 15 to 25 feet below the existing ground surface (bgs). The boring for infiltration testing was drilled to a depth of approximately 5 feet bgs adjacent to 20-foot deep Boring B-3. The subsurface conditions along the transmission line alignment were investigated by drilling five borings and performing five P-wave refraction survey lines and one refraction microtremor (ReMi) profile along Bell Bluff Truck Trail just of the northern

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edge of the road. The alignment borings were drilled to depths of approximately 5 to 17 ½ feet bgs.

All borings were drilled by Pacific Drilling of San Diego, California using an all-terrain truck-mounted Marl M5 drill rig equipped with 6-inch-diameter hollow-stem augers. This work was conducted on July 20 and 21, 2015. A geologist from our office supervised the field operations and logged the borings. Selected bulk and relatively undisturbed samples were retrieved from the borings and transported to our laboratory for further evaluation. The borings were backfilled in accordance with County of San Diego Department of Environmental Health guidelines, which specify grout for borings deeper than 20 feet and allow soil backfill for borings shallower than 20 feet. The backfill material is included on logs of borings in Appendix A. The approximate locations of the current borings and 2009 explorations by URS are presented on Figure 2, Site Plan. The substation is enlarged on Figure 3. A summary of our field investigations is presented in Appendix A.1. Pertinent field data from the 2009 URS investigation is presented in Appendix A.2

Borehole infiltration testing was performed in accordance with Appendix A, Riverside County – Low Impact Development BMP Design Handbook. Based on the Table 1, Infiltration Testing Requirements, and our selection of the percolation test method, we performed one borehole percolation tests in Boring INV-1. The total depth of the boring was approximately 5 feet. At the conclusion of drilling, the augers were removed vertically from the boring to limit the amount of "smearing" of the boring sidewall. Within the boring, approximately 2 inches of gravel was added to the bottom. Perforated pipe was then placed directly on the gravel bottom. Overnight pre-saturation of the borehole subsequently commenced. Testing was performed the following day and consisted of placing approximately 24 inches of water into the test hole and taking readings every 10 minutes for an hour. The results of the testing are discussed in Section 4.12.

Two resistivity tests were performed at the proposed substation site and five refraction survey lines were performed along the transmission line alignment by Southwest Geophysics (SG) of San Diego, California on July 22 and 23, 2015. The resistivity tests were comprised of two separately tested survey lines that crossed roughly perpendicularly and were up to approximately 600 feet long. The refraction survey lines were comprised of one line each and are approximately 125 feet in length. The approximate locations of the lines are presented on Figure 2. A copy of the SG report is included in Appendix A.3 of this report.

All field activities were performed under the observation of a biological/cultural monitor from SWCA Environmental Consultants of Pasadena, California.

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2.3 GEOTECHNICAL LABORATORY TESTING

Laboratory testing was performed on selected bulk and drive samples to substantiate field classifications and to provide engineering parameters for geotechnical design. Laboratory testing consisted of in-situ moisture content and dry unit weight, sieve analysis, Atterberg limits, expansion index, direct shear, laboratory compaction, R-value, and corrosivity (pH, electrical resistivity, water-soluble sulfates, and water-soluble chlorides). A description of the testing performed and the results are presented in Appendix B.1.

In addition, six samples were tested by Geotherm USA of Livermore, California for thermal property analysis. The tests were conducted in accordance with the IEEE Standard 442 and included a series of thermal resistivity measurements with the moisture contents ranging from as-received to dry conditions. A copy of the Geotherm USA report is included in Appendix C of this report.

2.4 GEOTECHNICAL ANALYSES

Field and laboratory data were analyzed in conjunction with the proposed finished grades, structures layout, and estimated structural loads to provide geotechnical recommendations for design and construction of the substation and transmission line. We evaluated foundation systems, lateral earth pressures for retaining structures, pavement design, and earthwork. In addition, potential geologic hazards were evaluated, including surface fault rupture, seismic shaking, ground lurching, liquefaction, seismically induced settlement, slope instability, flooding and seiche, and expansive soils. Seismic design parameters in accordance with the 2013 California Building Code (CBC) are also presented.

A rippability analysis was performed along the transmission alignment to consider the excavation characteristics of the decomposed granitic rock which occurs along the alignment.

2.5 REPORT PREPARATION

This report summarizes the work performed, data acquired, and our findings, conclusions, and geotechnical recommendations for the design and construction of the proposed project. Our report includes the following items:

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- Vicinity map and location plan showing the approximate boring locations and locations of the geologic cross sections;
- Logs of borings (Appendix A.1 and A.2);
- Geophysical resistivity and refraction study (Appendix A.3);
- Results of laboratory tests (Appendix B.1);
- Results of soil thermal resistivity tests (Appendix B.2);
- Discussion of general site conditions;
- Discussion of general subsurface conditions as encountered in our field exploration;
- Discussion of regional and local geology;
- Discussion of geologic and seismic hazards;
- Recommendations for seismic design parameters in accordance with the 2013 CBC;
- Preliminary recommendations for substation foundation design,
- Recommendations for drilled pier design, including MFAD parameters;
- Recommendations for site preparation, earthwork, temporary slope inclinations, fill placement and compaction, and excavation characteristics of subsurface materials;
- Recommendations for support of concrete slabs-on-grade;
- Recommendations for flexible pavement structural sections;
- Discussion of infiltration test results and potential hydromodification; and
- Preliminary evaluation of the corrosion potential of the on-site soils.

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3 SITE CONDITIONS

3.1 GEOLOGIC SETTING

San Diego County is located within the southern portion of California's Peninsular Ranges Geomorphic Province (CGS, 2002). This province is characterized as an assemblage of north-to-northwest-trending, high-relief ranges stretching south from the Santa Monica Mountains in Los Angeles, through San Diego County, and well into Baja California, Mexico. Notable mountain ranges of Southern California include the Santa Ana Mountains, the Laguna Mountains and the Cuyamaca Mountains. The development of this mountainous terrain is closely tied to the transform tectonics of the San Andreas Fault System.

The County encompasses three geomorphic subzones, as depicted in Figure 4 that are set in a series of north-to-northwest trending belts, roughly parallel to the Pacific coastline. From west to east, these zones are composed of a relatively narrow, low-relief coastal plain; a dominant central high-relief mountainous zone; and a low-lying desert zone on the east.

The Coastal Plain subzone ranges from ¼ mile wide in the northern county to approximately 14 miles wide in the central and southern regions and is underlain by relatively undeformed near-shore marine sedimentary rocks deposited during intermittent intervals from late Mesozoic through Quaternary time. The Central Mountainous subzone is west of the coastal plain and is approximately 40 to 50 miles wide. It is composed mostly of Cretaceous-age granitic type igneous rocks of the Southern California Batholith (SCB). The granites are inset with numerous isolated patches of Jurassic to Triassic-age metamorphic rocks and some Jurassic-age granites that are remnants of the former sedimentary cover into which the batholith intruded. The batholith is comprised of numerous plutons of varying composition which trends downward toward the west where it underlies Tertiary-age sedimentary rocks of the coastal plain. The Desert subzone occurs along the extreme eastern edge of the County and extends eastward into Imperial County. This low-lying area is part of the Colorado Desert Geomorphic Province and is commonly referred to as the Salton Trough. This desert basin developed in response to crustal extension and related faulting within the southeastern portion of the San Andreas Fault System.

3.2 FAULTING AND SEISMICITY

Much of California straddles the boundary between two global tectonic plates (see Plate 5) known as the North American Plate (on the east) and the Pacific Plate (on the west). The main plate boundary fault is known as the San Andreas fault and it crosses through some of the most densely

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populated and developed areas of both Southern and Northern California. It stretches northwest from the Gulf of California in Mexico, through the desert region of the Imperial Valley, crossing the San Bernardino region, and traversing up into northern California, where it eventually trends offshore near San Francisco (Jennings, 1994; Jennings and Bryant, 2010). Within southern California, the plate boundary is actually a complex system of numerous faults known as the San Andreas Fault System (SAFS) that spans a 150-mile wide zone from the main San Andreas fault in the Imperial Valley, westward to offshore of San Diego (Powell et al., 1993; and Wallace, 1990). This zone of faulting is depicted on Figure 5. The major faults east of the site (from east to west) include the San Andreas, San Jacinto, and Elsinore faults. Major faults west of San Diego include the Rose Canyon-Newport-Inglewood, Palos Verdes-Coronado Bank, San Diego Trough, and San Clemente faults. Further discussion of faulting relative to the site is provided in the Section 4.

Geodetic measurements reveal that up to 1.9 inches of cumulative lateral displacement occurs per year (in/yr) across the entire SAFS plate boundary. Most of this fault displacement and associated seismic energy release occurs along the fault structures closest to the main plate boundary on the east (i.e., on the Elsinore, San Jacinto, and San Andreas faults), with a combined total displacement of approximately 1.6 in/yr (84 percent). The remaining 0.3 in/yr (16 percent) is accommodated across the faults to the on the west including the Rose Canyon fault. Farther north, a similar amount (0.25-0.3 in/yr) is accommodated east of the San Andreas fault in the Eastern California Shear Zone (Rockwell et al., 2010). Figure 5 shows many of the active faults within an approximate 60-mile radius of the project alignment, along with the locations of epicenters of historical seismic events.

3.3 SITE GEOLOGY AND SUBSURFACE CONDITIONS

The geology and subsurface conditions of the project area were interpreted based on data obtained from our field investigation, our geologic mapping and review of various maps, aerial photography and reports. Several earth materials units were identified during our study and these include artificial fill, alluvial deposits, colluvial deposits, granitic rocks and metamorphic rocks. The areal extent of these units in the substation area is depicted on the Geologic Map (Figure 3). Geologic cross sections for the substation are presented on Figures 6 and 7. Detailed descriptions of these units are provided in Appendix A.1 (Boring Logs), and generalized descriptions are provided in the subsequent sections below

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3.3.1 Artificial Fill (af)

Artificial fill materials are present primarily along isolated areas of the Bell Bluff Truck Trail. The portion of the roadway between the SDG&E Suncrest Substation and Japatul Valley Road was upgraded during the development of that project. This included significant grading effort and paving to provide better access. Between the SDG&E Suncrest Substation and the proposed SVC substation, this grading consisted of construction of both cut and fill embankment. Most of the fill was placed along the north side of the roadway and within drainage features. This fill was generated on-site from cuts made into the native decomposed granitic material. It therefore is anticipated to consist mostly of silty sand, with some clayey sand, sandy silt and sandy clay. Fill was encountered at only one of our boring locations, B-7. It consists of a clayey sand and extended to a depth of approximately 3 feet below ground surface (bgs). Most of the fill is anticipated to be less the five feet in depth, with isolated areas up to a maximum of 10 feet in depth. It is anticipated that the transmission trench will penetrate most of the fill, where present.

Fill is also present along most of the southern edge Bell Bluff Truck Trail, above and to the north of the existing SDG&E substation. Most of this fill was placed during the original construction of the roadway in the early 19th century and is anticipated to range up to five feet in depth. The cut/fill transition is anticipated to trend along the centerline of the roadway. This means that the transmission line is on the cut side of the roadway and for the most part should not be underlain by fill.

3.3.2 Alluvial Deposits (Qa)

Holocene age stream deposited alluvium is present along a narrow and isolated areas of Bell Bluff Truck Trail between the SVC and SDG&E substations. Alluvial deposits were not encountered within any of our borings and these deposits were identified based on geologic field observations and review of topography. Alluvial deposits are typically granular in composition and based on our observations are likely less than 5 feet thick where mapped.

3.3.3 Colluvial Deposits (Qc)

Late Pleistocene age colluvial deposits are derived from deposition of eroded material carried downslope by surface runoff. It typically accumulates along the base of moderate to steep slopes as a wedge shaped mass. Topsoil, which develops at the ground surface due to natural soil formation processes, is also commonly classified as a colluvial deposit. Colluvial deposits were encountered in all four borings, B-1 through B-4, on the SVC substation site. This unit ranged from approximately 1-foot thick below boring B-1 up to approximately 6 ½ feet thick below boring

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B-3. It is comprised of very dark grayish brown to dark yellowish brown silty sand, sandy silt and clayey sand. The upper foot is typically loose (soft) and increases in relative density to a medium dense to dense condition. Most of the substation site is anticipated to be covered with 1 to 2 feet of colluvial deposits. The thickest deposits are anticipated within the low lying area along the west side of the proposed pad, north and south of boring B-3.

Colluvial deposits were also encountered at boring locations B-5 and B-8 along the transmission alignment. It is comprised of dark grayish brown to dark brown sandy silt, silty sand and clayey sand. The colluvium was less than one foot thick at boring B-5 and 5 feet thick at boring B-8.

3.3.4 Granitic Rocks – Corte Madera Monzogranite (Kcm) & Cuyamaca Gabbro (Kc)

Granitic Rocks of the Corte Madera Monzogranite and Cuyamaca Gabbro underlie the surficial units below the entire substation site and transmission alignment and were encountered in all of our borings. The regional geologic map by Todd (2004) indicates that these plutonic rocks are Early Cretaceous in age and range in composition between monzogranite to tonalite for the Corte Madera Monzogranite and gabbro to diorite for the Cuyamaca Gabbro.

Samples of these materials taken from our borings, as well as geologic observations of road cuts, reveal that the majority of this unit is appreciably decomposed. They range from completely weathered where none of the original textural fabric of the rock is discernible to highly weathered. This material is designated as decomposed granite on the boring logs and excavates into a soil material comprised of sand with silt and gravel, silty sand and clayey sand.

The decomposed granite was penetrated to depth of 15 to 25 feet bgs were the borings were terminated at boring locations B-1, B-3, B-4, B-5, B-7, and B-8. Refusal of the augers on hard granitic material occurred at 15 feet bgs at boring B-2, 7 ½ feet bgs at boring B-6 and 5 feet bgs at boring B-9. Less weathered boulders occur at the ground surface and within the roadcuts along portions of the roadway.

3.3.5 Metamorphic Rocks (JTrm)

Jurassic to Triassic age metamorphic rocks occur near the west end of the transmission line alignment. These rocks typically consist of metasedimentary to metavolcanic rocks. They were not encountered in any of our borings. Although they are not anticipated to underlie the transmission trench alignment, it is possible they will be encountered in the western portion. These materials were logged 2009 boring by URS near the proposed western pole location. Kleinfelder could not corroborate whether this the geologic classification is correct.

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3.3.6 Groundwater

Groundwater was encountered in some of the air track borings for the 2009 URS investigation below the SDG&E Suncrest Substation at depths from between 44 to 60 feet bgs, which correspond to elevations of between 3,036 to 3,049 feet MSL. A water well near the same area had water at 60 feet bgs corresponding to 3061 feet MSL. Another water well at the toe of a steep hillside in the area of the existing access road to the SDG&E substation had water at 8 to 12 feet bgs, corresponding to 3,139 to 3,135 feet MSL. All of these measurements were made at the time of the original geotechnical study in 2009. It is not known if the observed water represents a groundwater table, a perched condition or seepage within fractured rock.

Water well data obtained from the State of California Department of Water Resources website from three residential sites approximately 2 miles northeast of the proposed SVC substation had water at depths ranging from between 35 to 97 feet bgs.

Groundwater was not encountered in any of the borings drilled for this study. In addition, geologic observations of natural outcrops as well as graded slopes within the project area did not observe areas of obvious water seepage. Groundwater levels are influenced by seasonable variations in rainfall amounts and it should be noted that the field work was performed in the summer months following a several year drought. It is possible that water seepage could occur at isolated locations following significant rainfall events. Areas underlain by drainages would be more susceptible to subsurface water seepage. For the most part, groundwater is not anticipated to significantly affect construction. However, isolated areas of seepage could be encountered, particularly if construction is performed during or soon after the rainy season.

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4 DISCUSSIONS, ANALYSIS, AND RECOMMENDATIONS

4.1 POTENTIAL GEOLOGIC HAZARDS

An assessment of potential geologic hazards has been performed for the project area. The evaluated hazards include surface fault rupture, seismic shaking, ground lurching, liquefaction, seismically induced settlement, slope instability, flooding and seiche, and expansive soils. The following sections discuss these hazards and their potential at this site in more detail:

4.1.1 Surface Fault Rupture

Numerous faults have been mapped in the region surrounding the site as shown on the regional geologic map by Todd (2004) and the United States Geologic Survey fault data website (http://earthquake.usgs.gov/learn/kml.php). The closest faults to the site are two structures depicted of the regional fault map, Figure 5. The first of these is located approximately 0.6 miles to the southwest and trends toward the northeast. The second is located approximately 0.6 miles to the north and trends northwest. None of the faults have been identified as active and are not aligned toward the site. They are comprised of short discontinuous structures and are likely related to fracturing during the formation and emplacement of granitic plutons. Aerial imagery was also reviewed to evaluate possible fault related features and nothing conclusive was identified which would indicate obvious signs of faults crossing the project area. The closest active fault to the site is the Elsinore fault which is located approximately 18 miles to the northeast. Based on the data presented above, it is our opinion that the hazard with respect to fault rupture at the site is nominal.

4.1.2 Seismic Shaking and CBC Seismic Design Parameters

As is with all of southern California, the project site is located within a seismically active region and can expect to be impacted by shaking from regional earthquakes during the lifetime of the project. The most significant seismic event likely to affect the project site would be an earthquake with a moment magnitude of approximately 7.3M (Petersen et al. 2008) resulting from a rupture on the Julian segment of the Elsinore fault, which is located approximately 18 miles northeast of the site.

Our recommendations for seismic design parameters are in accordance with the 2013 California Building Code (CBC) and ASCE 7-10 (July 2013 errata) Minimum Design Loads for Buildings and Other Structures. Based on our field investigation and using the ASCE 7-10, Section 20.3.1, Table 20.3-1-Site Classification, the substation site can be classified as Site Class C. Based on

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the results of a surficial geophysical ReMi survey to a depth of 75 feet, the calculated average shear wave velocities within the upper 100 feet is approximately 2,000 feet per second (ft/s). Based on Site Class C, the site is defined as very dense soil and soft rock with average shear wave velocities within the upper 100 feet between 1,200 ft/s to 2,500 ft/s, average SPT N>50, or average undrained shear strength su ≥ 2,000 psf.

Based on the Site Class C designation and on the site locations with respect to mapped spectral acceleration parameters SS and S1, Kleinfelder developed seismic design parameters. The recommended seismic design parameters are summarized in Table 1.

Table 1

Recommended 2013 CBC Seismic Design Parameters

DESIGN PARAMETER	SYMBOL	RECOMMENDED VALUE	2013 CBC / (ASCE 7-10) REFERENCE(S)
Site Class	--	C	Section 1613.3.2 (Section 11.4.2)
Mapped MCE_R (5% damped) spectral acceleration for short periods (Site Class B)	S_s	1.027 g	Section 1613.3.1 (Section 11.4.1)
Mapped MCE_R (5% damped) spectral acceleration for a 1-second period (Site Class B)	S_1	0.374 g	Section 1613.3.1 (Section 11.4.1)
Short Period Site Coefficient	F_a	1.000	Table 1613.3.3(1) (Table 11.4-1)
Long Period Site Coefficient (at 1-second period)	F_v	1.426	Table 1613.3.3(2) (Table 11.4-2)
MCE_G Peak Ground Acceleration adjusted for site class effects (S_M at T=0)	PGA_M	0.39 g	N/A
MCE_R (5% damped) spectral response acceleration for short periods adjusted for site class (F_a*S_S)	S_{MS}	1.027 g	Section 1613.3.3 / (Section 11.4.3)
MCE_R (5% damped) spectral response acceleration at 1-second period adjusted for site class (F_v*S_1)	S_{M1}	0.533 g	Section 1613.3.3 / (Section 11.4.3)
Design Peak Ground Acceleration (S_D at T=0)	PGA_D	0.388 g	(Section 11.4.5)
Design spectral response acceleration (5% damped) at short periods (2/3*S_{MS})	S_{DS}	0.685 g	Section 1613.3.4 / (Section 11.4.4)
Design spectral response acceleration (5% damped) at 1-second period (2/3*S_{M1})	S_{D1}	0.355 g	Section 1613.3.4 / (Section 11.4.4)

Notes: *MCER: Risk-Targeted Maximum Considered Earthquake

*MCEG: Maximum Considered Earthquake Geometric Mean

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4.1.3 Ground Lurching

Ground lurching is defined as movement of low density materials on a bluff, steep slope, or embankment due to earthquake shaking. Steep fill slopes are particularly prone to lurching. The substation site will have relatively low fill slopes and would not be particularly prone to lurching. The fill along the south side of Bell Bluff Truck trail above the SDG&E Suncrest Substation is along the edge of a steep slope and would be considered prone to lurching.

4.1.4 Liquefaction and Seismic Settlement

The term liquefaction describes a phenomenon in which saturated, cohesionless soils temporarily lose shear strength (liquefy) due to increased pore water pressures induced by strong, cyclic ground motions during an earthquake. Structures founded on or above potentially liquefiable soils may experience bearing capacity failures due to the temporary loss of foundation support, vertical settlements (both total and differential), and undergo lateral spreading. The factors known to influence liquefaction potential include soil type, relative density, grain size, confining pressure, depth to groundwater, and the intensity and duration of the seismic ground shaking. The cohesionless soils most susceptible to liquefaction are loose, saturated sands and some silts.

The majority of the subject site is underlain at depth by very dense soil and weathered rock, with some limited areas of shallow alluvium, colluvium and compacted fill. Groundwater was not encountered within the soil units. Based on the dense nature of the on-site formational deposits, limited extent and depth of surficial soil and absence of a shallow groundwater in these areas, it is our opinion that the potential for liquefaction and seismic related settlement across the majority of the site is low.

4.1.5 Slope Instability

Slope instability is manifested by numerous types of failures ranging from small surficial slippage to deep-seated slope collapses. Landslides are deep-seated ground failures (several tens to hundreds of feet deep) in which a large arcuate or block shaped section of a slope detaches and slides downhill. Landslides are not to be confused with minor slope failures (slumps), which are usually limited to the topsoil zone and can occur on slopes composed of almost any geologic material. Landslides can cause damage to structures both above and below the slide mass. Structures above the slide area are typically damaged by undermining of foundations. Areas below a slide mass can be damaged by being overridden and crushed by the failed slope material.

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The natural slopes within the project area are composed of granitic material that typically are not prone to landsliding on low to moderate slopes and in most cases even on steep slopes are not prone to deep-seated failures. Several formations within the San Diego County region are particularly prone to landsliding. This is due to a number of factors related to both its material content, structure and strength parameters. During our site reconnaissance of the site area, we made observations of the slope surfaces and did not identify signs of past slope instability. The preliminary grading plan for the SVC substation site shows that the proposed slopes will have a maximum height of approximately 20 feet with typical gradients of 3:1 horizontal to vertical units (H:V). Based on this, it is our opinion that the hazard with respect to landsliding at the substation site is low.

The most significant slope along the transmission line alignment occurs at the western end above the SDG&E Suncrest Substation. Above Bell Bluff Truck Trail, the slope consists of a natural hillside with an average gradient of approximately 2:1 and up to approximately 300 feet high. The slope below the truck trail is a cut slope with a gradient of up to approximately 1.5:1 H/V and up to approximately 40 feet in height. The cut slope was graded in 2012 and is currently being revegetated. There were no indications of slope instability at the time of field study. For the natural slope above the roadway, we also did not observe signs of instability along the lower portion of the slope where visual observations could be made. Review of the geologic map by Todd (2004) and aerial imagery also do not show apparent signs of past slope instability. It is likely however that there have been shallow slope failures consisting of surficial slumps and minor debris flows which occurs naturally on all slopes and these should be anticipated in future. With regards to deep-seated failure, this is a much more unlikely event due primarily to the material composition of the slopes. The height and steepness of the slope does lend itself to possible isolated areas of deeper surface failure where weaker material may exist. Based on this, it is our opinion that the hazard with respect to landsliding would be low to moderate.

4.1.6 Flood and Seiche Hazards

According to a Federal Emergency Management Agency (FEMA) flood insurance map panel 06073C1725G, the site is outside of a 100-year and 500 year floodplains and subject to minimal flooding. Based on review of topographic maps, the site is not located downstream of a dam or within a dam inundation area. In addition, based on our document review there are no dams or facilities upstream of the site that could cause inundation of the subject site. Based on this review and our site reconnaissance, the potential for flooding of the site is considered low.

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A seiche is an oscillatory wave that develops in an enclosed or partially enclosed body of water, such as a bay or lake, in response to seismic shaking from an earthquake. The nearest body of water to each of the site is Palo Verde Reservoir which is approximately 2.2 miles to the west. The elevation of the reservoir is over 1000 feet lower than the project elevations. Given this elevation differential and the distance from the existing reservoir, the hazard with respects to seiche is considered low.

4.1.7 Expansive Soils

Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, concentrated drainage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures or concrete slabs supported on grade.

Three samples of the near surface soils in the substation area were tested for expansion index (UBC Standard 18 2). One of these test results indicated an expansion index (EI) of 4 and two tests were non-expansive. Based on this result and our visual evaluation of topsoil and colluvial soil variability through the site, these materials may be classified in the low expansion range (<20 EI). The granular decomposed granitic materials will be present over the majority of the substation pad and will comprise the majority of cut materials to be used as compacted fill. These granular materials were not tested but are considered to have a very low to low expansion potential.

4.2 SITE GRADING

4.2.1 General

Based on our understanding of the project and the results of our investigation, grading for the SVC substation pad will generally consist of making cuts up to approximately 15 to 20 feet along the eastern third of the site and placing fills up to about 5 feet to 10 toward the western side. The maximum cut depth is located in the central portion of the eastern retaining. For the transmission line, the work will include the excavation of approximately 1 mile of trench within the northern portion of Bell Bluff Truck Trial. The trench will be approximately 5 feet deep by 30 inches wide. After installation of the electrical conduit within the bottom of the trench, it will be backfill and finished with an asphalt pavement surface.

All site preparation and earthwork operations should be performed in accordance with applicable codes, including Chapter 15 of the County of San Diego Building Code. All reference to maximum

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dry density is established in accordance with American Society for Testing and Materials (ASTM) ASTM D 1557. Preliminary guidelines for site earthwork and construction are presented in the attached Guidelines for Earthwork Construction included in Appendix D and the following recommendations.

4.2.2 Pre-construction Conference

We recommend that a pre-construction conference be held. Owner representatives, the civil engineer, geotechnical consultant, and EPC contractor should be in attendance to discuss the plans and construction requirements of the project.

4.2.3 Construction Observation

The recommendations presented in this report are based on our understanding of the proposed project and on our evaluation of the data collected. The interpolated subsurface conditions should be evaluated in the field during construction. Final project drawings and specifications should be reviewed by the project geotechnical consultant prior to the commencement of construction.

A representative from our firm should be present during construction to evaluate the suitability of the various soil types exposed during excavation at the site for use as engineered fill. Also, all site preparation and fill placement should be observed and tested by a representative of our firm. This is especially true during the remedial removal and scarification process so that we can observe whether any undesirable material or conditions are encountered in the construction area.

4.2.4 Excavation Characteristics

Our evaluation of excavation characteristics is based on seismic refraction data and velocity correlations, drilling characteristics with hollow stem auger, and the proposed excavation depths. The construction contractor should review this information along with their experience from previous grading and utility trenching within similar sites to assess excavation characteristics. The choice of excavation method is often a function of economics, level of desired effort, logistics, quality and size of machinery used, permit conditions, and/or contractor convenience.

The boring explorations completed at the SVC substation area indicate the subsurface materials consist of shallow loose to medium dense topsoil/colluvium, over decomposed granitic material. Similar conditions and materials were encountered in the borings and observed in road cuts along Bell Bluff Truck Trail. Most of the surficial units consisting of fill and colluvium are relatively shallow. These materials will excavate with moderate effort with conventional heavy duty

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excavation equipment. The decomposed granitic material can have highly variable excavation characteristics and can often contain areas of hard rock. This was indicated during our field excavation where refusal was encountered with the auger drill rig at some locations at depths as shallow as 5 feet.

A seismic refraction study consisting of five 100-foot lines was performed at five locations along the 1-mile transmission line alignment to characterize the subsurface seismic P-wave velocity profiles. The study was conducted by Southwest Geophysics and their report is included in Appendix A.3. The locations of the survey lines are also shown on Figures 2 and 3. Based on our experience and local, Table 2 below is a comparison of rippability characteristics in relation to the seismic P-wave velocities as determined from a seismic refraction study. For mass grading, the rippability characteristics are based on excavation using a Caterpillar D-9 tractor, equipped with a single shank hydraulic ripper. For trenching, the estimates are based on use of a Caterpillar 345 excavator.

Table 2

Estimated Rippability from Seismic P-Wave Velocities

EXCAVATION MEANS	SEISMIC P-WAVE VELOCITY (FT/SEC)	ESTIMATED RIPPABILITY
Mass Grading	Less than 4,000	Rippable
Mass Grading	4,000 to 5,500	Marginally Rippable (Possible Blasting)
Mass Grading	Greater than 5,500	Non-Rippable (Blasting Necessary)
Trenching	Less than 3,500	Rippable
Trenching	3,500 to 4,500	Marginally Rippable
Trenching	Greater than 4,500	Non-Rippable

As shown on the seismic profile plots in the Southwest Geophysics report, the seismic velocities were typically on the order of 3,000 feet per second (fps) to 4,000 fps within the proposed 5-foot excavation depth for the transmission line. Localized areas measured velocities of 5,000 to 7,000 fps. The seismic profiles indicate that the degree of weathering typically decreased with depth and that local less weathered zones or corestones are present.

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4.2.5 Site Preparation

Prior to site grading at the substation site, existing trees, shrubs and vegetation will require removal. Existing underground structures and utilities (if any) should be completely removed as required to accommodate the proposed improvements. Excavations for removal of the above items should be dish-shaped and backfilled with properly compacted engineered fill. The actual locations of subsurface utilities should be verified in the field at the time of construction. Abandoned utilities should be completely removed, and the loose backfill removed and replaced. The trenches created by relocating any existing utilities should be backfilled with properly compacted fill.

All deleterious, organic, and inert materials exposed at the surface should be stripped and isolated. The stripping work should include the removal of soil that, in the judgment of the geotechnical engineer or geologist, is uncertified, compressible, collapsible, or contains significant voids. The stripping operation should expose a firm, non-yielding subgrade that is free of voids, organics, and deleterious materials. The subgrade exposed at the bottom of each excavation should be observed by a qualified representative from our office prior to the placement of any fill to observe that potentially unsuitable soils have been removed. Additional removals may be required as a result of observation and testing of the exposed subgrade soils.

Based on our review of the preliminary grading plan, and anticipated remedial grading, cuts and fills up to approximately 20 feet and 10 feet are anticipated, respectively. To avoid potential differential settlement at cut/fill transitions under structural areas, we recommend that remedial grading be performed so that a minimum of 3 feet of formational materials be undercut below typical foundation pad elevation and replaced with properly compacted fill. This also facilitates future small excavations such as duct banks and foundations. As an alternative, the cut portion of the site may be sloped at about 6 horizontal to 1 vertical to transition deeper fill to cut. The limits of the remedial grading for the substation should be 5 feet outside of the proposed perimeter of the pad limits. Final recommendations should be provided upon review of the substation layout and evaluation of differential settlement for specific improvements.

The excavated soil should be moisture conditioned, replaced and compacted, as recommended below. We recommend that foundation components of the proposed structures be founded either entirely in undisturbed decomposed granite or entirely in engineered fill materials; foundations of any given structure should not transition between native and fill support. This may be achieved by either overexcavating the cut area and replacing with a similar depth of compacted fill, or by

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deepening foundation excavations in fill to formational materials and placing a minimum 3-sack sand cement slurry back up to foundation elevation.

We anticipate that on-site materials will primarily be used to complete the grading for the project. The formational materials of the decomposed granite will generally break down fairly well under compactive effort, but some oversize hard rock material will likely remain. Oversize material greater than 6 inches in diameter should be placed a minimum of 8 feet below finish grade in areas outside the substation pad, a minimum of 8 feet from the face of fill slopes, and not in areas where underground construction is planned such as tower foundations or trenches for ducts. Material greater than 3 inches in diameter should not be placed within 2 feet of finished grade.

4.2.6 Recommendations for Treatment of Compressible / Potentially Expansive Soils

The substation site is covered with a variable thickness of potentially compressible topsoil/colluvium. The estimated thickness of the potentially compressible soil will range from about 1 foot to six feet. Existing potentially compressible soils within the limits of site grading should be removed to expose decomposed granitic rock prior to the placement of engineered fill materials. Near-surface soils with an expansion index over 30, if any, may be blended with other granular soils and used as fill. However, blending of expansive materials should be avoided in areas of structural fill below foundations.

4.2.7 Engineered Fill

Fill materials generated from the on-site formational soils are suitable for placement as compacted fill provided they are free of oversized rock, expansive clay, organic materials, and deleterious debris. Rocky material greater than 3 inches in diameter should not be placed within 2 feet of finished grade. Oversize material in excess of 6 inches in diameter should not be used in structural fill within 8 feet of finished grade. Fill soil placed within the upper 4 feet of finished grade in structural areas should consist of granular material with a very low to low expansion index (expansion index of 30 or less) as evaluated by UBC Standard 18-2 (Expansion Index Test). Based on the medium expansion potential (EI=4) of one laboratory test and our geologic logging, the topsoil / colluvium has a low potential for expansion. Additional testing may be performed during grading to further characterize expansion index if clayey soils are encountered.

Fill should be moisture conditioned to or above optimum and be compacted to 90 percent or more relative compaction in general fill areas and 95 percent relative compaction in structural fill areas supporting structures. The maximum dry density of calculating relative compaction should be measured in accordance with ASTM D 1557. Expansive soils with an expansion index greater

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than 30 should be similarly compacted, but at a moisture content over 2 to 3 percent above optimum. The results of three laboratory modified proctor tests (ASTM D 1557) indicate optimum moisture contents ranging from 7.9 to 9.6 percent. The results of numerous moisture content tests of samples from our investigation indicate an average moisture content of about 4 percent, with a range from 1.5 to 7 percent. The Contractor should anticipate that moisture conditioning of fill will be required to achieve optimum moisture content.

Although the optimum lift thickness for fill soils will be dependent on the type of compaction equipment used, fill should generally be placed in uniform lifts not exceeding approximately 8 inches in loose thickness.

The face of fill slopes should be compacted by back rolling with a sheepsfoot roller as the fill proceeds and track walked with a dozer when the pad grade is achieved.

In pavement areas, the upper 12 inches of subgrade soils should be moisture conditioned to a moisture content of at least optimum and compacted to 95 percent or more of the maximum laboratory dry density, as evaluated by ASTM D 1557.

4.2.8 Import Materials

We recommend that general import material consist of granular, very low to low expansive material (expansion index of 30 or less) as evaluated by UBC Standard 18-2 (Expansion Index Test) and with low corrosivity characteristics. Low corrosivity material is defined as having a minimum resistivity of more than 2,000 ohm-cm when tested in accordance with California Test 643, unless defined otherwise by the corrosion consultant. Import material should be evaluated by the geotechnical consultant at the borrow site for its suitability as fill prior to importation to the project site.

4.2.9 Temporary Slopes

Temporary cut slopes are not anticipated for this project, other than the sides of overexcavations for construction of the substation retaining wall and for removal of colluvium. However, if they become necessary, care should be taken to identify the location and protect subsurface improvements. . For planning purposes, we recommend OSHA soil classifications of Type C be assumed for fill and colluvial soils and Type B for decomposed granitic materials. Except as discussed with regard to utility trench excavation, temporary cut slopes in topsoil/colluvium and granular fill materials should not be steeper than 1.5:1. Cut slopes in clayey fill or underlying decomposed granitic rock to overall excavation depths of 20 feet can be as steep as 1:1. If

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steeper side slopes should be necessary due to construction restrictions, or excavations are deeper than 25 feet, shoring and bracing should be considered and a specific geotechnical analysis performed. OSHA and Cal-OSHA requirements should be observed for all excavations. If excavations deeper than 25 feet below existing site grades will be made that are not going to be shored or braced, then slopes should be cut at a gradient of 1.5H:1V.

The contractor is responsible for the stability of temporary excavations and his "competent person" should perform regular inspections of any temporary excavations. The contractor should retain a competent geotechnical engineer to develop systems to mitigate the effects of settlement induced by excavations. On a case-by-case basis, the contractor should protect structures which fall on a wedge formed by a 2H:1V slope extending from the bottom of excavation, and on settlement-sensitive structures falling on a wedge 4 horizontal to 1 vertical slope extending from the bottom of the excavation. The protection systems proposed by the contractor should be reviewed by the geotechnical engineer prior to constructing these protective systems.

4.2.10 Permanent Slopes

Plans indicate that cut slopes will have a maximum height of about 20 feet and will be located along the eastern side of the detention pond. Fill slopes will be located around portions of the western, southern and northern sides of the substation pad and have a maximum height of 10 feet at the southern corner. Both cut and fill slopes up to a maximum height of 20 feet can be as steep as 2H:1V. However, due to the potential for long term erosion of the cohesionless sands, fill slope inclinations of 3H:1V may be considered. Benches should be constructed if fill slopes are higher than approximately 30 feet.

New fill slopes should not be constructed above existing topsoil or compressible colluvial soils. Where new fill slopes will be built, the existing topsoil or colluvial soil should be excavated and a keyway constructed into the underlying formational materials. The dimensions and depth of the keyway will depend on final slope configurations and heights. For fill slopes constructed at 2H:1V up to 10 feet high, a keyway having a minimum width of 5 feet and a minimum depth of 2 feet into formational material would be appropriate. Due to the limited height of the fill slopes, benching of the slope face is not required. The base of the keyway should be tilted back at least 2 percent into the slope.

New fill placed on existing slopes that are steeper than 5H:1V should be keyed and benched into the existing hillside. Keyway recommendations are presented in the preceding paragraph.

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Benches within the backcut should be a minimum of 10 feet in width and spaced at no more than 4-foot vertical height intervals.

Sliver fills are locations where only several feet of new fill is placed on an existing slope surface. Depending on the specific site and geometric conditions such as subsurface conditions, slope height, thickness of new fill, and site constraints, the width of the key and extend of benching may be modified from those described above by the geotechnical engineer.

Due to the potential for water to perch along the interface of fill and decomposed granitic rock, we recommend that keyways be drained. This may be accomplished by installing a gravel subdrain along the heel of the key and connecting a 4-inch diameter PVC pipe which extends to a slope face at a 2 percent inclination. The subdrain should consist of at least 3 cubic foot per linear foot of permeable drain rock wrapped in Mirifi 140N filter fabric, or equivalent. The gravel drain along the length of the key should have a 2 percent slope to a central or several lowpoints where the PVC pipe is inserted. Permeable drain rock used for subdrainage shall meet the following gradation requirements:

Table 3

Permeable Rock Gradation for Subdrain

SIEVE SIZE	PERCENTAGE PASSING
3"	100
1-1/2"	90 - 100
3/4"	50 - 80
No. 4	24 - 40
No. 100	0 - 4
No. 200	0 - 2

Protection of the discharge location with a concrete headwall or riprap is not required from a geotechnical perspective, as significant flow is not anticipated. However, we do recommend that the pipe protrude at least 12 inches from the slope, the end be secured with wire mesh to prevent rodents from crawling into the pipe, and that the discharge location be marked with a bollard or permanent stake. If any zones of specific seepage are encountered during construction, they should be addressed as recommended by the geotechnical engineer in the field at that time.

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4.2.11 Bulking and Shrinkage Factors

Estimates of engineered fill bulking and shrinkage factors are typically based on comparing laboratory compaction tests with the in-place density of the soil material as encountered during the subsurface evaluation. Due to limited lab testing due to high resistance of the sampler, and variations in existing and compacted soil densities, the bulking and shrinkage factors are to be considered very approximate. Based on the results of our laboratory testing and experience, the topsoil/colluvium materials will have an approximate shrinkage factor on the order of 5 to 10 percent when excavated from their existing state and placed as compacted fills. A bulking factor of approximately 3 to 6 percent is anticipated for decomposed granitic materials.

4.3 UTILITY TRENCH EXCAVATIONS

4.3.1 Temporary Trench Excavations

We recommend that trenches and excavations be designed and constructed in accordance with OSHA regulations. These regulations provide trench sloping and shoring design parameters for trenches up to 20 feet deep based on a description of the soil types encountered. Trenches over 20 feet deep should be designed by the Contractor's engineer based on site-specific geotechnical analyses. For planning purposes, we recommend the following OSHA soil classifications be used in the table below:

Table 4
OSHA Soil Classifications

Fill, Topsoil/Colluvium	Type C
Decomposed Granite	Type B

Temporary excavations should be constructed in accordance with OSHA recommendations. Excavations deeper than 5 feet should be shored or laid back on a slope no steeper than 1.5H:1V (horizontal:vertical) above the decomposed granite and 1H:1V within the decomposed granite. In the case of trench excavations, OSHA requirements regarding personnel safety should be met using appropriate shoring (including trench boxes), or by laying back the slopes in accordance with OSHA requirements. Temporary excavations that encounter seepage may require shoring or may be stabilized by placing sandbags or gravel along the base of the seepage zone. Excavations encountering seepage should be evaluated on a case-by-case basis. On site safety

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of personnel is the responsibility of the contractor, and their designated "competent person" should perform regular inspections of all temporary excavations.

4.3.2 Pipe Bedding and Trench Backfill

Pipe bedding should consist of sand or similar granular material having a sand equivalent value of 30 or less. The sand should be placed in a zone that extends a minimum of 4 inches below and 12 inches above the pipe for the full trench width. The bedding material should be compacted to a minimum of 90 percent of the maximum dry density. Trench backfill above pipe bedding may consist of approved, on-site or import soils placed in lifts no greater than 8 inches loose thickness and compacted to 90 percent of the maximum dry density. Sand cement slurry is also acceptable.

It will be necessary to keep vibrations away from the immediate excavation area and provide adequate setback of stockpiled materials and construction equipment for a stable condition. It is recommended that the setback distance be one-half the excavation depth. Some minor sloughing may occur as the moisture content of the soils in the excavation walls dry out. Shoring and/or bracing of trenches may be required where construction personnel are working within excavations. Applicable governmental safety codes should be applied for safety of personnel.

4.4 FOUNDATIONS AND SLABS FOR STRUCTURES

4.4.1 General

The following sections provide geotechnical parameters that are suitable for preliminary design purposes and bidding purposes. The EPC Contractor should develop their own parameters for final design.

The proposed substation structures and walls may be supported on shallow spread and continuous footings founded entirely on either engineered fill soils or undisturbed formational materials. Drilled pier foundations may also be utilized for some substation equipment and steel pole foundations. Structures may include equipment pads, control house, perimeter screen wall, and possibly short masonry block retaining walls. Foundations for each individual structure should be supported on the same type of material, that is, either entirely supported by engineered fill or undisturbed decomposed granitic rock. Foundations should not be supported on a combination of both materials such as may occur where there is a transition between fill and decomposed granitic rock. The fill soils below the footprint of each improvement should be prepared as stated in Section 4.2.7. All footing excavations should be observed by a

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representative of the geotechnical engineer prior to placing reinforcing or concrete to verify proper subgrade conditions.

Spread and continuous footings for the substation structures that will be founded on engineered fill soils can be designed using an allowable soil bearing pressure of 2,500 psf, for dead loads plus long-term live loads. These values are based on a minimum depth of 12 inches and minimum width of 18 inches and may be increased by 500 psf for each additional foot of depth or width, up to a maximum of 4,000 psf. Based on an anticipated 3-foot minimum overexcavation across the substation pad, we do not anticipate that foundations will be directly within decomposed granitic rock materials, however, higher bearing values could be provided for foundations on decomposed granitic rock.

Mat foundations for equipment pads that will be founded on engineered fill soils can be designed using an allowable soil bearing pressure of 4,000 psf, for dead loads plus long-term live loads. These values can be increased by one-third for short term loads such as those due to wind and seismic forces. For preliminary design, we recommend an uncorrected static modulus of vertical subgrade reaction (k) for engineered fill of 175 pounds per cubic inch (pci). This value should be adjusted for mat dimensions in final design. Foundations subject to dynamic loading should be evaluated when specific information is provided. During design development, the geotechnical engineer should review the mat deflections and contact pressures developed from structural engineering analyses and reassess the modulus as necessary to finalize the design.

All footings should be extended in depth as necessary so that no existing or proposed utility trenches will extend below a plane having a downward slope of 2H:1V from a line 9 inches above the bottom edge of the closest footing. In addition, no parallel trenches should be within 18 inches from the closest edge of the footing. New footings should not be excavated below the bottom of adjacently located existing building foundations.

4.4.2 Estimated Settlements

Estimated total settlements for the proposed improvements, constructed in accordance with the recommendations contained herein, are anticipated to be less than 1/2 inch. Estimated differential settlement between points 40 feet apart on continuous footings and/or isolated spread footings are anticipated to be less than 1/4 inch.

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4.4.3 Lateral Resistance

For passive resistance, we recommend using an allowable equivalent fluid weight of 300 pcf for footings or grade beams poured neat against properly compacted select fill or decomposed granitic rock. This lateral pressure assumes a horizontal surface for the soil mass extending at least 10 feet from the face of the footing, or three times the height of the surface generating passive pressure, whichever is greater. The upper 12 inches of material in areas not protected by concrete slabs should not be included in design for passive resistance to lateral loads. The coefficient of friction between the bottom of the footings or grade beams and the prepared soil can be assumed as 0.45. If passive and frictional resistance are combined, the frictional resistance should be reduced to 0.35.

4.4.4 Concrete Slabs-On-Grade

Concrete slabs-on-grade can be used for light equipment pads. These pads should be supported by either a minimum of 6 inches of compacted Caltrans Class II aggregate base or compacted fills. The fill or aggregate base should be compacted to at least 90 percent of ASTM D 1557. As a minimum, these slabs should have a thickness of 6 inches and should be reinforced with No. 4 steel rebar placed mid-height and spaced at 12 inches on center in both directions. Additional reinforcement should be placed as required by the structural engineer.

Slab-on-grade floors for the substation control house, should be underlain by engineered fill compacted. To provide uniform subgrade support, a 6 inch layer of clean free-draining sand, gravel or crushed rock conforming to Section 7.1 of Appendix C should be placed between the finished subgrade and the bottom of the concrete. The subgrade should be compacted to at least 90 percent of ASTM D 1557.

4.5 DRILLED PIER FOUNDATIONS

Drilled pier lengths should satisfy criteria for downward, uplift and lateral loading. We understand that Sargent & Lundy will utilize the Electric Power Research Institute (EPRI) computer program Moment Foundation Analysis Design (MFAD) to design deep foundations such as drilled piers. We recommend utilizing the preliminary soil parameters in Table 5 for compacted fill and undisturbed decomposed granitic rock. We recommend utilizing the soil parameters in Table 6 for the western pole which will be underlain by decomposed granitic rock with various degrees of weathering. Other than the pole at the western end of the transmission line, the actual location of other poles is not know at this time. Therefore, the depth to formation is not provided at this time. Actual depths may be estimated from the existing topography and final pad elevations, and

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accounting for the potential depth of remedial grading. Kleinfelder can provide the estimated depth to formation when this information is available.

Axial capacity is a function of pier diameter and depth, depth of compacted fill, degree of weathering of rock, and allowable settlement. The capacity includes both frictional resistance on the perimeter of the pier and end bearing which increased with increasing settlement. To assist in preliminary planning, an allowable capacity of 100 kips is estimated for drilled piers with an assumed depth of 15 feet, diameter of 2 feet and located in areas with about 10 feet of fill or highly weathered rock. This capacity consists of about 50 kips of friction and 50 kips of end bearing for the assumed conditions. Additional estimates can be provided for specified locations, dimensions and loading conditions.

The parameters were developed based on the results of our field and laboratory investigation, engineering analyses, correlations for soil contained the EPRI Manual (1990) and engineering judgment. These values are intended for use in computer program MFAD only, values for other design analyses may be provided upon request.

Table 5

Preliminary Soil Parameters for MFAD Analysis

SOIL TYPE	UNIT COHESION (PSF)	FRICTION ANGLE (DEGREES)	MOIST UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	DEFORMATION MODULUS E_{PMT} (KSI)	STRENGTH REDUCTION FACTOR
FILL Silty Sand (SM) and Clayey Sand (SC)	0	33	125	9	1.2	1.0
DECOMPOSED GRANITIC ROCK Sand (SM)	100	36	130	4	5.0	1.0

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Table 6

Soil Parameters for MFAD Analysis

Pole at West End of Transmission Line

SOIL TYPE	DEPTH FROM SURFACE (ft)	UNIT COHESION (psf)	FRICTION ANGLE (degrees)	MOIST UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	DEFORMATION MODULUS EP (ksi)	STRENGTH REDUCTION FACTOR
Completely Weathered Rock	0 to 20	0	33	125	9	1.2	1.0
Highly Weathered Rock	20 to 28	100	36	130	4	5.0	1.0
Moderately Weathered Rock	28 to 38	2,500	45	140	4	30.0	0.45
Slightly Weathered Rock	38 to 60	4,000	40	150	4	100.0	0.35

Note: 1. The upper 2-feet of material should be ignored in design.

2. Reductions in capacity due to proximity of descending slopes should be considered by the designer.

4.6 CANTILEVER RETAINING WALLS

Current plans include a retaining wall up to approximately 15 feet in height along the northeastern side of the proposed substation. Lateral pressures acting against retaining walls can be calculated assuming that the backfill soils act as a fluid. The equivalent fluid weight (efw) value would depend on allowable wall movement. Walls which are free to rotate at least 0.5 percent of the wall height can be designed for the active efw. Walls which are restrained at the top or are sensitive to movement and tilting should be designed for the at-rest efw.

Our study indicates that potential fill materials generated from cuts into the decomposed granitic rock are suitable for use as retaining wall backfill. Colluvial soils may be suitable upon review and approval or mixing with more granular materials, however are discouraged given the quantity of fill derived from decomposed granitic rock which should be available. Therefore, the following values assume that non- to low-expansive sandy soils (SP, SM, SC) will be used as backfill. Values given in the table below are in terms of equivalent fluid weight and assume a triangular distribution.

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Table 7

Equivalent Fluid Weights (efw)

For Calculating Lateral Earth Pressures

CONDITION	SLOPE INCLINATION	EQUIVALENT FLUID WEIGHT (PCF)
Active	Level	35
	2:1	65
At-Rest	Level	55
	2:1	90

Fifty and thirty percent of any uniform areal surcharge placed at the top of the wall may be assumed to act as a uniform horizontal pressure over the entire wall for the at-rest and active cases, respectively. As a minimum, we recommend that a vertical traffic surcharge equivalent to 240 psf from 2 feet of soil backfill. The resulting horizontal pressure should be assumed to act as a simplified uniform horizontal pressure over the entire height of the wall, H. Supplemental recommendations should be provided for specific point or line loads.

Retaining walls should be designed to resist earthquake loading with the following recommendations. An estimate of lateral pressures due to seismic loading was evaluated using the Mononobe-Okabe method and one-half of the estimated peak ground acceleration. The resultant seismic force (in pounds) for each linear foot of wall can be estimated as $9*H^2$ for level backfill and 11*H2 for the gently sloping site conditions, where H is the height of the wall (in feet) above its base. The resultant seismic force acts at H/3 above the wall base.

Walls should be provided with drains to reduce the potential for build-up of hydrostatic pressure. A typical drainage system could consist of either a prefabricated drainage board or a one- to two-foot-wide zone of Caltrans Class 2 permeable material wrapped in a geotextile filter fabric, placed immediately adjacent to the wall, and with a perforated pipe at the base. The pipe should be discharged to an appropriate outlet, which is protected against erosion and becoming covered or plugged. For the prefabricated drainage board option, the geotextile manufacturer's recommendations should be followed for installation of a drainage fabric system.

Allowable foundation bearing pressure values described in Section 4.4 of this report can be increased by one-third when calculating resistance caused by loads of short duration, such as earthquake loads. Restraining passive pressure and friction values should not be increased by

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this amount, but a lower factor of safety that is normally applied to static loads could be used. This factor of safety for dynamic load conditions should not be less than 1.2. Backfill for retaining walls should consist of predominately granular materials from on-site excavations. All backfill should be placed in 8-inch loose lifts, moisture conditions to 2 percentage points above optimum moisture content, and compacted to at least 90 percent relative compaction in accordance with ASTM D 1557. For all retaining walls, we recommend a minimum horizontal distance from the outside base of the footing to daylight of 8 feet for slopes of less than 20 feet in height, and 10 feet for slopes of greater heights.

4.7 PAVEMENT SECTIONS

For purposes of preliminary analysis of pavements, we performed an R-value test on three soil samples of potential subgrade materials on-site. Our test results indicate R-values of 19, 31 and 42. Due to the uncertainty of what materials will be present at the surface of driveways or access roads, an R-Value of 20 was conservatively assumed for preliminary design. Actual pavement recommendations should be based on R-value tests performed on bulk samples of the soils that are exposed at the finished subgrade elevations across the site at the completion of the grading operations. This is a typical approach and pavement sections are often revised during grading.

4.7.1 Flexible Pavements

Flexible pavement sections have been evaluated in general accordance with the Caltrans method for flexible pavement design. Traffic indices of 4.5, 5.0, and 6.0 were used to calculate the design thickness. Recommendations for other traffic indices can be provided upon request. Recommended flexible pavement sections for these conditions are given in Table 8.

Table 8
Flexible Pavement Sections
Assumed R-Value of 20

TRAFFIC INDEX	ASPHALT CONCRETE (INCHES)	AGGREGATE BASE (INCHES)
4.5	3	5.5
5.0	3	7
6.0	4	8

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The flexible pavement should conform to, and be placed in general accordance with, current Caltrans Standard Specifications. The aggregate base (Class 2) should comply with the specifications in Section 26 of Caltrans Standard Specifications. The aggregate base and the upper 12 inches of subgrade should be compacted to a minimum of 95 percent relative compaction as obtained by the `ASTM D 1557 test procedure. All concrete curbs should extend below the bottom of adjacent aggregate base materials.

4.7.2 Rigid Pavement

Rigid pavements are typically used in truck traffic areas, parking entrances or trash enclosures (typical Traffic Index of 6). The recommended minimum rigid pavement section is 6 inches of Portland cement concrete (PCC) over 12 inches of Class 2 Aggregate Base.

The concrete pavement should be constructed in an approximate 15-foot square grid system. If a square system is impractical, rectangular panels can be used with the longitudinal distance a maximum of 20 feet.

Longitudinal or transverse control joints should be constructed by hand forming or placing a pre-molded filler such as “zip strips.” Longitudinal or transverse construction joints should be keyed. Expansion joints should be used to isolate fixed objects abutting or within the pavement area. The expansion joint should extend the full depth of the pavement. Joints should run continuously and extend through integral curbs and thickened edges. We recommend that joint layout be adjusted to coincide with the corners of objects and structures.

The recommended pavement sections for both flexible and rigid pavements are based on the following conditions:

1. Utility trench backfill should be properly placed and adequately compacted to provide a stable subgrade. Trench backfill below the 12 inches of pavement soil subgrade should be compacted to a minimum of 90 percent relative compaction (ASTM D 1557).
2. An adequate drainage system should be provided to prevent surface water from saturating the subgrade soil. Pavements should be sloped at least 1/2 percent to provide positive drainage, and not be allowed to pond.
3. A periodic maintenance program should be incorporated to include sealing cracks and other measures.

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4. Aggregate base materials and the upper 12 inches of subgrade below aggregate base should be compacted to a minimum of 95 percent of ASTM D 1557 maximum dry density.
5. The finished subgrade should be brought to a firm and unyielding condition at the time aggregate base is laid and compacted.
6. Asphalt concrete pavement and aggregate base materials should conform to Section 02510, Parts 2 and 3 of the Standard Specifications for Construction of Public Works (Greenbook), current edition. Portland cement concrete pavement should conform to Subsections 201 1 and 302 6 of the Greenbook.
7. Concrete curbs separating pavement from landscaped areas extend at least six inches into the subgrade to reduce movement of moisture into the aggregate base layer. This reduces the risk of pavement failures to subsurface water originating from landscaped areas.
8. Concrete should be cured with a suitable curing compound or be kept continuously moist for a period of at least seven days in general accordance with Greenbook or ACI guidelines.
9. Traffic should be kept off newly placed concrete for at least seven days or until its flexural strength exceeds 600 pounds per square inch.

4.8 FLATWORK

To reduce the potential manifestation of distress to exterior concrete flatwork due to movement of the underlying soil, we recommend that such flatwork be constructed with crack-control joints at appropriate spacing as designed by the structural engineer. Subgrade should be prepared in accordance with the earthwork recommendations presented earlier in this report. Positive drainage should be established and maintained adjacent to flatwork.

4.9 PRELIMINARY CORROSIVE SOIL SCREENING

A preliminary corrosive soil screening of on-site soil materials was completed to evaluate their potential effect on concrete and ferrous metals. The corrosion potential was evaluated using the results of laboratory testing on five soil samples obtained during our subsurface evaluation. We have also included the result from a test by URS in 2009 near the proposed pole location at the western end of the transmission line. The results are presented in Table 9 below.

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Table 9

Corrosion Test Results

BORING	DEPTH (ft)	PH	SULFATE (ppm)	CHLORIDE (ppm)	MINIMUM RESISTIVITY (ohm-cm)
B-1	6-7	8.0	47	21	2,000
B-2	5-7	6.5	32	11	6,500
B-6	2.5-4.5	6.2	59	64	2,600
B-7	2.5-4.5	5.9	54	64	4,500
B-8	2-4	6.0	46	53	4,400
INV-1	1.5-4	6.4	32	11	6,400
B-04 (URS)	5	7.0	54	75	7,200

These tests are only an indicator of soil corrosivity for the samples tested. Other soils found on site may be more, less, or of a similar corrosive nature. Imported fill materials should be tested to confirm that their corrosion potential is not more severe than those noted.

Minimum resistivity values between 1,000 and 3,000 ohm-cm are normally considered highly corrosive to buried ferrous metals (NACE, 2006). The concentrations of soluble sulfates indicate that the potential of sulfate attack on concrete in contact with the on-site soils is “negligible” based on ACI 318-11 Table 4.2.1 (ACI, 2011). Maximum water-cement ratios and cement types are not specified for these sulfate concentrations.

Kleinfelder’s scope of services does not include corrosion engineering and, therefore, a detailed analysis of the corrosion test results is not included. A qualified corrosion engineer could be retained to review the test results for further evaluation and design protective systems, if considered necessary.

4.10 SURFACE DRAINAGE

Foundation performance depends greatly on how well the runoff waters drain from the site. This drainage should be maintained both during construction and over the entire life of the project. Final elevations at the site should be planned so that positive drainage is established around structures. Positive drainage is defined as a slope of 2 percent or more for a distance of 5 feet or more away from structure foundations.

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4.11 SLOPE PROTECTION AND MAINTENANCE

Although graded slopes on this site are anticipated to be grossly stable, the surficial soils may be somewhat erodible due to low cohesion of the sands. For this reason, the finished slopes should be planted as soon as practical after the end of construction. Cut slopes into the decomposed granitic rock may be difficult to plant. Preferably, deep-rooted vegetation adapted to semi-arid climates should be used. In general, runoff water should not be permitted to drain over the edges of slopes and brow ditches should be used.

4.12 STORMWATER INFILTRATION AND BIORETENTION

Kleinfelder understands that as part of storm water management for the project, Infiltration Best Management BMPs, such as a detention basin is being considered. Due to site access limitations at the time of our investigation, we only performed one borehole percolation test west of the proposed basin area. The results of this test should be considered preliminary and used to assess feasibility of infiltration. Supplemental testing should be performed when site access to the basin area is provided. We also performed grain-size distribution laboratory tests to assess the grain size. The borehole infiltration tests along with rough correlations with grain-size distribution tests were used to evaluate the infiltration capabilities of the subsurface soils. The methodology of the borehole percolation test was discussed in Section 2.2.

Infiltration testing was performed within INF-1 which was drilled to a depth of 5 feet. This test boring was located adjacent to boring B-3 which was drilled to a depth of 20 feet to assess the underlying soils. Colluvial soils consisting of clayey sand were present at the test boring from a depth of about 2 ½ feet to 6 ½ feet. The colluvium is underlain by decomposed granitic rock. Fines contents passing the No. 200 sieve were between approximately 20 and 46 percent. Based on the results of the borehole infiltration tests, the soil classification and gradation tests, the use of infiltration BMPs, such as detention basins for storm water management are feasible, however, we recommend that the colluvial soils be removed.

The percolation test results provides the short-term infiltration rate of a soil layer. The long-term design infiltration rate is the short term value with a factor of safety of 3 applied. The short and long term infiltration rates are presented below.

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Table 10

Preliminary Infiltration Rate

LOCATION	DEPTH OF TEST (ft)	SHORT-TERM INFILTRATION RATE (in/hour)	LONG-TERM DESIGN INFILTRATION RATE (in/hour)
INV-1	4.8	1.5	0.5

Based on the results of the infiltration tests and the rough correlation of the grain-size distribution with hydraulic conductivity, and considering factors such as site variability, potential for long-term siltation and bio-buildup, a preliminary long-term infiltration rate of approximately 0.5 inches per hour may be used for preliminary design.

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5 ADDITIONAL STUDIES

The review of plans and specifications, and the observation and testing by Kleinfelder of earthwork related construction activities, are an integral part of the conclusions and recommendations made in this report. If Kleinfelder is not retained for these services, the client will be assuming our responsibility for any potential claims that may arise during or after construction. The required tests, observations, and consultation by Kleinfelder during construction includes, but is not limited to:

- Supplemental infiltration testing for the detention storm water basins;
- A review of plans and specifications;
- Observation of site clearing;
- Construction observation and density testing of fill material placement, trench backfill and subgrade preparation;
- Observation during retaining wall construction; and
- Observation of foundation excavations and foundation construction.

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6 LIMITATIONS

This report has been prepared for the exclusive use of Sargent & Lundy LLC, NextEra Energy Resources LLC, and their consultants for specific application to the subject project. The findings, conclusions and recommendations presented in this report were prepared in accordance with generally accepted geotechnical engineering practice. No warranty, express or implied, is made.

The scope of services was limited to the field exploration program described in this report. It should be recognized that definition and evaluation of subsurface conditions are difficult. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. The conclusions of this assessment are based on our field exploration, laboratory testing programs, and engineering analyses.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service, which provide information for their purposes at acceptable levels of risk. The client and key members of the design team should discuss the issues addressed in this report with Kleinfelder, so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk and expectations for future performance and maintenance.

Recommendations contained in this report are based on our field observations and subsurface explorations, laboratory tests, and our present knowledge of the proposed construction. It is possible that soil or groundwater conditions could vary between or beyond the points explored. If soil or groundwater conditions are encountered during construction that differ from those described herein, the client is responsible for ensuring that Kleinfelder is notified immediately so that we may reevaluate the recommendations of this report. If the scope of the proposed construction, or locations of the improvements, changes from that described in this report, the conclusions and recommendations contained in this report are not considered valid until the changes are reviewed, and the conclusions of this report are modified or approved in writing, by Kleinfelder.

Our geotechnical scope of services for this subsurface exploration and geotechnical report did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances in the soil, surface water, or groundwater at this site.

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Kleinfelder cannot be responsible for interpretation by others of this report or the conditions encountered in the field. Kleinfelder must be retained so that all geotechnical aspects of construction will be monitored on a full-time basis by a representative from Kleinfelder, including site preparation, ground improvement, preparation of foundations, and placement of engineered fill and trench backfill. These services provide Kleinfelder the opportunity to observe the actual soil and groundwater conditions encountered during construction and to evaluate the applicability of the recommendations presented in this report to the site conditions. If Kleinfelder is not retained to provide these services, we will cease to be the engineer of record for this project and will assume no responsibility for any potential claim during or after construction on this project. If changed site conditions affect the recommendations presented herein, Kleinfelder must also be retained to perform a supplemental evaluation and to issue a revision to our original report.

This report, and any future addenda or reports regarding this site, may be made available to bidders to supply them with only the data contained in the report regarding subsurface conditions and laboratory test results at the point and time noted. Bidders may not rely on interpretations, opinion, recommendations, or conclusions contained in the report. Because of the limited nature of any subsurface study, the contractor may encounter conditions during construction which differ from those presented in this report. In such event, the contractor should promptly notify the owner so that Kleinfelder's geotechnical engineer can be contacted to confirm those conditions. We recommend the contractor describe the nature and extent of the differing conditions in writing and that the construction contract include provisions for dealing with differing conditions. Contingency funds should be reserved for potential problems during earthwork and foundation construction.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance, but in no event later than one year from the date of the report. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party, other than the client who wishes to use this report shall notify Kleinfelder of such intended use. Based on the intended use of this report and the nature of the new project, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party and the client agrees to defend, indemnify, and hold harmless Kleinfelder from any claims or liability associated with such unauthorized use or non-compliance.

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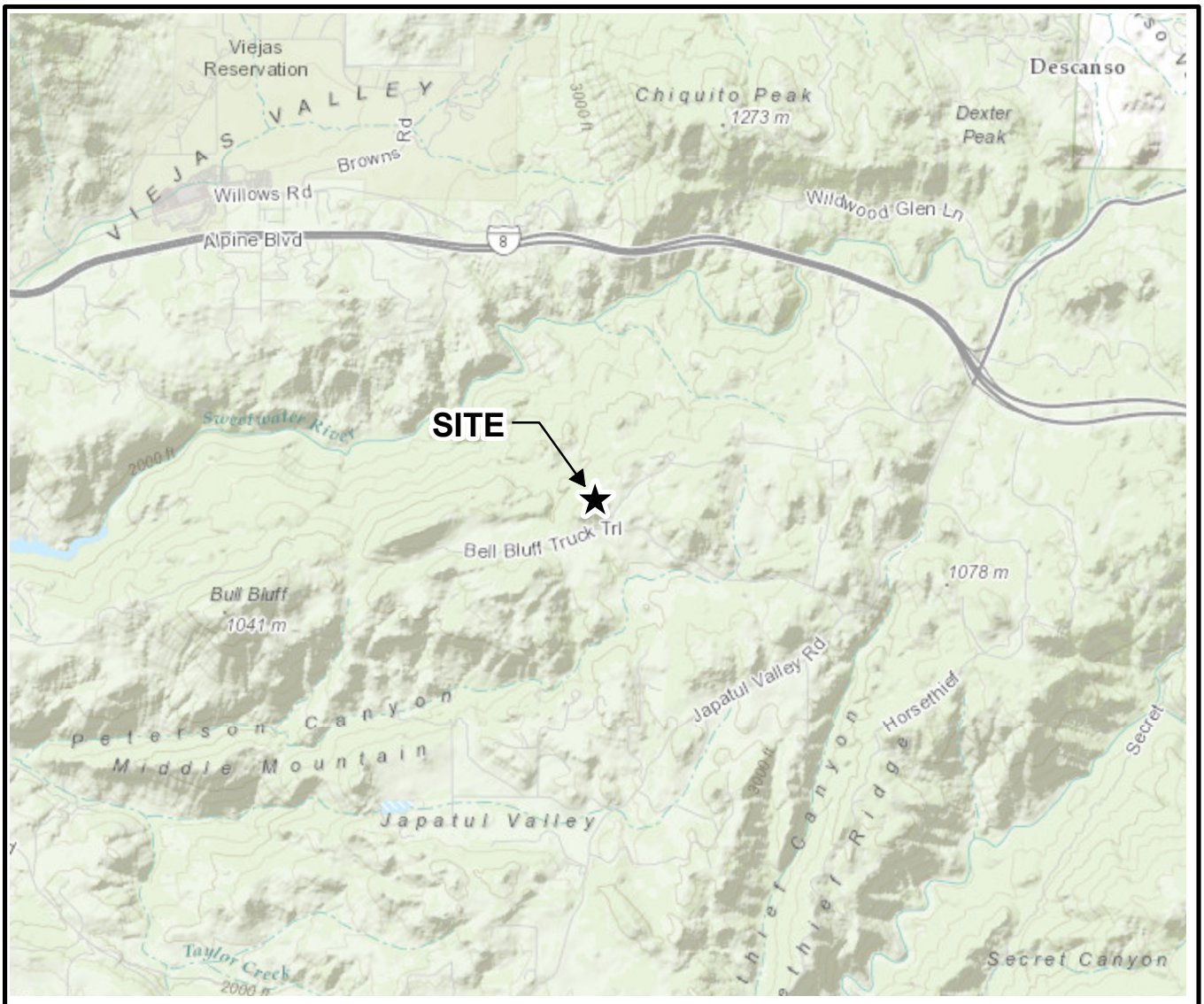
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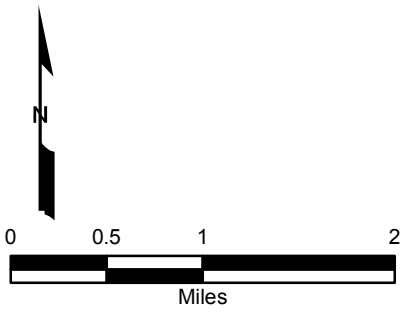
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FIGURES







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VICINITY MAP

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE

1



LEGEND

- B-9 — BORING LOCATION
- B-04 — BORING LOCATION (URS, 2009)
- INF-1 — INFILTRATION TEST LOCATION
- SL-9 — SEISMIC REFRACTION SURVEY LINE
- RST-4 — RESISTIVITY SURVEY LINE
- RSL-07 — REFACTION SURVEY LINE (URS, 2009)
- ReMi-9 — REFACTION MICROTREMOR SURVEY LINE
- PROPOSED SUBSTATION ALIGNMENT

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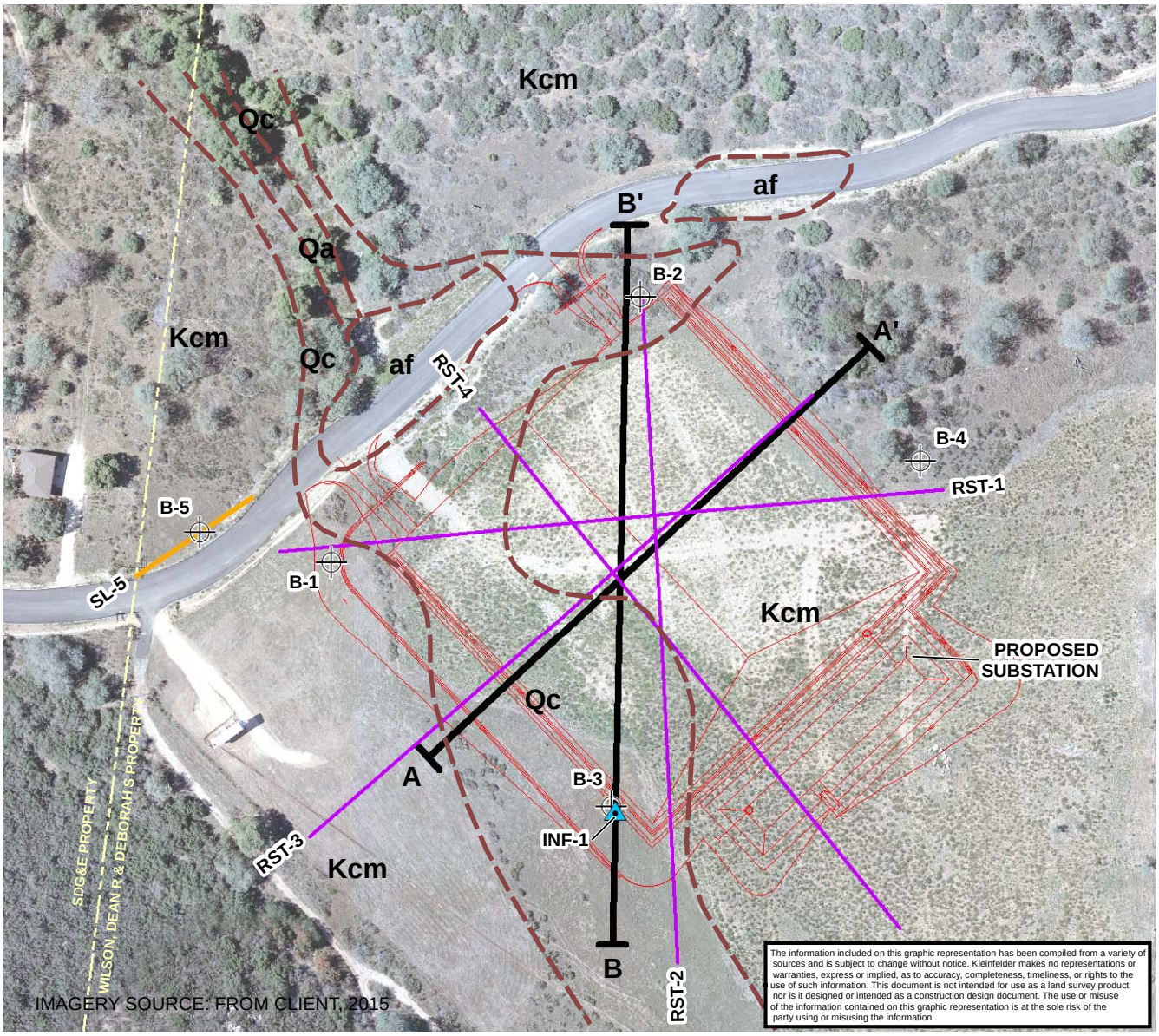
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SITE PLAN

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE
2



LEGEND

- B-9 — BORING LOCATION
- INF-1 — INFILTRATION TEST LOCATION
- SL-9 — SEISMIC REFRACTION SURVEY LINE
- RST-4 — RESISTIVITY SURVEY LINE
- RSL-07 — REFACTION SURVEY LINE (URS, 2009)
- ReMi-9 — REFACTION MICROTREMOR SURVEY LINE
- APPROXIMATE LOCATION OF GEOLOGIC CONTACT
- PROPOSED SUBSTATION ALIGNMENT

0 75 150 300
Feet

- **af** — ARTIFICIAL FILL
- **Qa** — ALLUVIAL DEPOSITS
- **Qc** — COLLUVIAL DEPOSITS
- **Kcm** — CORTE MADERA MONZOGRANITE
- B H B' — APPROXIMATE LOCATION OF GEOLOGIC CROSS SECTION

N

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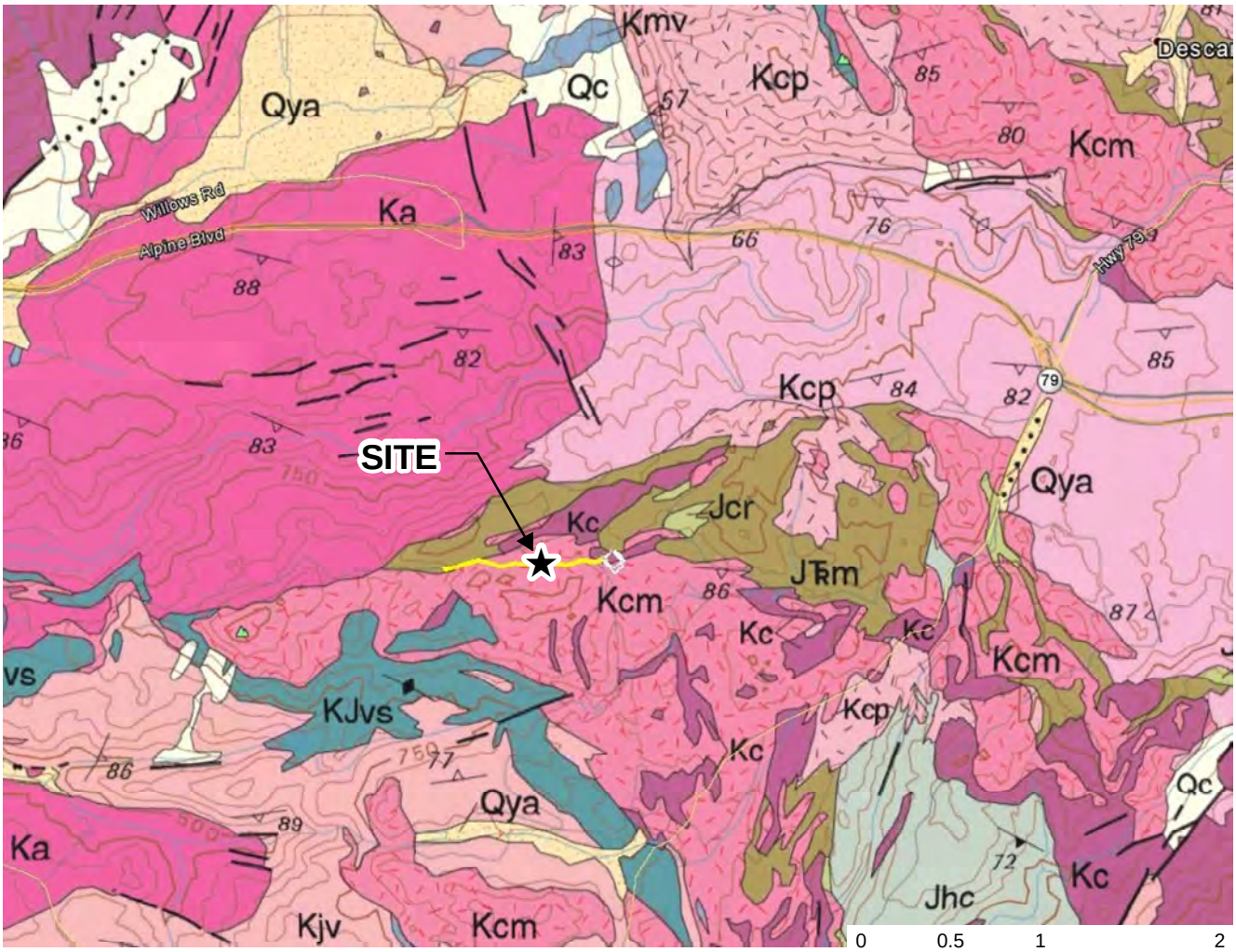
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GEOLOGIC MAP
SVC SUBSTATION SITE

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE
3



LEGEND

Qya	Young alluvium (Holocene)
Qc	Colluvium (Holocene and Pleistocene)
Klb	Tonalite of Las Bancas (Early Cretaceous)
Kc	Cuyamaca Gabbro (Early Cretaceous)
Kcm	Corte Madera Monzogranite (Early Cretaceous)
Kcp	Chiquito Peak Monzogranite (Early Cretaceous)
Kjv	Japatul Valley Tonalite (Early Cretaceous)
Ka	Tonalite of Alpine (Early Cretaceous)
Jcr	Granodiorite of Cuyamaca Reservoir (Late and MiddleJurassic)
Jhc	Gneiss of Harper Creek (Late and Middle Jurassic)
Kmv	Metavolcanic rocks (Early Cretaceous)
KJvs	Metavolcanic and metasedimentary rocks (Cretaceous and Jurassic?)
JTrm	Metasedimentary and metavolcanic rocks (Jurassic and Triassic)
	Fault
	Fault- Inferred

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Preliminary Geologic Map of the El Cajon 30' x 60' Quadrangle, Southern California, Version 1.0, compiled by Victoria R. Todd, 2004

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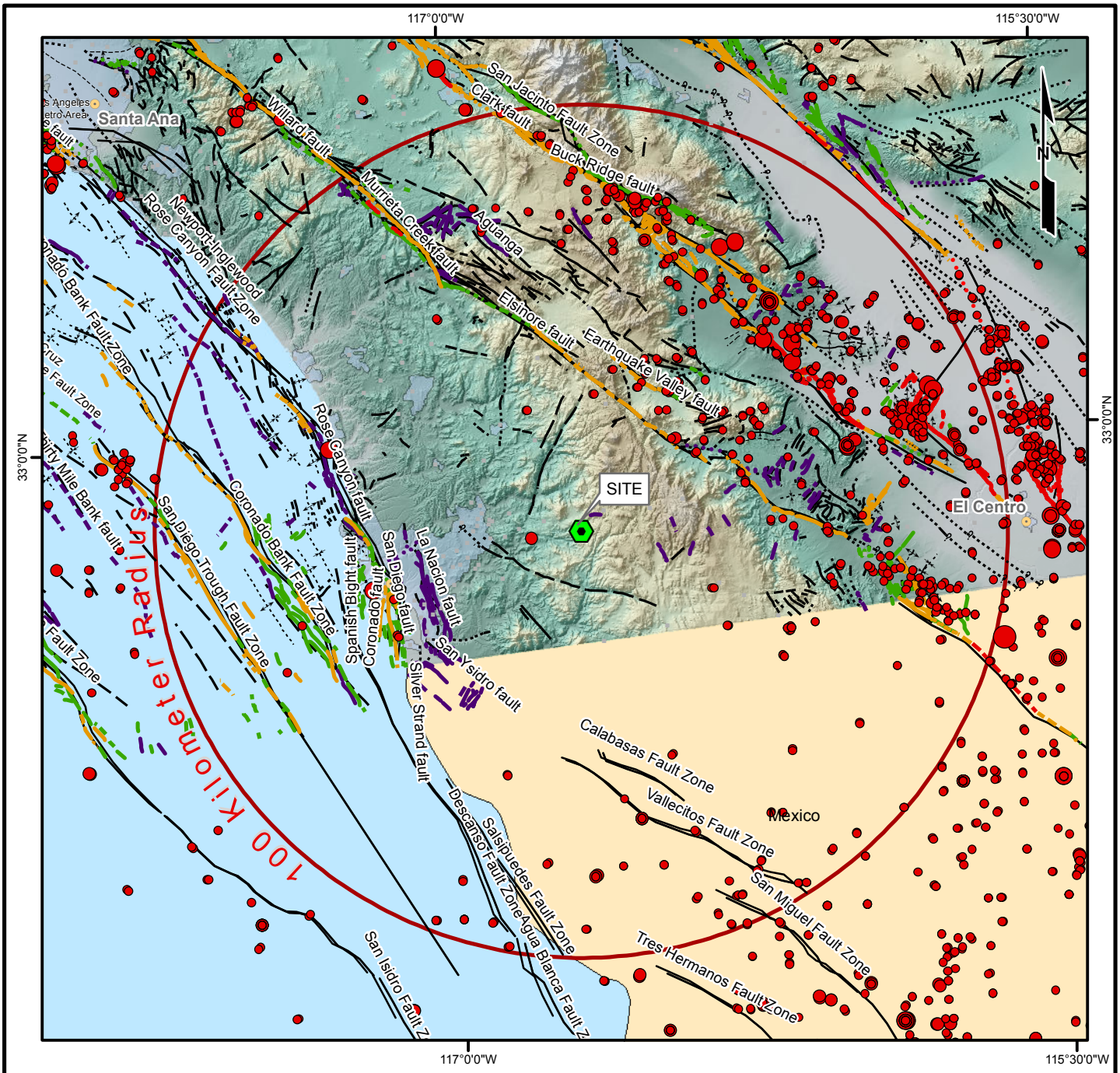
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REGIONAL GEOLOGIC MAP

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE
4

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Faulting Legend

Quaternary Faults (Bryant, 2005; USGS, 2009)

Historic displacement (< 200 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Late Quaternary displacement (< 750,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Holocene displacement (< 11,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Quaternary displacement (< 1,600,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Pre-Quaternary Geologic Structures (CGS, 2000)
- fault, approx. located
- fault, approx. located, queried
- fault, certain
- fault, concealed
- fault, concealed, queried
- fault, inferred, queried

ANSS Earthquakes

Magnitude
- 4.0 - 4.9
- 5.0 - 5.9
- 6.0 - 6.9
- 7.0 - 7.9
- 8.0 - 8.9

35 17.5 0 35
Kilometers

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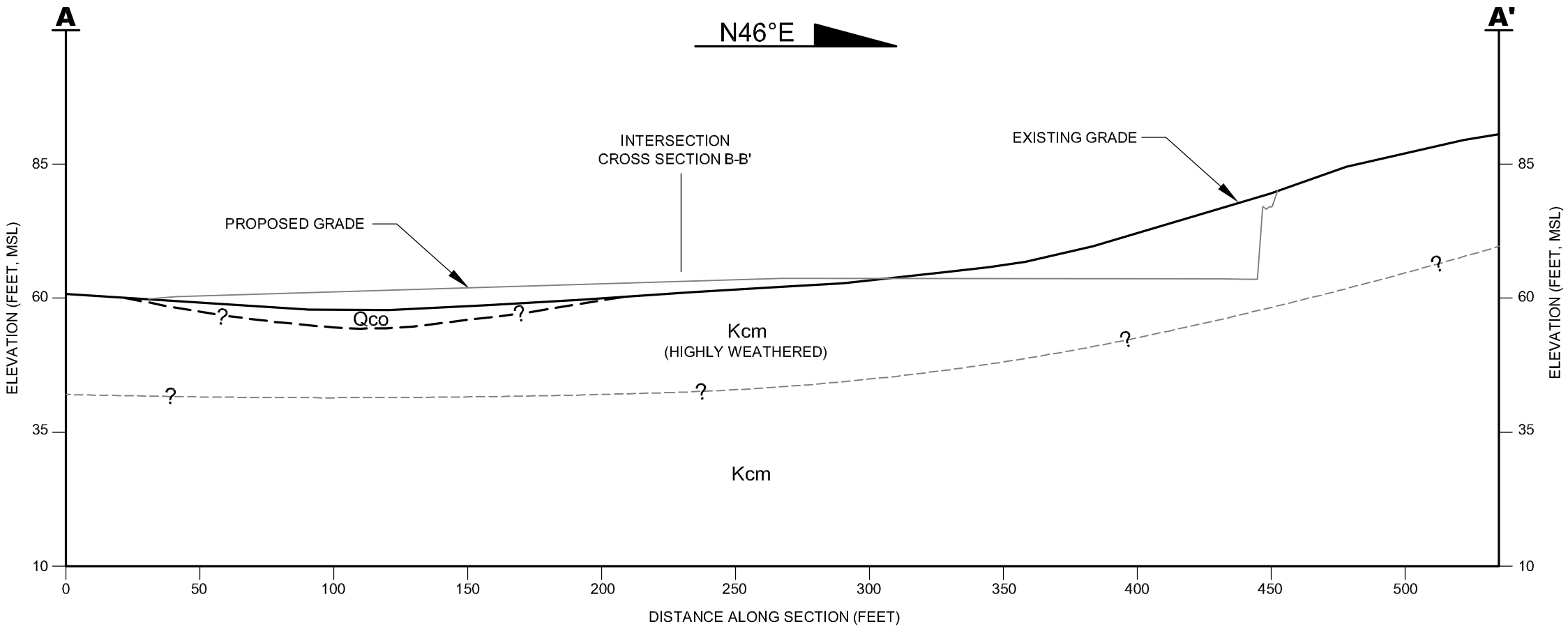
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REGIONAL FAULT AND EARTHQUAKE EPICENTER MAP (1800 - MAY 2015)

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE
5

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LEGEND

Qco	COLLUVIAL DEPOSITS
Kcm	CORTE MADERA MONZOGRANITE
- - ? - -	APPROXIMATE LOCATION OF GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
B-3 / TD = 20'	APPROXIMATE LOCATION OF BORING, SHOWING BORING ID AND TOTAL BORING DEPTH IN FEET

50 25 0 50
APPROXIMATE HORIZONTAL SCALE (feet)

25 0 25
APPROXIMATE VERTICAL SCALE (feet)

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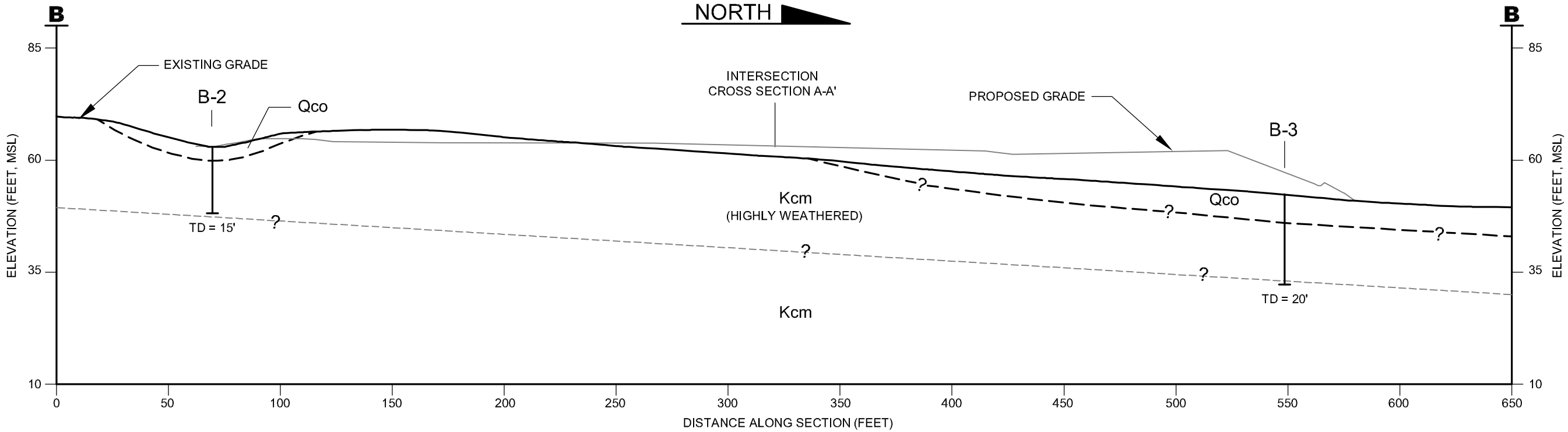
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GEOLOGIC CROSS SECTION A-A'

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE
6



LEGEND

Qco	COLLUVIAL DEPOSITS
Kcm	CORTE MADERA MONZOGRANITE
?	APPROXIMATE LOCATION OF GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN
B-3 / TD = 20'	APPROXIMATE LOCATION OF BORING, SHOWING BORING ID AND TOTAL BORING DEPTH IN FEET

50 25 0 50
APPROXIMATE HORIZONTAL SCALE (feet)

25 0 25
APPROXIMATE VERTICAL SCALE (feet)

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GEOLOGIC CROSS SECTION B-B'

SUNCREST 230KV SVC TRANSMISSION LINE
AND SVC SUBSTATION
SAN DIEGO COUNTY, CALIFORNIA

FIGURE
7

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ATTACHED XREFS:

APPENDIX A

FIELD INVESTIGATION

APPENDIX A
FIELD INVESTIGATION

The subsurface conditions at the substation site were investigated by drilling four exploratory geotechnical borings, and performing one infiltration test and two pairs of resistivity surveys. The substation borings were drilled to depths of approximately 15 to 25 feet below the existing ground surface (bgs). The boring for infiltration testing was drilled to a depth of approximately 5 feet bgs adjacent to 20-foot deep Boring B-3.

The subsurface conditions for the transmission line alignment were investigated by drilling five exploratory geotechnical borings and performing five P-wave refraction survey lines and one refraction microtremor (ReMi) profile were performed along Bell Bluff Truck Trail just off the northern edge of the road. The transmission alignment borings were drilled to depths of approximately 5 to 17 ½ feet bgs.

All borings were drilled by Pacific Drilling of San Diego, California using an all-terrain truck-mounted Marl M5 drill rig equipped with 6-inch-diameter hollow-stem augers. This work was conducted on July 20 and 21, 2015. A geologist from our office supervised the field operations and logged the borings. Selected bulk and relatively undisturbed samples were retrieved from the borings and transported to our laboratory for further evaluation. The borings were backfilled in accordance with County of San Diego Department of Environmental Health guidelines. The approximate locations of the current borings and previous URS boring are presented on Figure 2, Site Plan.

A Unified Soil Classification System (USCS) chart and a Boring Log Legend are presented as Figures A1 and A2, respectively. The Logs of Borings are presented as Figures A3 through A12. The Log of Boring performed in 2009 by URS for boring B-04 is provided in Appendix A.2.

The Logs of Borings describe the earth materials encountered, samples obtained, and show field and laboratory tests performed. The logs also show the general location, boring number, drilling date, and the names of the logger and drilling subcontractor. The borings were logged by an engineer/geologist using the USCS. The boundaries between soil types shown on the logs are approximate because the transition between different soil layers may be gradual. Bulk and intact samples of representative earth materials were obtained from the borings. The borings were backfilled using bentonite chips for borings deeper than 20 feet or soil cuttings for borings shallower than 20 feet per DEH guidelines and any remaining soil cuttings were spread out in the vicinity of the boring location.

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In-place soil samples were obtained at the test boring locations using a California penetration sampler driven a total of 18-inches (or until practical refusal), into the undisturbed soil at the bottom of the boring. The soil sampled by the California sampler (3-inch O.D., 2.4 inches I.D.) was retained in 6-inch long brass tubes for laboratory testing. An additional 2-inches of soil from each drive remained in the cutting shoe and was usually discarded after visually classifying the soil. The samplers were driven using a 140 pound automatic hammer falling 30-inches. The total number of hammer blows required to drive the sampler the final 12-inches is termed the blow count and is recorded on the Logs of Borings. For clarification, the blow counts presented on the Logs are raw and have not been adjusted for the effects of overburden pressure, input driving energy, rod length, sampler correction, or boring diameter correction. This is the typical way to present information on borings logs and the mentioned corrections are performed for analysis purposes.

Geophysical testing included two pairs of resistivity tests performed at the proposed substation site and five P-wave refraction survey lines and one refraction microtremor (ReMi) profile performed along the transmission line alignment. The geophysical testing was performed by Southwest Geophysics of San Diego, California on July 22 and 23, 2015. The resistivity tests were comprised of two separately tested survey lines that crossed roughly perpendicularly and were up to approximately 600 feet long. The resistivity 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. Soil resistance measurements were collected at electrode spacings of approximately 2, 3, 5, 7, 10, 20, 30, 50, 70, 100 and 200 feet. The soundings were performed along four different orientations in order to assess possible lateral variations in resistivity. The P-wave refraction survey lines were comprised of one line each and are approximately 125 feet in length. 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. The results were also used to calculate the shear wave velocity in the upper 100 feet of the site. The approximate locations of the survey lines are presented on Figure 2 and Figure 3. A copy of the Southwest Geophysics geophysical report is included in Appendix A.3 of this report.

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APPENDIX A.1

LOGS OF KLEINFELDER FIELD EXPLORATION

SAMPLE/SAMPLER TYPE GRAPHICS



BULK SAMPLE

CALIFORNIA SAMPLER
(3 in. (76.2 mm.) outer diameter)

STANDARD PENETRATION SPLIT SPOON SAMPLER
(2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)

GROUND WATER GRAPHICS

WATER LEVEL (level where first observed)

WATER LEVEL (level after exploration completion)

WATER LEVEL (additional levels after exploration)

OBSERVED SEEPAGE

NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, ie., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.
- If sampler is not able to be driven at least 6 inches then 50/X indicates number of blows required to drive the identified sampler X inches with a 140 pound hammer falling 30 inches.

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	**GRAVELS** (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu ≥4 and 1≤ Cc≤3		**GW**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			Cu <4 and/ or 1>Cc >3		**GP**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH 5% TO 12% FINES	Cu ≥4 and 1≤ Cc≤3		**GW-GM**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					**GW-GC**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
			Cu <4 and/ or 1>Cc >3		**GP-GM**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					**GP-GC**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		GRAVELS WITH > 12% FINES			**GM**	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
					**GC**	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
					**GC-GM**	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu ≥6 and 1≤ Cc≤3		**SW**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu <6 and/ or 1>Cc >3		**SP**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5% TO 12% FINES	Cu ≥6 and 1≤ Cc≤3		**SW-SM**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					**SW-SC**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
			Cu <6 and/ or 1>Cc >3		**SP-SM**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					**SP-SC**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		SANDS WITH > 12% FINES			**SM**	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
					**SC**	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
					**SC-SM**	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)				**ML**	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
					**CL**	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
					**CL-ML**	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
					**OL**	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid Limit greater than 50)				**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
					**CH**	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
					**OH**	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY

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GRAPHICS KEY

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE

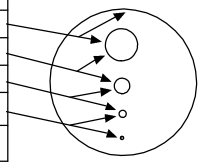
A-1

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gINT FILE: PROJECTWISE: 20160674.svc Suncrest.gpj
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GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		>12 in. (304.8 mm.)	>12 in. (304.8 mm.)	Larger than basketball-sized
Cobbles		3 - 12 in. (76.2 - 304.8 mm.)	3 - 12 in. (76.2 - 304.8 mm.)	Fist-sized to basketball-sized
Gravel	coarse	3/4 -3 in. (19 - 76.2 mm.)	3/4 -3 in. (19 - 76.2 mm.)	Thumb-sized to fist-sized
	fine	#4 - 3/4 in. (#4 - 19 mm.)	0.19 - 0.75 in. (4.8 - 19 mm.)	Pea-sized to thumb-sized
Sand	coarse	#10 - #4	0.079 - 0.19 in. (2 - 4.9 mm.)	Rock salt-sized to pea-sized
	medium	#40 - #10	0.017 - 0.079 in. (0.43 - 2 mm.)	Sugar-sized to rock salt-sized
	fine	#200 - #40	0.0029 - 0.017 in. (0.07 - 0.43 mm.)	Flour-sized to sugar-sized
Fines		Passing #200	<0.0029 in. (<0.07 mm.)	Flour-sized and smaller



Munsell Color

NAME	ABBR
Red	R
Yellow Red	YR
Yellow	Y
Green Yellow	GY
Green	G
Blue Green	BG
Blue	B
Purple Blue	PB
Purple	P
Red Purple	RP
Black	N

ANGULARITY

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges



Particles Present

Amount	Percentage
trace	<5
few	5-10
little	15-25
some	30-45
and	50
mostly	50-100

PLASTICITY

DESCRIPTION	LL	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm.) thread cannot be rolled at any water content.
Low (L)	< 30	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	30 - 50	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit
High (H)	> 50	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

REACTION WITH HYDROCHLORIC ACID

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT-N_{60} (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)
Very Loose	<4	<4	<5	0 - 15
Loose	4 - 10	5 - 12	5 - 15	15 - 35
Medium Dense	10 - 30	12 - 35	15 - 40	35 - 65
Dense	30 - 50	35 - 60	40 - 70	65 - 85
Very Dense	>50	>60	>70	85 - 100

NOTE: AFTER TERZAGHI AND PECK, 1948

CONSISTENCY - FINE-GRAINED SOIL

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (q_u)(psf)	CRITERIA
Very Soft	< 1000	Thumb will penetrate soil more than 1 in. (25 mm.)
Soft	1000 - 2000	Thumb will penetrate soil about 1 in. (25 mm.)
Firm	2000 - 4000	Thumb will indent soil about 1/4-in. (6 mm.)
Hard	4000 - 8000	Thumb will not indent soil but readily indented with thumbnail
Very Hard	> 8000	Thumbnail will not indent soil

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4-in. thick, note thickness
Laminated	Alternating layers of varying material or color with the layer less than 1/4-in. thick, note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

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SOIL DESCRIPTION KEY

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-2

KLEINFELDER - 550 West C Street, Suite 1200 | San Diego, CA 92101 | PH: 858.320.2000 | FAX: 858.320.2001 | www.kleinfelder.com

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PLOTTED: 08/14/2015 08:13 AM BY: stena

BORING LOG B-1

Date Begin - End:	7/20/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Cloudy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,557.103
Easting: 6,433,380.886
Approximate Ground Surface Elevation (ft.): 3,063.0
Surface Condition: Grass

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Colluvial Deposits (Qc) **Silty SAND (SM)**: dark grayish brown (10YR 4/2), dry, medium dense, (Topsoil)											
3060			**Decomposed GRANITE (Kcm)**; excavates as **Clayey GRAVEL with Sand (GC)**: fine to coarse-grained, angular, yellow (10YR 7/6), moist, very dense		BC=50	6"	GC	3.8	110.6	49	13			Rocky material in shoe
	5		Excavates as **Clayey SAND (SC)**: fine to medium-grained, yellow (10YR 7/6) - observed iron oxide and manganese coatings on grain and fracture surface, small percentage of mafic minerals below 5 feet		BC=13 25 33	12"	SC			92	18	27	12	Expansion Index=4; R-value=19; DS; LC; CORR
3055														
	10				BC=24 50	12"								
3050			Excavates as **Well-graded SAND with Silt and Gravel (SW-SM)**: fine to coarse-grained sand, <3/4" dia. gravel, angular, brownish yellow (10YR 6/6), moist, very dense, some manganese oxide staining											
	15				BC=23 35 30	18"								Very hard drilling at 15 feet
3045														
	20		- observed iron oxide on grain surface, approximately 15-20% mafic minerals below 20 feet		BC=40 50	12"								
3040														
	25		- becomes yellowish brown (10YR 5/6) below 25 feet		BC=50/5"									Rod bounced entire drive
3035			The boring was terminated at approximately 25.5 ft. below ground surface. The exploration was backfilled with bentonite on July 20, 2015.											

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20160674
DRAWN BY:	MAP
CHECKED BY:	SHR
DATE:	8/11/2015
REVISED:	-

BORING LOG B-1

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-3
PAGE: 1 of 1

gINT FILE: PROJECTWISE: 20160674.svc Suncrest.gpj
gINT TEMPLATE: PROJECTWISE: KLF_STANDARD_GINT_LIBRARY_2015.GLB [KLF_BORING/TEST PIT SOIL LOG]

PLOTTED: 08/14/2015 08:13 AM BY: stena

BORING LOG B-2

Date Begin - End:	7/20/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Cloudy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,795.517
Easting: 6,433,658.638
Approximate Ground Surface Elevation (ft.): 3,063.0
Surface Condition: Grass

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Colluvial Deposits (Qc): 3", silty, dark gray brown, (Topsoil)											
			Sandy SILT (ML): low plasticity, yellowish brown (10YR 5/6), dry, soft											
3060			**Decomposed GRANITE (Kcm):** excavates as **Clayey GRAVEL with Sand (GC)**: fine to coarse-grained sand, some gravel, sub-angular to angular, low plasticity, mottled dark yellowish brown (10YR 4/6) with white (10YR 8/1) and black (10YR 2/1), dry, very dense		BC=26 50/5"	9"	GC			49	13			
	5		Excavates as **Silty Clayey SAND (SC-SM)**: fine to medium-grained, dark yellowish brown (10YR 4/6) - non-plastic, sample has interlocking granular texture below 5 feet		BC=50/6"	4"	SC-SM	1.5	115.0	97	18	26	7	Expansion Index=0; R-value=42; DS; LC; CORR
3055														
	10		- becomes dark yellowish brown (10YR 3/6), alternating fine grain and coarse texture in sample, large quartz crystals, possible pegmatite dike below 10 feet		BC=27 50/6"	12"								
3050														Refusal at 15 feet. Moved 3 feet east, refusal at 13 feet. Moved 3 feet west, refusal at 14 feet.
	15				BC=50/0"	NR								
3045														
	20													
3040														
	25													
3035														

The boring was terminated because of practical auger refusal ( ) at approximately 15 ft. below ground surface. The exploration was backfilled with auger cuttings on July 20, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

gINT FILE: PROJECTWISE: 20160674_svc Suncrest.gpj
gINT TEMPLATE: PROJECTWISE: KLF_STANDARD_GINT_LIBRARY_2015.GLB [KLF_BORING/TEST PIT SOIL LOG]

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PROJECT NO.:	20160674
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DATE:	8/11/2015
REVISED:	-

BORING LOG B-2

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-4

KLEINFELDER - 550 West C Street, Suite 1200 | San Diego, CA 92101 | PH: 858.320.2000 | FAX: 858.320.2001 | www.kleinfelder.com

PLOTTED: 08/14/2015 08:13 AM BY: stena

BORING LOG B-3

Date Begin - End:	7/20/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Cloudy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,336.923
Easting: 6,433,632.751
Approximate Ground Surface Elevation (ft.): 3,053.0
Surface Condition: Grass

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Colluvial Deposits(Qc) **Sandy SILT (ML)**: fine-grained sand, low plasticity, very dark grayish brown (10YR 3/2), dry, soft, (Topsoil)											
3050			**Clayey SAND with Gravel (SC)**: fine to medium-grained sand, sub-angular to sub-rounded, low plasticity, dark yellowish brown (10YR 4/6), moist, dense		BC=8 10 11	18"								
	5				BC=12 22 31	18"	SC	6.7	125.3	82	25			
3045			**Decomposed GRANITE (Kcm);** excavates as **Clayey SAND (SC)**: fine to medium-grained sand, sub-angular, low plasticity, pale olive (5Y 6/4), moist, very dense											
	10		Excavates as **Silty SAND with Gravel (SM)**: fine to medium-grained sand, sub-angular to angular, low plasticity, strong brown (7.5YR 4/6) to dark yellowish brown (10YR 4/6), moist, very dense, interlocking granular texture		BC=28 26 25	10"	SM			77	17			
3040														Drilling becomes difficult at 14 feet
	15		- cuttings become pale olive (5Y 6/4)		BC=50/2"	NR								
3035														
	20				BC=50/0"	NR								Sampler rod bouncing
3030														
	25													
3025														

The boring was terminated at approximately 20 ft. below ground surface. The exploration was backfilled with auger cuttings on July 20, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

gINT FILE: PROJECTWISE: 20160674_svc Suncrest.gpj
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PROJECT NO.:	20160674
DRAWN BY:	MAP
CHECKED BY:	SHR
DATE:	8/11/2015
REVISED:	-

BORING LOG B-3

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-5

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BORING LOG B-4

Date Begin - End:	7/20/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Cloudy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,647.952
Easting: 6,433,910.782
Approximate Ground Surface Elevation (ft.): 3,079.0
Surface Condition: Grass

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Colluvial Deposits (Qc): 3", silty, dark grayish brown, (Topsoil)											
			Silty SAND (SM): fine to coarse-grained sand, sub-angular to sub-rounded, low plasticity, strong brown (7.5YR 4/6), moist, very dense		BC=19 35 44	15"								
3075			**Decomposed GRANITE (Kcm):** excavates as **Clayey SAND (SC)**: coarse to very coarse-grained sand, angular, low plasticity, mottled white (7.5YR 8/1) with black (7.5YR 2.5/1) and reddish yellow (7.5YR 6/8), moist, very dense, sample has interlocking granular texture											
	5				BC=21 39 50/5"	14"	SC	3.5	124.2	99	28			
			Decomposed GRANITE (Kcm): excavates as **Silty SAND (SM)**: coarse to very coarse-grained sand, angular, low plasticity, mottled white (7.5YR 8/1) with black (7.5YR 2.5/1) and reddish yellow (7.5YR 6/8), moist, very dense, sample has interlocking granular texture											
3070														
	10		- becomes fine to coarse-grained sand, sub-angular to angular, mottled light gray (2.5Y 7/2) and black (2.5Y 2.5/1) below 10 feet		BC=50/6"	6"	SM	2.2	114.9	89	13			
3065														
	15		- becomes dark yellowish brown (10YR 4/6) below 15 feet		BC=50/5"	1"								
3060														
	20				BC=50/0"	NR								
3055														
	25													
3050														

The boring was terminated at approximately 20 ft. below ground surface. The exploration was backfilled with auger cuttings on July 20, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

gINT FILE: PROJECTWISE: 20160674_svc Suncrest.gpj
gINT TEMPLATE: PROJECTWISE: KLF_STANDARD_GINT_LIBRARY_2015.GLB [KLF_BORING/TEST PIT SOIL LOG]

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DATE:	8/11/2015
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BORING LOG B-4

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-6

KLEINFELDER - 550 West C Street, Suite 1200 | San Diego, CA 92101 | PH: 858.320.2000 | FAX: 858.320.2001 | www.kleinfelder.com

PLOTTED: 08/14/2015 08:13 AM BY: stena

BORING LOG B-5

Date Begin - End:	7/20/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Cloudy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,584.161
Easting: 6,433,262.241
Approximate Ground Surface Elevation (ft.): 3,071.0
Surface Condition: Grass

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
3070	0		**Colluvial Deposits (Qc)**: 6", silty, dark grayish brown, (Topsoil)											
			Decomposed GRANITE (Kcm): excavates as **Clayey SAND (SC)**: fine to coarse-grained sand, angular to sub-angular, mottled dark yellowish brown (10YR 4/6) with white (10YR 8/1) and black (10YR 2/1), dry, very dense, interlocking granular texture.		BC=16 24 21	15"								TR
3065	5		- becomes dark brown (7.5YR 3/4) below 5 feet		BC=50/6"	6"	SC	6.9	128.8	97	24			TR
			Decomposed GRANITE (Kcm): excavates as **Silty SAND (SM)**: fine to coarse-grained, angular to sub-angular, mottled dark yellowish brown (10YR 4/6) with white (10YR 8/1) and black (10YR 2/1), dry, very dense, interlocking granular texture.											
3060	10		- texture becomes finer grain, higher mafic mineral content, increased fine content below 10 feet		BC=50/4"	1"								
3055	15		- coarse-grained trace gravel, some clay, dark yellowish brown (10YR 3/6), moist below 15 feet		BC=25 50/3"	7"								
3050	20													
3045	25													

The boring was terminated at approximately 15.8 ft. below ground surface. The exploration was backfilled with auger cuttings on July 20, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

gINT FILE: PROJECTWISE: 20160674_svc Suncrest.gpj
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PROJECT NO.:	20160674
DRAWN BY:	MAP
CHECKED BY:	SHR
DATE:	8/11/2015
REVISED:	-

BORING LOG B-5

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-7

KLEINFELDER - 550 West C Street, Suite 1200 | San Diego, CA 92101 | PH: 858.320.2000 | FAX: 858.320.2001 | www.kleinfelder.com

PLOTTED: 08/14/2015 08:13 AM BY: stena

BORING LOG B-6

Date Begin - End:	7/21/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Foggy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,460.501
Easting: 6,432,056.19
Approximate Ground Surface Elevation (ft.): 3,128.0
Surface Condition: Dirt

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
3125			**Decomposed GRANITE (Kcm):** excavates as **Clayey SAND (SC)**: fine to medium-grained sand, low to medium plasticity, strong brown (7.5YR 4/6), dry, hard.											
					BC=20 30 40	15"	SC	3.3	118.6	97	31			CORR
	5		Excavates as **Clayey SAND (SC)**: low plasticity, mottled pinkish white (7.5YR 8/2) and reddish yellow (7.5YR 6/6), dry, very dense, interlocking texture apparent		BC=50/6"	6"	SC	2.3	106.3	94	27			Very hard drilling at 5 feet
3120														Refusal at 7.5 feet on first attempt, moved south, refusal at 4 feet
	10													
3115														
	15													
3110														
	20													
3105														
	25													
3100														

The boring was terminated because of practical auger refusal (↑) at approximately 7.5 ft. below ground surface. The exploration was backfilled with auger cuttings on July 21, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20160674
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CHECKED BY:	SHR
DATE:	8/11/2015
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BORING LOG B-6

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-8

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BORING LOG B-7

Date Begin - End:	7/21/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Foggy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,483.721
Easting: 6,430,804.737
Approximate Ground Surface Elevation (ft.): 3,155.0
Surface Condition: Dirt

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Artificial Fill (af) **Clayey SAND (SC)**: fine to medium-grained sand, low to medium plasticity, strong brown (7.5YR 4/6), dry, very stiff, mottled texture, roots		BC=11 22 31	15"	SC	3.7	115.9	99	40			CORR; TR
3150	5		**Decomposed GRANITE (Kcm):** excavates as **Clayey SAND (SC)**: fine to coarse-grained sand, sub-angular to angular, low plasticity, mottled very pale brown (10YR 8/3) with yellowish brown (10YR 5/6) and black (10YR 2/1), dry, very dense, interlocking granular texture.		BC=30 50	9"								TR
			Excavates as **Silty SAND (SM)**: fine to coarse-grained sand, sub-angular to angular, low plasticity, very pale brown (10YR 8/3) with black (10YR 2/1), dry, very dense											
3145	10				BC=50/4"	3"								
3140	15		- fine to medium-grained sand, very dark grayish brown (10YR 3/2) with mottled very pale brown (10YR 8/3) below 15 feet		BC=50/1"	1"								
3135	20													
3130	25													

The boring was terminated at approximately 15.1 ft. below ground surface. The exploration was backfilled with auger cuttings on July 21, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20160674
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BORING LOG B-7

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-9
PAGE: 1 of 1

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BORING LOG B-8

Date Begin - End:	7/21/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Foggy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,541.553
Easting: 6,429,877.143
Approximate Ground Surface Elevation (ft.): 3,151.0
Surface Condition: Dirt

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
3150			**Colluvial Deposits (Qc)** **Silty SAND (SM)**: fine to coarse-grained sand, sub-angular to sub-rounded, low plasticity, dark brown (10YR 3/2) mottled yellowish red (5YR 5/6), dry, medium dense, pinhole voids (Topsoil)		BC=6 11 16	15"								CORR TR
			Clayey SAND (SC): fine to coarse-grained sand, sub-rounded, low plasticity, brown (7.5YR 4/4), dry, dense				SC	2.3	105.6	99	24			
	5		**Decomposed GRANITE (Kcm):** excavates as **Silty SAND (SM)**: fine to coarse-grained sand, sub-angular to angular, low plasticity, mottled very pale brown (10YR 8/3) and black (10YR 2/1) and yellowish brown (10YR 5/6), dry, very dense		BC=50/6"	6"								TR
3145														
	10		- becomes pale yellow (2.5Y 7/4) below 10 feet		BC=31 50/4"	10"								
3140			Excavates as **Silty SAND with Gravel (SM)**: fine to coarse-grained sand, angular, low plasticity, brown (10YR 4/3), dry, very dense											
	15				BC=50/4"									
3135														
	20													
3130														
	25													
3125														

The boring was terminated at approximately 15.3 ft. below ground surface. The exploration was backfilled with auger cuttings on July 21, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.
GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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BORING LOG B-8

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-10
PAGE: 1 of 1

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BORING LOG B-9

Date Begin - End:	7/21/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Foggy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,482.628
Easting: 6,429,445.521
Approximate Ground Surface Elevation (ft.): 3,138.0
Surface Condition: Dirt

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
3135	5		**Decomposed GRANITE (Kcm):** excavates as **Silty SAND (SM)**: fine to coarse-grained sand, sub-angular, reddish brown (5YR 4/4)		BC=25 28 38	16"	SM	4.0	132.8	99	14			Drilling at toe of 5 foot high cut Refusal at 5 feet on first attempt, moved ~3' east, refusal at 4.5 feet

The boring was terminated because of practical auger refusal ( ) at approximately 5 ft. below ground surface. The exploration was backfilled with auger cuttings on July 21, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

3130 10 3125 15 3120 20 3115 25 3110

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PROJECT NO.:	20160674
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BORING LOG B-9

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-11
PAGE: 1 of 1

gINT FILE: PROJECTWISE: 20160674_svc Suncrest.gpj
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BORING LOG INV-1

Date Begin - End:	7/20/2015	**Drilling Company:**	Pac Drill		
Logged By:	S. Rugg	**Drill Crew:**	Gordy & Toby		
Hor.-Vert. Datum:	NAD83	**Drilling Equipment:**	Marl 5	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Hollow Stem Auger		
Weather:	Cloudy	**Exploration Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Northing: 1,875,333.141
Easting: 6,433,636.203
Approximate Ground Surface Elevation (ft.): 3,053.0
Surface Condition: Grass

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Colluvial Deposits (Qc)											
			Sandy SILT (ML): low plasticity, very dark grayish brown (10YR 3/2), dry, soft, (Topsoil)											
3050			**Clayey SAND (SC)**: fine to medium-grained sand, sub-angular to sub-rounded, low plasticity, dark yellowish brown (10YR 4/6) mottled strong brown and black, dry, dense				SC			96	37	25	11	Expansion Index=0; R-value=31; DS; LC; CORR
	5				BC=19 27		SC	7.0	120.0	93	43			
3045														
	10													
3040														
	15													
3035														
	20													
3030														
	25													
3025														

The boring was terminated at approximately 5.2 ft. below ground surface. The exploration was backfilled with auger cuttings on July 20, 2015.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
Placed 2" gravel in bottom of borehole and a 4" dia. 5' casing. The exploration location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20160674
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BORING LOG INV-1

SUNCREST 230KV SVC TRANSMISSION LINE AND SVC SUBSTATION
SAN DIEGO, CALIFORNIA

PLATE
A-12
PAGE: 1 of 1

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APPENDIX A.2

LOGS OF 2009 URS FIELD EXPLORATION

Project: SDG&E - Suncrest Substation
Project Location: Bell Bluff, San Diego County, California
Project Number: 27669017.00002

Log of Boring B-04

Sheet 1 of 4

Date(s) Drilled	**01/19/09**	Logged By	**P. McDonald**	Checked By	**J. Nevius/C. Goetz**
Drilling Method	**Hollow Stem Auger/HQ3 Core**	Drill Bit Size/Type	**8" finger bit/HQ3 #6**	Total Depth Drilled	**50.0 feet**
Drill Rig Type	**Deitrich D120**	Drilling Contractor	**Tri County Drilling**	Approx. Surface Elevation	**3087 feet MSL**
Groundwater Level	**None encountered**	Location	**N32° 48.682', W116° 40.968'**	Inclination from Horizontal/Bearing	**90°**
Borehole Completion	**Bentonite grout**			Hammer Data	**140 lbs/30" drop**

Elevation, feet	Depth, feet	ROCK CORE: Run No.	Box No.	Recovery, %	Fractures per Foot	R Q D, %	Fracture Drawing Number	Lithology	MATERIAL DESCRIPTION	SOIL SAMPLES: Type	Number	Blows/foot	Drill Time and Rate (ft/hr)	REMARKS AND LAB TESTS
3087	0								METASEDIMENTARY ROCK Light brown, medium grained, completely weathered, extremely to very weak. Fragments to very dense, dry, clayey to silty SAND (SC-SM)		1	17		SA(20), WC(9), DUW(121), DS
3086	1													
	2										2	38		WA(24), WC(6)
3084	3													
	4										3	50/3"		SA(21), WC(4)
3082	5													
	6										4			SA(29), WC(5), COMP
3080	7								Becomes pale yellowish brown					
	8													
3078	9										5	50/3"		SA(29), WA(4)
	10				0		M		Becomes completely to highly weathered				1108	DUW(122), UCS
3076	11	1	1	90	0	90							20	
	12				0									
3074	13												1115	

Report: GEO_CORE+SOIL_17; File: 27669017.GPJ; 5/27/2009 B-04

URS

Figure A-5

Project: SDG&E - Suncrest Substation
Project Location: Bell Bluff, San Diego County, California
Project Number: 27669017.00002

Log of Boring B-04

Elevation, feet	Depth, feet	ROCK CORE: Run No.	Box No.	Recovery, %	Fractures per Foot	R Q D, %	Fracture Drawing Number	Lithology	MATERIAL DESCRIPTION	SOIL SAMPLES: Type	Number	Blows/foot	Drill Time and Rate (ft/hr)	REMARKS AND LAB TESTS
3074	13				1		1		1: 15°, J, T, No, N, Pl, Sr				1120	
	14				0		1							
3072	15								2: 10°, J, T, No, N, Wa, Sr					
		2		68	1	0*	2							DUW(165), UCS
	16								3: 15° J, T, Cl, Sp, Wa, Sr 4: 15° J, T, Cl, Sp, Wa, Sr					*Rock does not meet soundness requirements
					1		3 4						14	
3070	17						NR							
					2								1142	
	18						1						1146	
							2							
					3		3							
3068	19						M		1: 35°, J, N, Cl, Sp, Pl, S					
			1						2: 5°, J, N, Cl, Sp, Ir, R					
					0		NR	M	3: 60-70°, J, N, Mn, Su, Wa, R					
	20						M							
		3		73	0	0*							20	
3066	21													
					0									
	22						M							
							NR							
					--									
3064	23												1201	
							1		1: 10°, Fo, Vn, Fe, Su, Pl, Sr				1210	
							2		2: 15°, J, N, Fe, Su, Ir, R					
					2		3		3: 45°, J, N, Fe+Mn, Su, Pl, S					
	24													
					1		M							
3062	25						M							
		4		50	--	0*	M						15	
	26													
					--		NR							
3060	27													
					--									
	28												1230	
							1		Becomes moderately weathered, moderately strong to strong 1: 10°, J, Py, Pa, Pl, S				1233	
			2	92	9	40	2		2: 45°, J, N, Fe+Mn, Su, Pl, S					
							3		3: 80°, J, N, Fe+Mn, Su, Pl, S					
3058	29						M		4: 75°, J, N, Mn, Su, Pl, S					

Report: GEO_CORE+SOIL_17; File: 27669017.GPJ; 5/27/2009 B-04

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Figure A-5

Project: SDG&E - Suncrest Substation
Project Location: Bell Bluff, San Diego County, California
Project Number: 27669017.00002

Log of Boring B-04

Sheet 3 of 4

Elevation, feet	Depth, feet	ROCK CORE: Run No.	Box No.	Recovery, %	Fractures per Foot	R Q D, %	Fracture Drawing Number	Lithology	MATERIAL DESCRIPTION	SOIL SAMPLES: Type	Number	Blows/foot	Drill Time and Rate (ft/hr)	REMARKS AND LAB TESTS
3058	29				6		M 4 5 6		5: 5°, J, N, Cl+Py, Fi, Pl, S					
3056	30	5		92	4	40	M 7 8 9 10 11 12		Becomes slightly weathered, strong, fine grained, light gray 6: 8-10°, J, N, Cl, Fi, Pl, S 7: 10°, J, N, Cl, Fi, Pl, S 8: 10°, J, Mw, Cl+Sd, Fi, Pl, S 9: 10°, J, N, Cl+Sd, Fi, Pl, S 10: 30°, J, N, Fe, Sp, Wa, R 11: 20°, J, N, Fe, Sp, Wa, R 12: 60-70°, J, N, Fe, SP, Wa, R				6	DUW(174), UCS
	31				1									
	32													
3054	33						NR						1325	
													1330	
	34				0								5	
			2		0									
3052	35	6		100	0	73			1: 45-50°, J, Fe, Su, Pl, Sr					
	36				5									
3050	37						2							
					5				2: 10-30°, J, N, Fe, Su, Wa, R				1424	
	38												1430	
					5		1 2 3 4		1: 10°, J, N, Mn, Pl, Sr 2: 5°, J, N, Mn, Pl, Sr					
3048	39								3: 30°, J, N, Fe, Su, Wa, R 4: 30°, J, N, Fe, Su, Pl, Sr					
					3									
	40	7		100	0	90							5	
3046	41				1									
							5		5: 65-70°, J, N, Fe, Su, Wa, R					
	42				0									
3044	43												1530	
			3		0								1536	
	44			100		90	M						7	
					1									
3042	45													

Report: GEO_CORE+SOIL_17; File: 27669017.GPJ; 5/27/2009 B-04

URS

Figure A-5

Project: SDG&E - Suncrest Substation
Project Location: Bell Bluff, San Diego County, California
Project Number: 27669017.00002

Log of Boring B-04

Elevation, feet	Depth, feet	ROCK CORE: Run No.	Box No.	Recovery, %	Fractures per Foot	R Q D, %	Fracture Drawing Number	Lithology	MATERIAL DESCRIPTION	SOIL SAMPLES: Type	Number	Blows/foot	Drill Time and Rate (ft/hr)	REMARKS AND LAB TESTS
3042	45													
		8	3	100	6	90	1		1: 5-15°, N, No, Su, Wa, R					
							3		2: 40°, J, Fe, Sp, Pl, S					
									3: 75°, J, Fe, Sp, Wa, R					
							4		4: 40-70°, J, Fe, Sp, Ir, V, R					
	46								5: 15-20°, J, Fe, Sp, St, R					
					2				←Near vertical gneiss banding up to 3/4" wide				7	
3040	47						5							
					1									
	48												1618	
													0730	
					1				1: 70°, J, Fe +H, Fi, Wa, R					
							1		2: 15°, J, Fe, Su, Wa, R					
									3: 15°, J, R, Fe, Su, Wa, R					
3038	49	9		100		92	2		4: 15°, J, No, No, Ir, Vr				4	
					3		3							
													0800	
	50								Bottom of boring at 50 feet					
3036	51													
	52													
3034	53													
	54													
3032	55													
	56													
3030	57													
	58													
3028	59													
	60													
3026	61													

Report: GEO_CORE+SOIL_17; File: 27669017.GPJ; 5/27/2009 B-04

URS

Figure A-5



Boring B-04, Depth Interval 9.6 to 28.0 feet



Boring B-04, Depth Interval 28.0 to 42.3 feet

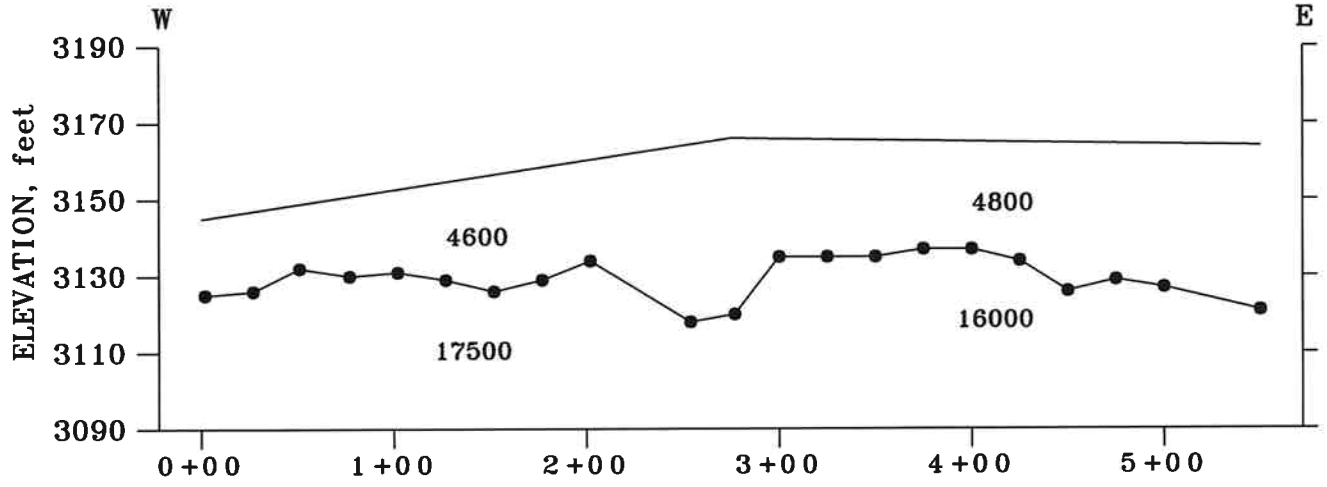
CORE PHOTOGRAPHS BORING B-04	URS
Suncrest Substation 27669017.00002	Date: 2-19-09 Figure: A-70

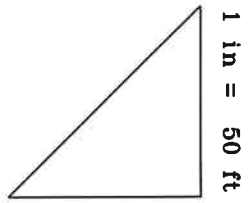


Boring B-04, Depth Interval 42.3 to 50.0 feet

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CORE PHOTOGRAPHS BORING B-04	URS
Suncrest Substation 27669017.00002	Date: 2-19-09
	Figure: A-71



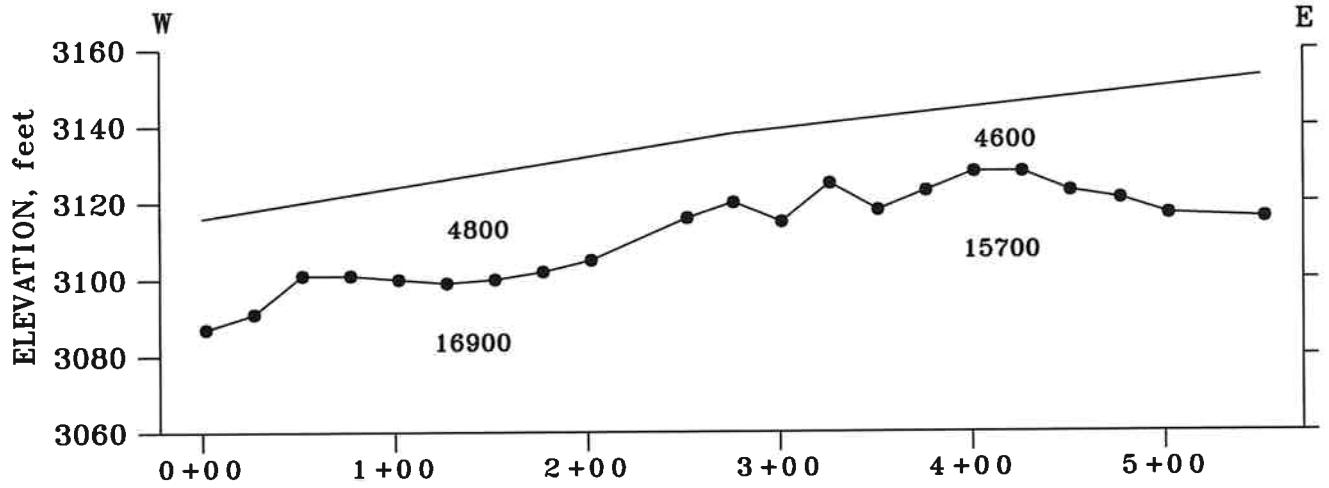


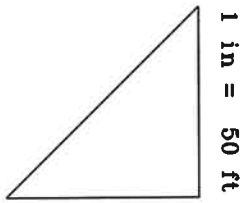
1 in = 100 ft

P-wave velocities in feet per second

RS08-6

Project No. 27669017	Date: 11-24-08	Project: Suncrest Substation	Fig. B-6





P-wave velocities in feet per second

RS08-7

Project No. 27669017	Date: **11-24-08**	Project: Suncrest Substation	Fig. B-7

APPENDIX A.3

GEOPHYSICAL REPORT BY SOUTHWEST GEOPHYSICS

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

SOUTHWEST GEOPHYSICS, INC.
YOUR SUBSURFACE SOLUTION

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

Patrick Lehrmann, P.G., P.Gp.
Principal Geologist/Geophysicist

Hans van de Vrugt

Hans van de Vrugt, C.E.G., P.Gp.
Principal Geologist/Geophysicist

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Figure 5 – ReMi Results, R-1
Figure 6 – Electrical Resistivity Results (RL-1 through RL-4)

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.

Table 2 – ReMi Results

Line No.	Depth (feet)	Shear Wave Velocity (feet/second)
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.

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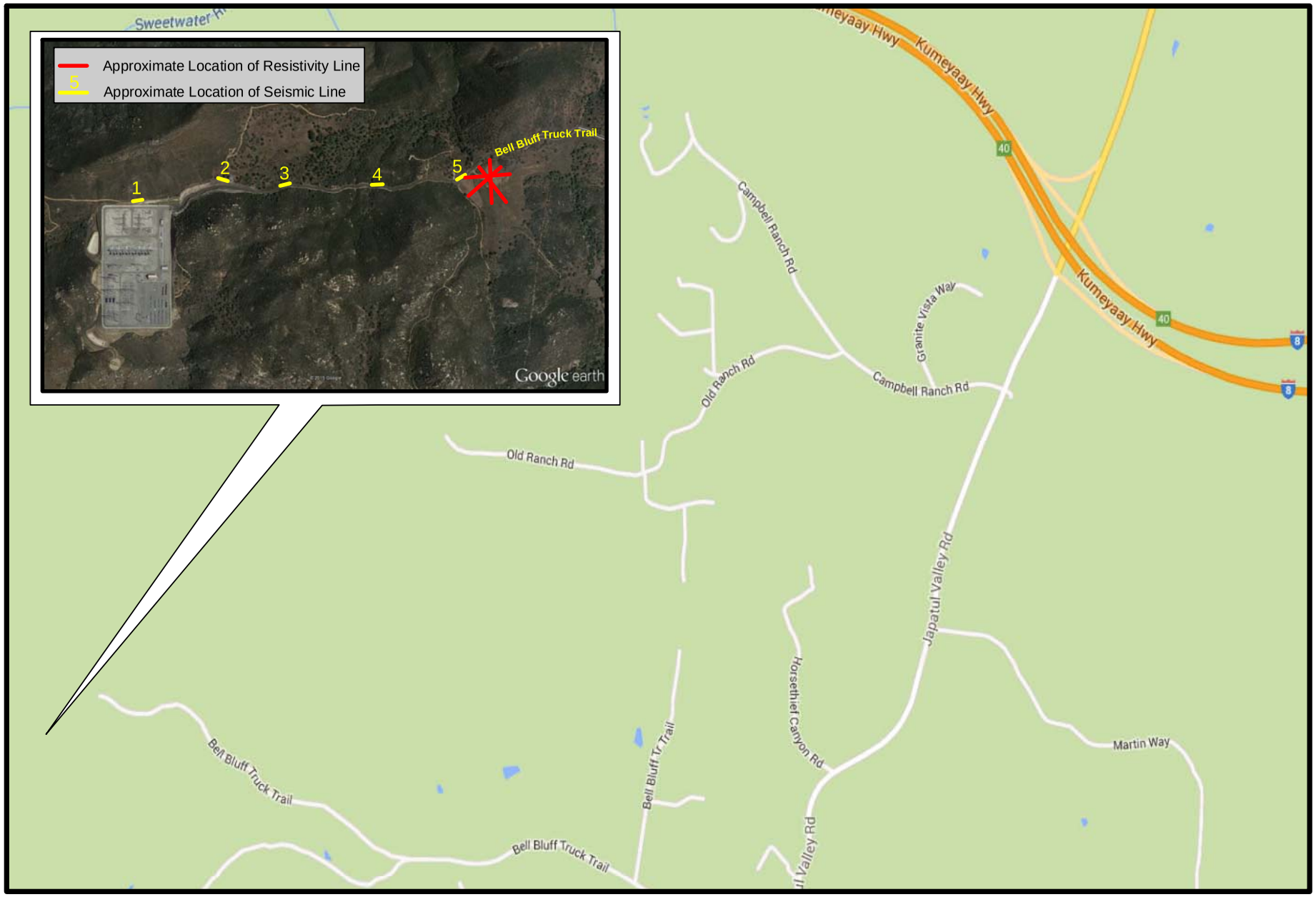
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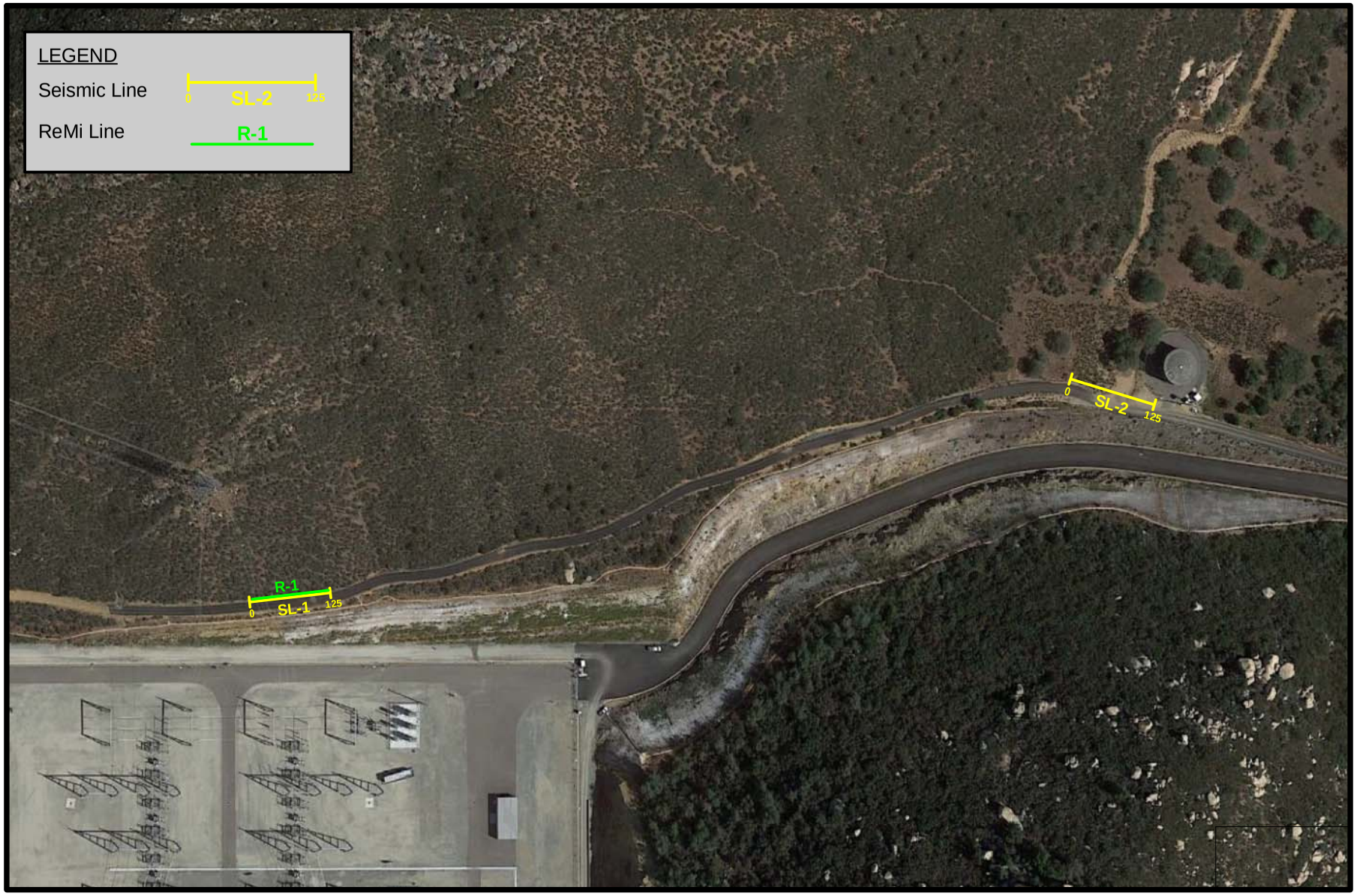
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SITE LOCATION MAP	N	SVC Sun Crest Alpine, California	SOUTHWEST GEOPHYSICS INC.
		Project No.: 115336 / Date: 08/15	Figure 1



LINE LOCATION MAP
(SL-1, SL-2, and and R-1)

N

SVC Sun Crest
Alpine, California

Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 2a

0 200 400

approximate scale in feet



LINE LOCATION MAP
(SL-3)

N

SVC Sun Crest
Alpine, California

Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 2b

0 100 200
approximate scale in feet



LINE LOCATION MAP
(SL-4 and SL-5)

N

SVC Sun Crest
Alpine, California

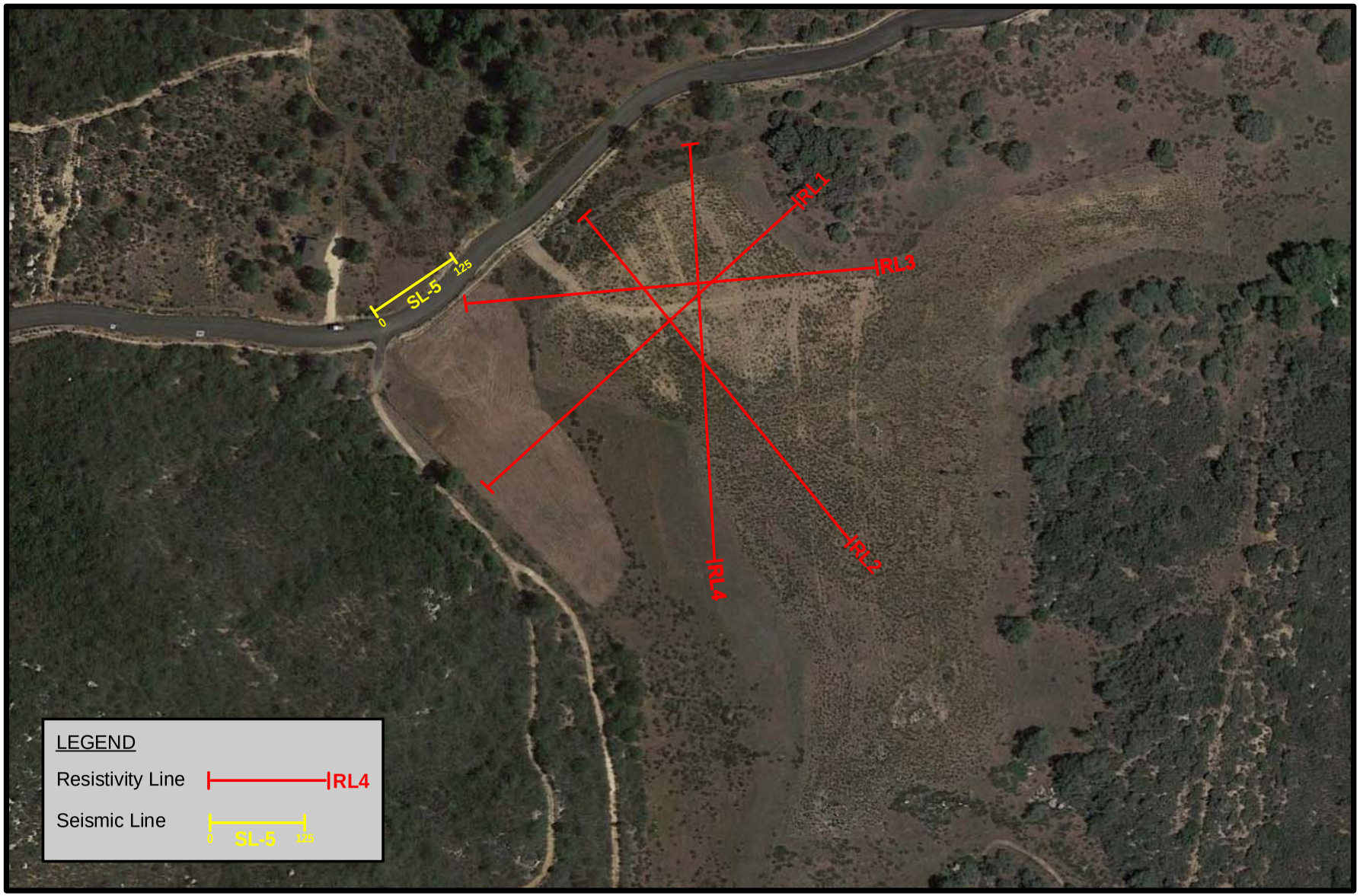
Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 2c

0 200 400

approximate scale in feet



LINE LOCATION MAP
(SL-5 and RL-1 through RL-4)

N

SVC Sun Crest
Alpine, California

Project No.: 115336 | Date: 08/15

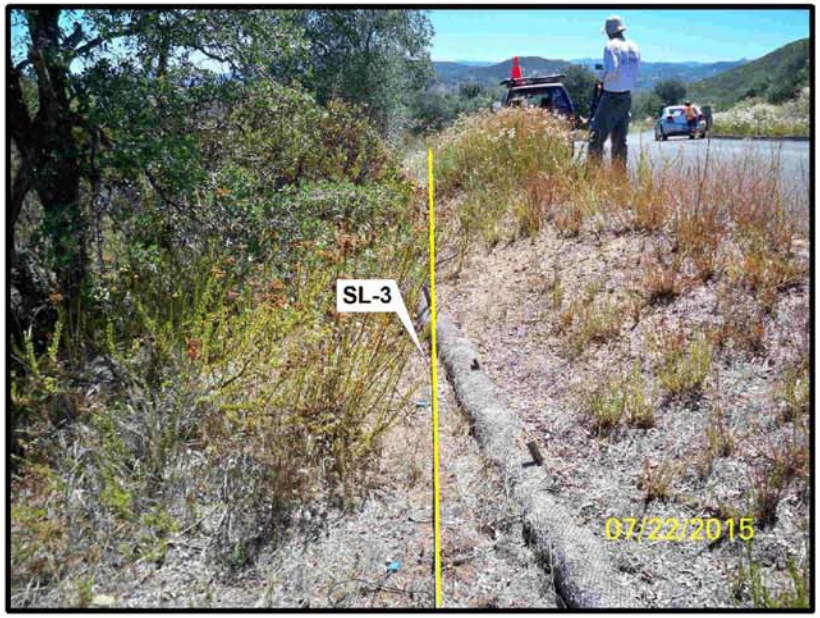
SOUTHWEST GEOPHYSICS INC.

Figure 2d

0 200 400
approximate scale in feet







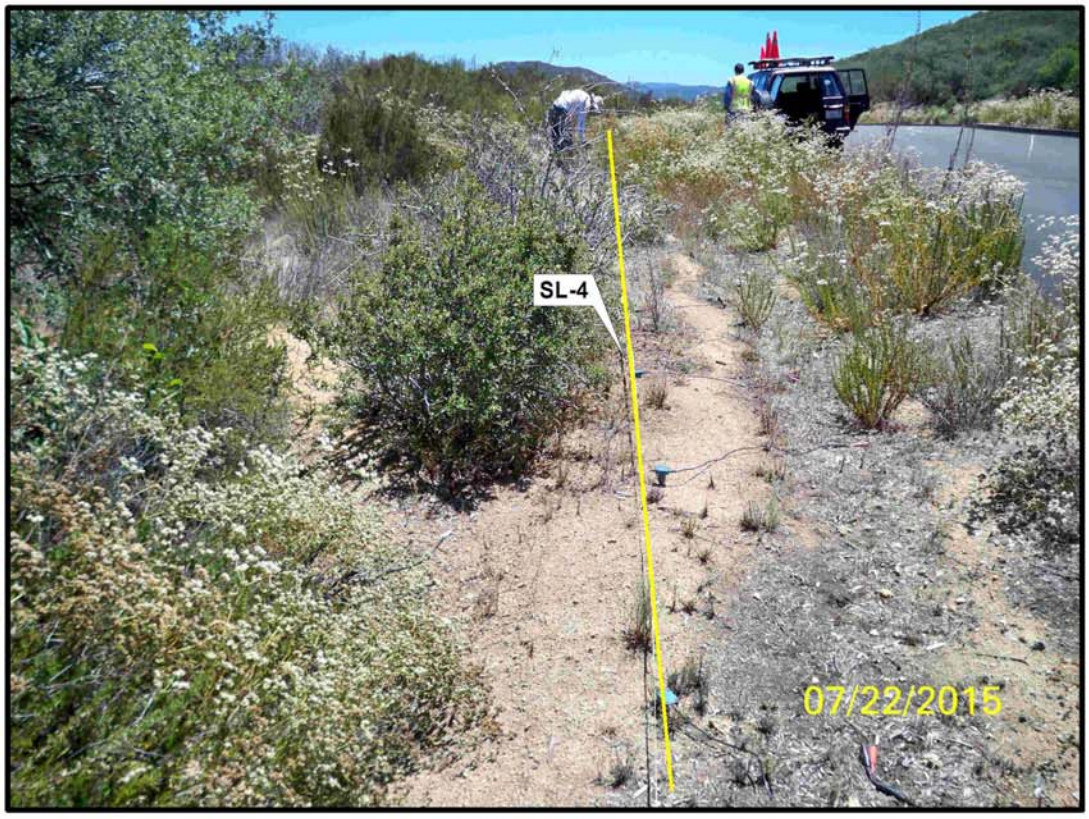
SITE PHOTOGRAPHS

SVC Sun Crest
Alpine, California

Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 3a





SITE PHOTOGRAPHS

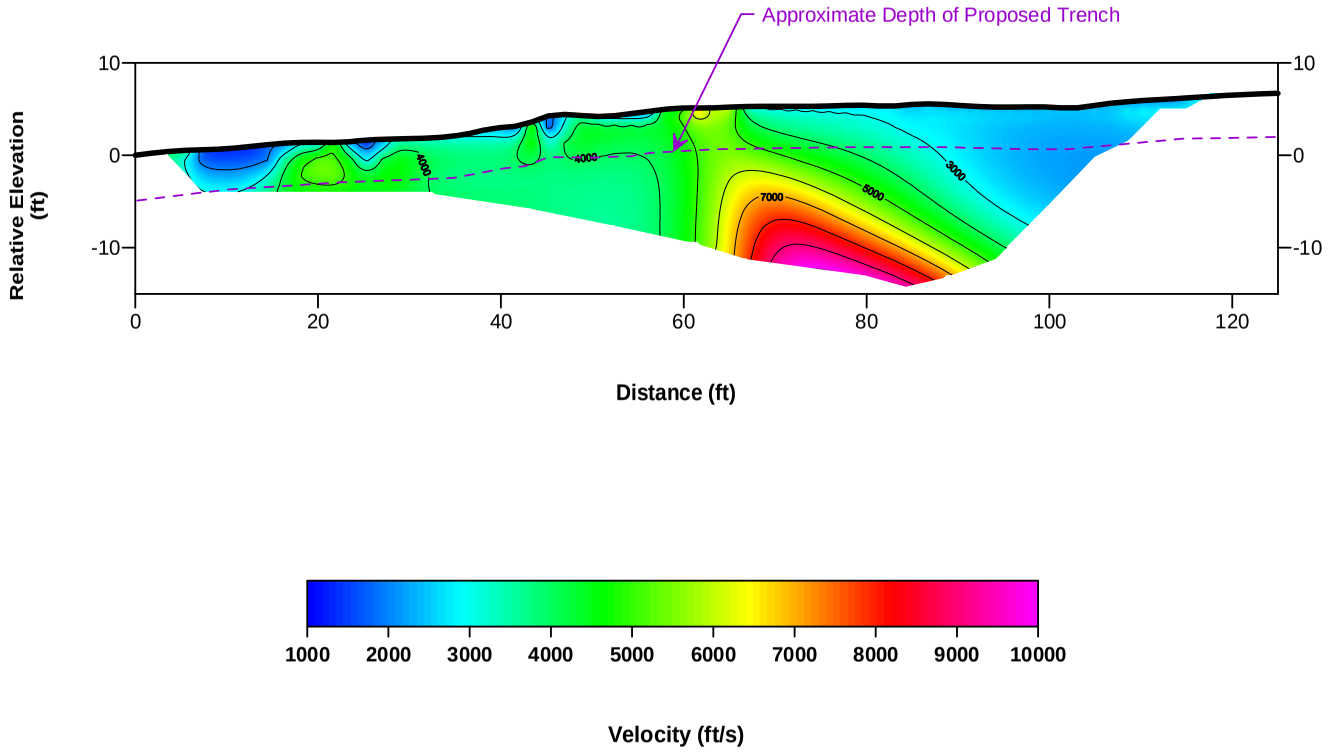
SVC Sun Crest
Alpine, California

Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 3b

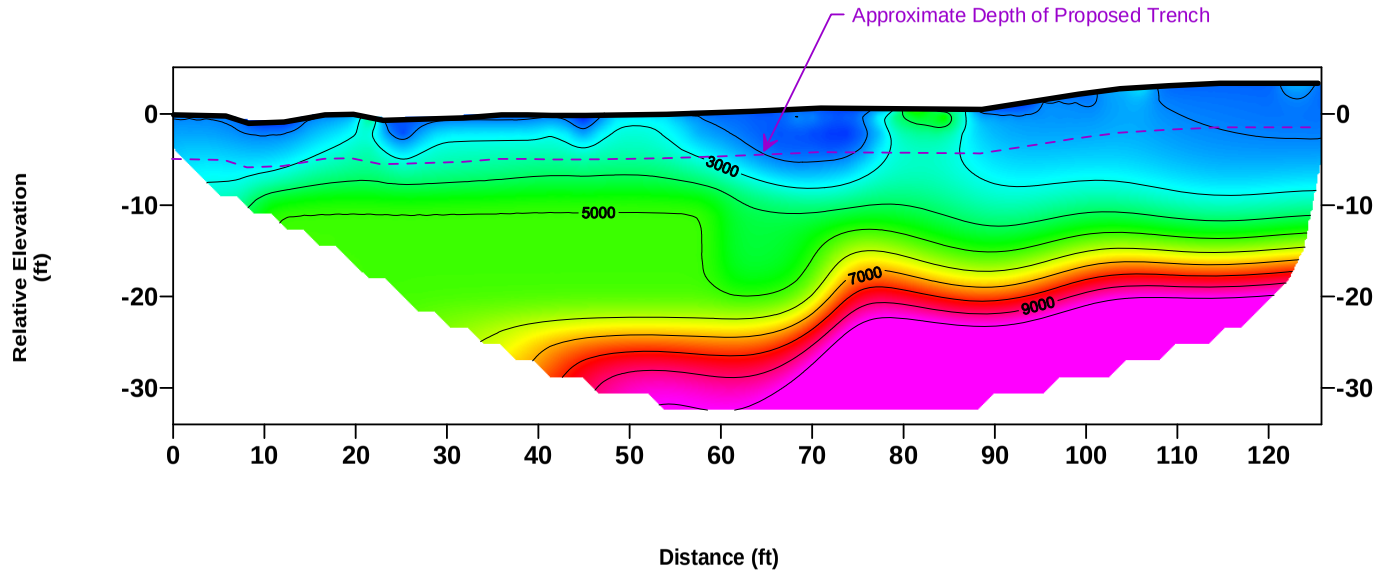
TOMOGRAPHY MODEL



SEISMIC PROFILE SL-1	SVC Sun Crest Alpine, California Project No.: 115336 Date: 08/15	SOUTHWEST GEOPHYSICS INC. Figure 4a

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL

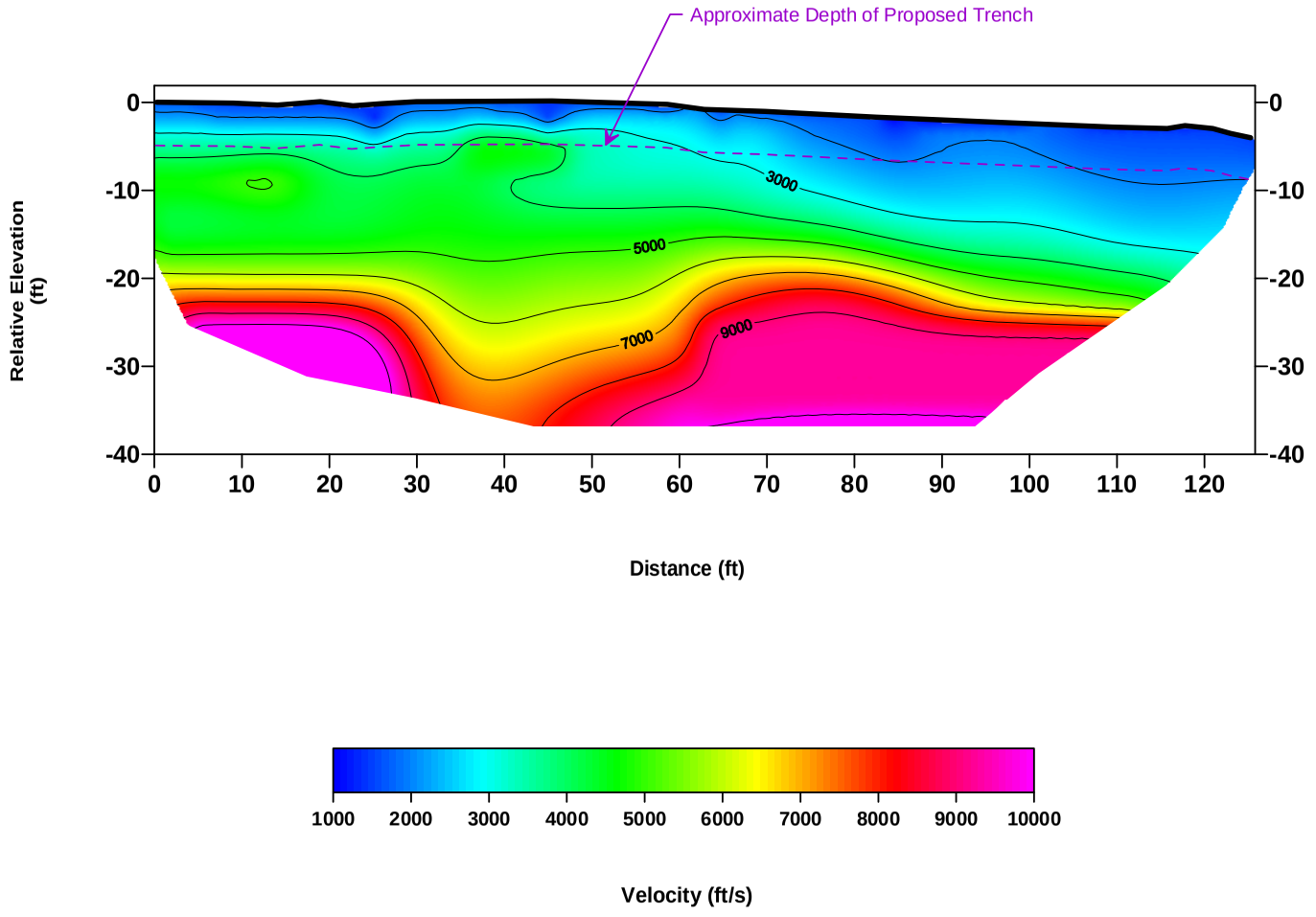


Velocity (ft/s)

SEISMIC PROFILE SL-2	SVC Sun Crest Alpine, California Project No.: 115336 Date: 08/15	SOUTHWEST GEOPHYSICS INC. Figure 4b

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



SEISMIC PROFILE SL-3

SVC Sun Crest
Alpine, California

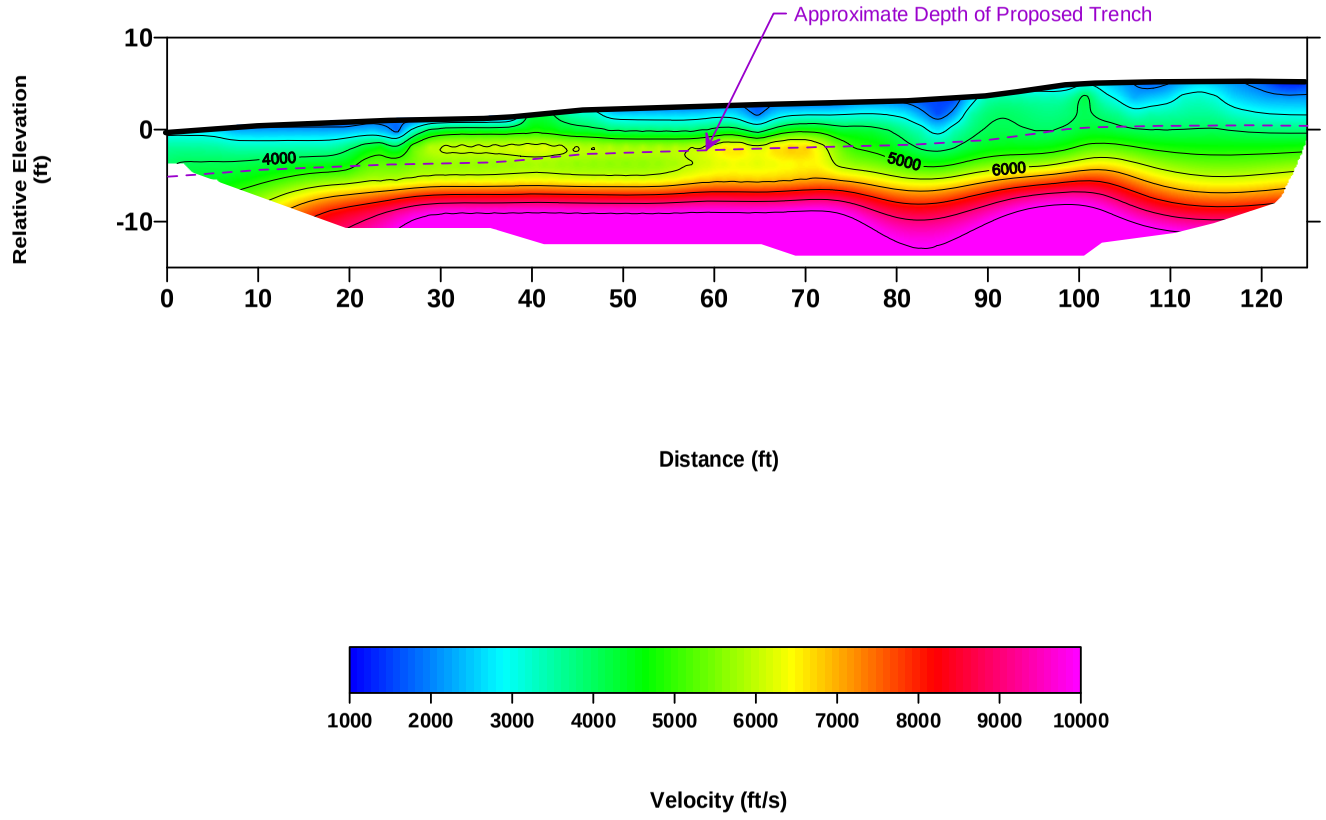
Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 4c

Note: Contour Interval = 1,000 feet per second

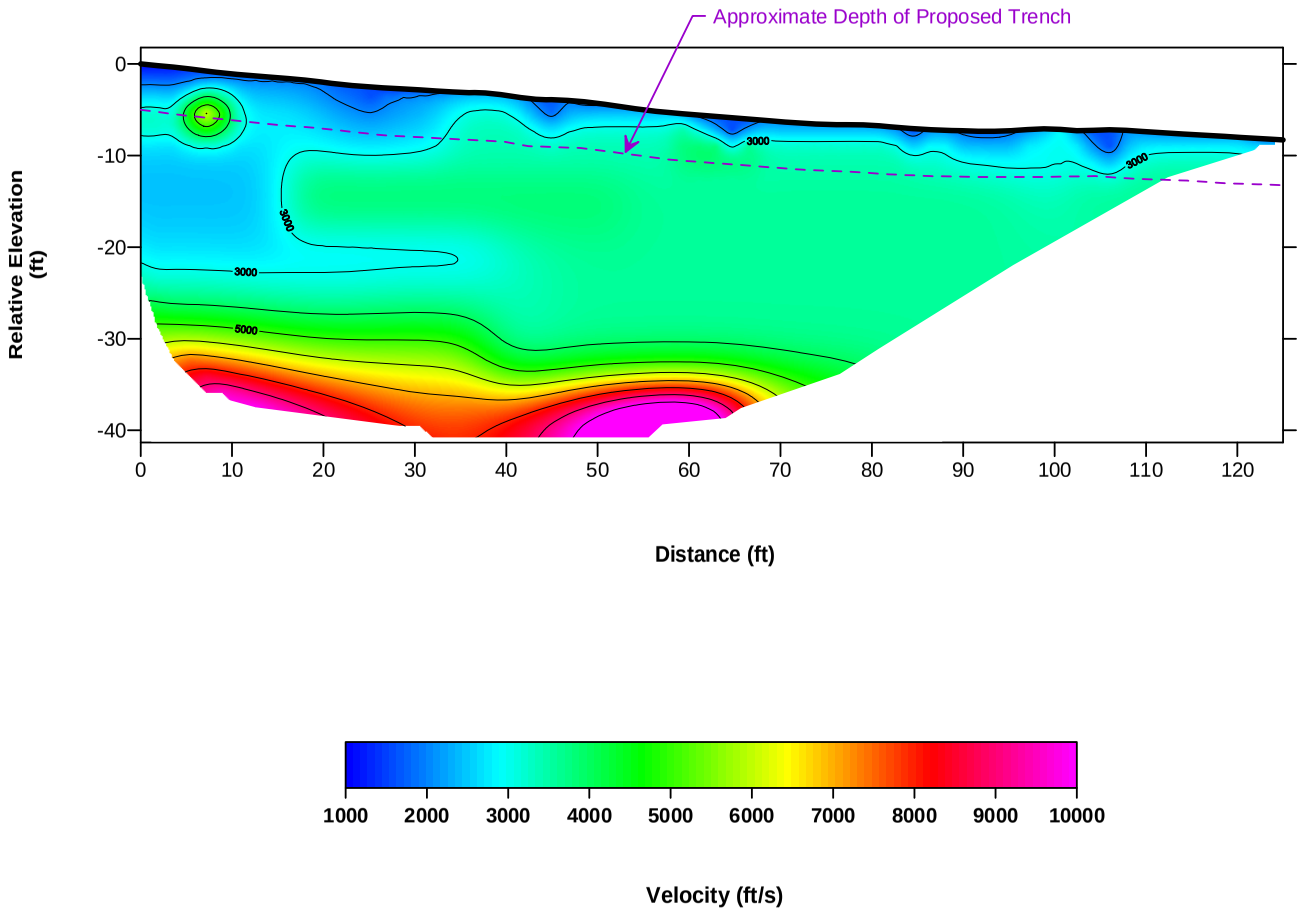
TOMOGRAPHY MODEL



SEISMIC PROFILE SL-4	SVC Sun Crest Alpine, California Project No.: 115336 Date: 08/15	SOUTHWEST GEOPHYSICS INC. Figure 4d

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



SEISMIC PROFILE SL-5

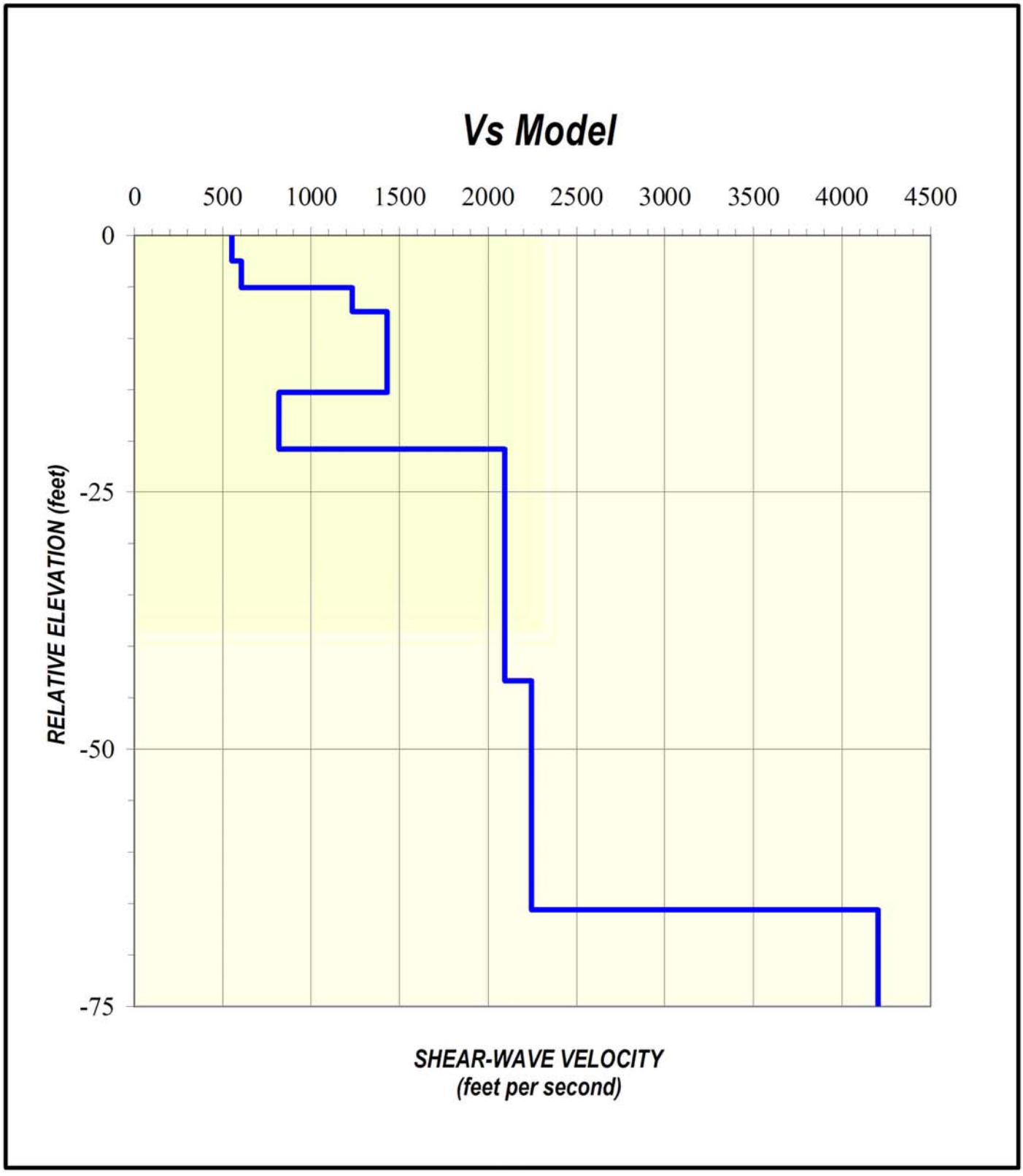
SVC Sun Crest
Alpine, California

Project No.: 115336 | Date: 08/15

SOUTHWEST GEOPHYSICS INC.

Figure 4e

Note: Contour Interval = 1,000 feet per second



ReMi RESULTS RL-1	SVC Sun Crest Alpine, California	
	Project No.: 115336	Date: 08/15

SOUTHWEST GEOPHYSICS INC.

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

SOUTHWEST GEOPHYSICS INC.

Figure 6

APPENDIX B

LABORATORY TEST RESULTS

APPENDIX B
LABORATORY TEST RESULTS

Laboratory tests were performed on selected bulk and drive samples to estimate engineering characteristics of the various earth materials encountered. Testing was performed in accordance with ASTM Standards for Soil Testing, latest revisions.

MOISTURE CONTENT AND DRY UNIT WEIGHT

Natural moisture content and dry unit weight tests were performed on twelve drive samples in accordance with ASTM D 2216 and D 2937, respectively. The results of these tests are presented on the Logs of Borings in Appendix A and on Figure B-1.

SIEVE ANALYSIS

Sixteen sieve analyses were performed on representative samples of the materials encountered at the site to evaluate the gradation characteristics of the soil and to aid in classification. The tests were performed in general accordance with ASTM Test Method D 6913. The results are presented on Figures B-2 through B-17.

ATTERBERG LIMITS

Atterberg limits test consists of the evaluation of liquid limit, plastic limit, and plasticity index. Atterberg limit tests were performed on three soil samples from the site to evaluate the plasticity characteristics of the soil and to aid in its classification. The test was performed in general accordance with ASTM Test Method D4318. The results are presented on Figure B-18.

EXPANSION INDEX TEST

Three expansion index tests were performed on representative soil samples. Test procedures were in general accordance with ASTM D4829. The results are presented in Figures B-19 through B-21.

COMPACTION TEST

The maximum dry density and optimum moisture content of one soil sample was evaluated by performing a compaction test in general conformance with ASTM test procedure D 1557. The results of these tests are shown on Table B-1.

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Table B-1

Compaction Test Results

BORING	SAMPLE	DEPTH (ft)	MAXIMUM DRY UNIT WEIGHT (psf)	OPTIMUM WATER CONTENT (%)
B-1	3	6-7	128.1	9.6
B-2	3	5-7	128.1	8.2
INV-1	1	1.5-4	129.1	7.9

DIRECT SHEAR TEST

Three direct shear tests were performed on representative soil samples. The test procedures were in general accordance with the ASTM D 3080. The results are presented in Figures B-22 through B-24. The samples were remolded to about 90 percent of the maximum dry density determined by ASTM D 1557.

R-VALUE TESTS

R-value testing was performed on three samples of the potential subgrade soil. The test was performed in general accordance with Caltrans Standard Test Method 301. The test results are presented on Figures B-25 through B-27.

CORROSION TESTS

A series of chemical tests were performed on six samples to estimate pH, resistivity and sulfate and chloride contents. The test results presented by our subcontractor, Clarkson Laboratories, are presented in Table B-2 and attached at the end of this appendix.

Table B-2

Corrosion Test Results

BORING	DEPTH (FT)	pH	SULFATE (ppm)	CHLORIDE (ppm)	MINIMUM RESISTIVITY (ohm-cm)
B-1	6-7	8.0	47	21	2,000
B-2	5-7	6.5	32	11	6,500
B-6	2.5-4.5	6.2	59	64	2,600

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Table B-2 (continued)

Corrosion Test Results

BORING	DEPTH (FT)	pH	SULFATE (ppm)	CHLORIDE (ppm)	MINIMUM RESISTIVITY (ohm-cm)
B-7	2.5-4.5	5.9	54	64	4,500
B-8	2-4	6.0	46	53	4,400
INV-1	1.5-4	6.4	32	11	6,400

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Date Tested : 7/28-29/2015

Boring #	Sample #	Depth (ft)	Dry Density (pcf)	Moisture Content (%)	Description
B1	1	2-2.5	110.6	3.8%	light yellow clayey gravel with sand
B2	2	5-5.5	115.0	1.5%	light yellowish brown silty sand
B3	2	6-6.5	125.3	6.7%	dark yellowish brown clayey sand
B4	1	6-6.5	124.2	3.5%	reddish yellow silty sand
B4	3	10-10.5	114.9	2.2%	light brown silty sand
B5	2	5.5-6	128.8	6.9%	light brown clayey sand
B6	1	2.5-3	118.6	3.3%	light reddish brown clayey sand
B6	3	5-5.5	106.3	2.3%	light brown clayey sand
B7	1	3-3.5	115.9	3.7%	light brown clayey sand
B8	1	3-3.5	105.6	2.3%	brown clayey sand
B9	1	2.5-3	132.8	4.0%	red silty sand
INV-1	2	4.5-5	120.0	7.0%	brown clayey sand

Performed in General Accordance with ASTM D7263 B and D2216

KLEINFELDER
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Dry Density and Moisture Content

FIGURE

B-1

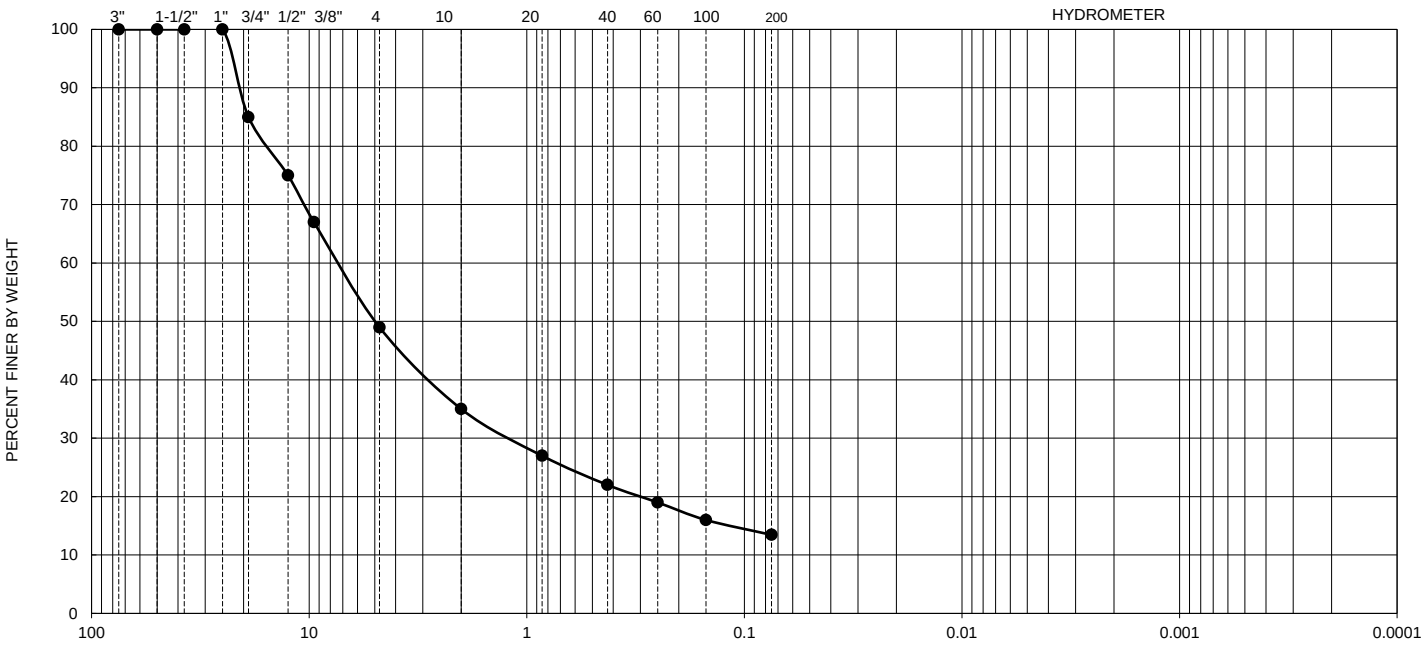
Suncrest SVC Substation and Transmission Line

CHECKED BY: TECH: Uly

JOB NUMBER: 20160674 DATE: 12-Aug-15

Date Tested: **7/31/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B1	1	2-2.5	13.4	GC

Sample Description	light yellow Clayey gravel with sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	85
	1/2"	12.5 mm	75
	3/8"	9.5 mm	67
	No. 4	4.75 mm	49
	No. 10	2.0 mm	35
	No. 20	0.85 mm	27
	No. 40	0.425 mm	22
	No. 60	0.25 mm	19
	No 100	0.15 mm	16
	No 200	.075 mm	13.4

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

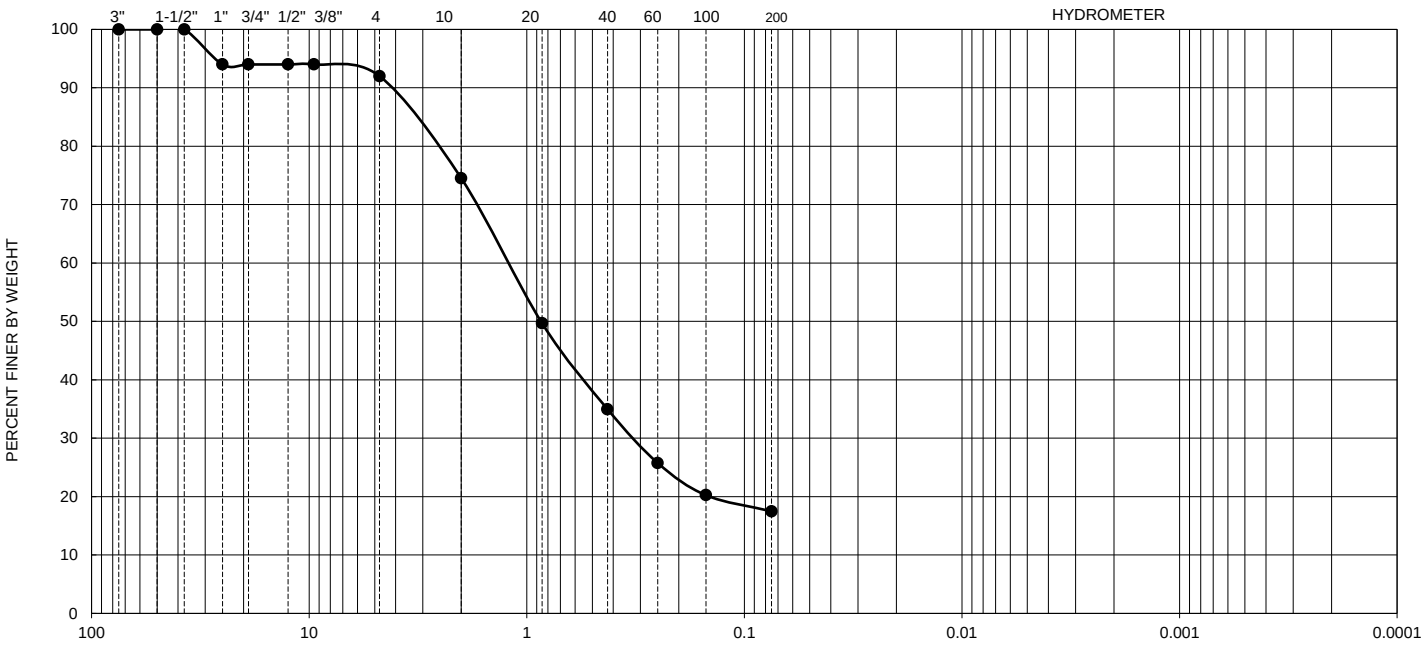
Suncrest SVC Substation and Transmission Line

FIGURE

B-2

Date Tested: **8/5/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B1	2	5-6	17.5	SC

Sample Description	yellow Clayey sand

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	94
	3/4"	19 mm	94
	1/2"	12.5 mm	94
	3/8"	9.5 mm	94
	No. 4	4.75 mm	92
	No. 10	2.0 mm	75
	No. 20	0.85 mm	50
	No. 40	0.425 mm	35
	No. 60	0.25 mm	26
	No 100	0.15 mm	20
	No 200	.075 mm	17.5

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	M.O.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

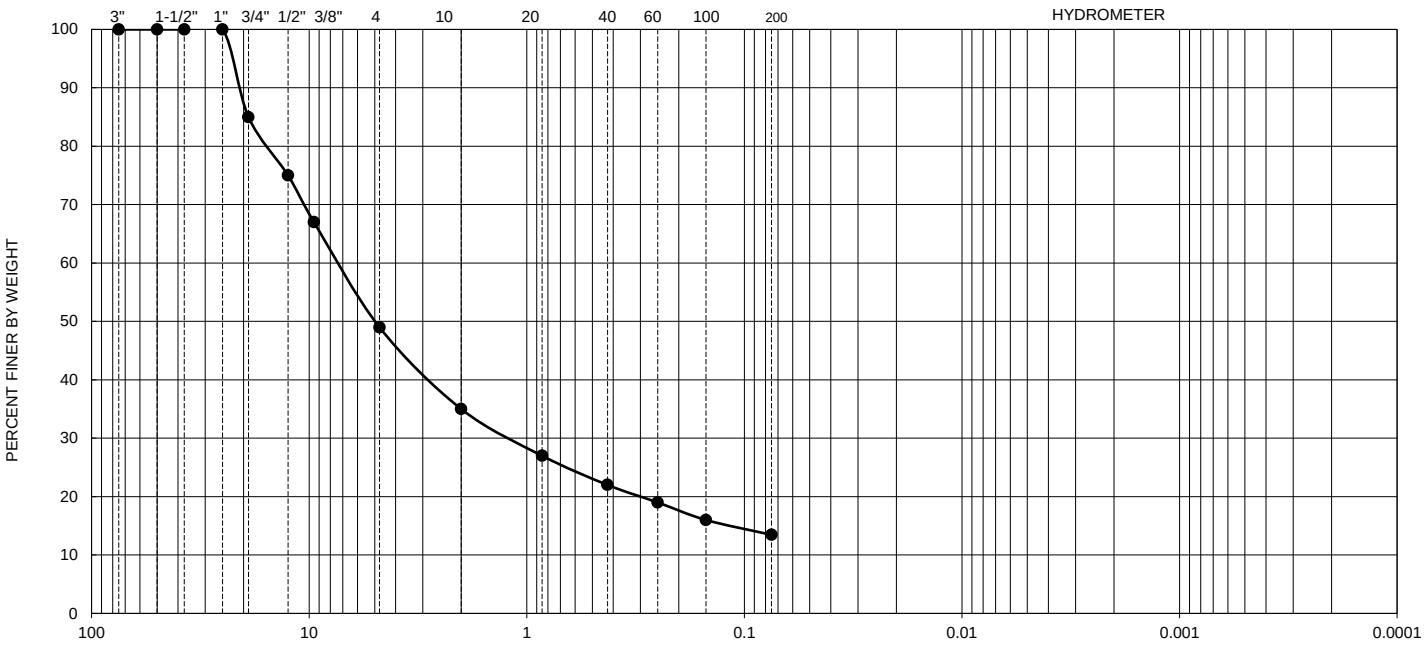
Suncrest SVC Substation and Transmission Line

FIGURE

B-3

Date Tested: **7/31/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B2	1	2.5-3	13.4	GC

Sample Description	light yellow Clayey gravel with sand

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	85
	1/2"	12.5 mm	75
	3/8"	9.5 mm	67
	No. 4	4.75 mm	49
	No. 10	2.0 mm	35
	No. 20	0.85 mm	27
	No. 40	0.425 mm	22
	No. 60	0.25 mm	19
	No 100	0.15 mm	16
	No 200	.075 mm	13.4

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

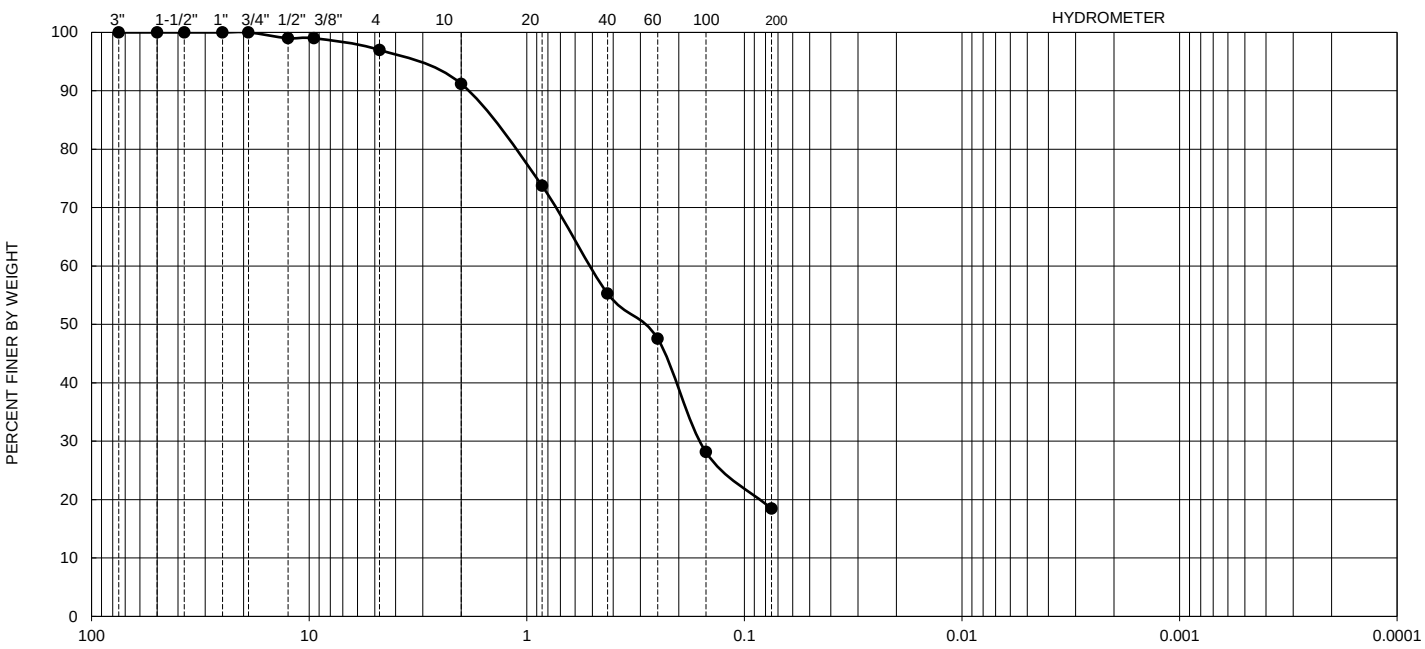
Suncrest SVC Substation and Transmission Line

FIGURE

B-4

Date Tested: **8/5/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B2	3	5-7	18.4	SC-SM

Sample Description	reddish brown silty, clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	99
	3/8"	9.5 mm	99
	No. 4	4.75 mm	97
	No. 10	2.0 mm	91
	No. 20	0.85 mm	74
	No. 40	0.425 mm	55
	No. 60	0.25 mm	48
	No 100	0.15 mm	28
	No 200	.075 mm	18.4

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

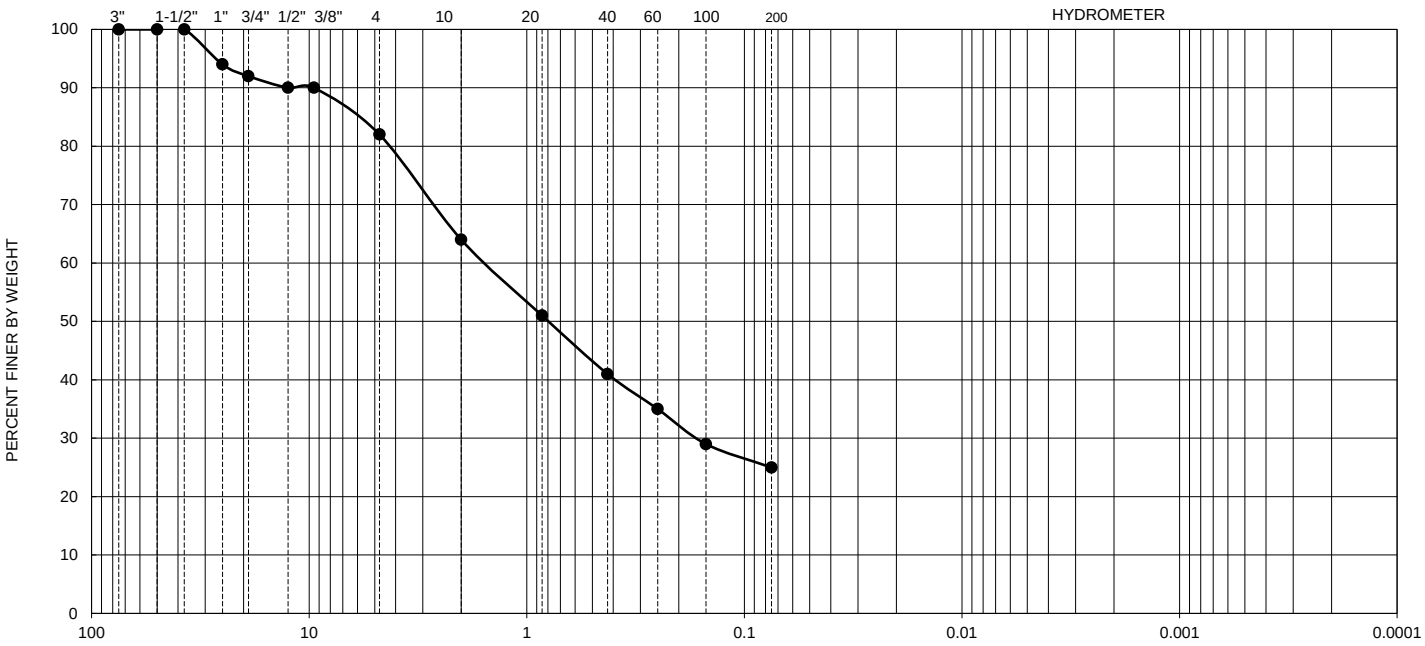
Suncrest SVC Substation and Transmission Line

FIGURE

B-5

Date Tested: **7/31/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B3	2	6-6.5	25.0	SC

Sample Description	dark yellowish brown	Clayey sand with gravel

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	94
	3/4"	19 mm	92
	1/2"	12.5 mm	90
	3/8"	9.5 mm	90
	No. 4	4.75 mm	82
	No. 10	2.0 mm	64
	No. 20	0.85 mm	51
	No. 40	0.425 mm	41
	No. 60	0.25 mm	35
	No 100	0.15 mm	29
	No 200	.075 mm	25.0

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

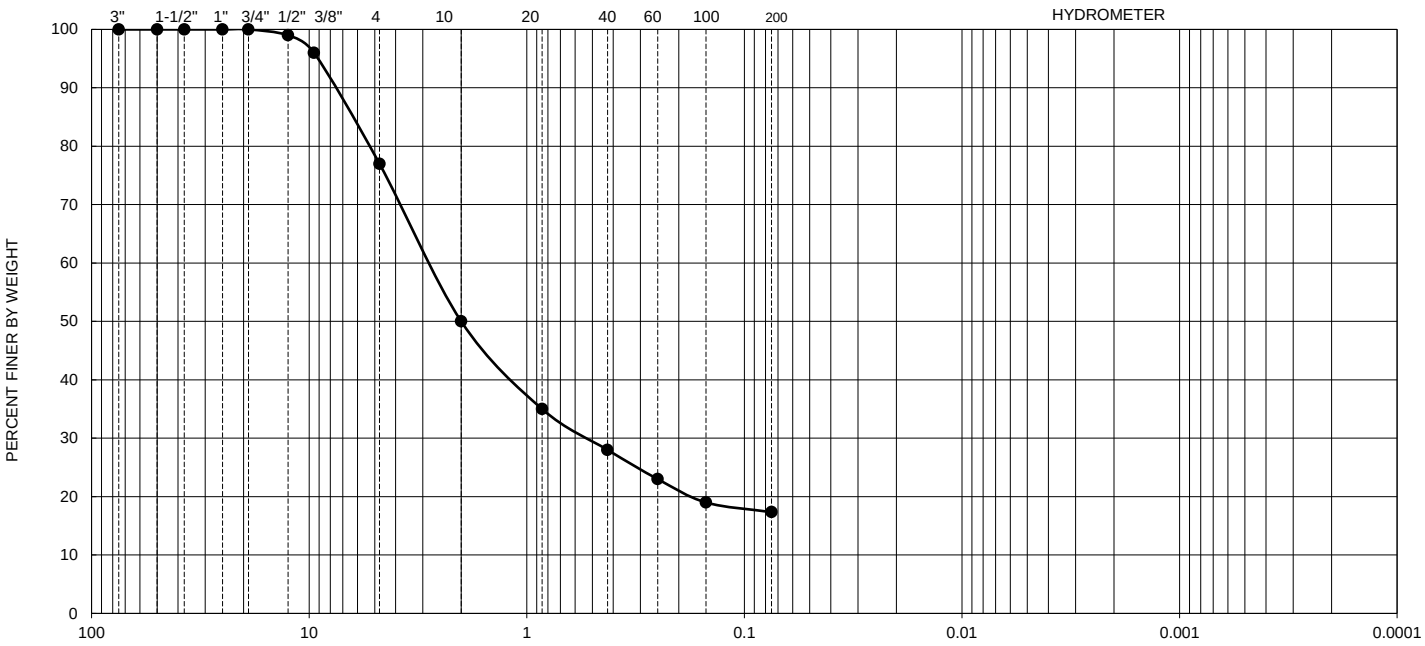
Suncrest SVC Substation and Transmission Line

FIGURE

B-6

Date Tested: **7/31/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B3	3	10-11.5	17.3	SM

Sample Description	brown Silty sand with gravel

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	99
	3/8"	9.5 mm	96
	No. 4	4.75 mm	77
	No. 10	2.0 mm	50
	No. 20	0.85 mm	35
	No. 40	0.425 mm	28
	No. 60	0.25 mm	23
	No 100	0.15 mm	19
	No 200	.075 mm	17.3

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

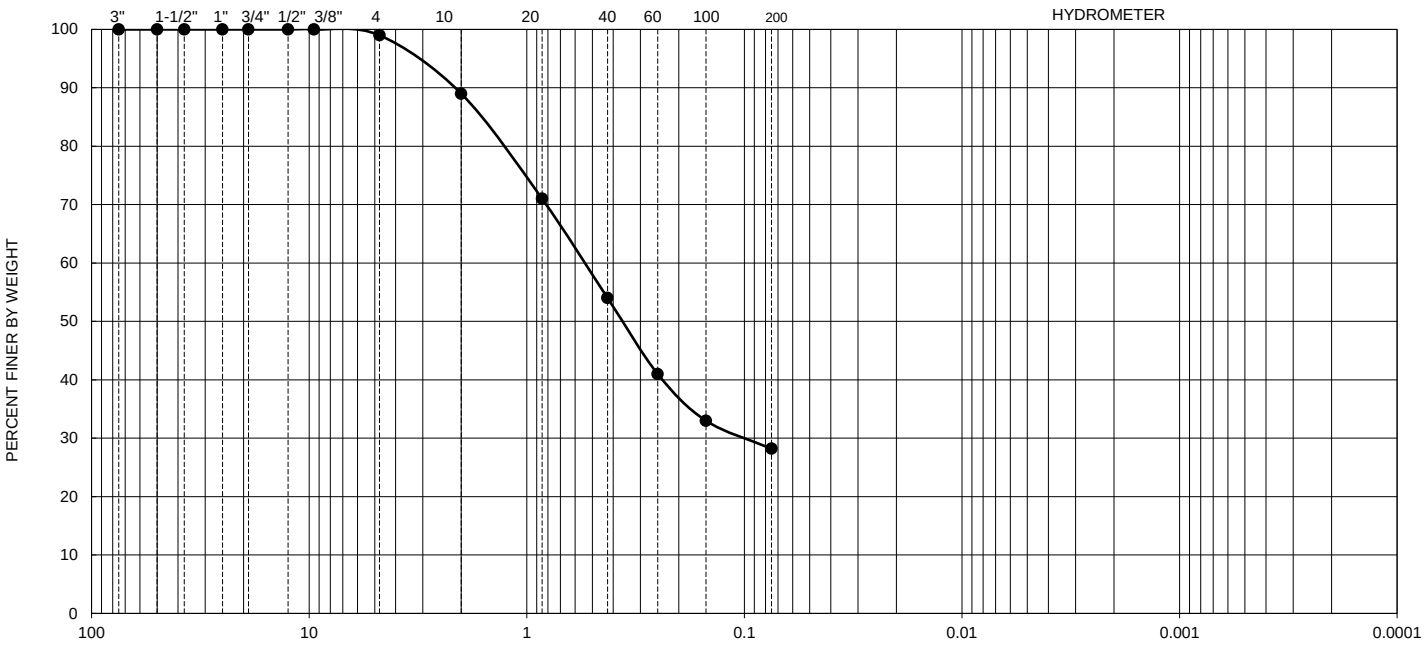
Suncrest SVC Substation and Transmission Line

FIGURE

B-7

Date Tested: **7/31/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B4	1	6-6.5	28.2	SC

Sample Description	rediish brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	99
	No. 10	2.0 mm	89
	No. 20	0.85 mm	71
	No. 40	0.425 mm	54
	No. 60	0.25 mm	41
	No 100	0.15 mm	33
	No 200	.075 mm	28.2

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

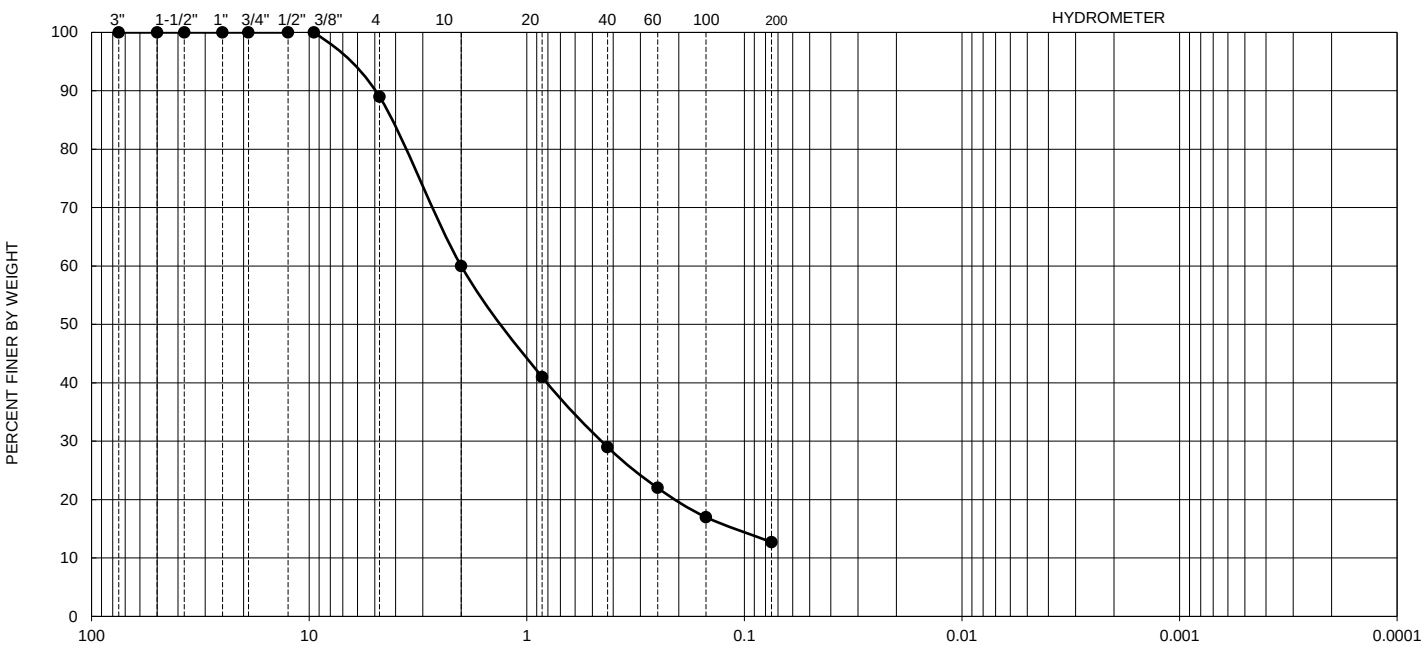
Suncrest SVC Substation and Transmission Line

FIGURE

B-8

Date Tested: **8/3/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B4	3	10-10.5	12.7	SM

Sample Description	light brown Silty sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	89
	No. 10	2.0 mm	60
	No. 20	0.85 mm	41
	No. 40	0.425 mm	29
	No. 60	0.25 mm	22
	No 100	0.15 mm	17
	No 200	.075 mm	12.7

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
Bright People. Right Solutions.

Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

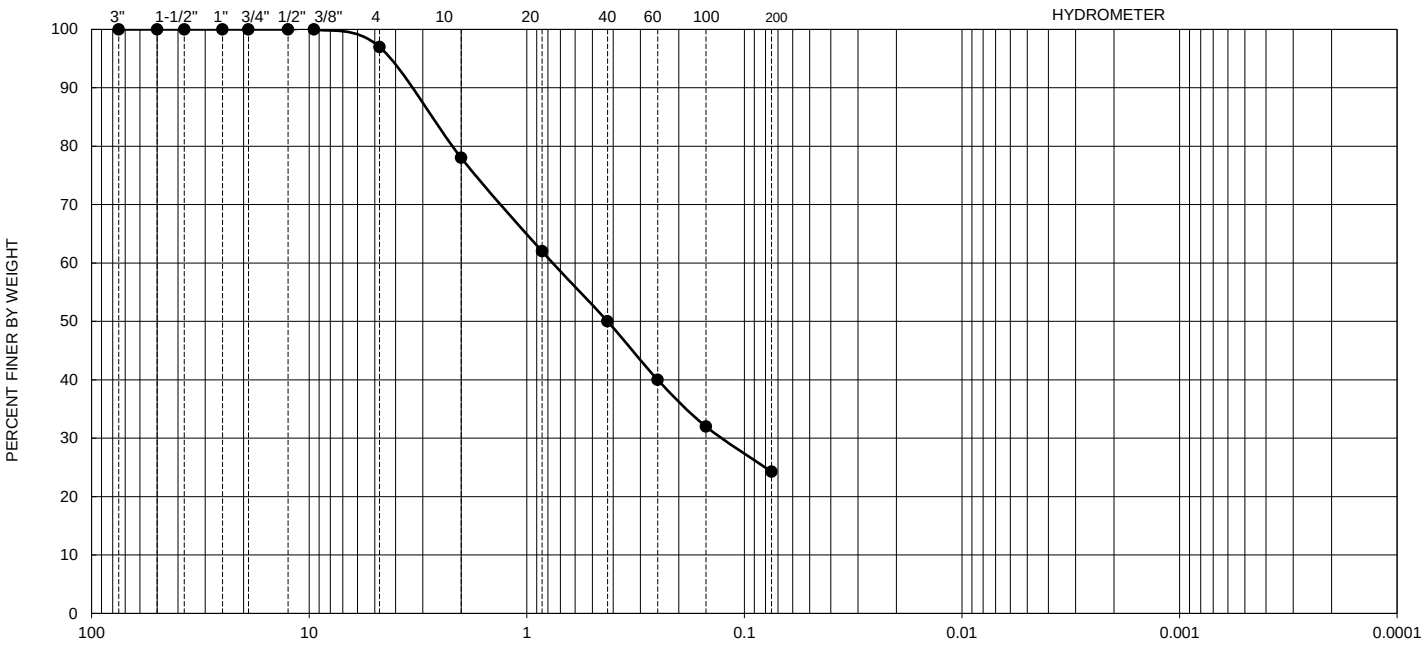
Suncrest SVC Substation and Transmission Line

FIGURE

B-9

Date Tested: **8/3/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B5	2	5-5.5	24.3	SC

Sample Description	light brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	97
	No. 10	2.0 mm	78
	No. 20	0.85 mm	62
	No. 40	0.425 mm	50
	No. 60	0.25 mm	40
	No 100	0.15 mm	32
	No 200	.075 mm	24.3

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
Bright People. Right Solutions.

Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

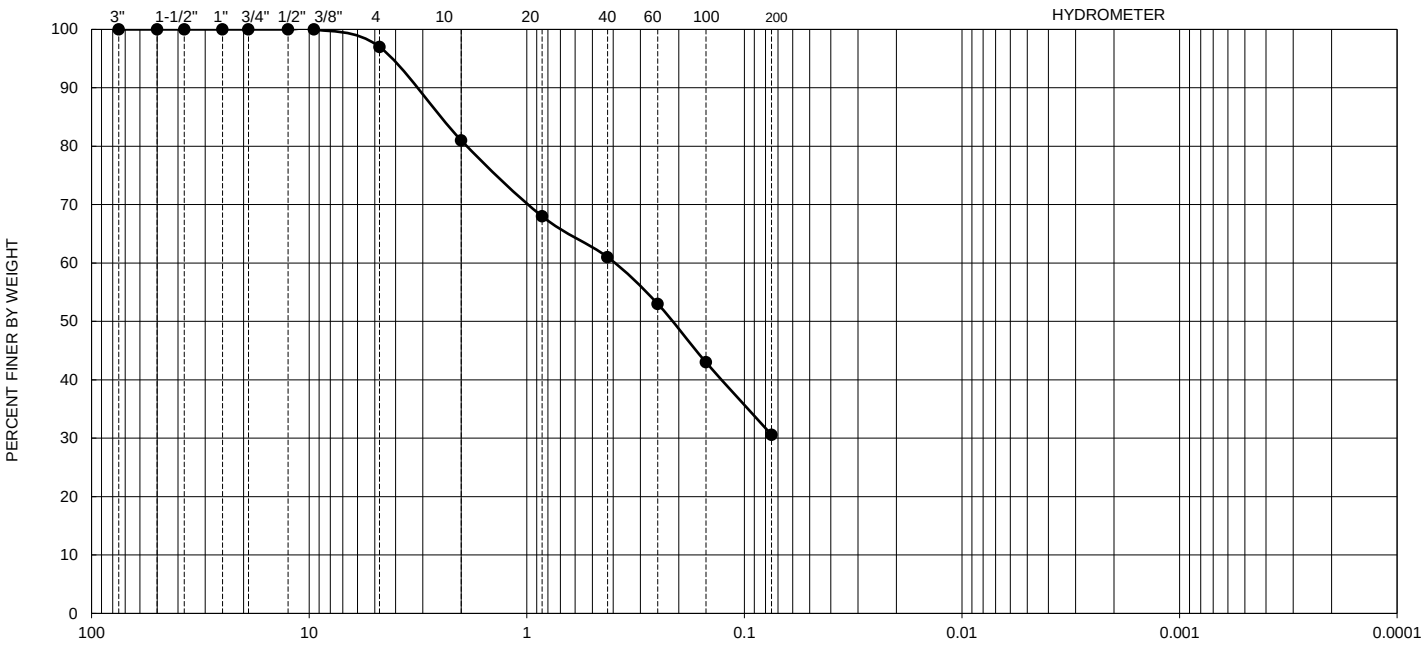
Suncrest SVC Substation and Transmission Line

FIGURE

B-10

Date Tested: **8/3/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B6	1	2.5-3	30.6	SC

Sample Description	light reddish brown Clayey sand

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	97
	No. 10	2.0 mm	81
	No. 20	0.85 mm	68
	No. 40	0.425 mm	61
	No. 60	0.25 mm	53
	No 100	0.15 mm	43
	No 200	.075 mm	30.6

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
Bright People. Right Solutions.

Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

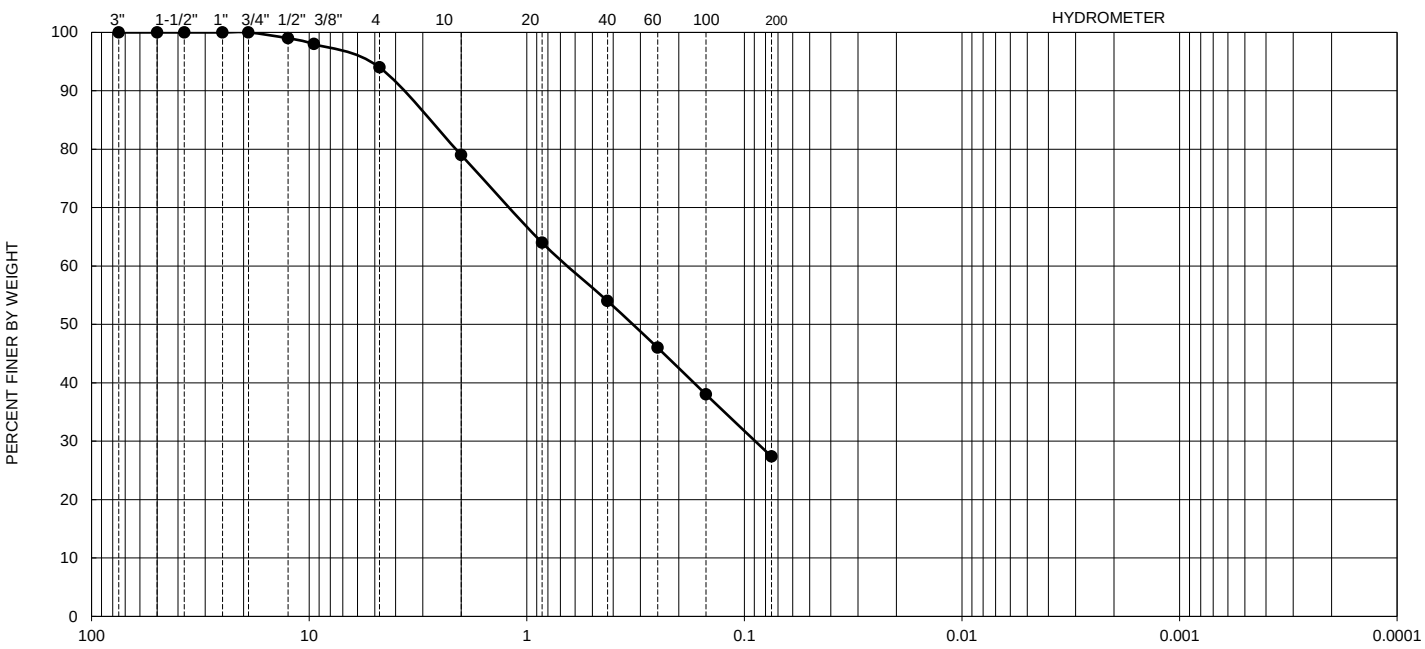
Suncrest SVC Substation and Transmission Line

FIGURE

B-11

Date Tested: **8/3/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B6	3	5-5.5	27.4	SC

Sample Description	light brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	99
	3/8"	9.5 mm	98
	No. 4	4.75 mm	94
	No. 10	2.0 mm	79
	No. 20	0.85 mm	64
	No. 40	0.425 mm	54
	No. 60	0.25 mm	46
	No 100	0.15 mm	38
	No 200	.075 mm	27.4

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
Bright People. Right Solutions.

Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

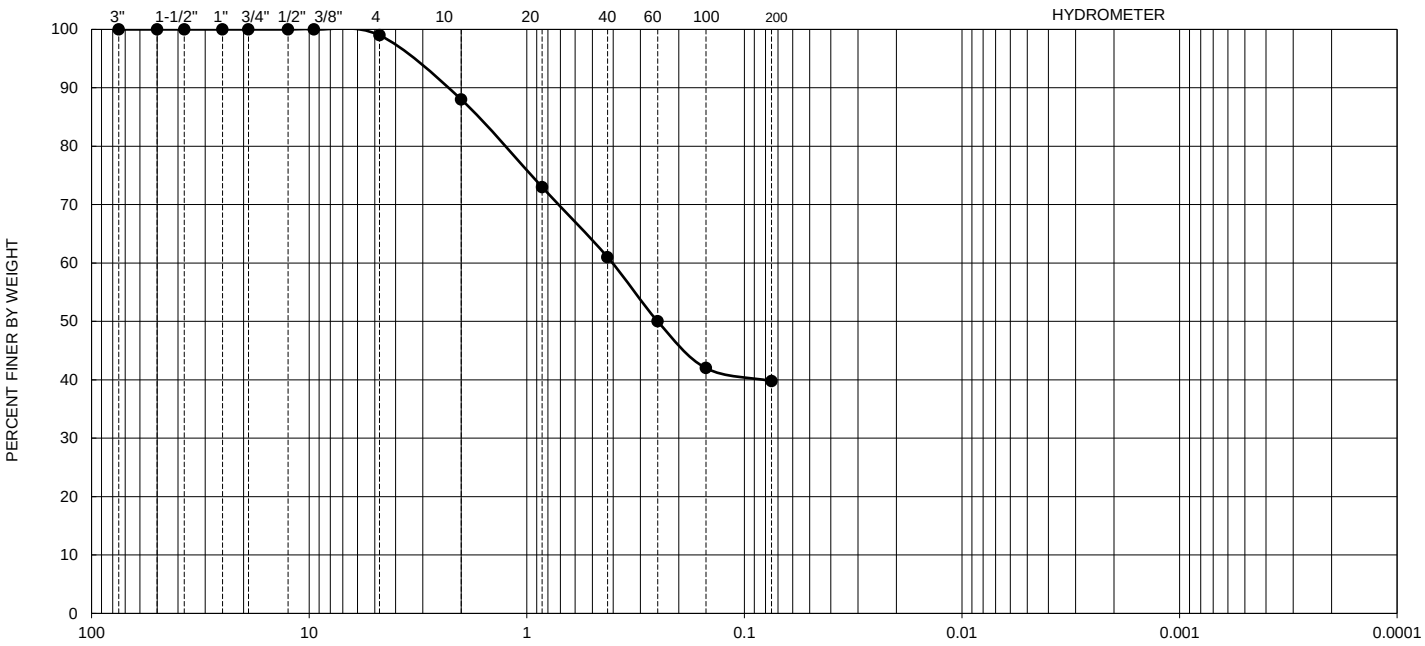
Suncrest SVC Substation and Transmission Line

FIGURE

B-12

Date Tested: **8/4/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B7	1	3-3.5	39.8	SC

Sample Description	light brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	99
	No. 10	2.0 mm	88
	No. 20	0.85 mm	73
	No. 40	0.425 mm	61
	No. 60	0.25 mm	50
	No 100	0.15 mm	42
	No 200	.075 mm	39.8

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

KLEINFELDER
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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

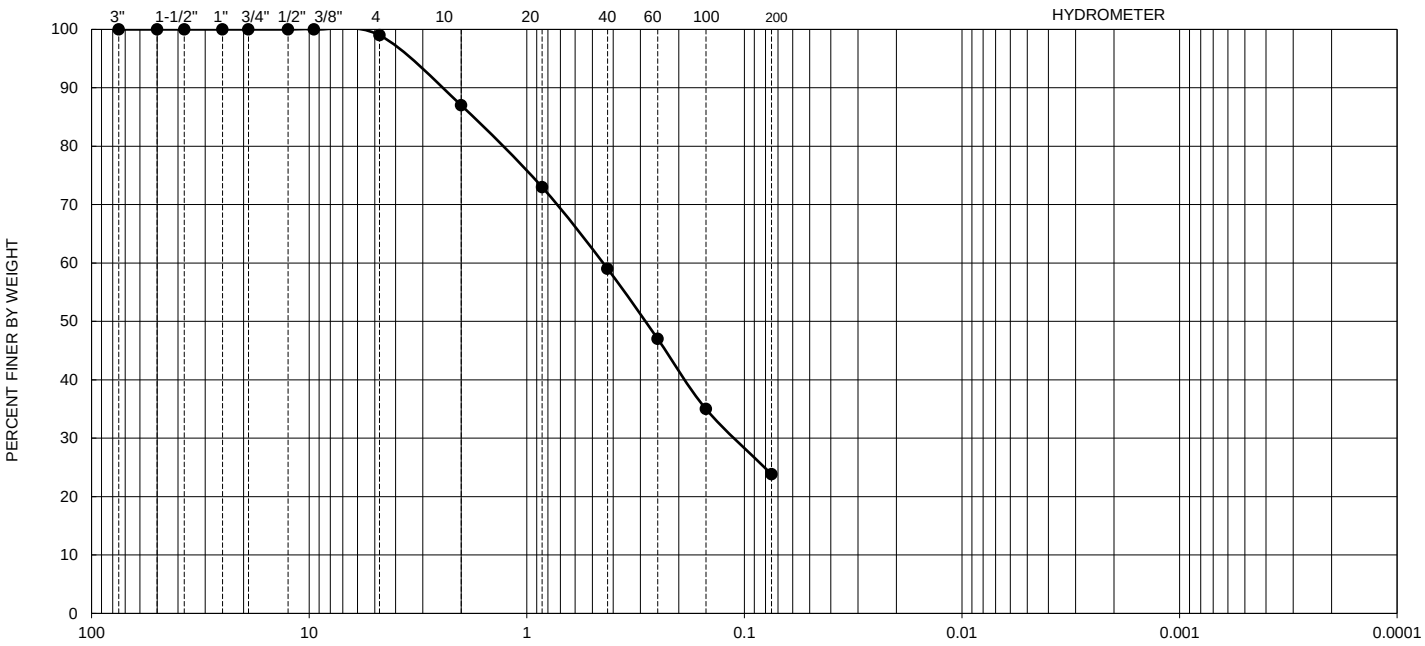
Suncrest SVC Substation and Transmission Line

FIGURE

B-13

Date Tested: **8/4/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B8	1	3-3.5	23.8	SC

Sample Description	light brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	99
	No. 10	2.0 mm	87
	No. 20	0.85 mm	73
	No. 40	0.425 mm	59
	No. 60	0.25 mm	47
	No 100	0.15 mm	35
	No 200	.075 mm	23.8

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

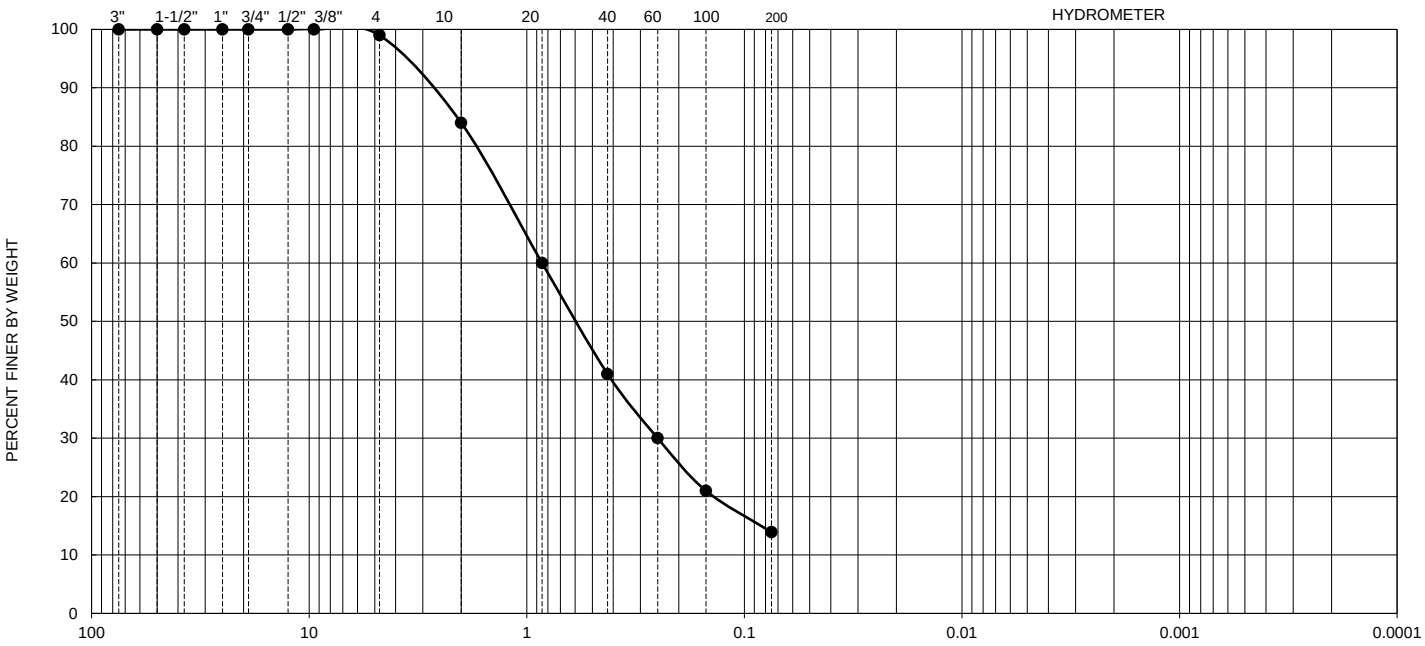
Suncrest SVC Substation and Transmission Line

FIGURE

B-14

Date Tested: **8/4/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
B9	1	2.5-3	13.9	SM

Sample Description	light brown Silty sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	99
	No. 10	2.0 mm	84
	No. 20	0.85 mm	60
	No. 40	0.425 mm	41
	No. 60	0.25 mm	30
	No 100	0.15 mm	21
	No 200	.075 mm	13.9

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

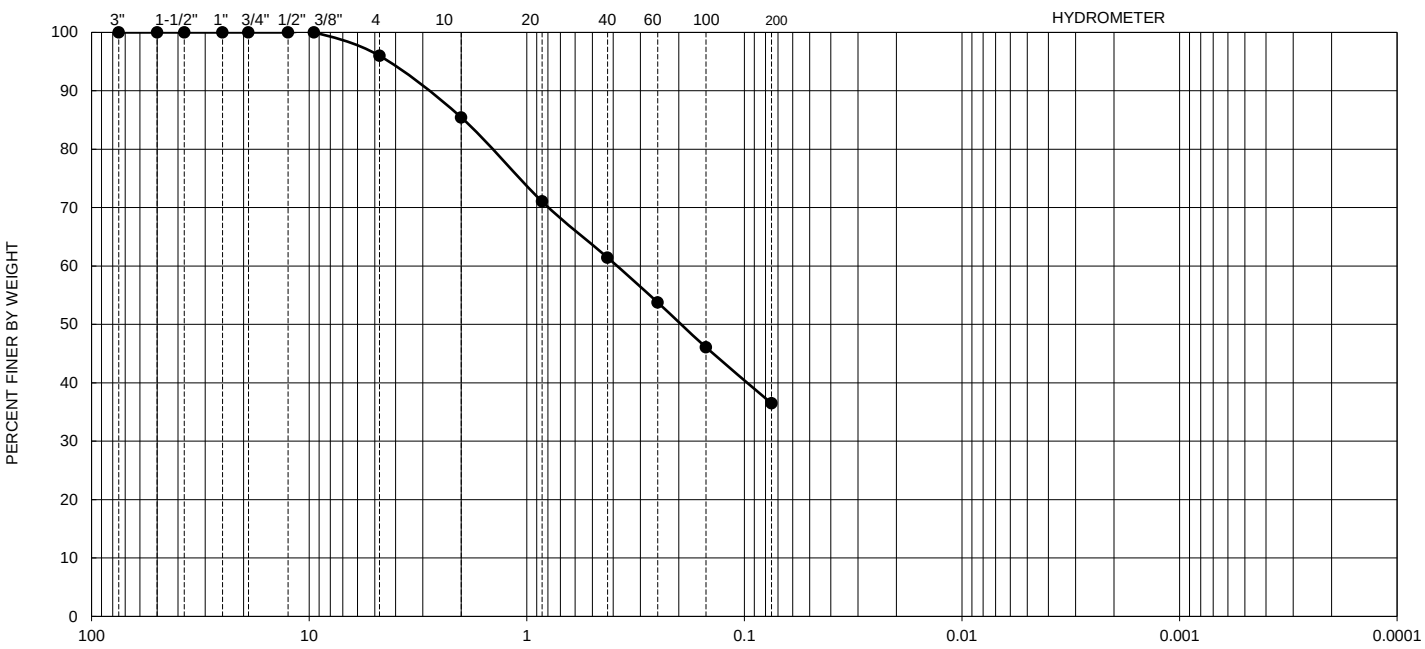
Suncrest SVC Substation and Transmission Line

FIGURE

B-15

Date Tested: **8/5/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
INV-1	1	1.5-4	36.5	SC

Sample Description	dark yellowish brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	96
	No. 10	2.0 mm	85
	No. 20	0.85 mm	71
	No. 40	0.425 mm	61
	No. 60	0.25 mm	54
	No 100	0.15 mm	46
	No 200	.075 mm	36.5

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	M.O.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

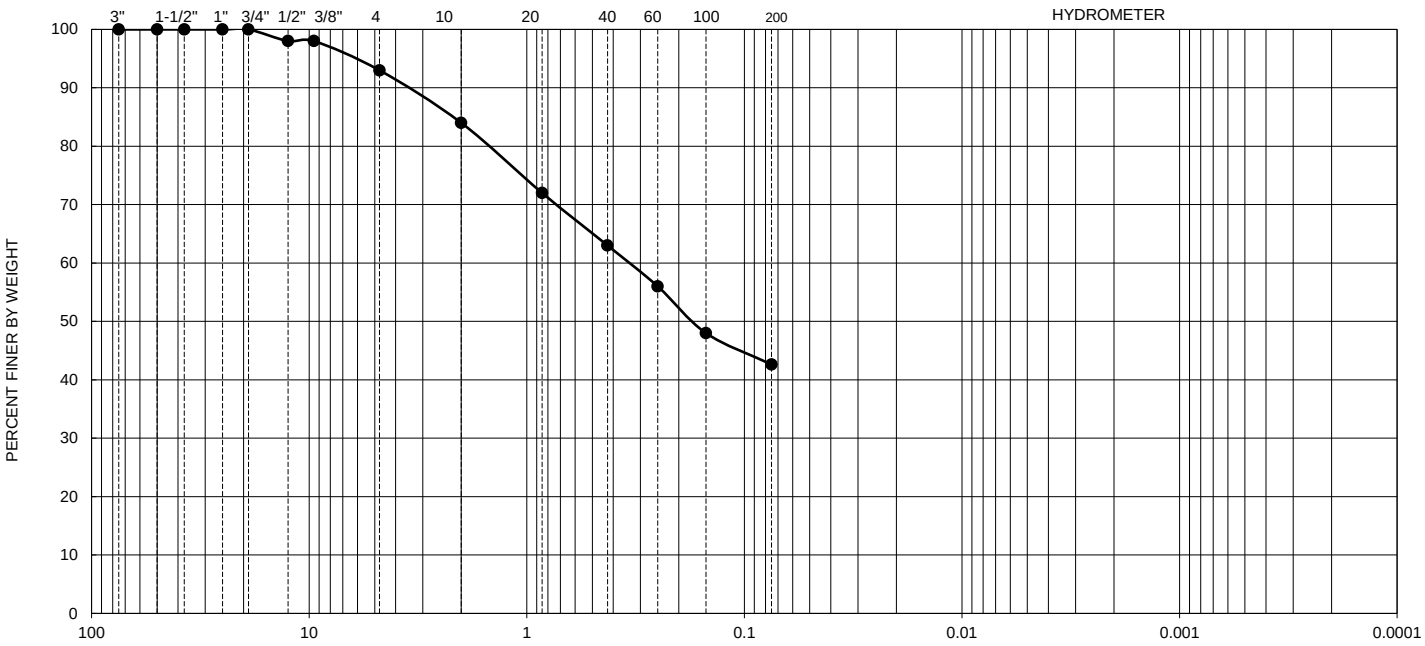
Suncrest SVC Substation and Transmission Line

FIGURE

B-16

Date Tested: **8/4/2015**

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
INV-1	2	4.5-5	42.6	SC

Sample Description	brown Clayey sand

	Sieve Size		% Passing
Sieve Analysis	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	98
	3/8"	9.5 mm	98
	No. 4	4.75 mm	93
	No. 10	2.0 mm	84
	No. 20	0.85 mm	72
	No. 40	0.425 mm	63
	No. 60	0.25 mm	56
	No 100	0.15 mm	48
	No 200	.075 mm	42.6

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

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Tested by:	Uly P.		
Project No.	20160674	Date:	12-Aug-15

GRADATION TEST RESULTS

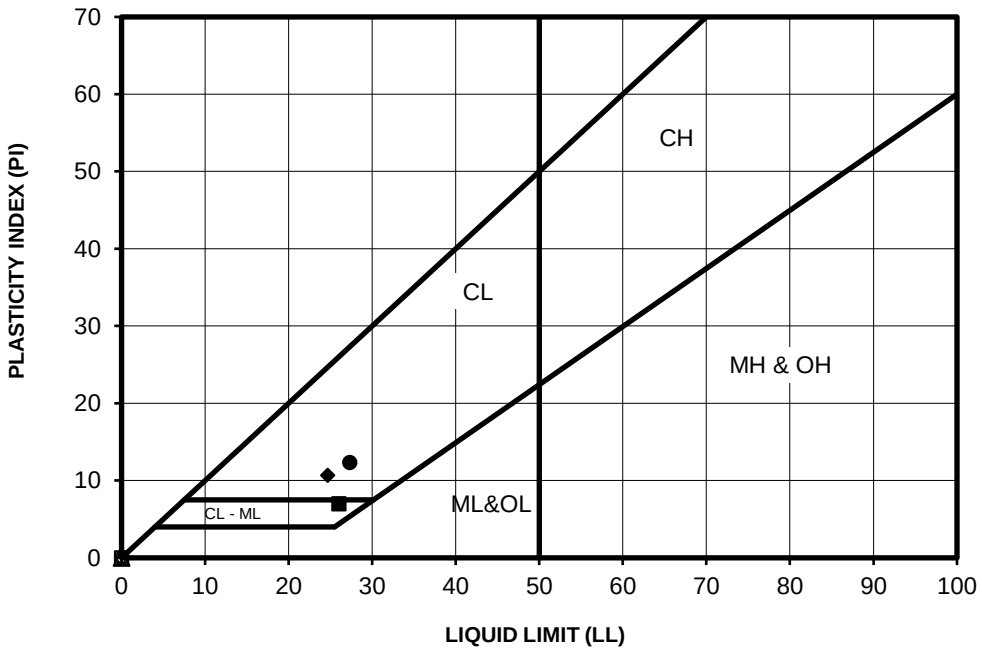
Suncrest SVC Substation and Transmission Line

FIGURE

B-17

Date Tested : 8/5-10/2015

SYMBOL	SAMPLE NAME	DEPTH (ft)	LL	PL	PI	USCS CLASSIFICATION (Minus No. 40 Sieve Fraction)	USCS (Entire Sample)
●	B-1-3	6'-7'	27	15	12	CL	SC
■	B-2-3	5'-7'	26	19	7	CL-ML	SC-SM
◆	INV-1-1	1.5'-4'	25	14	11	CL	SC
○							
□							
△							
+							
◇							



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

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ATTERBERG LIMITS TEST RESULTS

Suncrest SVC Substation and Transmission Line

FIGURE
B-18

Tested by: Uly P.	
PROJECT NO: 20160674	12-Aug-15

Boring No.	Sample No.	Depth (ft)	Sample Description
B1	3	6'-7'	yellowish brown clayey sand

Density Determination	Trial #1	Trial #2
Weight Compacted Sample and Ring	774.5	
Weight of Ring	362.6	
Net Weight of Sample	411.9	
Wet Density, pcf	124.8	
Dry Density, pcf	115.3	

Moisture Determination		
Wet Weight of Sample, g	206.9	
Dry Weight of Sample, g	191.1	
Moisture Content, %	8.3%	

Expansion Index	4	
Corrected Expansion Index	**4**	**(VERY LOW)**
% Saturation	48.3	

Expansion Readings			
DATE	**TIME**	**READING**	
8/4/2015	12:40PM	0.2046	
8/4/2015	12:50PM	0.2040	<< Add Water
8/5/2015	7:35AM	0.2076	<< Final

Moisture Content after Test	
Wet+Ring	**796.5**
Dry	380.4
	14.1%

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Expansion Index (ASTM D4829)

Suncrest SVC Substation and Transmission Line

FIGURE

B-19

CHECKED BY:	TECH: Uly
JOB NUMBER 20160674	DATE: 8/12/2015

Boring No.	Sample No.	Depth (ft)	Sample Description
B2	3	5'-7'	reddish brown clayey sand

Density Determination	Trial #1	Trial #2
Weight Compacted Sample and Ring	793.6	
Weight of Ring	362.5	
Net Weight of Sample	431.1	
Wet Density, pcf	130.7	
Dry Density, pcf	121.7	

Moisture Determination		
Wet Weight of Sample, g	289.4	
Dry Weight of Sample, g	269.5	
Moisture Content, %	7.4%	

Expansion Index	0	
Corrected Expansion Index	**0**	**(VERY LOW)**
% Saturation	51.7	

Expansion Readings			
DATE	**TIME**	**READING**	
8/7/2015	4:05pm	0.2393	
8/7/2015	4:15pm	0.2389	<< Add Water
8/10/2015	7:01am	0.2376	<< Final

Moisture Content after Test	
Wet+Ring	**809.9**
Dry	401.5
	11.4%

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Expansion Index (ASTM D4829)

Suncrest SVC Substation and Transmission Line

FIGURE

B-20

CHECKED BY:	TECH: Uly
JOB NUMBER 20160674	DATE: 8/12/2015

Boring No.	Sample No.	Depth (ft)	Sample Description
INV	1	1.5'-4'	dark yellowish brown clayey sand

Density Determination	Trial #1	Trial #2
Weight Compacted Sample and Ring	796.1	
Weight of Ring	366.4	
Net Weight of Sample	429.7	
Wet Density, pcf	130.2	
Dry Density, pcf	121.2	

Moisture Determination		
Wet Weight of Sample, g	239.4	
Dry Weight of Sample, g	222.8	
Moisture Content, %	7.5%	

Expansion Index	0	
Corrected Expansion Index	**0**	**(VERY LOW)**
% Saturation	51.5	

Expansion Readings			
DATE	**TIME**	**READING**	
8/7/2015	4:35PM	0.2139	
8/7/2015	4:45PM	0.2136	<< Add Water
8/10/2015	7:10AM	0.2138	<< Final

Moisture Content after Test	
Wet+Ring	**810.1**
Dry	399.9
	11.0%

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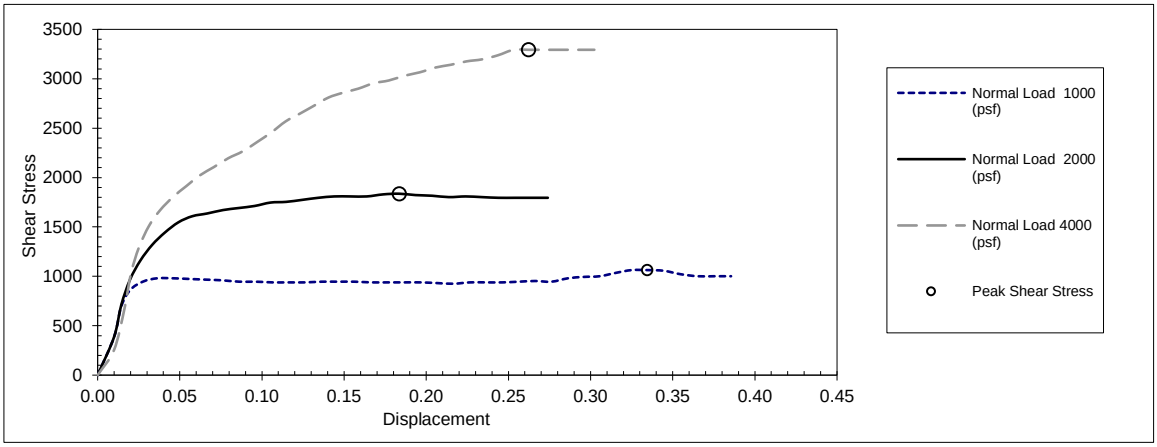
Expansion Index (ASTM D4829)

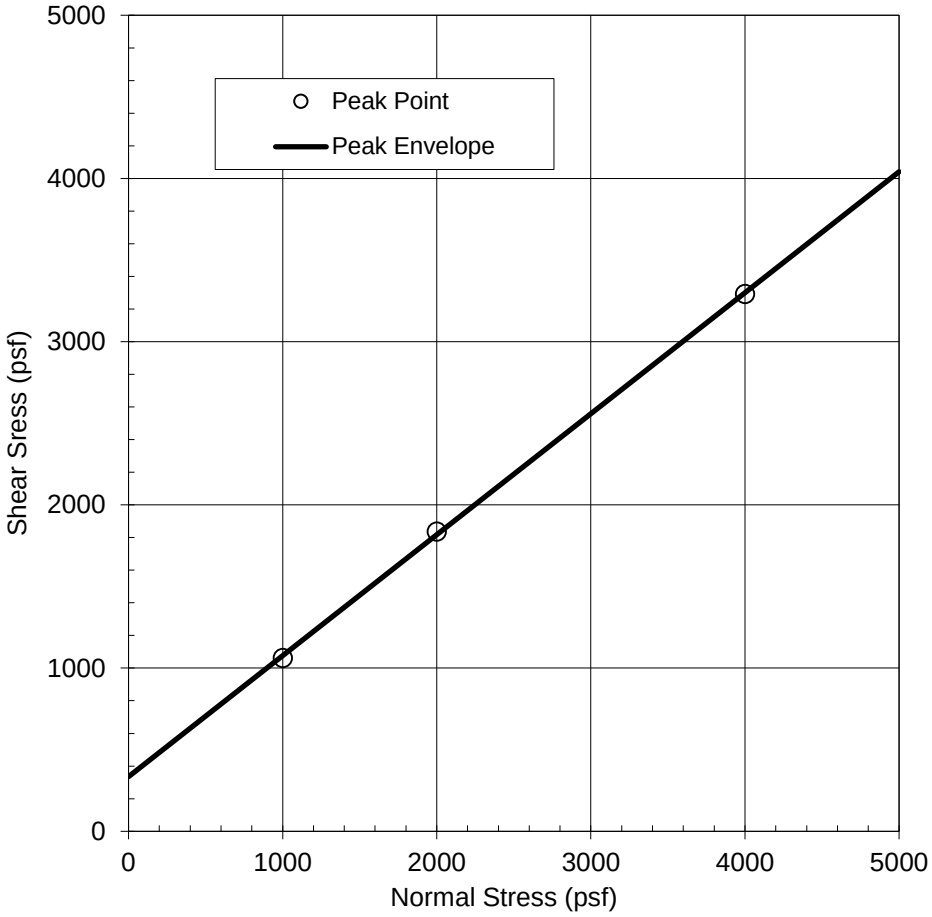
Suncrest SVC Substation and Transmission Line

FIGURE

B-21

CHECKED BY:	TECH: Uly
JOB NUMBER 20160674	DATE: 8/12/2015





Strain Rate = 0.0118 inch/min

Date Tested: 8/3/2015

				Interpreted Shear Strength			
				Peak			
Boring No.	Sample No.	Depth	UCSC	Cohesion (psf)	Friction Angle (deg)		
B1	3	6'-7'	SM	335	36.5		

Sample description: light yellowish brown clayey sand

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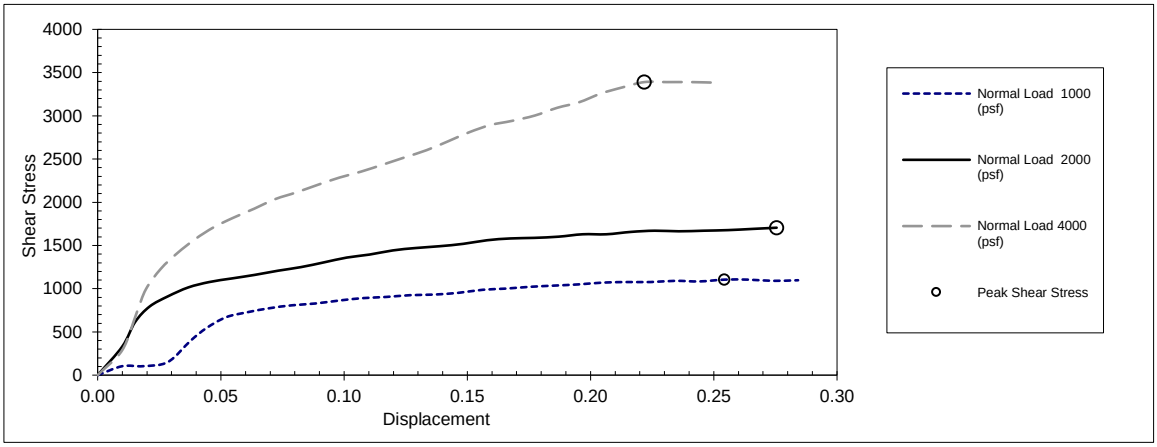
Checked By:	Tech : Uly
Project # 20160674	12-Aug-15

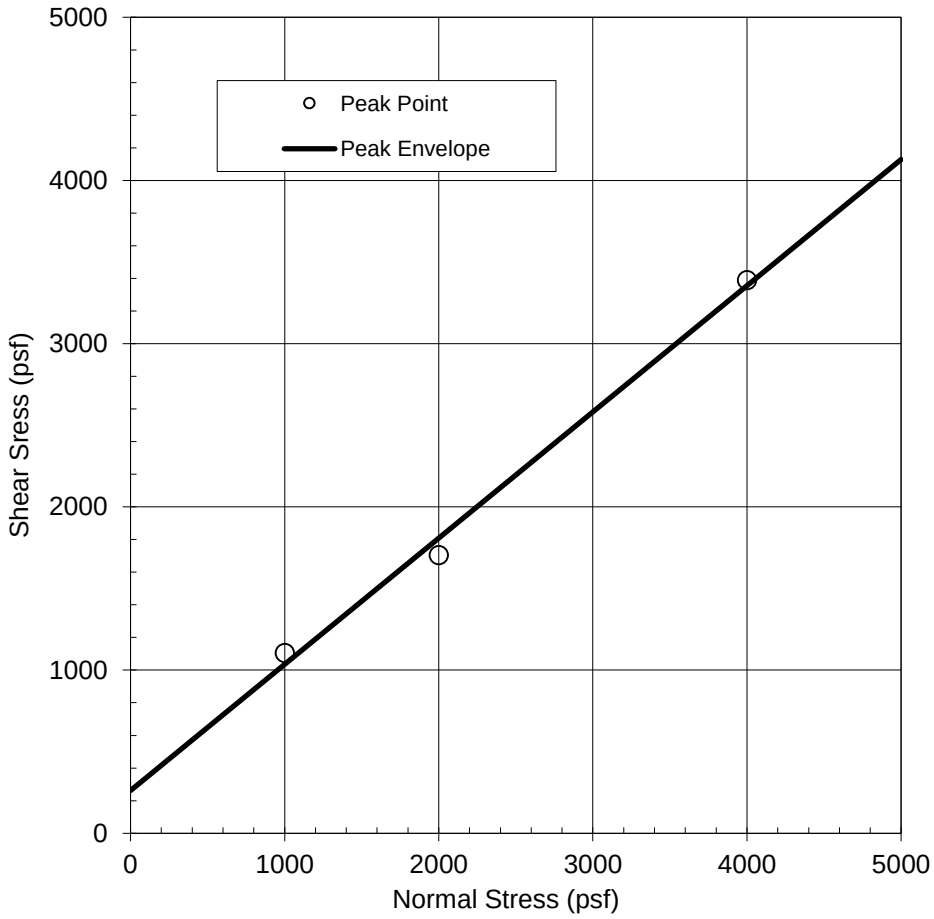
Remolded Direct Shear Test Results (ASTM D 3080)

Suncrest SVC Substation and Transmission Line

Figure

B-22





Strain Rate = 0.0118 inch/min

Date Tested: 8/6/2015

				Interpreted Shear Strength			
				Peak			
Boring No.	Sample No.	Depth	UCSC	Cohesion (psf)	Friction Angle (deg)		
B2	3	5'-7'	SC	262	37.7		

Sample description: reddish brown clayey sand

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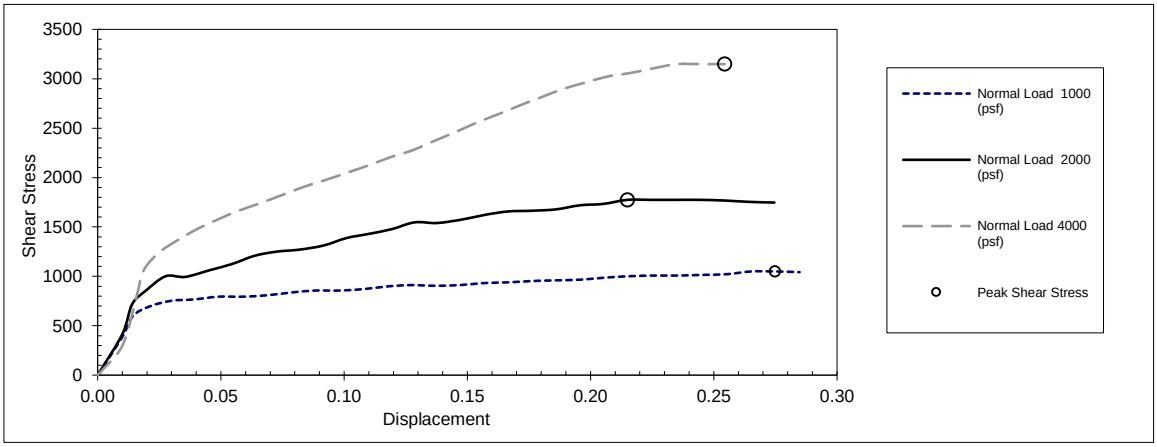
Checked By:	Tech : Uly
Project # 20160674	12-Aug-15

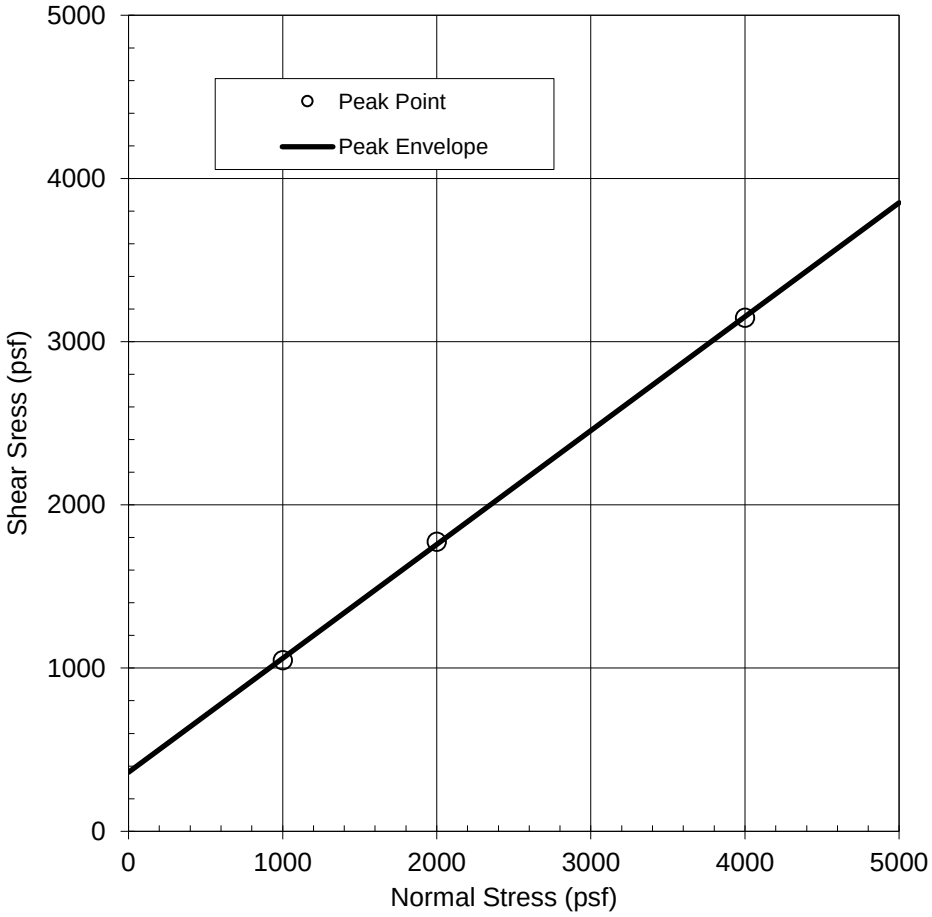
Remolded Direct Shear Test Results (ASTM D 3080)

Suncrest SVC Substation and Transmission Line

Figure

B-23





Strain Rate = 0.0118 inch/min

Date Tested: 8/7/2015

				Interpreted Shear Strength			
				Peak			
Boring No.	Sample No.	Depth	UCSC	Cohesion (psf)	Friction Angle (deg)		
INV-1	1	1.5'-4'	SC	362	34.9		

Sample description: dark yellowish brown clayey sand

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Checked By:	Tech : Uly
Project # 20160674	12-Aug-15

Remolded Direct Shear Test Results (ASTM D 3080)

Suncrest SVC Substation and Transmission Line

Figure

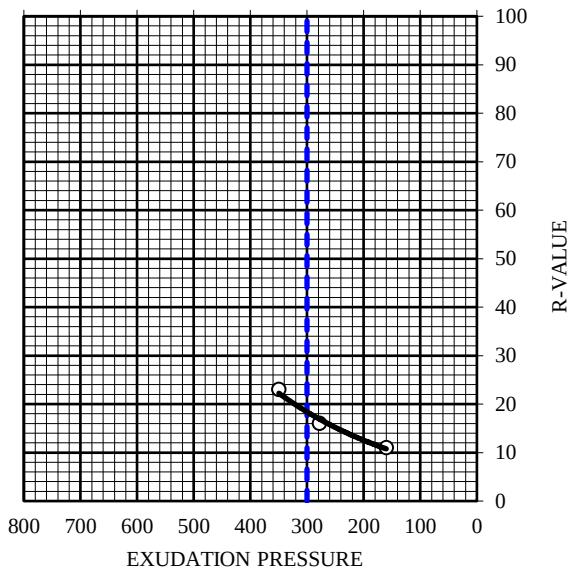
B-24

Boring No.	Sample No.	Depth	Description	Date Tested
B1	3	6'-7'	light yellowish brown clayey sand	8/3-4/2015

TEST SPECIMEN				
MOLD NO.	5	7	2	
FOOT PRESSURE, psi	**50**	**60**	**80**	
INITIAL MOISTURE, %	7.7	7.7	7.7	
"AS-IS" WEIGHT, g	1200	1200	1200	
DRY WEIGHT, g	1114.0	1114.0	1114.0	
WATER ADDED, ml	**75**	**55**	**40**	
COMPACTION MOISTURE, %	14.4	12.7	11.3	
HEIGHT OF BRIQUETTE, in.	**2.51**	**2.47**	**2.5**	
WEIGHT BRIQUETTE/MOLD,	**3230.7**	**3225.8**	**3252.6**	
WEIGHT OF MOLD, g	**2107.9**	**2104.9**	**2109.2**	
WEIGHT OF BRIQUETTE, g	1122.8	1120.9	1143.4	
DRY DENSITY, pcf	118.5	122.2	124.6	
STABILOMETER, 1000 lbs	**65**	**51**	**44**	
2000lbs	**138**	**126**	**109**	
DISPLACEMENT, in	**3.31**	**3.57**	**3.91**	
EXUDATION LOAD, lbs	**2011**	**3492**	**4392**	
EXUDATION PRESSURE, psi	160.1	278.0	349.7	
R-VALUE	11	16	23	
CORRECTED R-VALUE	11	16	23	
DIAL READING, END	0.0291	0.0200	0.0191	
DIAL READING, START	0.0300	0.0209	0.0200	
DIFFERENCE	-0.0009	-0.0009	-0.0009	
EXPANSION PRESSURE, PSF	0.0	0.0	0.0	

INITIAL MOISTURE	
WET WEIGHT, g	617.0
DRY WEIGHT, g	572.8
WEIGHT OF WATER	
WEIGHT OF SAMPLE	
MOISTURE CONTENT %	7.7

R-VALUE:	**19**
Location:	



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R-Value (ASTM D2844)

FIGURE

B-25

Suncrest SVC Substation and Transmission Line

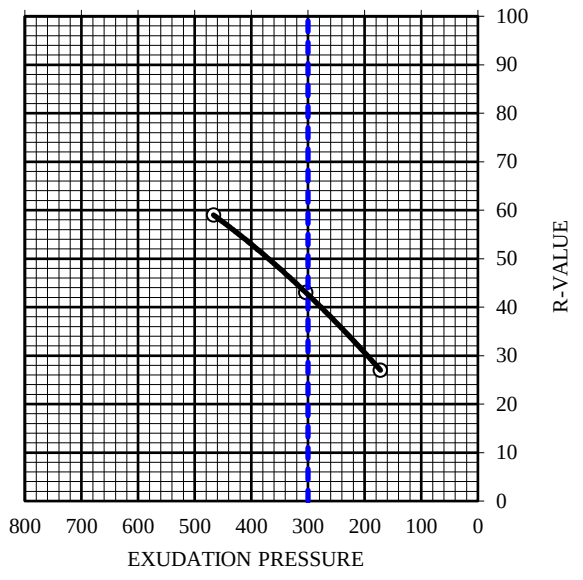
Tested By: Uly P.	
Job Number: 20160674	DATE: 12-Aug-15

Boring No.	Sample No.	Depth	Description	Date Tested
B2	3	5'-7'	light yellowish brown clayey sand	8/7&10/2015

TEST SPECIMEN				
MOLD NO.	6	9	5	
FOOT PRESSURE, psi	**350**	**250**	**110**	
INITIAL MOISTURE, %	7.7	7.7	7.7	
"AS-IS" WEIGHT, g	1200	1200	1200	
DRY WEIGHT, g	1114.4	1114.4	1114.4	
WATER ADDED, ml	**5**	**15**	**30**	
COMPACTION MOISTURE, %	8.1	9.0	10.4	
HEIGHT OF BRIQUETTE, in.	**2.45**	**2.45**	**2.45**	
WEIGHT BRIQUETTE/MOLD,	**3255.3**	**3262**	**3244.3**	
WEIGHT OF MOLD, g	**2100.9**	**2111.4**	**2109.2**	
WEIGHT OF BRIQUETTE, g	1154.4	1150.6	1135.1	
DRY DENSITY, pcf	132.2	130.7	127.3	
STABILOMETER, 1000 lbs	**23**	**30**	**39**	
2000lbs	**46**	**68**	**96**	
DISPLACEMENT, in	**4.23**	**4.46**	**4.48**	
EXUDATION LOAD, lbs	**5863**	**3815**	**2162**	
EXUDATION PRESSURE, psi	466.8	303.7	172.1	
R-VALUE	59	43	27	
CORRECTED R-VALUE	59	43	27	
DIAL READING, END	0.0179	0.0375	0.0205	
DIAL READING, START	0.0179	0.0379	0.0207	
DIFFERENCE	0.0000	-0.0004	-0.0002	
EXPANSION PRESSURE, PSF	0.0	0.0	0.0	

INITIAL MOISTURE	
WET WEIGHT, g	371.6
DRY WEIGHT, g	345.1
WEIGHT OF WATER	
WEIGHT OF SAMPLE	
MOISTURE CONTENT %	7.7

R-VALUE:	**42**
Location:	



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R-Value (ASTM D2844)

FIGURE

B-26

Suncrest SVC Substation and Transmission Line

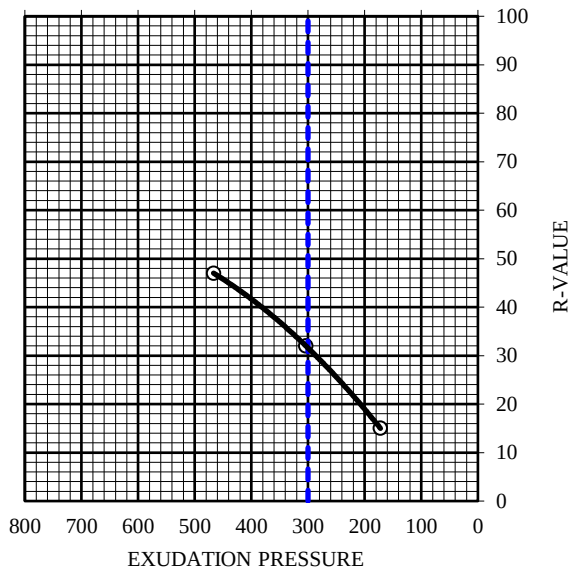
Tested By: Uly P.	
Job Number: 20160674	DATE: 12-Aug-15

Boring No.	Sample No.	Depth	Description	Date Tested
INV-1	1	1.5'-4'	dark yellowish brown clayey sand	8/7&10/2015

TEST SPECIMEN				
MOLD NO.	4	2	7	
FOOT PRESSURE, psi	**150**	**110**	**60**	
INITIAL MOISTURE, %	6.6	6.6	6.6	
"AS-IS" WEIGHT, g	1200	1200	1200	
DRY WEIGHT, g	1125.2	1125.2	1125.2	
WATER ADDED, ml	**20**	**35**	**50**	
COMPACTION MOISTURE, %	8.4	9.8	11.1	
HEIGHT OF BRIQUETTE, in.	**2.5**	**2.5**	**2.6**	
WEIGHT BRIQUETTE/MOLD,	**3266.8**	**3258**	**3282.8**	
WEIGHT OF MOLD, g	**2112.7**	**2109.2**	**2104.9**	
WEIGHT OF BRIQUETTE, g	1154.1	1148.8	1177.9	
DRY DENSITY, pcf	129.1	127.0	123.7	
STABILOMETER, 1000 lbs	**30**	**40**	**53**	
2000lbs	**75**	**102**	**122**	
DISPLACEMENT, in	**3.18**	**3.03**	**4.41**	
EXUDATION LOAD, lbs	**5863**	**3815**	**2162**	
EXUDATION PRESSURE, psi	466.8	303.7	172.1	
R-VALUE	47	32	15	
CORRECTED R-VALUE	47	32	15	
DIAL READING, END	0.0295	0.0300	0.0198	
DIAL READING, START	0.0300	0.0302	0.0200	
DIFFERENCE	-0.0005	-0.0002	-0.0002	
EXPANSION PRESSURE, PSF	0.0	0.0	0.0	

INITIAL MOISTURE	
WET WEIGHT, g	337.1
DRY WEIGHT, g	316.1
WEIGHT OF WATER	
WEIGHT OF SAMPLE	
MOISTURE CONTENT %	6.6

R-VALUE:	**31**
Location:	



Limitations: Pursuant to applicable codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specification were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet), if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

KLEINFELDER
Bright People. Right Solutions.

Tested By: Uly P.	
Job Number: 20160674	DATE: 12-Aug-15

R-Value (ASTM D2844)

Suncrest SVC Substation and Transmission Line

FIGURE

B-27

APPENDIX C

THERMAL RESISTIVITY TEST REPORT BY GEOTHERM USA

4370 Contractors Common
Livermore, CA 94551
Tel: 925-999-9232
Fax: 925-999-8837
info@geothermusa.com

August 7, 2015

Kleinfelder
5761 Copley Drive, Suite 100
San Diego, CA 92111
Attn: Kevin Crennan, PE, GE

Re: Thermal Analysis of Native Soil Samples
Suncrest SVC Transmission Line- San Diego County (PO 20160674.1001A 02-0000)

The following is the report of thermal dryout characterization tests conducted on 6 undisturbed tube samples sent to our laboratory.

Thermal Resistivity Tests: The samples were tested 'as received'. A series of thermal resistivity measurements were made in stages, with moisture contents ranging from the 'as received' to totally dry condition. The tests were conducted in accordance with the IEEE Standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figure 1.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample Info		Visual Description (Kleinfelder)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
ID	Depth		Wet	Dry		
B-5	3'-3.5'	Silty sand	67	143	6	123
	5'-5.5'	Silty sand	83	159	5	118
B-7	2.5'-3'	Silty sand	124	209	4	108
	5.5'-6'	Silty sand	77	147	4	120
B-8	2.5'-3'	Silty sand	145	212	3	106
	5'-5.5'	Silty sand	137	187	2	122

Comments: The thermal characteristic depicted in the dryout curves applies for the soils at the respective test dry density.

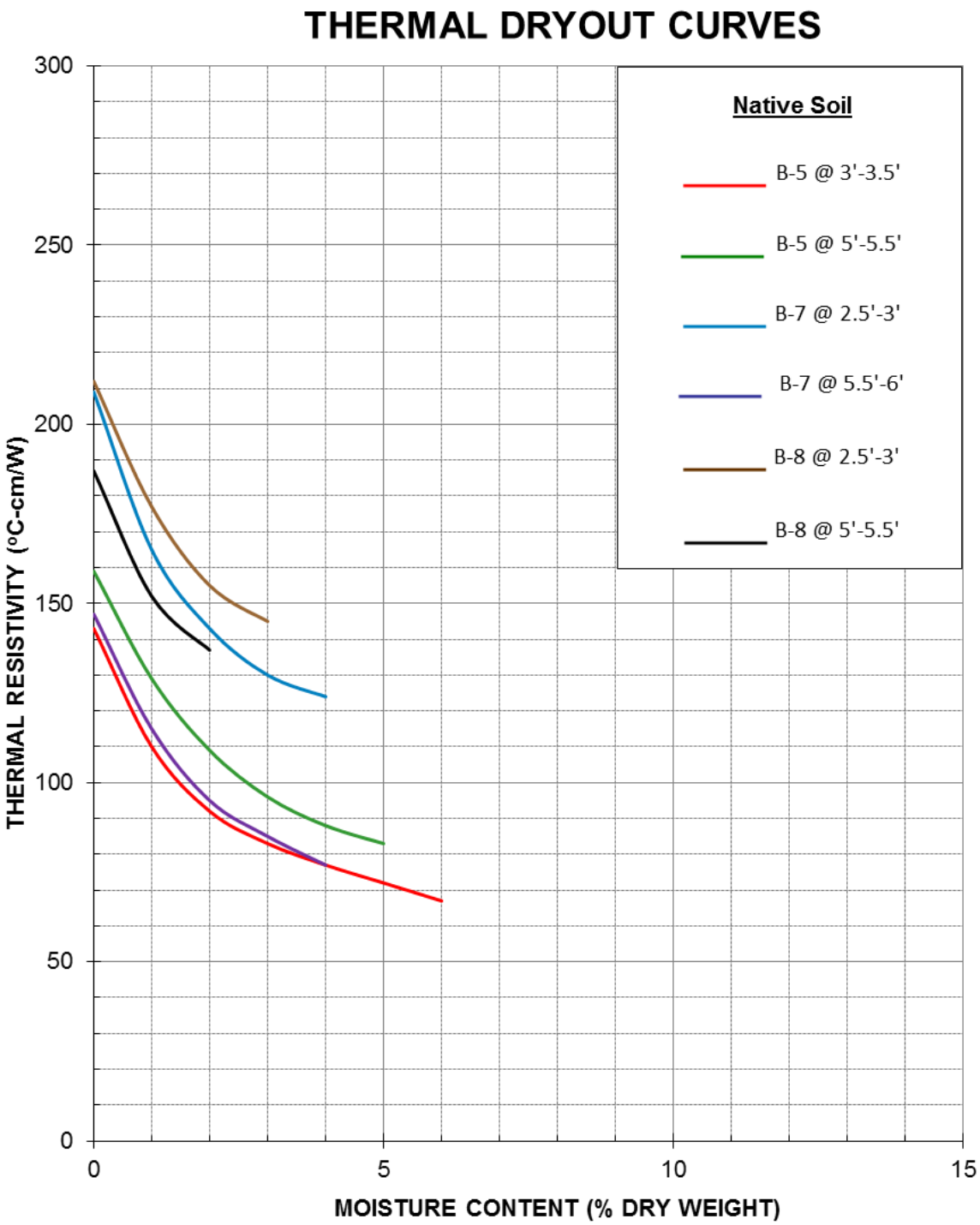
Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA



Deepak Parmar

Please Note: All samples will be disposed of after 5 days from date of report.



Kleinfelder

Thermal Analysis of Native Soils

Suncrest SVC Transmission Line- San Diego County

August 2015 **Figure 1**

APPENDIX D

SUGGESTED GUIDELINES FOR EARTHWORK CONSTRUCTION

APPENDIX D
SUGGESTED GUIDELINES FOR EARTHWORK CONSTRUCTION

1.0 GENERAL

1.1 **Scope** - The work done under theses specifications shall include clearing, stripping, removal of unsuitable material, excavation, preparation of natural soils, placement and compaction of on-site and imported fill material and placement and compaction of pavement materials.

1.2 **Contractor's Responsibility** - The Contractor shall attentively examine the site in such a manner that he can correlate existing surface conditions with those presented in the geotechnical evaluation report. He shall satisfy himself that the quality and quantity of exposed materials and subsurface soil or rock deposits have been satisfactorily represented by the Geotechnical Engineer's report and project drawings. Any discrepancy of prior knowledge to the Contractor to that is revealed through his evaluations shall be made known to the Owner. It is the Contractor's responsibility to review the report prior to construction. The selection of equipment for use on the project and the order of the work shall similarly be the Contractor's responsibility. The Contractor shall be responsible for providing equipment capable of completing the requirements included in the following sections.

1.3 **Geotechnical Engineer** - The work covered by these specifications shall be observed and tested by Kleinfelder, the Geotechnical Engineer, who shall be hired by the Owner. The Geotechnical Engineer will be present during the site preparation and grading to observe the work and to perform the tests necessary to evaluate material quality and compaction. The Geotechnical Engineer shall submit a report to the Owner, including a tabulation of tests performed. The costs of re-testing unsuitable work installed by the Contractors shall be deducted by the Owner from the payments to the Contractor.

1.4 **Standard Specifications** - Where referred to in these specifications, "Standard Specifications" shall mean the State of California Standard Specifications for Public Works Construction, with Regional Supplement Amendments for San Diego County, 2000 Edition.

1.5 **Compaction Test Method** - Where referred to herein, relative compaction shall mean the in-place dry density of soil expressed as a percentage of the maximum

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dry density of the same material, as determined by the ASTM D 1557 Compaction Test Procedure. Optimum moisture content shall mean the moisture content at the maximum dry density determined above.

2.0 SITE PREPARATION

2.1 **Clearing** - Areas to be graded shall be cleared and grubbed of all vegetation and debris. These materials shall be removed from the site by the Contractor.

2.2 **Stripping** - Surface soils containing roots and organic matter shall be stripped from areas to be graded and stockpiled or discarded as directed by the Owner. In general, the depth of stripping of the topsoil will be approximately 3 inches. Deeper stripping, where required to remove weak soils or accumulations of organic matter, shall be performed when determined necessary by the Geotechnical Engineer. Stripped material shall be removed from the site or stockpiled at a location designated by the Owner.

2.3 **Removal of Existing Fill** - Existing fill soils, trash and debris in the areas to be graded shall be removed prior to the placing of any compacted fill. Portions of any existing fills that are suitable for use in new compacted fill may be stockpiled for future use. All organic materials, topsoil, expansive soils, oversized rock or other unsuitable material shall be removed from the site by the Contractor or disposed of at a location on-site, if so designated by the Owner.

2.4 **Ground Surface** - The ground surface exposed by stripping shall be scarified to a depth of 6 inches, moisture conditioned to the proper moisture content for compaction and compacted as required for compacted fill. Ground surface preparation shall be approved by the Geotechnical Engineer prior to placing fill.

3.0 EXCAVATION

3.1 **General** - Excavations shall be made to the lines and grades indicated on the plans. The data presented in the Geotechnical Engineer's report is for information only and the Contractor shall make his own interpretation with regard to the methods and equipment necessary to perform the excavation and to obtain material suitable for fill.

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3.2 **Materials** - Soils which are removed and are unsuitable for fill shall be placed in nonstructural areas of the project, or in deeper fills at locations designated by the Geotechnical Engineer.

All oversize rocks and boulders that cannot be incorporated in the work by placing in embankments or used as rip-rap or for other purposes shall be removed from the site by the Contractor.

3.3 **Treatment of Exposed Surface** - The ground surface exposed by excavation shall be scarified to a depth of 6 inches, moisture conditioned to the proper moisture content for compaction and compacted as required for compacted fill. Compaction shall be approved by the Geotechnical Engineer prior to placing fill.

3.4 **Rock Excavation** - Where solid rock is encountered in areas to be excavated, it shall be loosened and broken up so that no solid ribs, projections or large fragments will be within 6 inches of the surface of the final subgrade.

4.0 COMPACTED FILL

4.1 **Materials** - Fill material shall consist of suitable on-site or imported soil. All materials used for structural fill shall be reasonably free of organic material, have an Expansion Index of 50 or less, 100% passing the 3 inch sieve and less than 30 percent passing the #200 sieve.

4.2 **Placement** - All fill materials shall be placed in layers of 8 inches or less in loose thickness and uniformly moisture conditioned. Each lift should then be compacted with a sheepsfoot roller or other approved compaction equipment to at least 90 percent relative compaction in areas under structures, utilities, roadways and parking areas. No fill material shall be placed, spread or rolled while it is frozen or thawing, or during unfavorable weather conditions.

4.3 **Compaction Equipment** - The Contractor shall provide and use sufficient equipment of a type and weight suitable for the conditions encountered in the field. The equipment shall be capable of obtaining the required compaction in all areas.

4.4 **Recompaction** - When, in the judgment of the Geotechnical Engineer, sufficient compactive effort has not been used, or where the field density tests indicate that the required compaction or moisture content has not been obtained, or if pumping

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or other indications of instability are noted, the fill shall be reworked and recompacted as needed to obtain a stable fill at the required density and moisture content before additional fill is placed.

4.5 **Responsibility** - The Contractor shall be responsible for the maintenance and protection of all embankments and fills made during the contract period and shall bear the expense of replacing any portion which has become displaced due to carelessness, negligent work or failure to take proper precautions.

5.0 UTILITY TRENCH BEDDING AND BACKFILL

5.1 **Material** - Pipe bedding shall be defined as all material within 4 inches of the perimeter and 12 inches over the top of the pipe. Material for use as bedding shall be clean sand, gravel, crushed aggregate or native free-draining material, having a Sand Equivalent of not less than 30.

Backfill should be classified as all material within the remainder of the trench. Backfill shall meet the requirements set forth in Section 4.2.7 for compacted fill.

5.2 **Placement and Compaction** - Pipe bedding shall be placed in layers not exceeding 8 inches in loose thickness, conditioned to the proper moisture content for compaction and compacted to at least 90 percent relative compaction. All other trench backfill shall be placed and compacted in accordance with Section 306-1.3.2 of the Standard Specifications for Mechanically Compacted Backfill. Backfill shall be compacted as required for adjacent fill. If not specified, backfill shall be compacted to at least 90 percent relative compaction in areas under structures, utilities, roadways, parking areas and concrete flatwork.

6.0 SUBSURFACE DRAINAGE

6.1 **General** - Subsurface drainage shall be constructed as shown on the plans. Drainage pipe shall meet the requirements set forth in the Standard Specifications.

6.2 **Materials** - Permeable drain rock used for subdrainage shall meet the following gradation requirements:

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SIEVE SIZE	PERCENTAGE PASSING
3"	100
1-1/2"	90 - 100
3/4"	50 - 80
No. 4	24 - 40
No. 100	0 - 4
No. 200	0 - 2

6.3 **Geotextile Fabric** - Filter fabric shall be placed between the permeable drain rock and native soils. Filter cloth shall have an equivalent opening size greater than the No. 100 sieve and a grab strength not less than 100 pounds. Samples of filter fabric shall be submitted to the Geotechnical Engineer for approval before the material is brought to the site.

6.4 **Placement and Compaction** - Drain rock shall be placed in layers not exceeding 8 inches in loose thickness and compacted as required for adjacent fill, but in no case, to be less than 85 percent relative compaction. Placement of geotextile fabric shall be in accordance with the manufacturer's specifications and shall be checked by the Geotechnical Engineer.

7.0 AGGREGATE BASE BENEATH INTERIOR CONCRETE SLABS

7.1 **Materials** - Aggregate base beneath concrete slabs shall consist of clean free-draining sand, gravel or crushed rock conforming to the following gradation requirements:

SIEVE SIZE	PERCENT PASSING
1"	100
3/8"	30 – 100
No. 20	0 – 10

7.2 **Placement** - Aggregate base shall be compacted and kept moist until placement of concrete. Compaction shall be by suitable vibrating compactors. Aggregate base shall be placed in layers not exceeding 8 inches in loose thickness. Each layer shall be compacted by at least four passes of the compaction equipment or until 95 percent relative compaction has been obtained.

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APPENDIX E

ASFE INSERT

Important Information about Your

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you —* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical-Engineering Report Is Based on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical-engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical-engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold-prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your GBA-Member Geotechncial Engineer for Additional Assistance

Membership in the GEOPROFESSIONAL BUSINESS ASSOCIATION exposes geotechnical engineers to a wide array of risk confrontaton techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your GBA-member geotechnical engineer for more information.

GBA GEOPROFESSIONAL BUSINESS ASSOCIATION

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
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IIGER03135.0MRP

Appendix I

Phase 1 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

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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 though 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

Parcel # (APN*)	Owner
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.

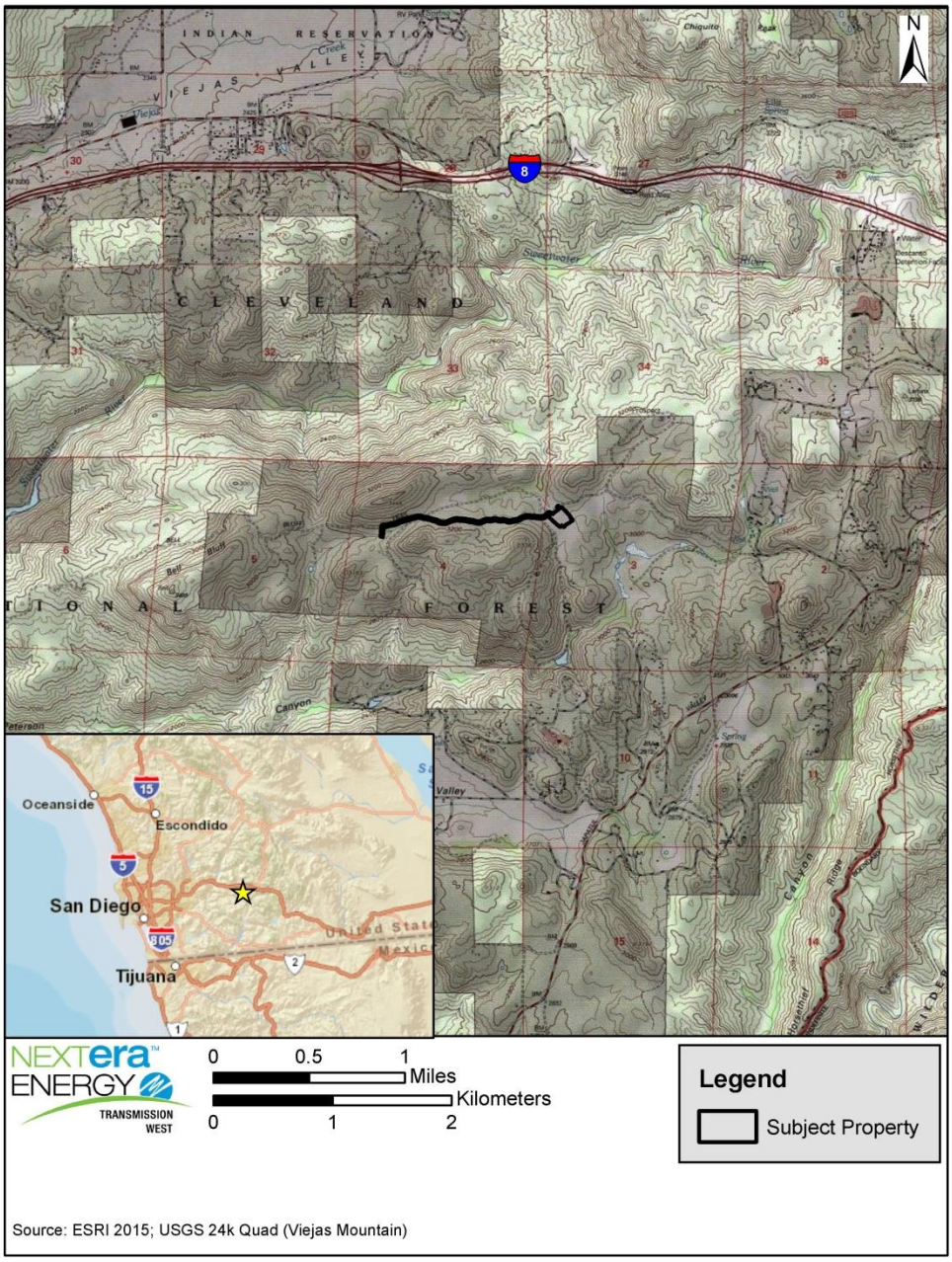
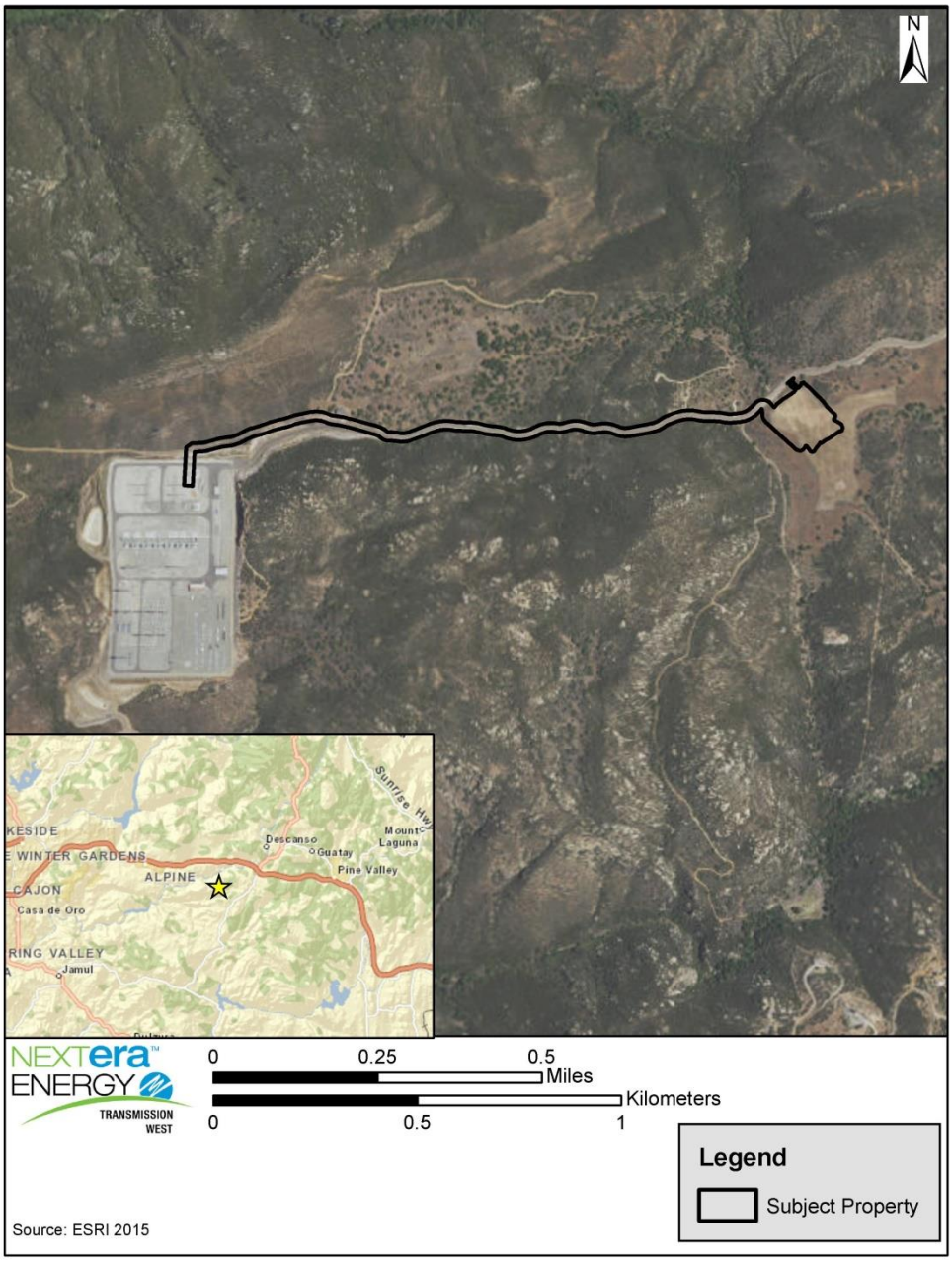


Figure 2. Subject property and surrounding properties.



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*.

9 LITERATURE CITED

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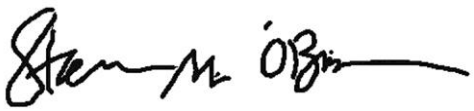
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10 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

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.



07/17/15

Steven M. O'Brien
Environmental Specialist

Date



07/17/15

DeAnne Rietz
Environmental Specialist

Date

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Appendix A.
Phase I ESA Scope of Work

SWCA ENVIRONMENTAL CONSULTANTS

Sound Science. Creative Solutions.®

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.

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

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

SWCA
ENVIRONMENTAL CONSULTANTS

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.

SWCA ENVIRONMENTAL CONSULTANTS

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 contaminates at the site.*

SWCA | 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

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	9
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

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 Tranverse 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

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

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

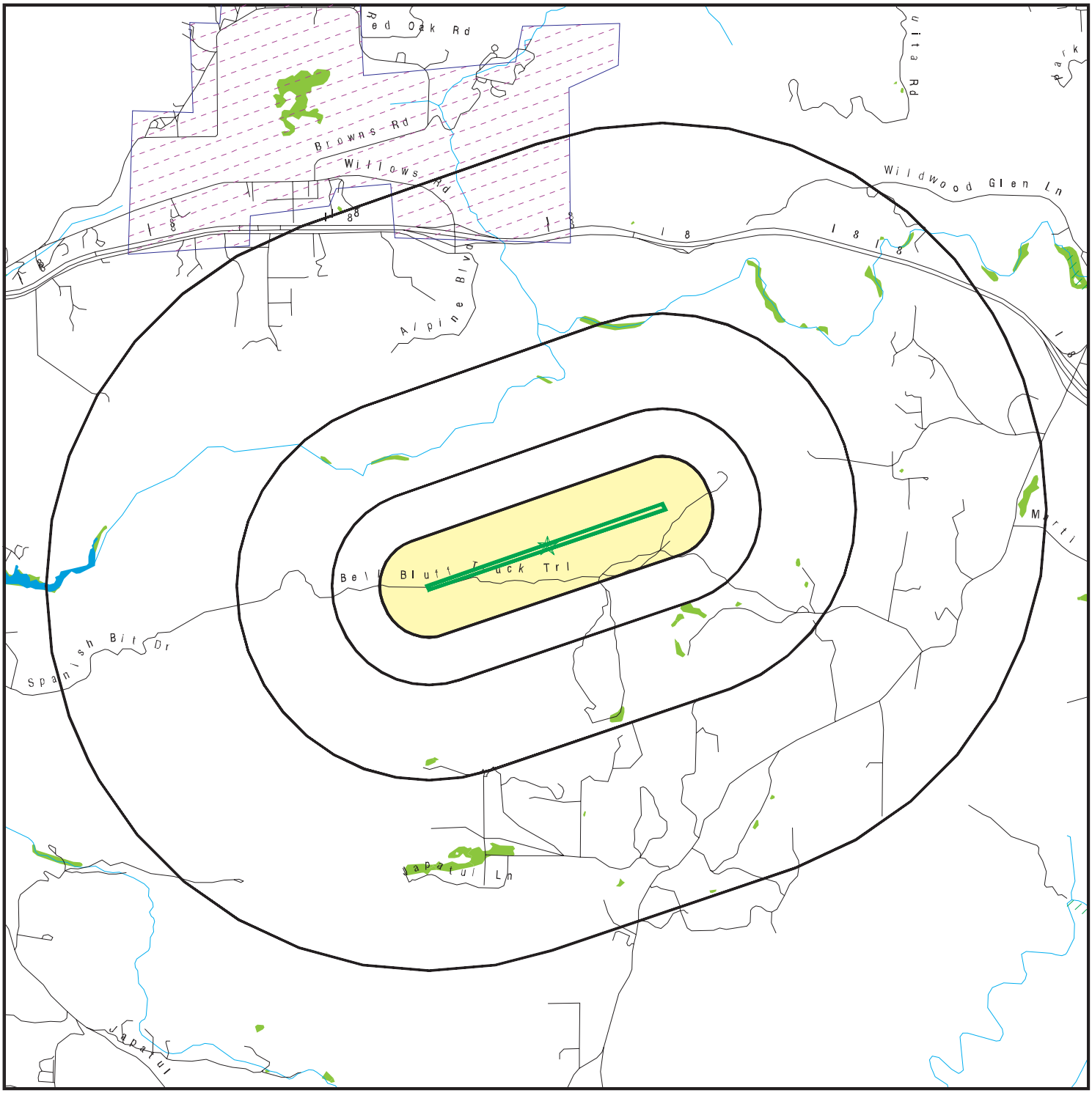
Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4232128.2S



0 1/2 1 2 Miles

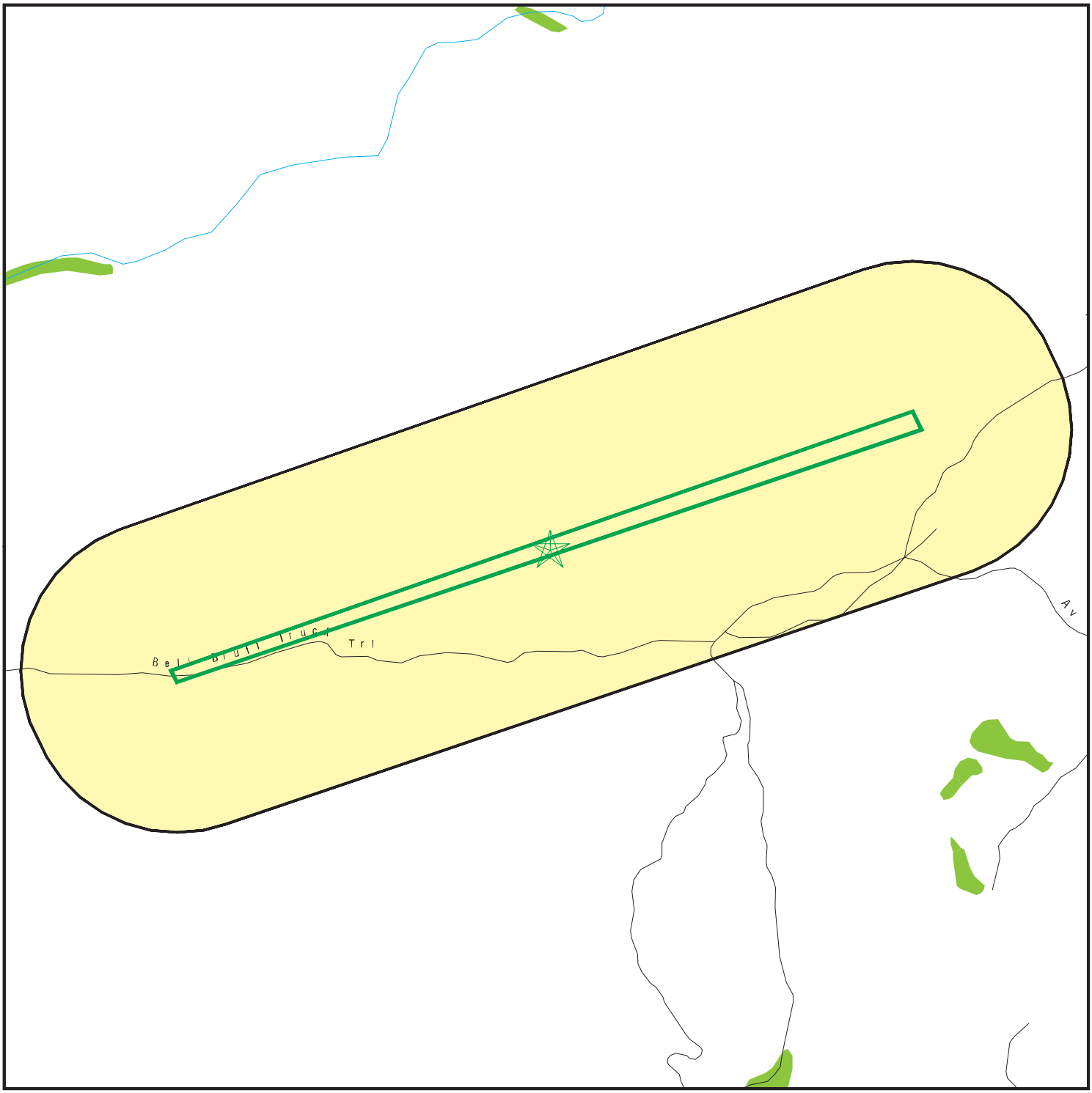
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year 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	CLIENT:	SWCA Environmental Consultants
ADDRESS:	Avenue De Los Arboles Alpine CA 91901	CONTACT:	Steve Obrien
		INQUIRY #:	4232128.2s
LAT/LONG:	32.8144 / 116.6727	DATE:	March 12, 2015 2:16 pm

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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

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 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

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.250		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
Federal Delisted NPL site list								
Delisted NPL	1.250		0	0	0	0	0	0
Federal CERCLIS list								
CERCLIS	0.750		0	0	0	0	NR	0
FEDERAL FACILITY	0.750		0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.750		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.250		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.750		0	0	0	0	NR	0
Federal RCRA generators list								
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
Federal institutional controls / engineering controls registries								
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
Federal ERNS list								
ERNS	0.250		0	0	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.250		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.250		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.750		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
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
State and tribal registered storage tank lists								
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
State and tribal voluntary cleanup sites								
VCP	0.750		0	0	0	0	NR	0
INDIAN VCP	0.750		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.750		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
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
Local Lists of Hazardous waste / Contaminated Sites								
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
Local Lists of Registered Storage Tanks								
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
Local Land Records								
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
Records of Emergency Release Reports								
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
Other Ascertainable Records								
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 FINDINGS

Map ID Direction Distance Elevation	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
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 01/08/2015
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
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 01/08/2015
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
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 01/08/2015
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
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 02/27/2015
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
Date Data Arrived at EDR: 10/07/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/09/2015
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
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 02/27/2015
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.

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

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
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/26/2015
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
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/26/2015
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
Date Data Arrived at EDR: 12/12/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 48

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2015
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
Date Data Arrived at EDR: 09/30/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 37

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/29/2014
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
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 - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 02/02/2015
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 inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/16/2015
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, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 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

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

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

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

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
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 32
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/26/2015
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
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
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
Date Data Arrived at EDR: 01/21/2015
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 6
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 01/21/2015
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
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21
Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/23/2014
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
Date Data Arrived at EDR: 10/29/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 8
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
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
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 UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 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.

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 Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 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

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

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
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: 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
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/02/2015
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

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 09/02/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 22
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 04/27/2015
Data Release Frequency: Varies

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.

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 Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/21/2015
Next Scheduled EDR Contact: 03/30/2015
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 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 Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/03/2015
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.

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.

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.

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

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/26/2015
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
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/24/2015
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
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/16/2015
Date Data Arrived at EDR: 02/17/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/17/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

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
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 45
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/15/2014
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
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 02/03/2015
Number of Days to Update: 36
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/29/2014
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
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/18/2014
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
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 08/21/2014
Number of Days to Update: 49
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/09/2015
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
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/23/2014
Next Scheduled EDR Contact: 04/13/2015
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/26/2015
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 Resoruces 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 administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/15/2015
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.

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 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/13/2015
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
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/30/2015
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
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/09/2015
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
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

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/12/2014
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.

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

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/29/2014
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
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/29/2014
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
Date Data Arrived at EDR: 12/11/2014
Date Made Active in Reports: 01/23/2015
Number of Days to Update: 43

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 02/26/2015
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:

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.

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.

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.

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:

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.

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 Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/09/2015
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:

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

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:

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: Divison 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:

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
Date Data Arrived at EDR: 02/19/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 12

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/16/2015
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
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/05/2015
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
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/16/2015
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
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 32

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/26/2015
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
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 02/02/2015
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/15/2014
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
Date Data Arrived at EDR: 12/23/2014
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 35

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/18/2014
Next Scheduled EDR Contact: 04/06/2015
Data Release Frequency: Annually

YUBA COUNTY:

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

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

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

N

TARGET QUAD		SITE NAME:	32001 - Suncrest P1ESA	CLIENT:	SWCA Environmental Consultants
NAME:	CUYAMACA	ADDRESS:	Avenue De Los Arboles	CONTACT:	Steve Obrien
MAP YEAR:	1903		Alpine, CA 91901	INQUIRY#:	4232128.6
SERIES:	30	LAT/LONG:	32.8144 / -116.6727	RESEARCH DATE:	03/12/2015
SCALE:	1:125000				

Historical Topographic Map

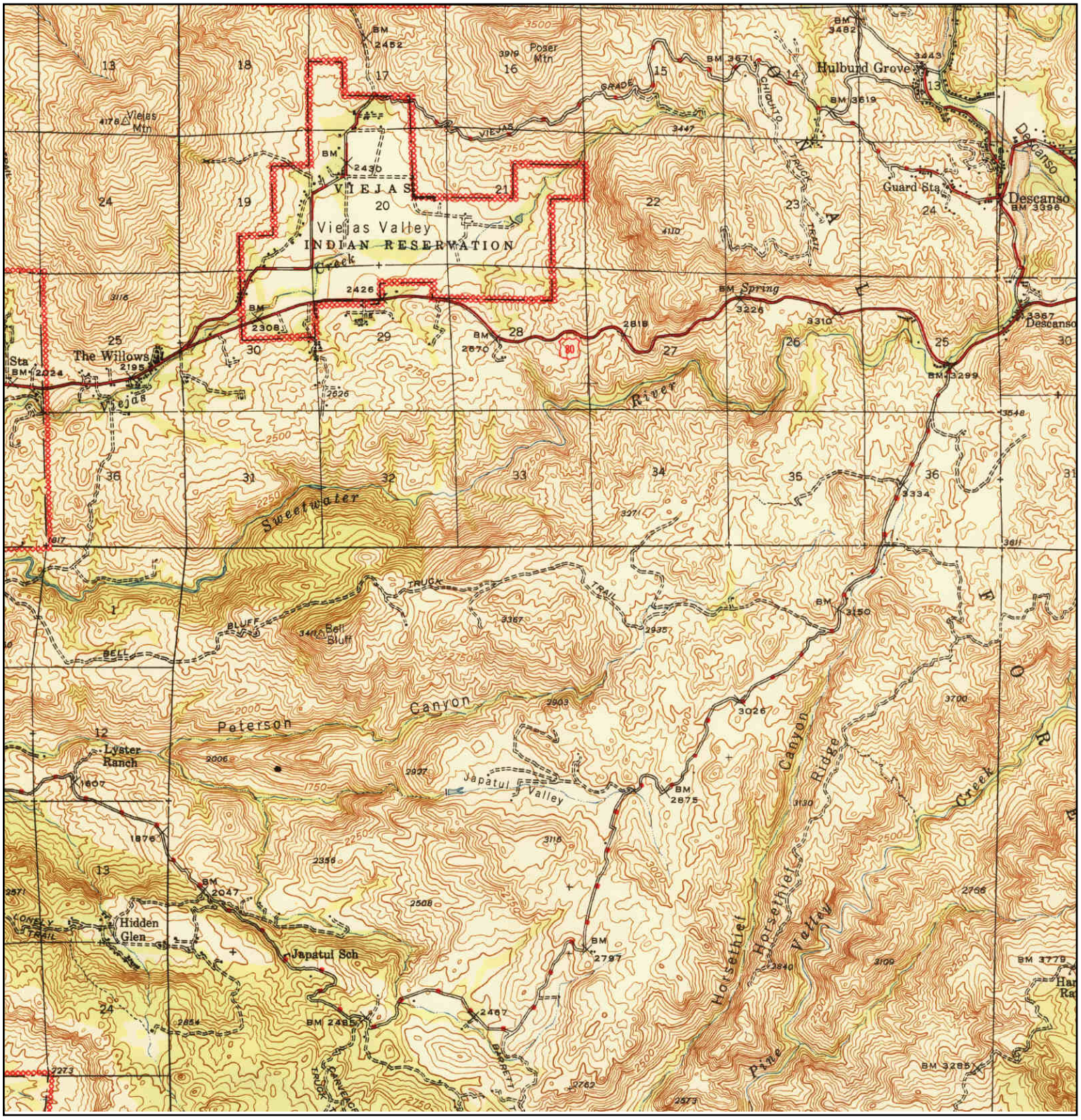


Unsurveyed Area on the Topographic Map

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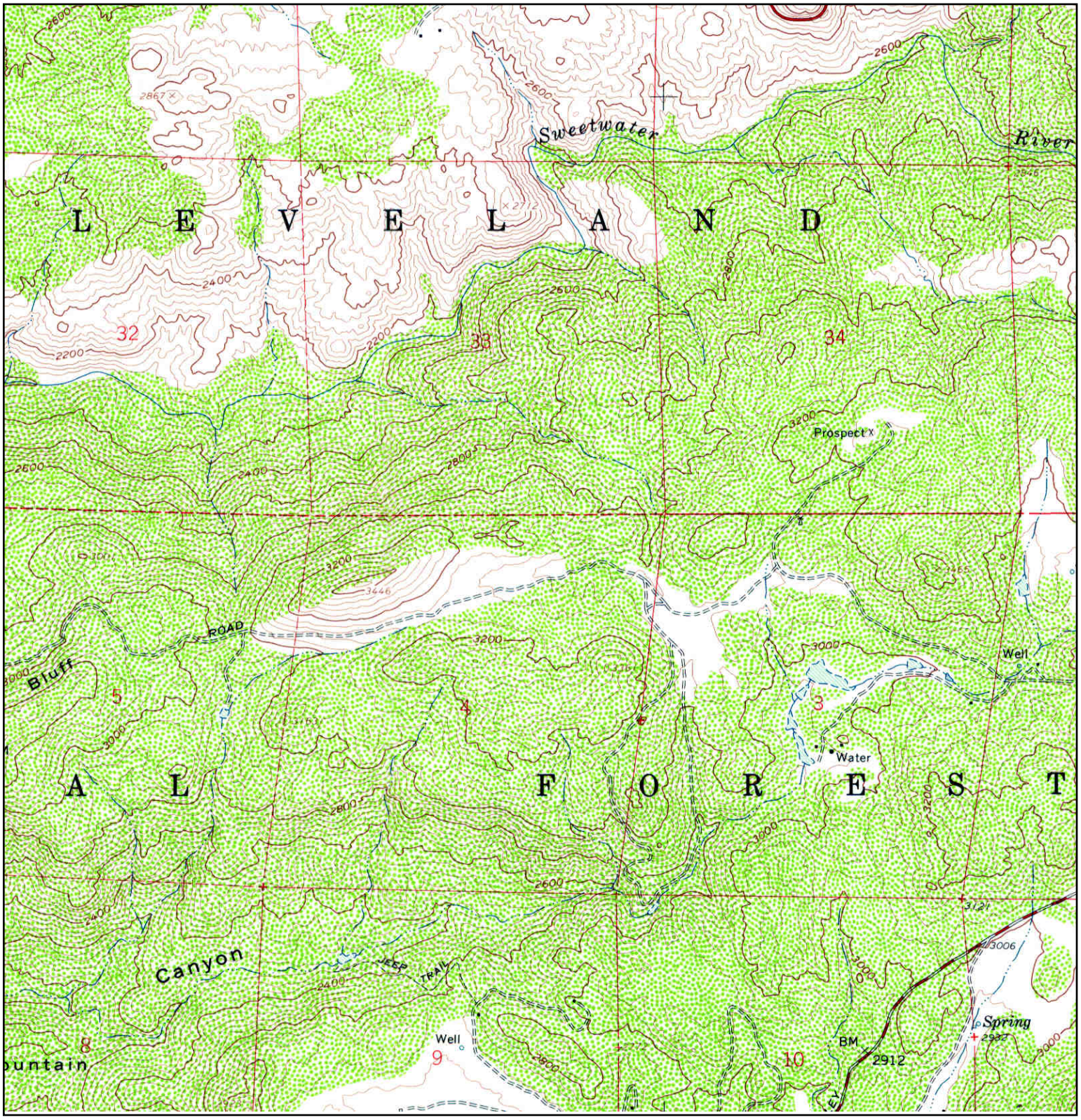
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MAP YEAR:	1904	ADDRESS:	Avenue De Los Arboles Alpine, CA 91901	CONTACT:	Steve Obrien
SERIES:	60	LAT/LONG:	32.8144 / -116.6727	INQUIRY#:	4232128.6
SCALE:	1:250000			RESEARCH DATE:	03/12/2015

Historical Topographic Map



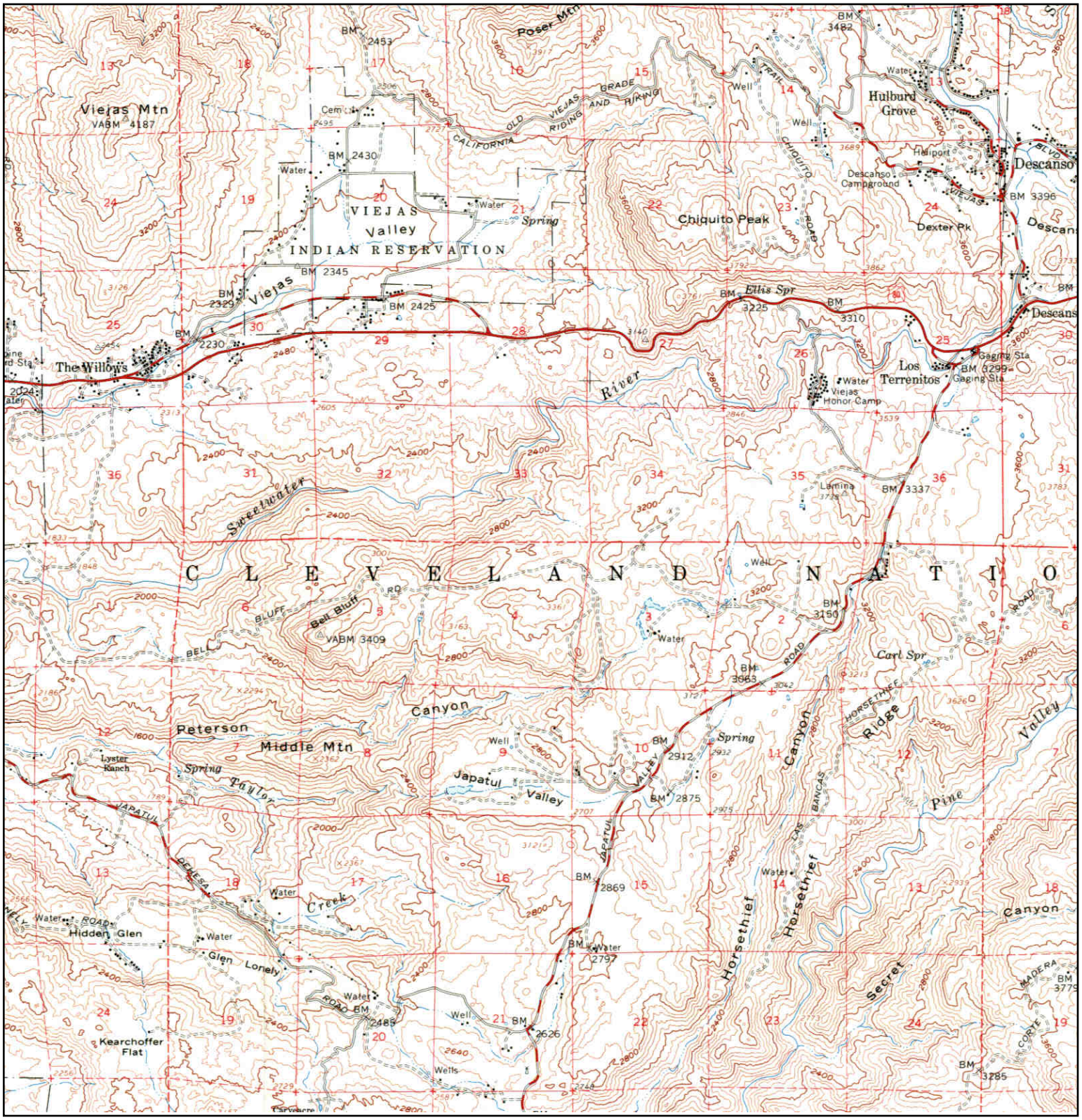
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	MAP YEAR:	1944	ADDRESS:	Avenue De Los Arboles Alpine, CA 91901	CONTACT: Steve Obrien
	SERIES:	15	LAT/LONG:	32.8144 / -116.6727	INQUIRY#: 4232128.6
	SCALE:	1:62500			RESEARCH DATE: 03/12/2015

Historical Topographic Map



N	TARGET QUAD NAME: VIEJAS MOUNTAIN MAP YEAR: 1960 SERIES: 7.5 SCALE: 1:24000	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#: 4232128.6 RESEARCH DATE: 03/12/2015

Historical Topographic Map



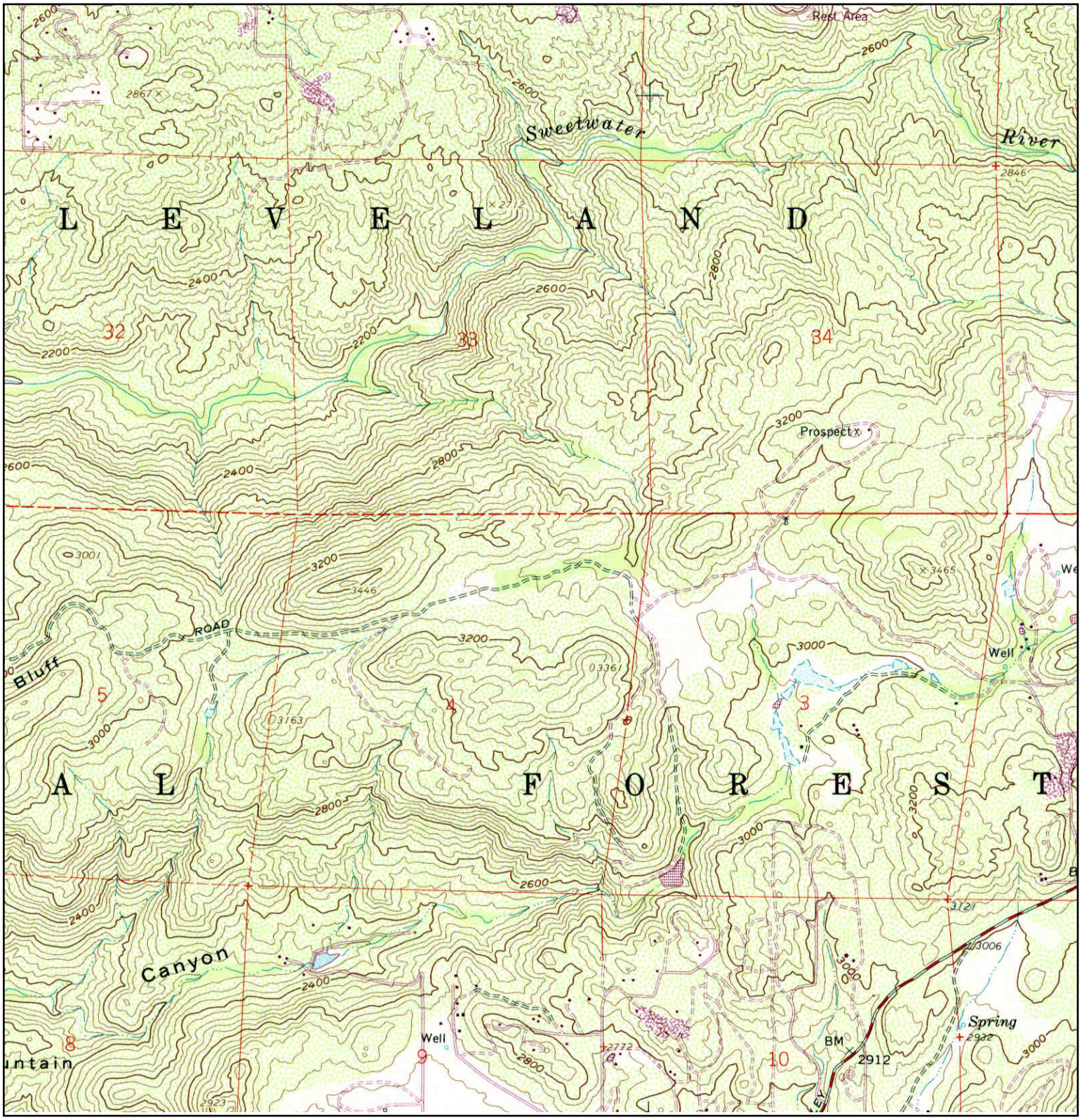
N	**TARGET QUAD**	SITE NAME: 32001 - Suncrest P1ESA	CLIENT: SWCA Environmental Consultants
	NAME: CUYAMACA PEAK	ADDRESS: Avenue De Los Arboles	
	MAP YEAR: 1960	Alpine, CA 91901	CONTACT: Steve Obrien
		LAT/LONG: 32.8144 / -116.6727	INQUIRY#: 4232128.6
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Historical Topographic Map



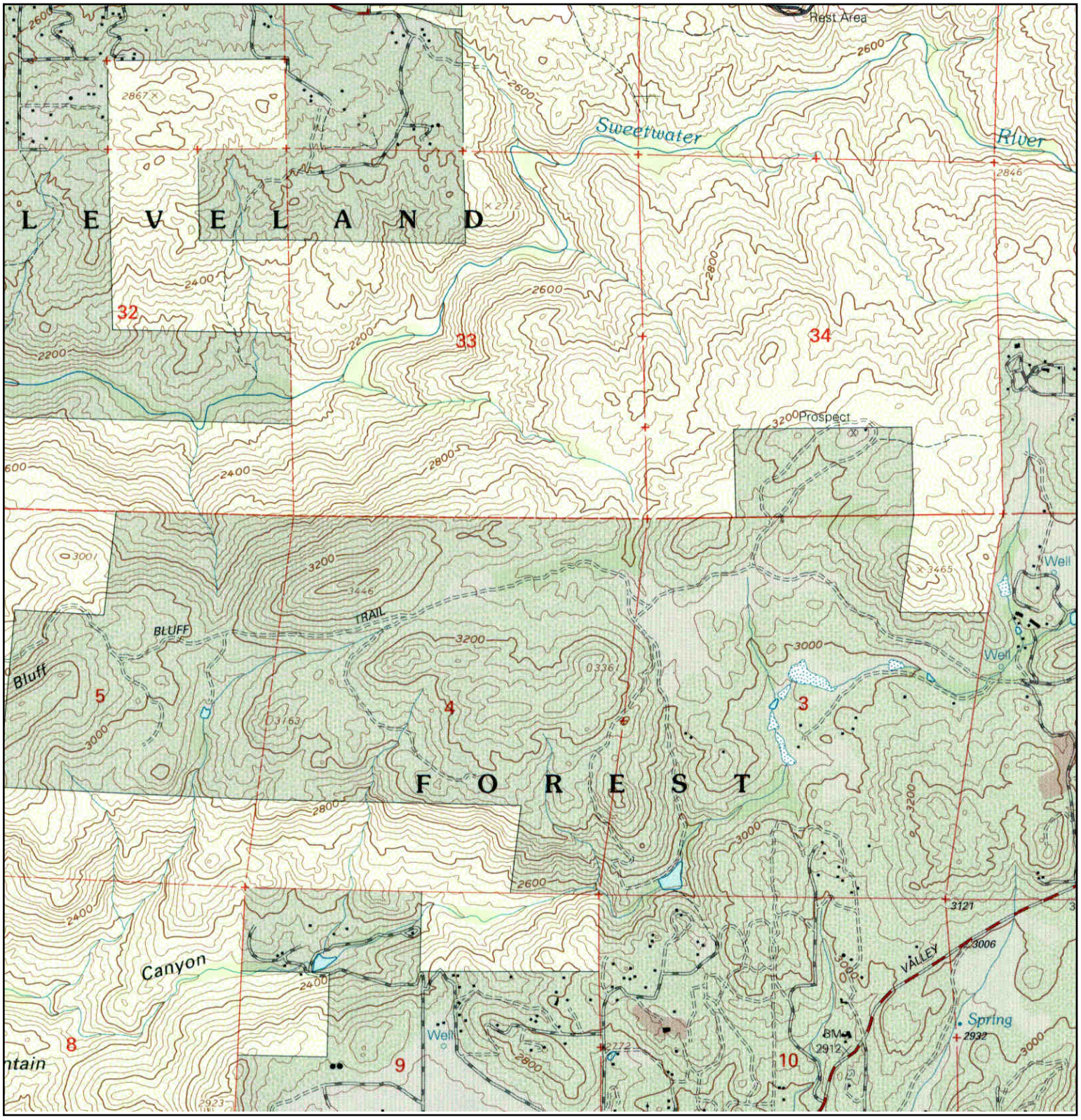
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Historical Topographic Map



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Historical Topographic Map



N	TARGET QUAD NAME: VIEJAS MOUNTAIN MAP YEAR: 1997 SERIES: 7.5 SCALE: 1:24000	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#: 4232128.6 RESEARCH DATE: 03/12/2015

32001 - Suncrest P1ESA
Avenue De Los Arboles
Alpine, CA 91901

Inquiry Number: 4232128.5
March 17, 2015

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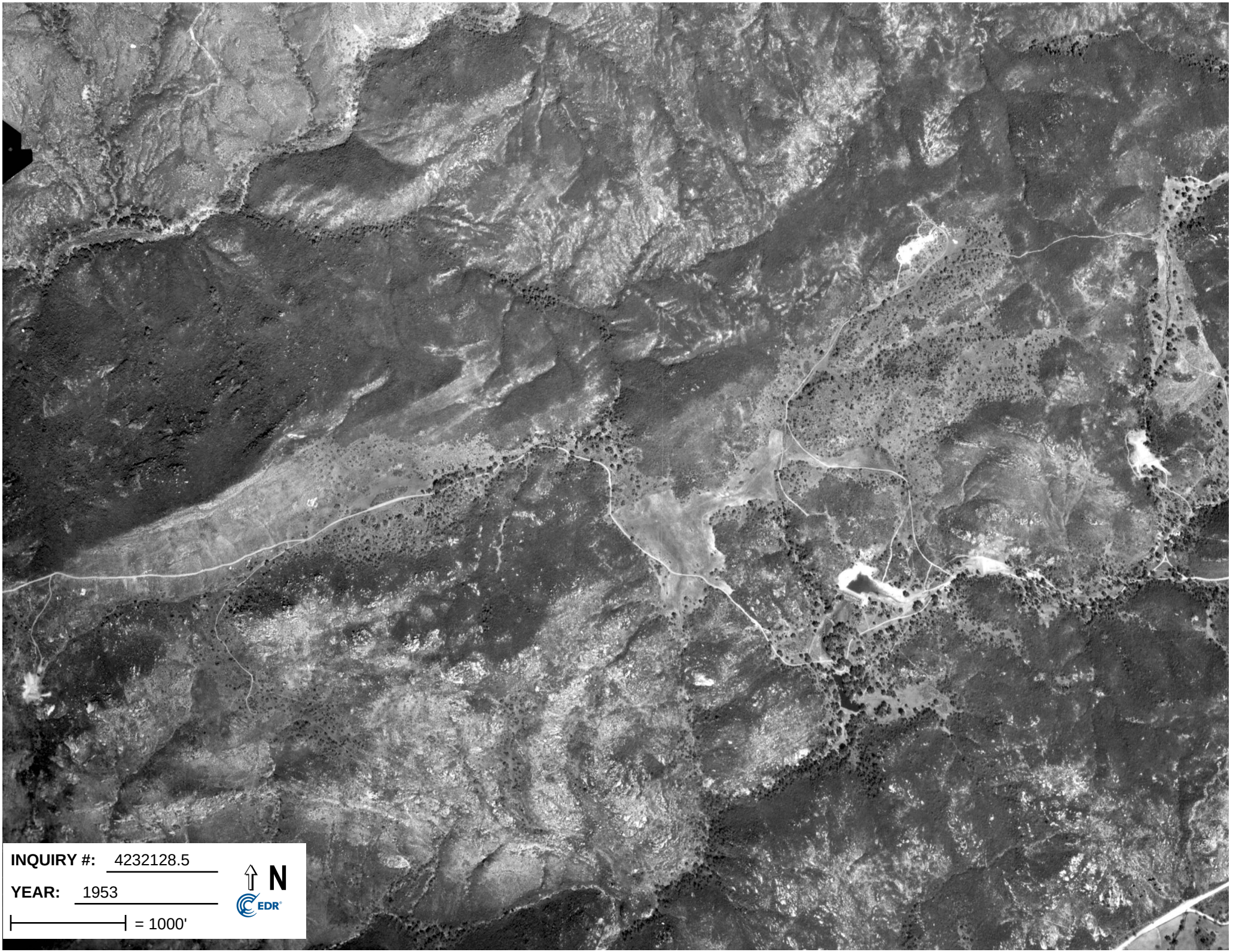
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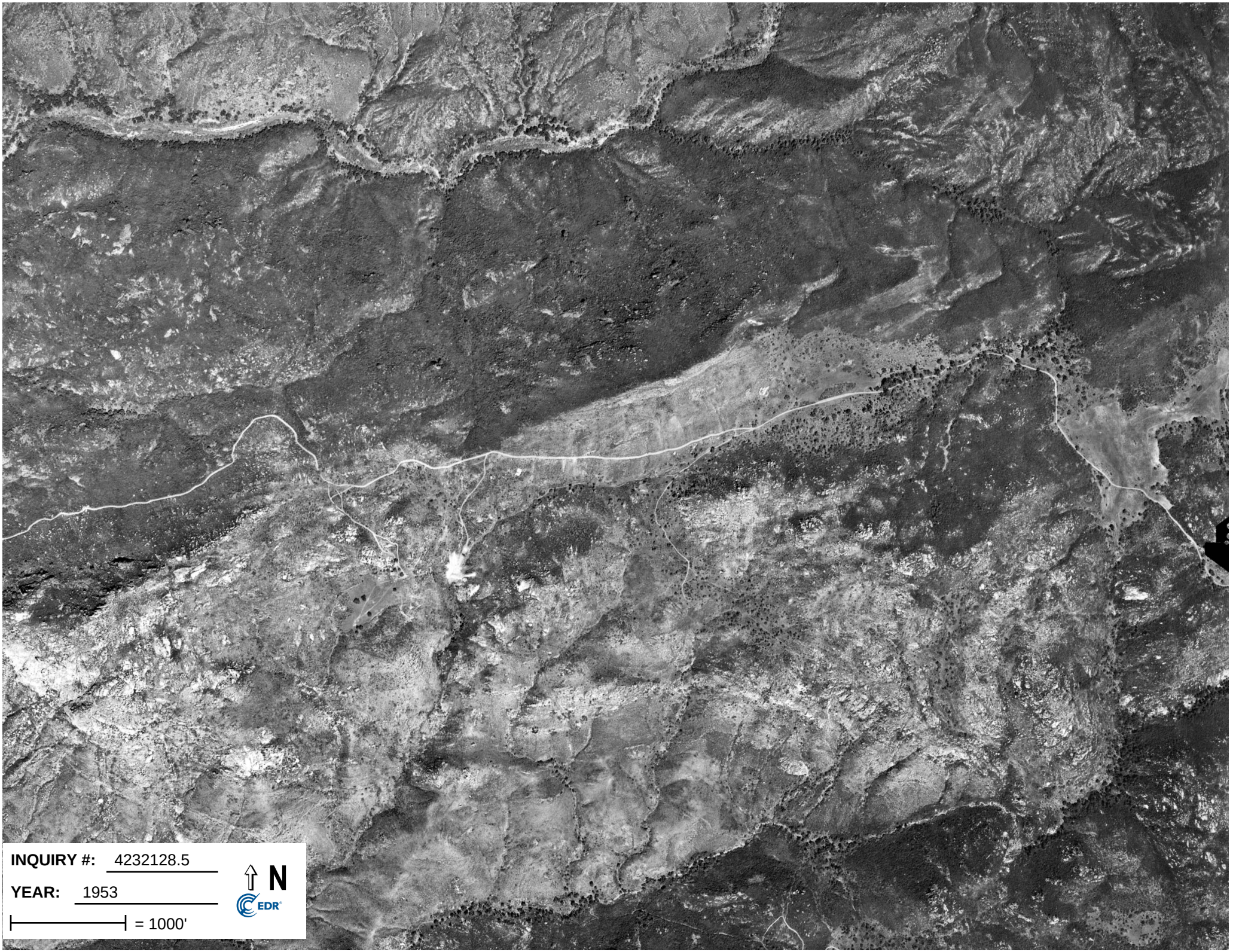
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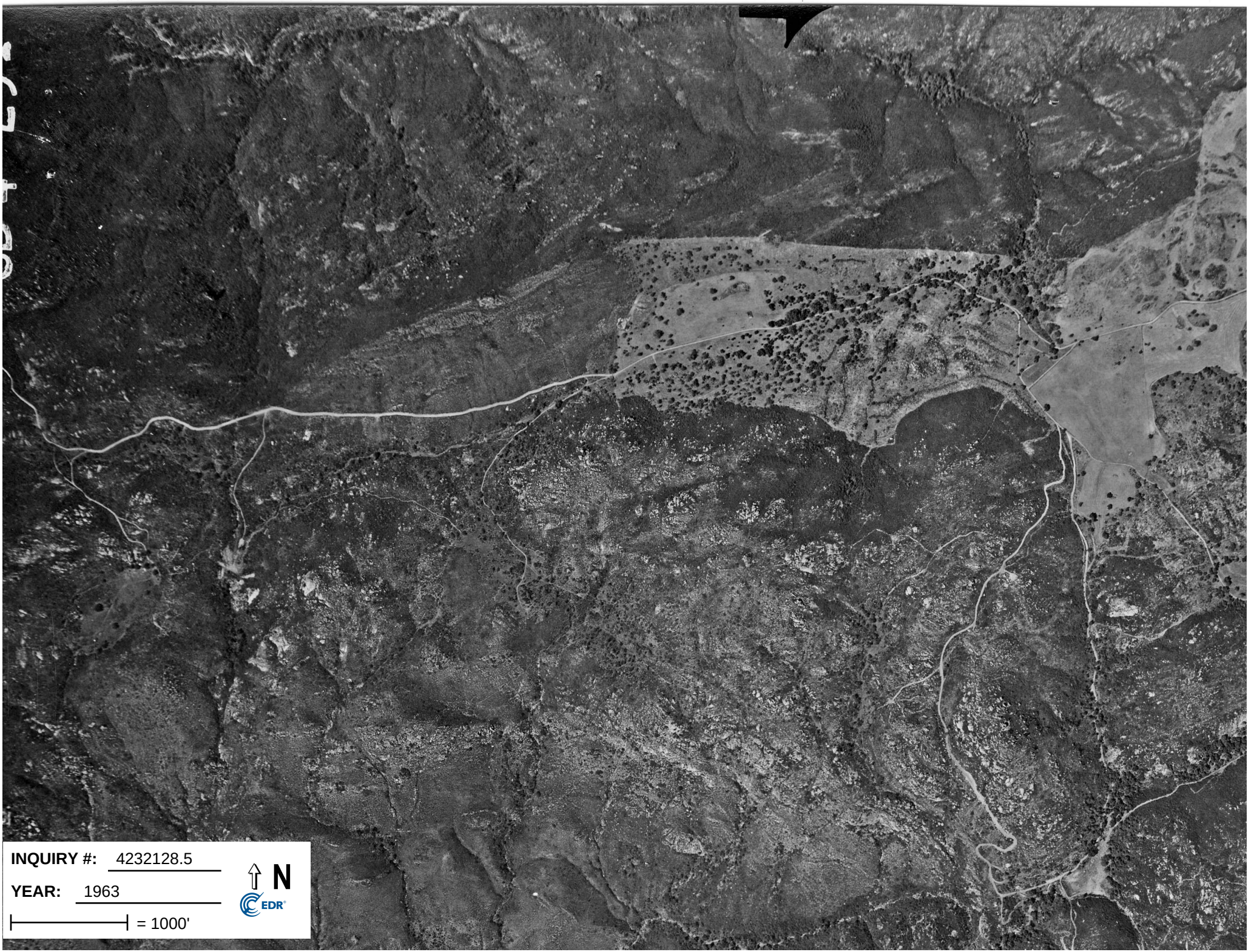
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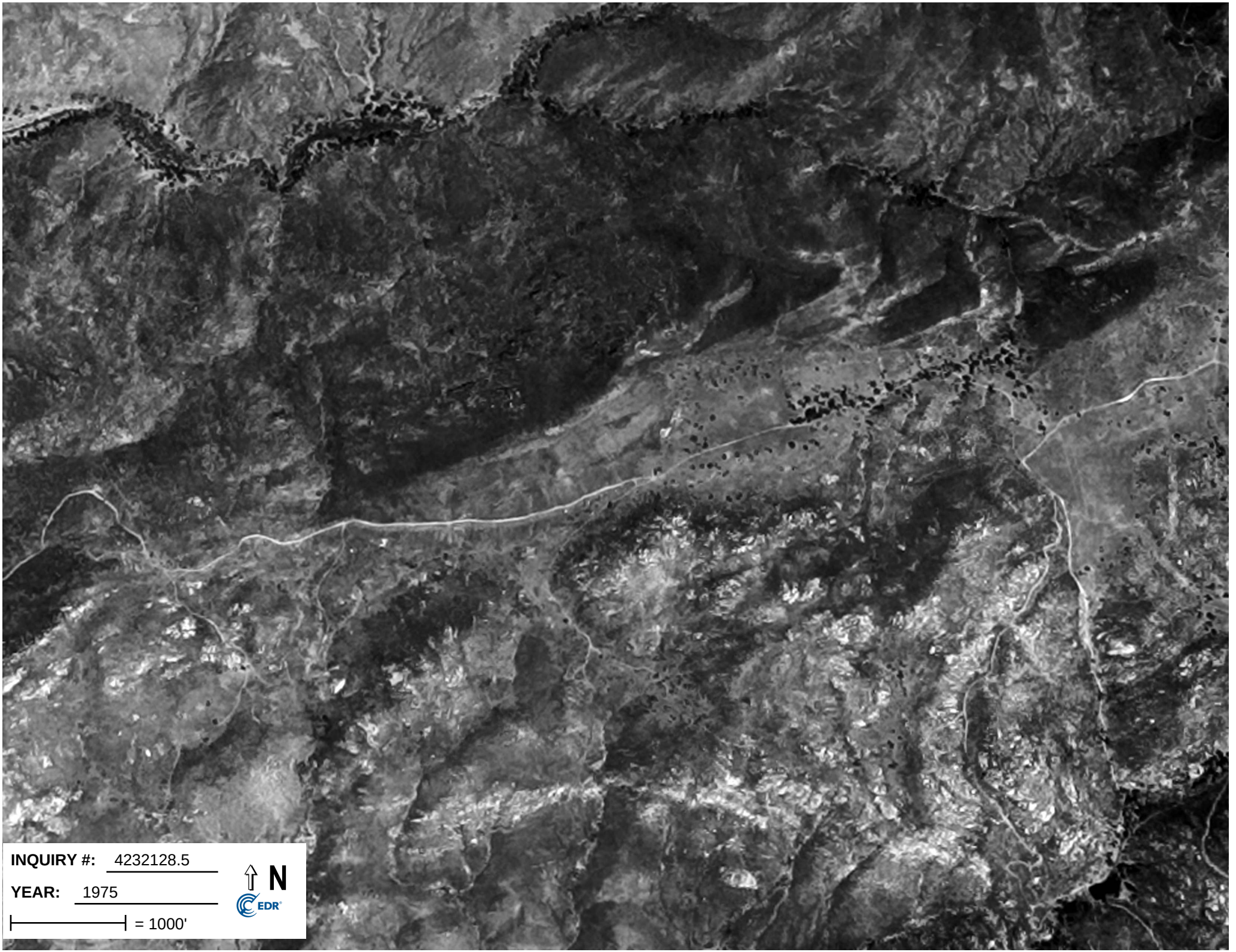
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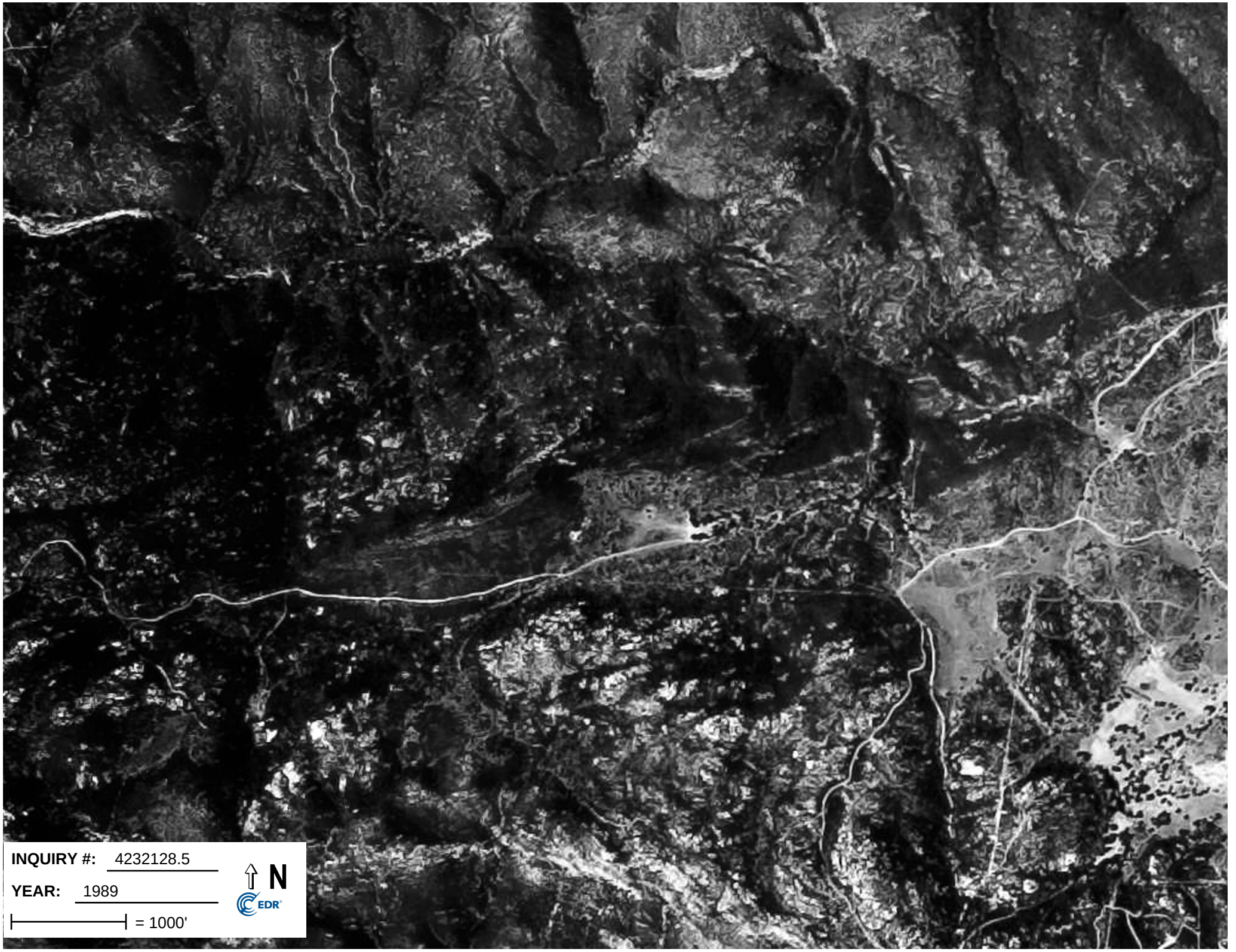
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1953	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1953 Best Copy Available from original source	Park
1963	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1963	Cartwright
1975	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1975	AMI
1989	Aerial Photograph. 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


INQUIRY #: 4232128.5
YEAR: 1953
= 1000'
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EDR


INQUIRY #: 4232128.5
YEAR: 1953
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EDR


INQUIRY #: 4232128.5
YEAR: 1963
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EDR


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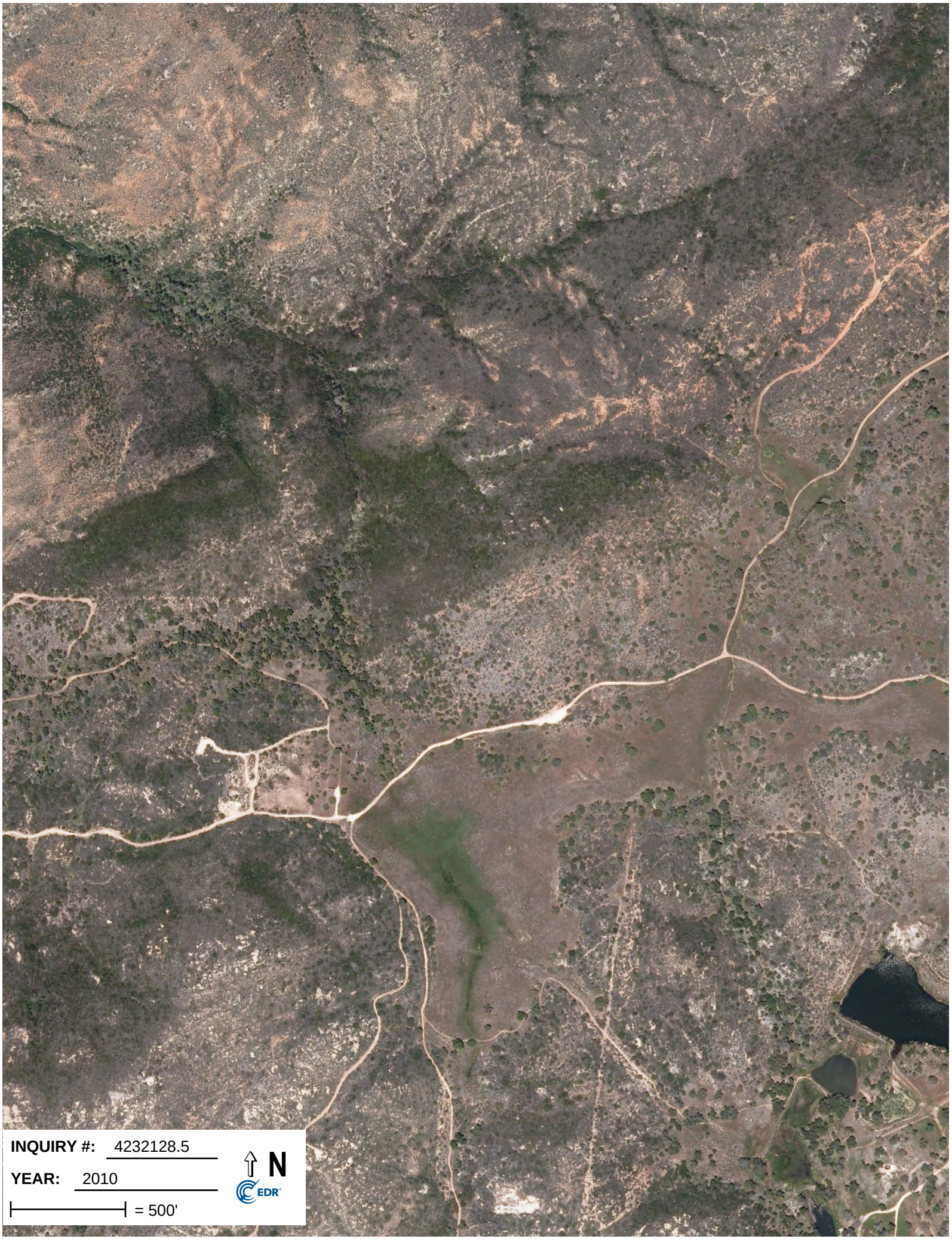

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= 500'
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EDR

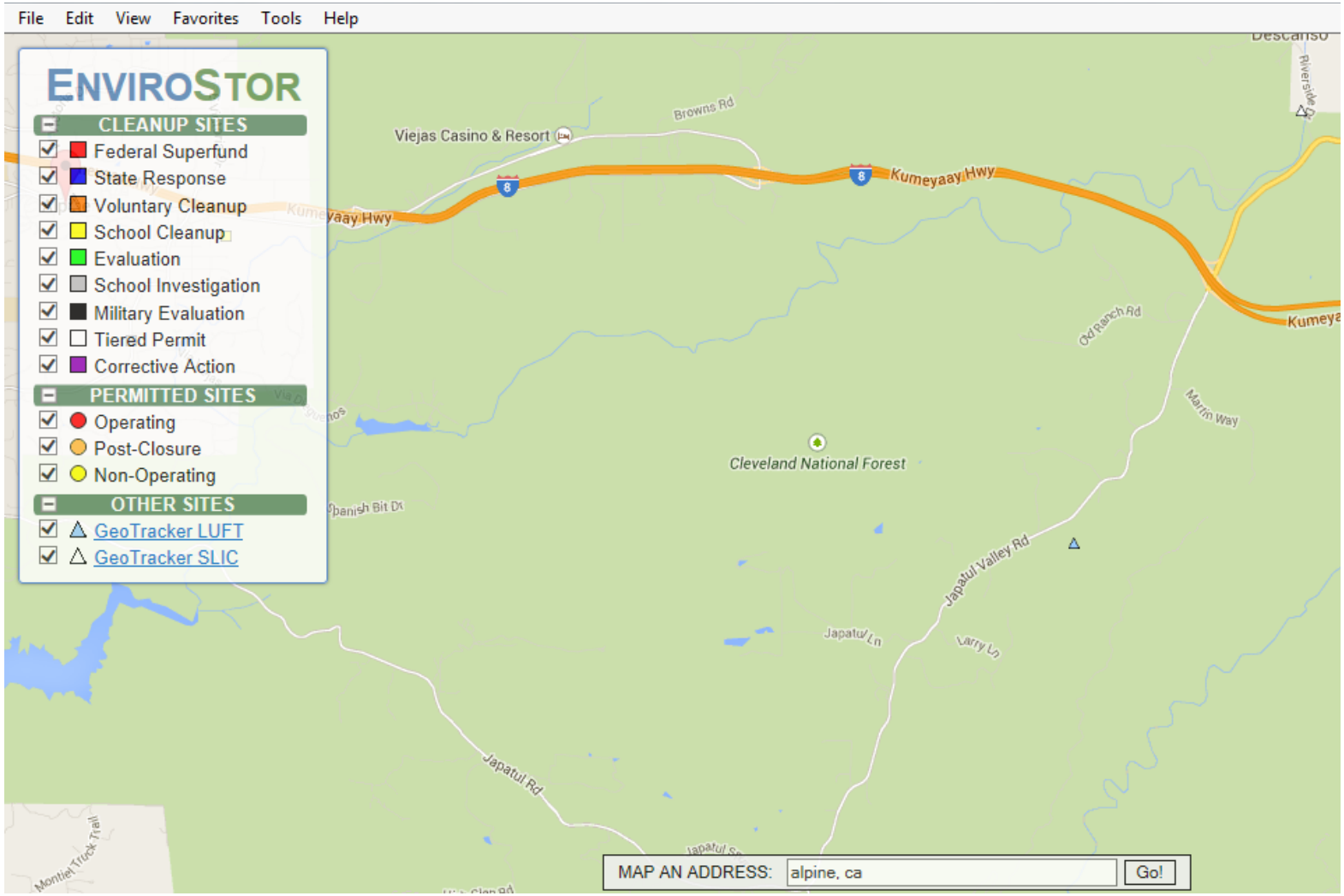

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EDR

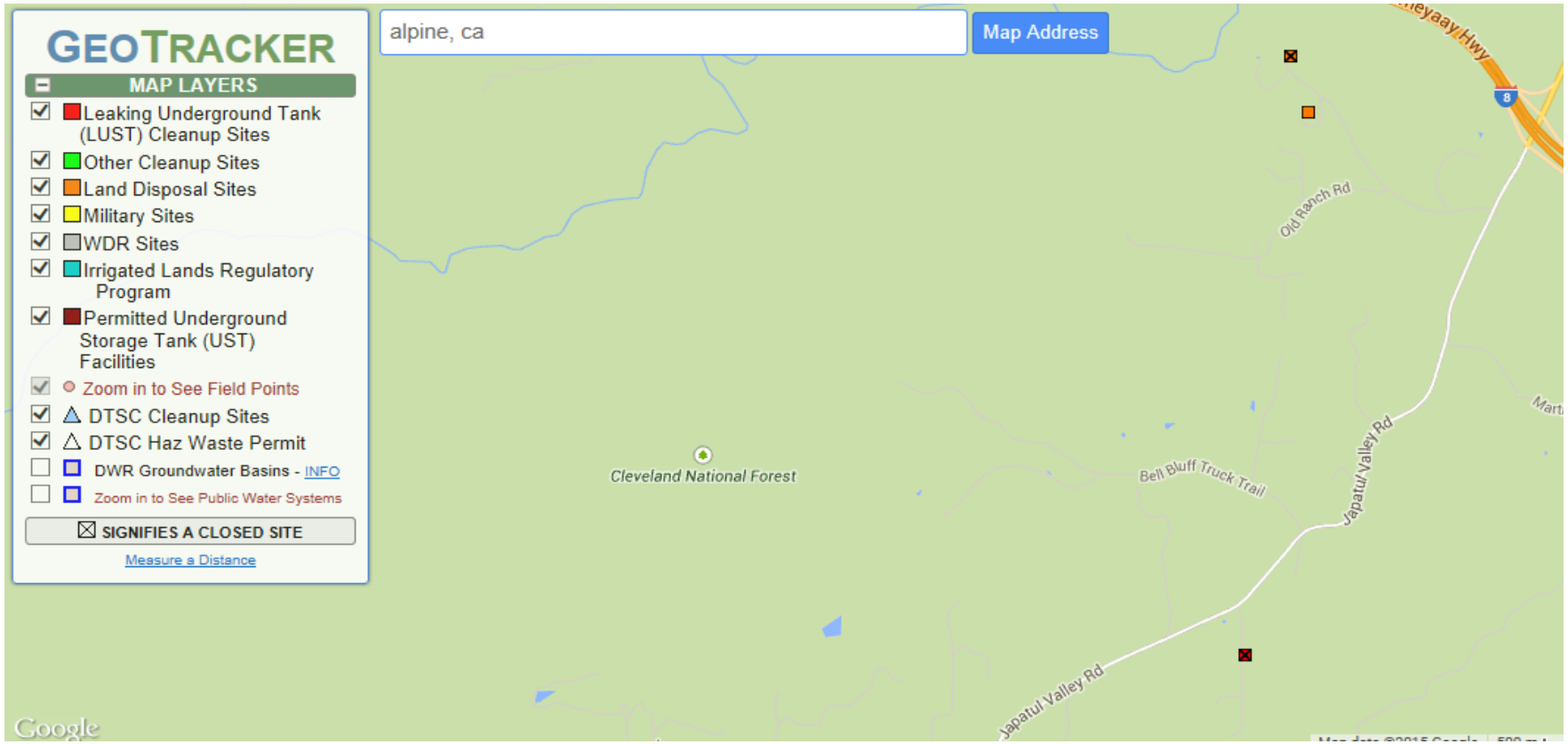

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= 500'
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EDR


INQUIRY #: 4232128.5
YEAR: 2012
= 500'
N
EDR

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 J

Noise Data

Noise Calculations for the NextEra Energy Transmission West's (NEET West's) proposed Suncrest Dynamic Reactive Power Support Project

Construction Equipment 1 (rock drill)	98	dBA at 50 feet
Construction Equipment 2 (scraper)	89	dBA at 50 feet

Combined Noise at 50 feet (Ltotal at 50 feet) 98.5 dBA

Ltotal=10 log(10^L1/10+10^L2/10)

San Diego County Noise Threshold Limits and Distances from Project Site to those Limits for Construction Equipment

Noise Threshold	Threshold Level - Leq (dBA)	Treshold Level - Lmax	Distance to Leq Threshold from Middle of Project Site (feet)	Distance to Lmax Threshold from Middle of Project Site (feet)
Construction Daytime Limit (7 am-7pm)	75	75	749.4	749.4
Nighttime Limit (7pm -7am)	45		23,698.4	
Impulsive Daytime Limit	85		237.0	

Source: San Diego County Noise Ordinance, County Code Chapter 4, Noise Abatement and Control.

Nearest Sensitive Receptors and Distances from Middle of Nearest Project Site (SVC site)

Sensitive Receptor	Distance (feet)
Residence southeast of project site	3279
Nearest property line from project site	458
Nearest occupied property line from project site	856

Distance (feet) from Middle of Project Site to Sensitive Receptors	Noise level dBA	Noise Level Equation: Leq = EL50-20*log(D/50)
50	98.5	
100	92.5	
200	86.5	
300	83.0	
400	80.5	
456	79.3	Nearest property line
500	78.5	
750	75.0	
856	73.8	Nearest occupied property line
1000	72.5	
1250	70.6	
1500	69.0	
2000	66.5	
2500	64.5	
3000	63.0	
3279	62.2	Nearest residence
3500	61.6	
4000	60.5	
5000	58.5	

Vibration Source Levels for Construction Equipment (FTA 2006)

Equipment	Peak Particle Velocity (PPV) at 25 feet	Lv/VBA (units of dB) at 25 feet	Vrms (root mean square)
Impact Hammer (Hoe Ram)	0.089	87	0.0224
RMS calculations		41.0	0.00011

Vrms was calculated using: Lv=20*log10(v/vref).

Where Lv is the velocity level in decibels (VdB), v = rms velocity amplitude, and Vref = reference velocity amplitude.

The equation was solved for v=vref*10^(lv/20) to determine the rms velocity for the proposed construction equipment.

Vibration Calculations with Equations for Vibration-Causing Equipment (use of impact hammer/hoe ram)

Threshold	Distance to Threshold from Middle of Project Site (feet)	Notes
PPV=PPVref * (25/d)^1.5	20.5	Building damage threshold
Lvd=Lvref-30log(D/25)	42.8	residential, human perception threshold

San Diego County Guidelines (2009), Table 4 thresholds were used.

PPV=PPVref * (25/d)^1.5
where PPV (equip) is the peak particle velocity in inches/second of the equipment adjusted for distance

PPV (ref) is the reference vibration level in inches/second at 25 feet from FTA 2006 reference Table 12-2.
D is the distance from the equipment to the receiver.

Lvd=Lvref-30log(D/25)
Lvref is the vibration level at 25 feet and D is the distance from the equipment to the receiver.

Blasting Noise Calculations

Construction Blasting	94	dBA at 50 feet	(FHWA 2009)

San Diego County Noise Threshold Limits and Distances from Project Site to those Limits from Blasting

Noise Threshold	Threshold Level - Leq (dBA)	Threshold Level - Lmax	Distance to Leq Threshold from Middle of Project Site (feet)	Distance to Lmax Threshold from Middle of Project Site (feet)
Construction Daytime Limit (7 am-7pm)	75	75	445.6	445.6
Nighttime Limit (7pm -7am)	45		14,091.9	
Impulsive Daytime Limit	85		140.9	

Source: San Diego County Noise Ordinance, County Code Chapter 4, Noise Abatement and Control.

Vibration Source Levels for Blasting (FTA 2006)

Equipment	PPV at 50 feet	VBA at 50 feet	Vrms (root mean square)
Blasting	NA	100	
RMS calculations		63.0	0.0014

Source: Blasting VBA at 50 feet is taken from the FTA (2006) manual's Figure 7-3.

Vibration Calculations with Equations for Vibration from blasting

Threshold	Distance to Threshold from Middle of Project Site (feet)	Notes
PPV=PPVref * (50/d)^1.5	NA	Building damage threshold
Lvd=Lvref-30log(D/50)	232.1	residential, human perception threshold

Source: FTA (2006), 80 VdB threshold was used for Lvd.

Distance (feet) from Middle of Project Site to Sensitive Receptors	Noise level dBA	Noise Level Equation: Leq = EL50-20*log(D/50)
50	94.0	
100	88.0	
200	82.0	
250	80.0	
300	78.4	
400	75.9	
456	74.8	Nearest property line
500	74.0	
600	72.4	
750	70.5	
856	69.3	Nearest occupied property line
1500	64.5	
2000	62.0	
2500	60.0	
3000	58.4	
3279	57.7	Nearest residence
4000	55.9	

Operational Noise Calculations		
Operational Equipment 1 (HVAC)	87	dBA at 1 meter (3.28 feet)
Operational Equipment 2 (Transformer)	87	dBA at 1 meter (3.28 feet)

Combined Noise at 1 meter (Ltotal at 1 meter (3.28 feet) 90.0 dBA

Ltotal=10 log(10^L1/10+10^L2/10)

San Diego County Noise Threshold Limits and Distances from Project Site to those Limits for Operational Equipment

Noise Threshold	Threshold Level - Leq (dBA)	Threshold Level - Lmax	Distance to Leq Threshold from Middle of Project Site (feet)	Distance to Lmax Threshold from Middle of Project Site (feet)
Daytime Limit for Agricultural Areas (7 am-10pm)	50	75	328.4	18.5
Nighttime Limit (10pm -7am)	45		584.0	

Source: San Diego County Noise Ordinance, County Code Chapter 4, Noise Abatement and Control.

For CNEL calculations, the project's operational Leq of 30.0 dB at the nearest residence was combined with the existing ambient Leq of 49.8 dB, which resulted in an unchanged ambient Leq of 49.8 dB. Thus, assuming the equipment was operated continuously over a 24-hour period, the CNEL would be approximately 56 dB, as shown in the attachments.

Operational Noise

Distance (feet) from Middle of Project Site to Sensitive Receptors	Noise level dBA	Noise Level Equation: Leq = EL3.28-20*log(D/3.28)
50	66.3	
100	60.3	
200	54.3	
250	52.4	
300	50.8	
400	48.3	
456	47.1	Nearest property line
500	46.3	
600	44.8	
750	42.8	
856	41.7	Nearest occupied property line
1500	36.8	
2000	34.3	
2500	32.4	
3000	30.8	
3279	30.0	Nearest residence
4000	28.3	

Tel. 888-206-4377
info@noisemeters.com

Ldn, Lden, CNEL - Community Noise Calculators

Ldn and Lden Calculator

Start Time	Hourly Leq		Calculate
00:00	49.8	dB ✓	
01:00	49.8	dB ✓	**Leq**
02:00	49.8	dB ✓	**59.4 dB**
03:00	49.8	dB ✓	
04:00	49.8	dB ✓	**Ldn**
05:00	49.8	dB ✓	**60.8 dB**
06:00	49.8	dB ✓	
07:00	62.2	dB ✓	**Lden**
08:00	62.2	dB ✓	**60.9 dB**
09:00	62.2	dB ✓	
10:00	62.2	dB ✓	
11:00	62.2	dB ✓	
12:00	62.2	dB ✓	
13:00	62.2	dB ✓	
14:00	62.2	dB ✓	
15:00	62.2	dB ✓	
16:00	62.2	dB ✓	
17:00	62.2	dB ✓	
18:00	62.2	dB ✓	
19:00	49.8	dB ✓	
20:00	49.8	dB ✓	
21:00	49.8	dB ✓	
22:00	49.8	dB ✓	
23:00	49.8	dB ✓	

Rock Drill CNEL at Residence

Ldn and Lden Calculator



Calculators

Calculation of the Ldn (day, night) and the Lden (day, evening, night) based on 1-hour Leq

measurements.

Ldn - Day Night Average Sound Level

The Ldn is the average equivalent sound level over a 24 hour period, with a penalty added for noise during the nighttime hours of 22:00 to 07:00. During the nighttime period 10 dB is added to reflect the impact of the noise.

Ldn measurements are useful for assessing the impact that road, rail, air and general industry has on the local population.

The NoiseMeters Ldn calculator accepts hourly Leq measurements and calculates the Ldn accordingly.

Lden or CNEL

The Lden (Day Evening Night Sound Level) or CNEL (Community Noise Equivalent Level) is the average sound level over a 24 hour period, with a penalty of 5 dB added for the evening hours or 19:00 to 22:00, and a penalty of 10 dB added for the nighttime hours of 22:00 to 07:00.

It is very similar in nature (and in results) to the Ldn, but with the added penalty for the evening period.

Our Lden or CNEL calculator takes the hourly Leq measurements and calculates the Lden (which is the same as the CNEL).

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Ldn, Lden, CNEL - Community Noise Calculators

Ldn and Lden Calculator

Start Time	Hourly Leq		Calculate
00:00	49.8	dB ✓	
01:00	49.8	dB ✓	**Leq**
02:00	49.8	dB ✓	**55.3 dB**
03:00	49.8	dB ✓	
04:00	49.8	dB ✓	**Ldn**
05:00	49.8	dB ✓	**58.2 dB**
06:00	49.8	dB ✓	
07:00	57.7	dB ✓	**Lden**
08:00	57.7	dB ✓	**58.4 dB**
09:00	57.7	dB ✓	
10:00	57.7	dB ✓	
11:00	57.7	dB ✓	
12:00	57.7	dB ✓	
13:00	57.7	dB ✓	
14:00	57.7	dB ✓	
15:00	57.7	dB ✓	
16:00	57.7	dB ✓	
17:00	57.7	dB ✓	
18:00	57.7	dB ✓	
19:00	49.8	dB ✓	
20:00	49.8	dB ✓	
21:00	49.8	dB ✓	
22:00	49.8	dB ✓	
23:00	49.8	dB ✓	

Blasting-related Noise at Residence

Ldn and Lden Calculator



Calculators

Calculation of the Ldn (day, night) and the Lden (day, evening, night) based on 1-hour Leq

measurements.

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info@noisemeters.com

Ldn, Lden, CNEL - Community Noise Calculators

Ldn and Lden Calculator

Start Time	Hourly Leq	
00:00	49.8 dB	✓
01:00	49.8 dB	✓
02:00	49.8 dB	✓
03:00	49.8 dB	✓
04:00	49.8 dB	✓
05:00	49.8 dB	✓
06:00	49.8 dB	✓
07:00	49.8 dB	✓
08:00	49.8 dB	✓
09:00	49.8 dB	✓
10:00	49.8 dB	✓
11:00	49.8 dB	✓
12:00	49.8 dB	✓
13:00	49.8 dB	✓
14:00	49.8 dB	✓
15:00	49.8 dB	✓
16:00	49.8 dB	✓
17:00	49.8 dB	✓
18:00	49.8 dB	✓
19:00	49.8 dB	✓
20:00	49.8 dB	✓
21:00	49.8 dB	✓
22:00	49.8 dB	✓
23:00	49.8 dB	✓

Calculate

Leq
49.8 dB

Ldn
56.2 dB

Lden
56.5 dB

Operation-related Noise at Residence

Ldn and Lden Calculator



Calculators

Calculation of the Ldn (day, night) and the Lden (day, evening, night) based on 1-hour Leq measurements.

Ldn - Day Night Average Sound Level

The Ldn is the average equivalent sound level over a 24 hour period, with a penalty added for noise during the nighttime hours of 22:00 to 07:00. During the nighttime period 10 dB is added to reflect the impact of the noise.

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< Noise Applications

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Appendix K

Fire Protection Plan

FIRE PROTECTION PLAN

Suncrest Dynamic Reactive Power Support Project

APN: 523-040-080 (Portion of)

PDS-2015-IC-15-031

Prepared for:

County of San Diego, California

Project Proponent:

NextEra Energy Transmission West, LLC

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Juno Beach, Florida 33408

Contact: Michael Sheehan

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Michael Huff, Project Manager



DECEMBER 2016

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EXECUTIVE SUMMARY

This Fire Protection Plan (FPP) is submitted pursuant to Section 4903 of the San Diego County Consolidated Fire Code to address the adverse environmental effects that the proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project) may have from wildland fire. It provides analysis and documentation that the Proposed Project is consistent with the County significance checklist and does not expose people or structures to a significant risk of loss, injury or death involving wildland fires based on its conformance with applicable fire and building codes.

The Proposed Project will provide dynamic reactive power support at the existing San Diego Gas & Electric (SDG&E) Suncrest Substation, a 500 kV and 230 kV-level regional substation near Alpine, San Diego County, California. The Proposed Project will: (a) facilitate the importation and use of renewable electricity to fulfill California's energy policies and goals; (b) provide cost-effective voltage control and other electric transmission grid benefits; and (c) support the provision of safe, reliable, and adequate electricity service in the greater San Diego and Los Angeles metropolitan areas.

The Proposed Project addresses a need for voltage control and grid benefits. Certain types of renewable power sources, such as solar photovoltaic, do not provide reactive power at the same level as traditional generation sources, unless augmented by special equipment.

The Proposed Project site is located in a Very High Fire Hazard Severity Zone, as statutorily designated by the California Department of Forestry and Fire Protection (CAL FIRE) (FRAP 2014). Fire hazard severity zone designations are based on topography, vegetation, and weather, amongst other factors that indicate the likelihood of wildfire occurrence. The Proposed Project site is located in an area with historically fire adapted vegetation communities including chaparral and oak woodlands , which are vegetation communities that experience occasional wildfire and can burn in an extreme manner under the occasional severe fire weather (dry and windy) conditions that occur in the area. The terrain on the site gently slopes to the south and areas off-site may exceed 30 percent slopes to the south. Based on the region's fuels, fire history, and expected fire behavior, severe fires may occur, with moderate to severe-intensity fire expected to occur in the project area. The flat terrain and lighter fuels adjacent to the project site results in the anticipated moderate intensity fire behavior. The applicable County fire codes and additional measures required by this FPP directly address the fire concerns associated with this project's location.

Fire protection in the project area is shared by several agencies, with the San Diego County Fire Authority (SDCFA) and CALFIRE providing significant resources. The closest fire station is SDCFA's Descanso Station 45. Response to the Proposed Project from Station 45 will be

within the acceptable time frame as designated in the County General Plan. The Proposed Project will introduce an electrified facility and underground transmission line and related activities into a rural setting that currently includes semi-disturbed and undisturbed wildland fuels. There is no electricity generated at the site, but electricity passes through the facility. The Proposed Project may incrementally increase potential ignition sources in the area with the ongoing operation and maintenance program, but will reduce the available wildland fuels and will result in a higher level of fire monitoring and awareness due to Proposed Project monitoring and security measures. The project vicinity is currently subject to ignition sources including a major substation approximately 1 mile to the west, a significant electrical transmission line easement to the north of the property, roadways, and construction work occurring nearby, amongst others. The Proposed Project will include compliance with the San Diego County Consolidated Fire Code, as applicable, and will provide additional measures that enhance fire safety and protection.

1 INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project) in San Diego County, California. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, this FPP has considered the property location, topography, geology (soils and slopes), combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), and structure ignitability and ignition resistive features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect this project and its essential infrastructure. The plan recommends measures that the project developer will take to reduce the probability of ignition of vegetation, equipment or structures throughout the project area addressed by this plan.

This FPP is consistent with the 2014 County Consolidated Fire Code (CCFC), 2013 California Fire and Building Codes, 2016 CCR Title 14 SRAF Fire Safe Regulations and Fire Prevention Standards for Electric Utilities (CCR Title 14, Division 1.5, Chapter 7, Sections 1250-1258). Further, the Proposed Project is consistent with the County Building and Electrical Codes and will employ all related California Public Utilities Commission regulations including the General Order (GO) 95: Rules for Overhead Electric Line Construction, GO 128: Rules for Construction of Underground Electric Supply and Communication Systems, and GO 850: Outdoor Oil-Insulated Transformers.

The purpose of this FPP is to analyze the project's various components and siting in a fire hazard area and to generate and memorialize the fire safety requirements of the Fire Authorities Having Jurisdiction (FAHJ). Recommendations of this FPP incorporate analysis of the project and of the cumulative impact on the area's emergency service resources from foreseeable projects in the area. Recommendations for effectively mitigating identified impacts are based on site-specific characteristics and incorporate input from the project applicant and San Diego County Fire Authority (SDCFA). This FPP incorporates applicable fire safety regulations and requirements and documents a selection of these regulations that are most pertinent to the Proposed Project's unique facility and location.

1.1 Project Summary

1.1.1 Project Location

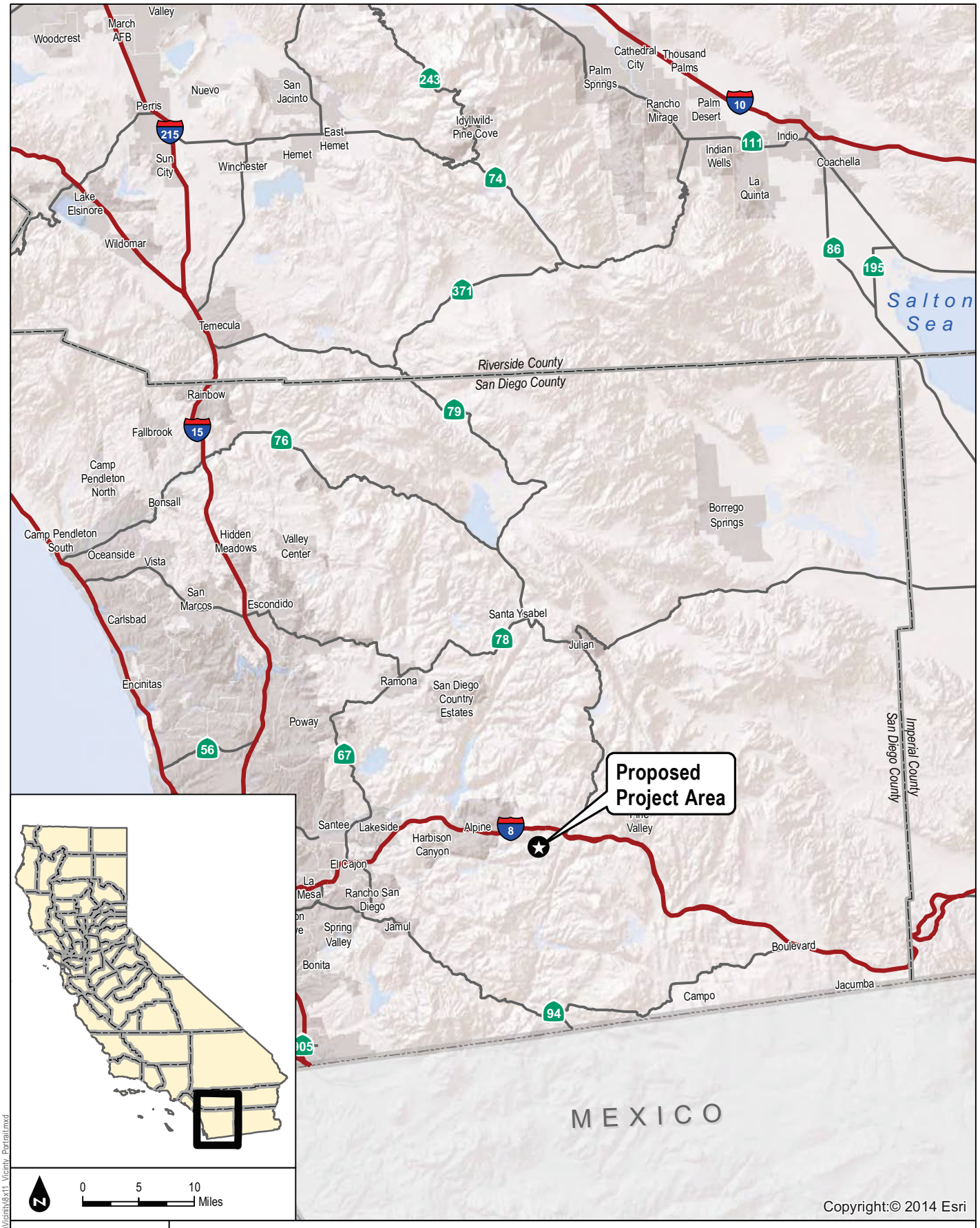
The Proposed Project is located on privately owned lands in an unincorporated portion of San Diego County, approximately 33 miles from the Pacific Ocean. Specifically, it is located in the south central portion of San Diego County, approximately 3.8 miles southwest of the community of Descanso and approximately 3.4 miles southeast of the community of Alpine. The City of El Cajon is situated approximately 17 miles to the west. The Proposed Project will be constructed immediately south of Bell Bluff Truck Trail within an approximately six-acre portion of Assessor's Parcel Number (APN) 523-040-080. The project site is located in a portion of the northwest quarter of Section 3 of Township 16 South, Range 3 East, on the U.S. Geographical Survey (USGS), 7.5 minute, Viejas Mountain, California quadrangle map. The Proposed Project's location is illustrated in Figure 1, Project Vicinity Map.

Surrounding land use/ownership includes private and public lands in all directions. Low-density rural residential developments are present approximately 1.15 miles to the northeast and 0.8 mile to the southeast of the Proposed Project. Interstate 8 (I-8) is located approximately 1.8 miles to the north and Japatul Valley Road (State Highway 79) is located approximately 1.7 miles to the east.

The majority of the project site will be constructed in areas of San Diego County classified as a Very High Fire Hazard Severity Zone by CALFIRE (FRAP 2014).

1.1.2 Project Description

The Proposed Project involves two primary components: the Static Var Compensator (SVC) facility and the 230 kV single circuit underground transmission line (underground transmission line). The proposed SVC is an approximately 112,000-square-foot facility that would produce and consume reactive power and interconnect with the 230 kV bus of the existing SDG&E Suncrest Substation through the proposed underground transmission line, which is approximately 1 mile in length. The proposed transmission line will be installed underground within polyvinyl chloride (PVC) conduits in a concrete-encased duct bank system beneath an existing paved, private road known as Bell Bluff Truck Trail. At the western terminus of the approximately 1-mile-long underground transmission line, the conductors would surface at a riser pole structure where they would transition to a 300-foot-long overhead transmission line span and terminate into the existing Suncrest Substation's 230 kV bus.



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FIGURE 1

Project Vicinity Map

Suncrest Dynamic Reactive Power Support Project FPP

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The project as shown on Figure 2: Project Overview Map will include the following main components:

- Construction of a new Static Var Compensator (SVC) facility with a rated real power output of 0 MW, and a nominal terminal voltage of 230 kV;
- Construction of two new access driveways to facilitate construction, operation, and maintenance of the SVC;
- Installation of a new approximately 1-mile 230 kV single-circuit underground electrical transmission line within a concrete-encased electrical duct bank between the SVC and the Suncrest Substation 230 kV bus;
- Installation of fiber optic cable within the same underground duct bank as the 230 kV cable to provide communications for line relaying, the Supervisory Control and Data Acquisition (SCADA) communications and control system, 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;
- Installation of a 12 kV underground electrical distribution feed to the SVC; and,
- Installation of a riser pole approximately 85 to 95 feet in height north of the Suncrest Substation to transition the transmission line from underground to overhead to connect to the 230 kV bus.

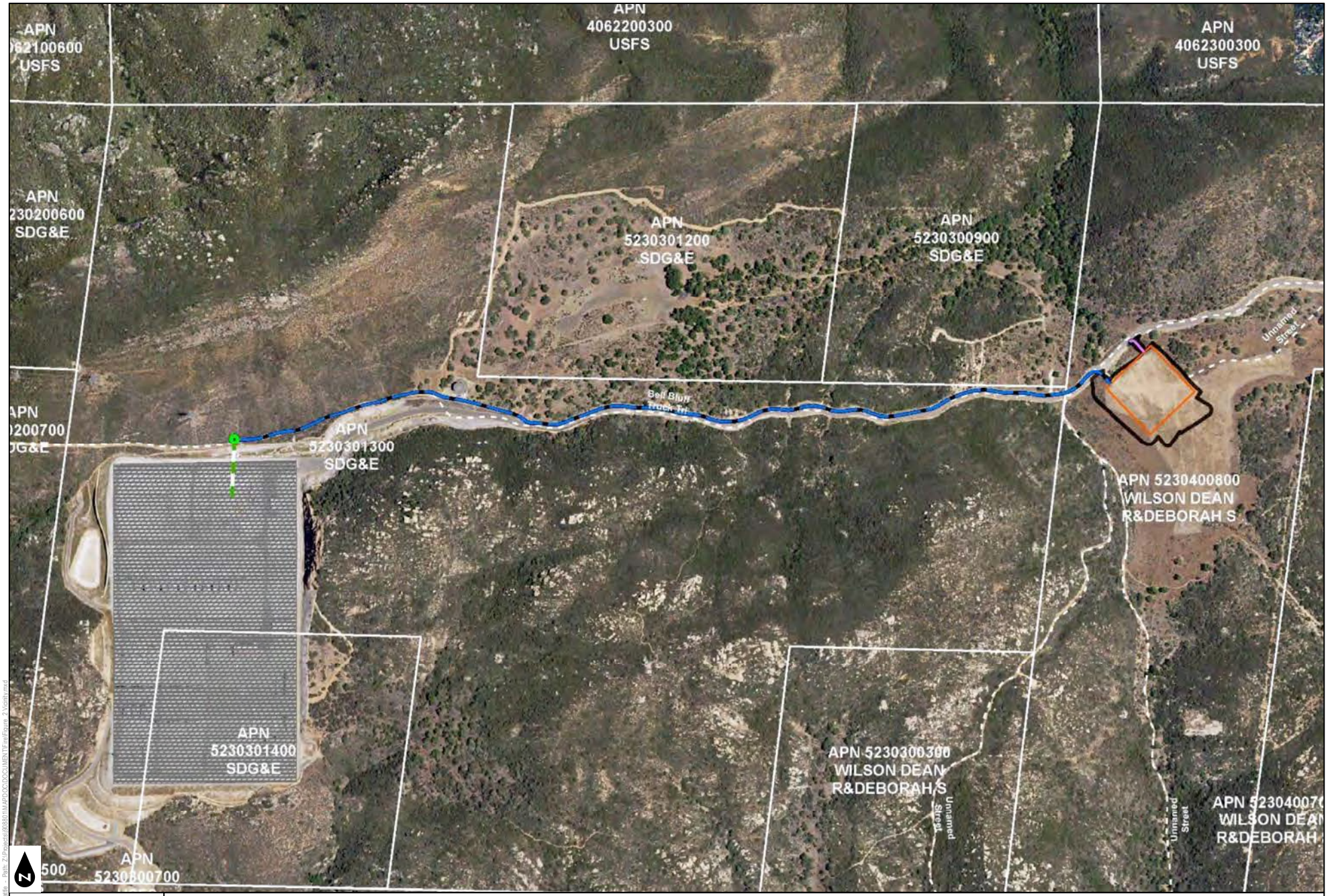
The Proposed Project components are described in the following sections and shown on Figure 3, Typical Plan View and SVC Arrangement and Figure 4, Typical Underground Duct Bank. Permanent Proposed Project components are summarized in Table 1.

Table 1
Proposed Project Components

Component	Quantity	Size (unit)	Description
SVC Facility	1	Approximately 6 acres total Approximately 2.58 acres fenced	SVC including all components and associated improvements (e.g., grading, access routes, retaining wall, stormwater management, etc.).
SVC Access Driveway	2	20 feet × 95 feet	New access driveways from the edge of Bell Bluff Truck Trail to the SVC.
Underground Transmission Line	1	Approximately 1 mile	230 kV single-circuit, three-phase underground electric transmission line from the SVC to a new riser pole outside Suncrest Substation.
Overhead Transmission Span – Interconnection to Suncrest Substation	1	300 feet	230 kV single-circuit, three phases from underground cable riser pole to Suncrest Substation.
Underground Splice Vaults	Up to 5	30 feet × 7 feet × 8 feet	Precast concrete, located within Bell Bluff Truck Trail.

1.1.2.1 Existing Transmission System

The Proposed Project consists of a SVC facility and a 230 kV single circuit underground transmission line that will connect to the existing SDG&E Suncrest Substation. The transmission system in the Proposed Project area includes the existing 500/230 kV SDG&E Suncrest Substation and the Sunrise Powerlink. The Suncrest Substation became operational in 2012 as part of the SDG&E Sunrise Powerlink Transmission Project. The purpose of the Suncrest Substation is to convert voltages along the Sunrise Powerlink Project's transmission line entering the substation from 500 kV to 230 kV. The substation is connected to the transmission line system by an existing SDG&E 500 kV overhead transmission line entering the substation from the south. The 500 kV transmission line is routed to the Suncrest Substation from Ocotillo and Imperial Valley Substations located to the east. Two SDG&E 230 kV overhead transmission lines exit the substation to the north connecting it with Sycamore Substation located to the west. The substation has been designed to accommodate one future 500 kV line and four future 230 kV lines. The proposed transmission line will parallel a double circuit SDG&E 230 kV transmission line on the north side of Suncrest Substation for approximately 300 feet.



SOURCE: Nextera Energy

FIGURE 2

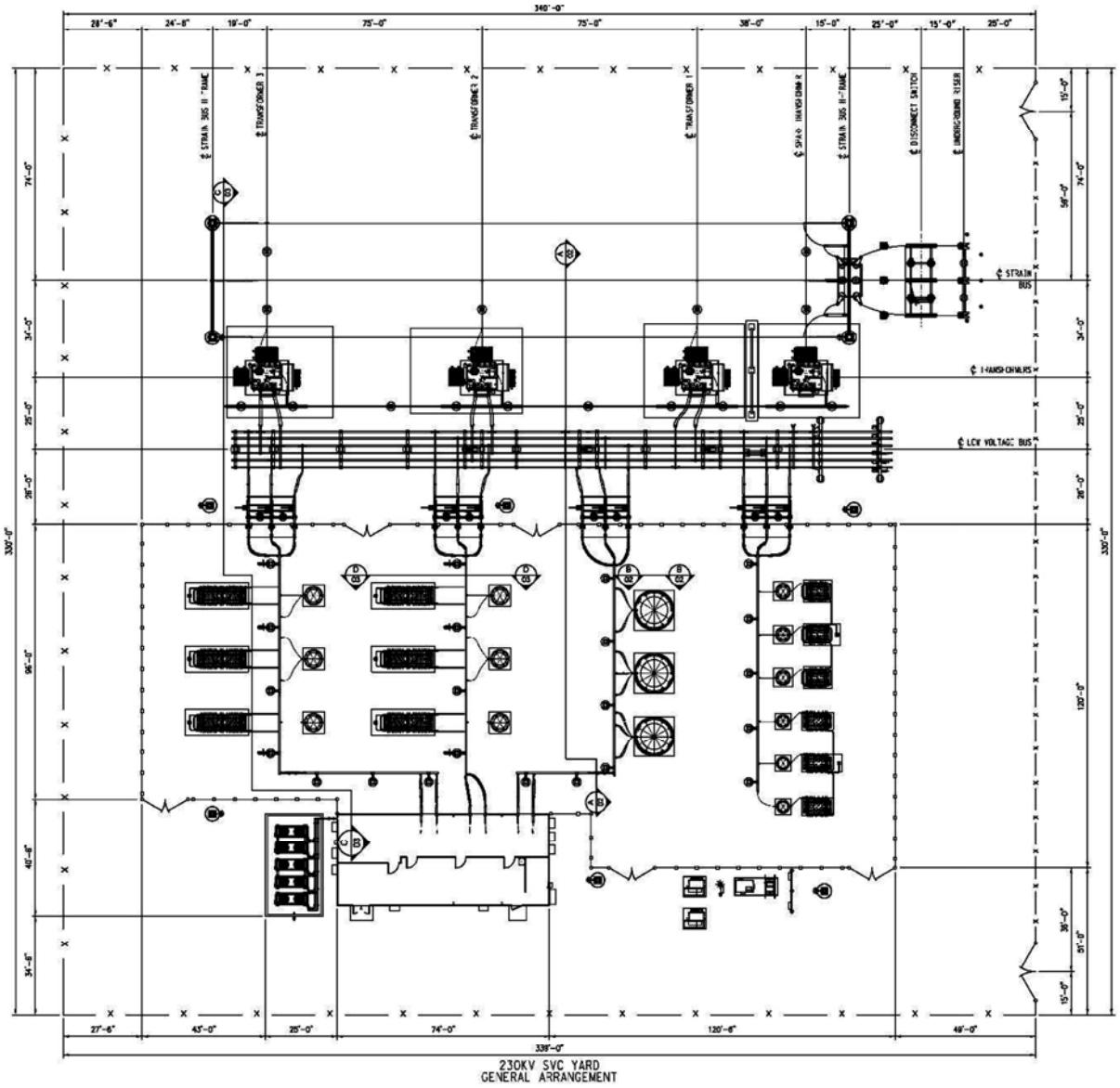
Project Overview Map

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Suncrest Dynamic Reactive Power Support Project FPP

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SOURCE: Nextera, 2015

FIGURE 3

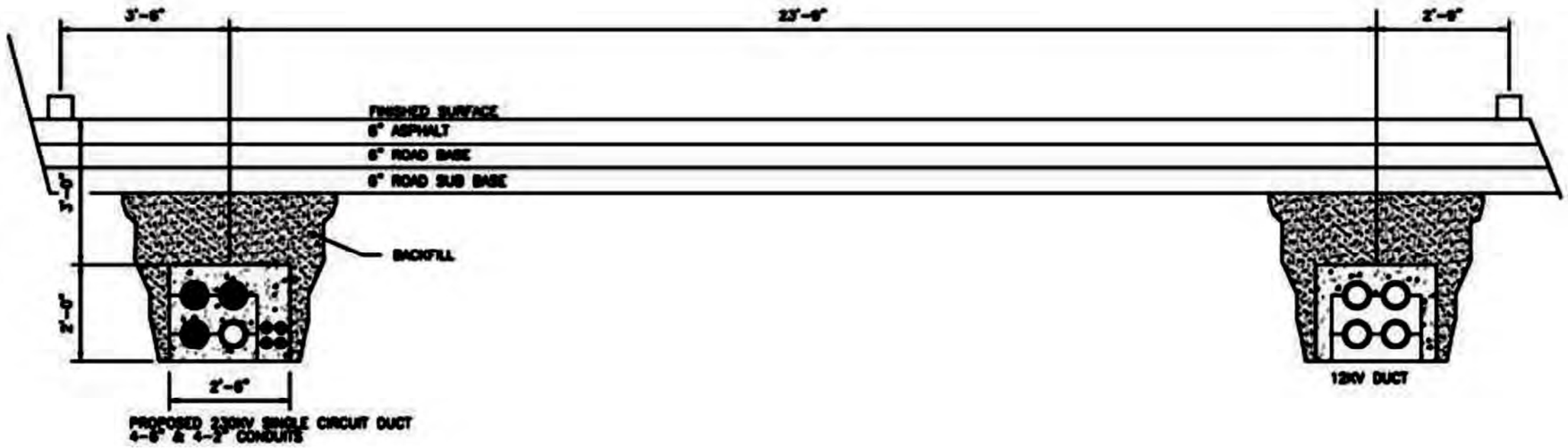
SVC Typical View and General Arrangement Plan

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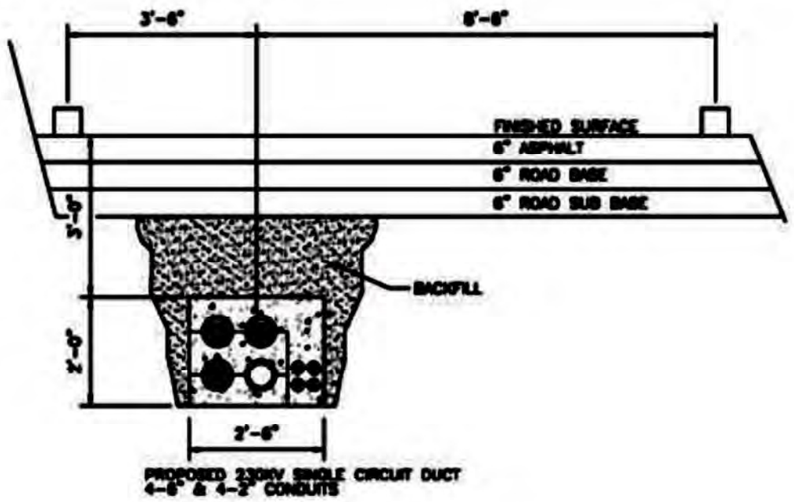
Suncrest Dynamic Reactive Power Support Project FPP

Date: 10/30/2015 - Last saved by: cbattle - Path: Z:\Projects\800\80104\APD\DOCS\DOCUMENTS\Final\Figure 3 SVC Typical View and General Arrangement Plan.mxd

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TYPICAL ROAD CROSS SECTION
BELL BLUFF TRUCK TRAIL



TYPICAL ROAD CROSS SECTION
BELL BLUFF TRUCK TRAIL (NORTH SIDE ROAD)

Date: 10/1/2015 Last saved by: cbaffa Path: X:\Powers\20080\MAPDOCS\DOCS\MXD\TDI\ExpFigure_4 Typical Underground Duct Bank Plan.mxd

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SOURCE: Nextera

FIGURE 4
Typical Underground Duct Bank Plan

Suncrest Dynamic Reactive Power Support Project FPP

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1.1.2.2 Static Var Compensator (SVC) Facility

The proposed SVC will be constructed immediately south of Bell Bluff Truck Trail within a portion of Assessor's Parcel Number (APN) 523-040-080 in an area that was previously used as a construction laydown area for the Sunrise Powerlink. Construction of the SVC (e.g., limit of grading and associated site improvements based on current information) will occupy a total area of approximately 6.0 acres to be obtained in fee by NextEra Energy Transmission, West LLC (NEET West) prior to construction. Within the graded area, the SVC will be contained within a fenced area of up to approximately2.58 acres. The final design, layout, and footprint of the SVC will be procured through a functional specification detailing capacity, performance, available site area, and other requirements. The final design will generally incorporate a number of common components including the following contained within the SVC fenced area:

- Lightning Shielding Masts
- 230 kV Circuit Breaker
- 230 kV Main Stringbus and Busbar
- 230 kV Group Operated Air Break Switch
- 230 kV Lightning Arresters
- 230 kV Potential Measurement Transformers
- Three Single Phase 230 kV Main Power Transformers (plus One Spare) Outdoor HVAC Equipment and Thyristor/Convertor Cooling Equipment
- Outdoor Capacitor Banks
- Outdoor Air Core Reactors
- Outdoor Medium Voltage Busbars
- Outdoor Medium Voltage Instrument/Auxiliary Transformers
- Outdoor Medium Voltage Surge Arresters
- Outdoor Medium Voltage Group Operated Air Break Switches
- Control House of approximately 2,500 square feet of non-combustible construction containing the following equipment:
    - Thyristor Valves and/or IGBT Convertors
    - Protective Relaying and Control Equipment
    - SCADA Equipment

- Cooling Equipment
- AC/DC Auxiliary Power Equipment
- Spare Parts and Maintenance Tool Storage
- Miscellaneous Support Facilities

All major equipment (e.g., power transformers, power circuit breakers, control buildings, capacitors, and reactors) will be installed on concrete foundations. The maximum amount of oil required for the transformers at the SVC will be approximately 10,000 to 12,000 gallons for each of the four transformers. Secondary containment basins will be provided for each piece of equipment, including internal oil storage and transformers. The basins will be designed to retain 100 percent of the oil plus 24-hour 25-year storm in the transformer or storage area. Outdoor oil-insulated transformers will be separated from adjacent structures and from each other by firewalls for the purpose of limiting damage and potential spread of fire from a transformer failure. Determination of the type of physical separation between transformers, control equipment, and building structures will be in accordance with NFPA 850, Section 5.1.4. Outdoor Oil-Insulated Transformers. The tallest structures within the SVC will be the approximately 75-feet high lightning shielding masts. The general layout and arrangement of the outdoor equipment of a typical SVC of this approximate size is shown in Figure 3, SVC Typical Plan View and General Arrangement.

In addition to the electrical equipment, the SVC will include the following facilities or components for the site design:

- Signage and lighting;
- Access road improvements;
- A stormwater detention basin;
- A retaining wall, stormwater drainage ,and conveyance system;
- Chain link and barb wire security fencing approximately 7 feet in height with a secure gate accessible only by NEET West staff and emergency services personnel; and,
- Transformer oil containment basins designed to contain the oil volume of the transformers plus the 25 year 24-hour storm.

All facilities at the SVC, including the associated access drives and stormwater drainage and conveyance system, will occur within the property line of the approximately 6-acre parcel to be owned by NEET West.

1.1.2.3 Underground Transmission Line

An underground electric transmission line will connect the proposed SVC to the existing SDG&E Suncrest Substation. The proposed transmission line will be a new 230 kV single-circuit line composed of cross-linked polyethylene-insulated, solid-dielectric, copper or aluminum conductor cables. For a single-circuit line, there will be three separate cables installed within PVC conduits in a concrete-encased duct bank system. In addition to the 230 kV cables, a fourth spare PVC conduit will be installed in the duct bank to facilitate installation of a spare cable in the event of a failure occurs. There will be four smaller conduits for fiber optics to provide communications for line relaying, SCADA, and other devices as required. Dimensions of the overall duct bank are approximately 30 inches wide by 24 inches tall. Up to five underground splice vaults will be installed along the transmission line alignment about every 900 feet to facilitate installation of the underground cables and to operate and maintain the transmission line following construction. The new transmission line will be approximately 1.0 mile in length and include a permanent Right-of-Way that will be approximately 12-feet-wide.

The proposed transmission line will be installed within the curbs of the existing Bell Bluff Truck Trail. The proposed underground transmission line will parallel an existing underground 12 kV distribution line owned by SDG&E, which is located on the south side of Bell Bluff Truck Trail, for approximately 3,400 feet. From the intersection of Bell Bluff Truck Trail and SDG&E's substation access road to the riser structure, NEET West anticipates having to cross a 12 kV distribution feeder (powering a communication site on the north side of Suncrest Substation), and the water pipe connecting SDG&E's water tank to the Suncrest Substation. Existing utilities and culverts within the roadway will be located and potholed prior to construction to ensure proper separation and avoidance by the proposed underground transmission line. Separation will be in accordance with CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communication Systems.

Final entry into the Suncrest Substation will be via an approximately 300-foot-long overhead span. The underground transmission line will be routed to a new self-supporting riser pole installed north of Bell Bluff Truck Trail outside of the Suncrest Substation. The riser pole at the end of the underground alignment where the line transitions to overhead will be located on the road shoulder just north of Bell Bluff Truck Trail. This riser pole will be between 85 and 95 feet tall and located just outside the pavement on the north side of Bell Bluff Truck Trail and approximately 250 feet southeast from the nearest, 142-foot-tall 230 kV Sunrise Powerlink transmission tower. The base of the riser pole has a diameter of approximately 7 feet and an approximate 15-foot radius of permanent clearance will be required around the riser pole, per GO-95 Rules.

1.1.3 Construction Fire Prevention Plan

This FPP is applicable to the ongoing Operation and Maintenance (O&M) of the Proposed Project. This FPP is not intended to apply to the construction phases of the Proposed Project. A separate "Construction Fire Prevention Plan" (CFPP) document shall be prepared, reviewed and approved by SDCFA and CALFIRE a minimum of 45 days prior to construction activities associated with this Proposed Project. The document will address fire prevention measures that will be employed during the construction phase, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. Example Construction Fire Prevention Plans are available for previously entitled San Diego County energy projects and they can be easily adapted for this Proposed Project. The Conceptual CFPP includes discussion of the following fire safety, prevention, and protection topics:

Conceptual Construction Fire Prevention/Protection Plan

1. INTRODUCTION

   This section will identify the intent of the CFPP for the Proposed Project and which mitigation measures the plan satisfies, if any.

   All construction work shall follow these guidelines and commitments. The contents of this plan are to be incorporated into the standard construction contracting agreements for the construction of the project. Primary plan enforcement and implementation responsibility will remain with the project applicant and its contractors and vendors. Copies of this plan shall be given to all contractors, and a kick-off safety meeting will be conducted. Workers shall sign a form stating they received this training.

2. REQUIREMENTS

   This section will identify specific requirements of the plan, which shall be implemented to the satisfaction of the fire authorities having jurisdiction, which include the SDCFA and CAL FIRE (jointly, the Fire Agencies). The following is an outline of requirements for the CFPP.

   A. Construction Fire Prevention Plan Definitions

   B. Project Description

   C. Project Fire Risks

   D. Fire Risk Mitigation Measures

   E. Staging Areas and Major Operation Work Sites

   F. Project Tool and Equipment Requirements

G. Agency Specific Requirements

H. Construction of Access Roads Prior to On Site Construction

I. Training

J. Water Storage Tanks: ID location and capacity.

K. Fire Safety Coordinator: This position is required by the California Fire Code Section 1408.1.

L. Safety briefings, Inspections and Compliance

M. Road Widths and Roadside Fuel Modification

N. Fuel Modification at Construction Sites

O. Fire Patrols

P. Firefighting Pump Units

Q. Construction Water Tenders

R. Portable Fire Extinguishers

S. Red Flag Warnings; High Fire Hazard Weather Conditions

T. Project Specific No Work Provisions/Restrictions

U. Agency Specific Requirements

V. Tool Caches

W. Mufflers and Spark Arrestors on Equipment Engines

X. Use of Portable Equipment

Y. Clearing Crews

Z. Storage of Flammable and Combustible Liquids and Fueling of Vehicles and Equipment

AA. Temporary Heating Devices

BB. Storage Areas and Parking Areas

CC. Designated Smoking Areas

DD. Warming and Lunch Fires; No Open Burning

EE. Hot Work (Welding, Grinding, etc.): These requirements are primarily from California Fire Code (CFC) Chapter 26, “Welding and other Hot Work,” and NFPA 51-B, “Fire Prevention During Welding, Cutting and other Hot Work”.

FF. Storage of Combustibles and Trash

GG. Storage and Use of Hazardous Materials

HH. Warehouses and Construction offices

II. Construction office trailers or modular buildings:

JJ. Temporary Construction Materials:

KK. II. Turbine Construction

LL. Power Line and Structures

MM. Temporary Wiring and Electrical and Heating Equipment

NN. First Aid

OO. Communications Plan

PP. Emergency Alarms

QQ. Calling 911

RR. Emergency Plan

SS. Visitors

TT. Checklists

1. Fire Safety Coordinator
2. Construction Fire Watch
3. Construction Crewmembers
4. Construction Supervisors
5. Example Contents of the Required Laminated Card

3. SUMMARY

This section will summarize that the CFPP has been prepared in response to the requirements of the Fire Agencies and will state the limitations of the requirements listed above, if any. For example, requirements made by the representatives of the Fire Agencies can overrule items in this CPPF.

4. DISCLAIMER

This section will provide the disclaimer that the CFPP does not guarantee a fire or other emergency will not occur or cause property damage, injury or loss of life. However, it will also discuss that if the CFPP is complied with, the construction operation should be reasonably fire safe.

5. APPENDICES

   Appendices may include maps, contact information, excerpts from the California Public Resources Code and other applicable regulations.

1.1.4 Environmental Setting

Following extensive review of available digital site information, including topography, vegetation types, fire history, and the Proposed Project's site plan, Dudek fire protection planners conducted a field assessment of the Proposed Project on September 25, 2015, in order to confirm digital data and fill any identified data gaps

Among the field tasks that were completed are:

- Vegetation estimates and mapping refinements
- Fuel load analysis
- Topographic features documentation
- Photograph documentation
- Confirmation/verification of hazard assumptions
- Ingress/egress documentation.

Site photographs were collected (Appendix A: Photograph Log) and fuel conditions were mapped using aerial images. Field observations were utilized to augment existing site data in generating the fire behavior models and formulating the requirements provided in this FPP.

1.1.4.1 Topography

Located in east San Diego County, the Proposed Project site is located approximately 33 miles east of the Pacific Ocean and situated in the Laguna Mountains of the Peninsular Range. Topography in the vicinity of the Proposed Project area is undulating with steep hills interspersed by narrow valleys and deep canyons. The Proposed Project site occurs on a ridgeline which trends approximately west to east with Viejas Mountain to the west and Japatul Valley to the south. Topography on the Proposed Project site is gentle slopes (less than 5%) and then drops off to steeper terrain (30%) that drains to the south via a steeply incised drainage into Japatul Valley. Site elevations range from approximately 3,000 to 3,200 feet above mean sea level.

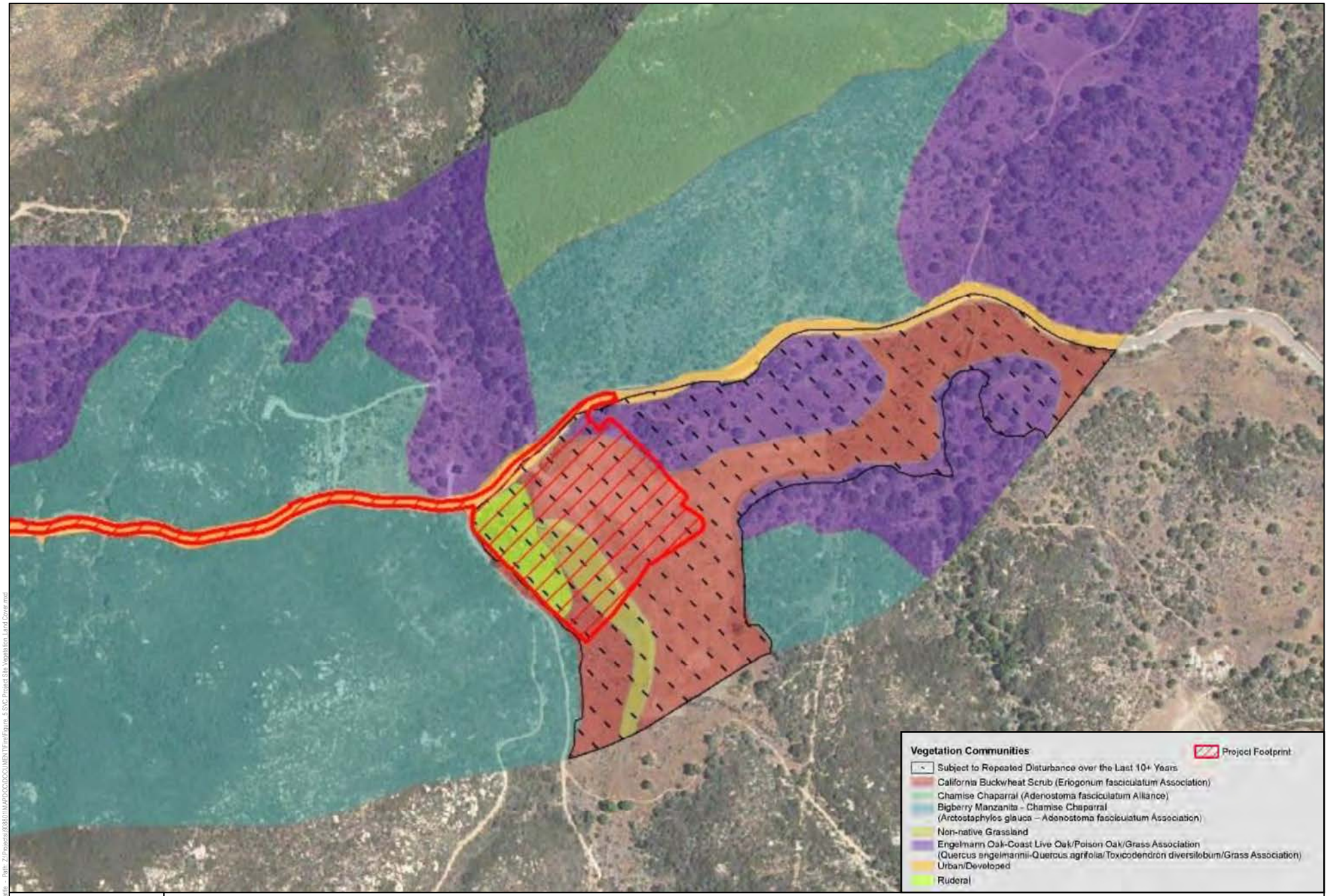
1.1.4.2 Vegetation

The footprint of the Proposed Project and surrounding habitats consist of undeveloped chaparral scrub and oak woodlands with pockets of disturbance dominated by non-native grasses and forbs. There are six vegetation communities and one land cover type in the Proposed Project area, including urban developed, Engelmann and Coast Live oak woodlands, Chamise chaparral, California buckwheat scrub, Bigberry Manzanita-chamise chaparral, Non-native grassland, and ruderal. The acreage of each of these vegetation communities/land cover type are provided in Table 2 and their spatial distribution on the site is illustrated in Figure 5 As indicated, California buckwheat scrub and Non-native grasslands are the most common plant communities on the project site. Bigberry Manzanita- Chamise chaparral and Engelmann-Coast Live oak woodlands are also the most common plant communities adjacent to the site, which represents the fuels that would spread wildfire toward or away from the Proposed Project. Both vegetation types were modeled in Section 3.

Table 2
Proposed Project Vegetation Communities and Land Cover*

Vegetation Community/Land Cover	Acres**	Percentage Cover
Upland Scrub and Chaparral		
California Buckwheat Scrub	4.5	58.4%
Woodlands		
Engelmann Oak-Coast Live Oak	0.3	3.9%
Non-Native Communities and Land Covers		
Non-native Grassland	1.1	14.3
Ruderal	1.7	22.1
Urban Developed	0.1	1.3%
Total	**7.7**	**100.0%**

Note:
* Source: Proponent's Environmental Assessment, August 2015
** Acreage totals do not include vegetation types adjacent to transmission line alignment along Bell Bluff Truck Trail Road.



SOURCE: Nextera Energy Transmission West, LLC - 2015

FIGURE 5

SVC Project Site Vegetation/Land Cover

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Suncrest Dynamic Reactive Power Support Project FPP

Not to scale

Date: 10/12/2015 - Last saved by cbattle - Path: Z:\Projects\00660\MAPDOC\DOCUMENT\Final\Figure_5 SVC Project Site Vegetation Land Cover.mxd

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In addition to the SVC site, the transmission line and vaults traverse underneath Bell Bluff Truck Trail Road (3.1 acres) with small patches of Chamise Chaparral (0.4 acre), California Buckwheat Scrub (<0.1 acre), and oak woodlands (< 0.1 acre) that are adjacent to the road. Descriptions of all vegetation types on or adjacent to the site are as follows:

Engelmann Oak-Coast Live Oak Woodlands

Stands of Engelmann oak (*Quercus engelmannii*) and coast live oak (*Q. agrifolia*) occupy the north central and eastern portions of the Proposed Project area, particularly along streams or in moist declivities. 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*).

Chamise Chaparral

The chamise chaparral habitat occurs in the northwestern and northeastern Project area limits 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 plant community 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*).

California Buckwheat Scrub

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 site.

Bigberry Manzanita – Chamise Chaparral

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 plant community Herbaceous layers are uncommon in chamise-dominated scrub, except following fires. This plant community is immediately adjacent to the Proposed Project footprint along the west, southeast and north sides.

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 Project 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 is proposed.

Ruderal

Ruderal areas are highly disturbed areas and are dominated by non-native species that have high rates of seed dispersal, fast growth, and are able to quickly colonize disturbed areas. 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.

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.

The Proposed Project will include removal of most of the vegetation from the site and replacement with fuel modification areas comprised of consistent low growing, low fuel

accumulation grasses and forbs that will be mowed or weed whipped, annually. The underground transmission line alignment will not include removal of vegetation, except as necessary for installation and maintenance according to applicable vegetation management standards.

1.1.4.3 Fuel Loads

The vegetation described above translates to fuel models used for fire behavior modeling, discussed in detail in Section 3 of this FPP. Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (leaf size, branching patterns), and overall fuel loading.

The fuel load is the amount of fuel available to wildfire. Shrub dominated plant communities tend to include higher fuel loads than grass dominated plant communities. Tree dominated communities may include higher fuel loads than shrub dominated landscapes. However, there are many other facets of fire behavior that govern fire ignition and spread. Therefore, because an area may include higher fuel loads, it does not necessarily mean that it presents a higher fire risk.

As previously mentioned, the vegetation along the perimeter of the proposed SVC site and approximately 300 feet from the fuel modification zone is the area of highest concern for determining what effects wildfire may have on the project's structure. It is these fuels, which if ignited, would burn up against the provided fuel modification zones as it gets closer to the built portions of the Proposed Project.

Vegetation distribution is relatively consistent in all directions from this site and consists of Bigberry Manzanita-Chamise chaparral with large patches of Engelmann Oak-Coast Live Oak woodlands. Fuel loads for the chaparral vegetation type is estimated to be 8.6 tons/acre, whereas the oak woodland fuel bed is estimated to be 2.6 tons/acre. Fires burning in both fuel types often display moderate fire intensity and thresholds for spread that are observed to depend on environmental factors like wind or slope.

1.1.4.4 Fire History

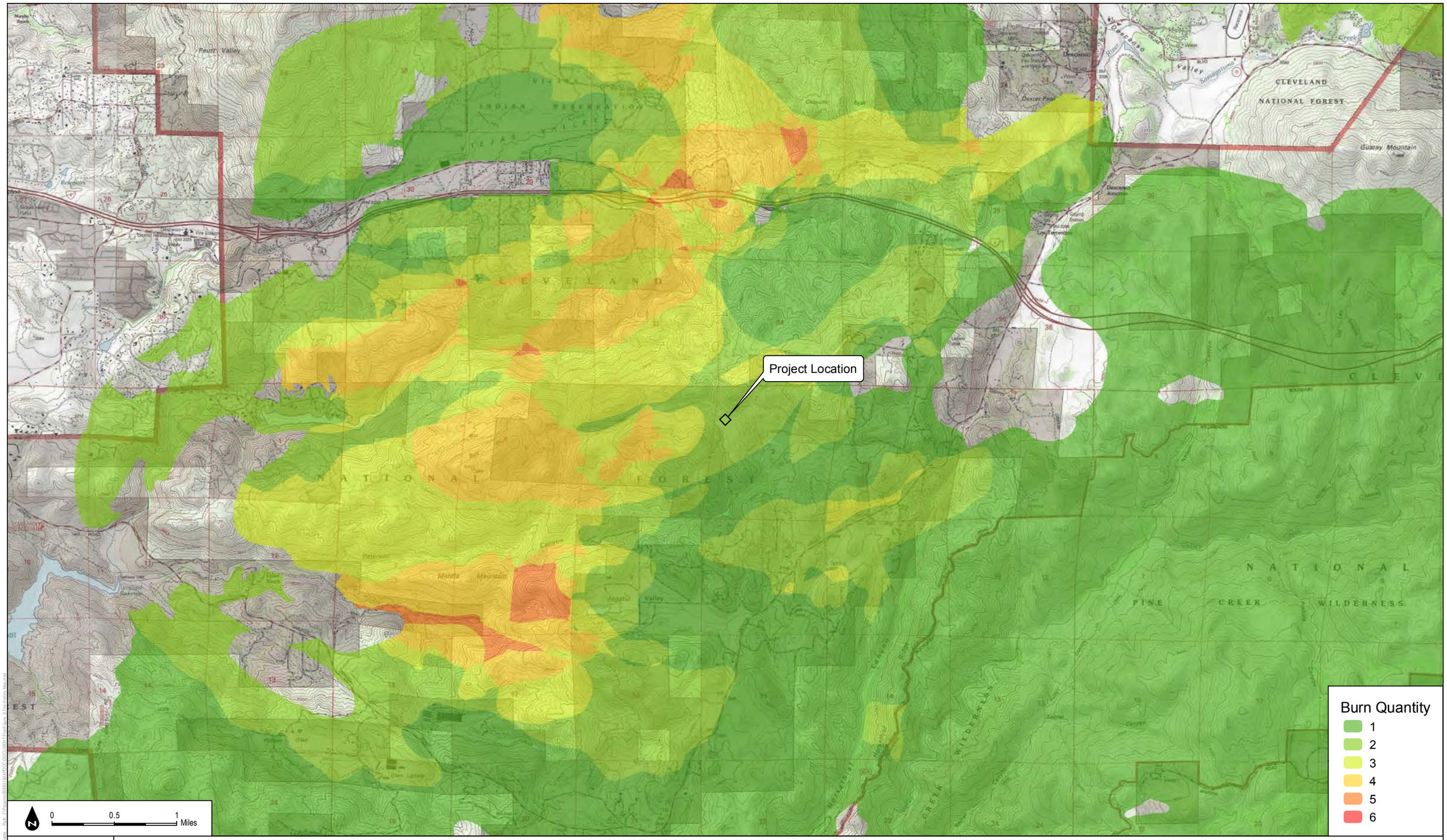
Fire history data provides valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. One important use for this information is as a tool for pre-planning. It is advantageous to know which areas may have burned recently and therefore may provide a tactical defense position, what type of fire burned on the site, and how a fire may spread. According to available data from the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) database

(CALFIRE FRAP 2014), there have been 25 fires recorded within 5 miles of Project vicinity since 1911. Of the total 25 fires, there have only been two fires over the last 104 years that burned small portions of the Proposed Project property. The most notable fire (Laguna) occurred in September-October1970, and burned approximately 175,425 acres in the southern portion of the County, including the Project Area. SDCFA may have data regarding other smaller, undocumented fires that have occurred on the site that have not been included herein based on their small size (fires less than 10 acres are not recorded by CALFIRE). Table 3 presents fire history within five miles of the Proposed Project Site since 1910 and Figure 6 provides a graphical representation of the quantity of times the landscape has burned in the area.

Table 3
Fire History in the Proposed Project Area

Fire Year[1]	Fire Name	Total Area Burned (acres)
1911	Un-named	7,307
1912	Un-named	438
1915	Un-named	197
1921	Un-named	788
1923	Un-named	87
1924	Un-named	5,166
1933	Un-named	70
1938	Un-named	65
1942	Un-named	571
1943	Un-named	3,910
1943	Un-named	985
1947	Un-named	32
1948	Un-named	516
1948	Un-named	448
1948	Un-named	135
1950	Conejos	62,848
1953	Viejas	707
1968	Un-named	876
1969	Un-named	668
1970	Laguna	175,425
1982	Sweetwater #2	42
1992	Loveland	2,080
2001	Viejas	10,438
2003	Cedar	280,278
2014	Viewpoint	17

[1] Based on polygon GIS data from CAL FIRE's Fire and Resource Assessment Program (FRAP), which includes data from CAL FIRE, USDA Forest Service Region 5, BLM, NPS, Contract Counties and other agencies. The data set is a comprehensive fire perimeter GIS layer for public and private lands throughout the state and covers fires 10 acres and greater between 1878–2013.



SOURCE: USGS, 2015; Cal Fire, 2014

FIGURE 6

Fire History Map

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Based on an analysis of this fire history data set, specifically the years in which the fires burned, the average interval between wildfires in the area (includes areas up to roughly 5 miles from the Proposed Project site) was calculated to be 4.7 years with intervals ranging between 1 and 15 years. Based on this analysis, it is expected that wildfire that could impact the SVC facility may occur, if weather conditions coincide, roughly every five years with the realistic possibility of shorter interval occurrences, as observed in the fire history records. Further, the large expanses of open space surrounding the Proposed Project site and potential ignition sources along I-8 and Hwy 79, contribute to increased potential risk and wildfire hazard in the area.

1.1.4.5 Climate

Eastern San Diego County and the project area are influenced by the Pacific Ocean and are frequently under the influence of a seasonal, migratory subtropical high pressure cell known as the "Pacific High" (WRCC 2014). Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. This climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds. In the vicinity of the Proposed Project, the average temperatures in January range from 42 degrees Fahrenheit (°F) at night to 65°F during the day. The warmest month is August, when high temperatures average 91°F. Precipitation typically occurs between November and April with rainfall averaging about 16 inches per year (WRCC 2015a)[2]The prevailing wind pattern is most frequently from the west-southwest (on-shore), but the presence of the Pacific Ocean causes a diurnal wind pattern known as the land/sea breeze system. During the day, winds are from the west–southwest (sea) and at night winds are from the northeast (land). During the summer season, the diurnal winds may average slightly higher than the winds during the winter season due to greater pressure gradient forces. Surface winds can also be influenced locally by topography and slope variations. The highest wind velocities are associated with downslope, canyon, and Santa Ana winds. The majority of the time the winds were calm (less than 1.3 miles per hour [mph]). The average wind speed for the period was approximately 2.4 mph (WRCC 2015b).

The project area's climate has a large influence on the fire risk as drying vegetation during the summer months becomes fuel available to advancing flames should an ignition be realized. Typically the highest fire danger is produced by the high-pressure systems that occur in the Great Basin, which result in the Santa Ana winds of Southern California. Sustained wind speeds recorded during recent major fires in San Diego County exceeded 30 mph and may exceed 50 mph during extreme conditions. The Santa Ana wind conditions are a reversal of the prevailing

[2] Historical weather data for Alpine, California, NWS Co-op Station 040136 (approximately 6.2 miles west-northwest from the Proposed Project site) from 11/1/1951 to 1/20/2015.

southwesterly winds that usually occur on a region-wide basis during late summer and early fall. Santa Ana winds are warm and dry winds that flow from the higher desert elevations in the north through the mountain passes and canyons. As they converge through the canyons, their velocities increase. Consequently, peak velocities are highest at the mouths of canyons and dissipate as they spread across valley floors. Santa Ana winds generally coincide with the regional drought period and the period of highest fire danger. The project site is affected by Santa Ana winds.

1.1.4.6 Current Land Use

The Proposed Project area currently consists of a mixture of semi-rural residential developed lands and open space in both private and federal land holdings. The Proposed Project site is located on privately owned lands within the administrative boundary of the United States Forest Service-Cleveland National Forest. SDG&E privately owned lands, including the Suncrest Substation, are within one mile of the Project limits on the west side and the Cleveland National Forest lands are to the north of the Proposed Project site. Individual, private ownerships occur to the east and south of the Proposed Project site.

Based on a review of topographic maps and aerial photography, as early as 1953 a large portion of this parcel, including the proposed SVC area, appears to have been cleared, likely for livestock grazing purposes. From 1953 onward the land where the SVC will be constructed remained largely cleared of dense or woody vegetation consisting predominantly of grasses and forbs. During the construction of the Sunrise Powerlink Transmission Project the proposed SVC area was used as a materials staging area and was completely graded and cleared of vegetation. Following completion of construction, the area has been in a process of revegetation, including active planting and restoration activities by SDG&E, and has largely been undisturbed.

While the Proposed Project area is bound nearly in all directions by undeveloped vegetated lands, several features of the built environment are present in the immediate vicinity. The Suncrest Substation constructed in 2012, is located at the western terminus of the proposed transmission line approximately one mile west of the location of the proposed SVC. Several localized development improvements were made within the area during construction of the Suncrest Substation and the larger SDG&E Sunrise Powerlink Transmission Project. Bell Bluff Truck Trail, a dirt road, was widened to 30 feet and paved to provide access to the Suncrest Substation. The Proposed Project site will be accessed from Bell Bluff Truck Trail Road.

1.1.4.7 Proposed Land Use

The Proposed Project has two primary components, the SVC facility, and a 230 kV single-circuit, underground transmission line connecting the SVC to the existing Suncrest Substation owned and operated from SDG&E. The Project would include removal of existing vegetation from the Proposed Project site, grading to create flat pad area, construction of a new SVC facility that will be connected to SDG&E Suncrest substation via a 230 kV underground transmission line. The SVC facility is planned to be constructed on the 6.0-acre development site. The Project land use would include access road, an on-site water storage tank, a chain link perimeter fence, and related infrastructure for the SVC facility, as described herein.

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2 ANTICIPATED FIRE BEHAVIOR

2.1 Fire Behavior Modeling

Following field data collection efforts and available data analysis, fire behavior modeling was conducted to document the type and intensity of fire that would be expected on this site given characteristic site features such as topography, vegetation, and weather. The BehavePlus 5.0.5. fire behavior modeling software package, which is the latest version of this industry standard fire behavior prediction software, was utilized in evaluating anticipated fire behavior adjacent to proposed fuel modification zones for the perimeter of the Proposed Project's developed area. Results are provided below and a more detailed presentation of the BehavePlus modeling methodology, including fuel moisture and weather input variables, is provided in Appendix B.

2.1.1 BehavePlus Fire Behavior Modeling Results

Fire Behavior results derived from the BehavePlus modeling efforts are presented in Table 4 and in Figure 7. Four focused analyses (fire scenarios) were completed, each assuming worst-case fire weather conditions for a fire approaching the Proposed Project site primarily from the northeast or west-southwest. These fire scenario areas, which were directly adjacent the fuel modification zones and around the perimeter of the Proposed Project site, were modeled as a Bigberry manzanita-chamise chaparral (Fuel Model Sh5) or as an Engelmann oak-Coast live oak woodlands with grass-shrub understory (Fuel Model Gs2). This detailed analysis compared fire behavior adjacent to the proposed development with outputs including flame length (feet), rate of spread (mph), and fireline intensity (BTU/ft/s).

Table 4
BehavePlus Fire Behavior Modeling Results

Model Run	Fuel Model(s)	Flame Length (feet)	Fireline Intensity (Btu/ft/s)	Surface Rate of Spread (mph)
1	Sh5	63.7	47,368	14.3
2	Gs2, Sh5	30.2 to 63.6	9,392 to 47,294	9.6 to 14.3
3	Gs2, Sh5	10.6 to 26.2	956 to 6,883	1.2 to 2.4
4	Gs2, Sh5	10.6 to 26.2	952 to 6,898	1.2 to 2.4

Based on the results of BehavePlus analysis, worst-case fire behavior is expected in Bigberry manzanita-chamise chaparral fuels along the northern and eastern edges of the proposed development during a strong (Santa Ana) wind-driven fire event (Scenarios 1 and 2). Under such extreme weather conditions, flame lengths in this shrub fuel bed will approach 63.7 feet with fire

spread rates reaching approximately 3.4 mph due to high winds and very low fuel moistures. On the contrary, wildfires occurring during on-shore wind patterns (Scenarios 3 and 4) are expected to be of low to moderate severity with flames lengths of 26.2 feet and slower spread rates (approximately 2.4 mph) due to higher fuel moisture content and reduced wind speeds.

The results presented in Table 4 depict values based on inputs to the BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis. For planning purposes, the averaged worst-case fire behavior is the most useful information for conservative fuel modification design. Model results should be used as a basis for planning only, as actual fire behavior for a given location will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns. As such, the proposed 100-foot FMZ width will be approximately 1 ½ times wider than the calculated flamelengths for a fire under very low fuel moistures and high wind conditions.

2.2 On-Site Risk Assessment

As presented, the chaparral and oak woodlands' fuel beds in the area surrounding the Proposed Project site would be the fuels affecting the constructed project. Based on the observed fuel beds surrounding the site, off-site fire behavior is expected to be similar to that modeled for the site. Wildfire behavior is expected to be of moderate intensity during extreme, Santa Ana weather conditions with maximum sustained wind speeds of 56 mph and low fuel moistures. Wildfire in the project vicinity is expected to be relatively short in duration as vegetative fuels are consumed rapidly. As such, there would not be a sustained source of heat and or flame associated with site-adjacent wildland fuels.

Further, the project site's fuels would be mowed to low growing ground cover in the developed portion of the project site. The post-project fuel modification areas would provide a significant reduction in the potential for fire ignition as well as the flame length, spread rate, and intensity of fires should ignition occur. The developed portion of the project site may be compared to a fuel break once completed. Adjacent native and undisturbed fuels may readily carry fire, especially during portions of the year where vegetation moisture content falls and warm temperatures, low humidity and high winds become common. The developed portion of the site will be largely free of combustible vegetation with only a ground cover of maintained vegetation adjacent to the SVC facility. Flying embers from off-site fire may inundate the project site during wind-driven fire events. The modified fuel areas and construction type and materials for all project features will resist ignition from ember showers. Ignition of the ground cover could result in a fast moving, but lower intensity fire that burns in a patchy manner on the site due to the highly compartmentalized fuel modification around the perimeter of the SVC development footprint.

Modeling Inputs:

Summer Weather - Onshore Flow (RUN 3 & 4):
1h Moisture: 2%
10h Moisture: 4%
100h Moisture: 6%
Live Herbaceous Moisture: 50%
Live Woody Moisture: 80%
20-ft Wind Speed: 18 mph
Wind Adjustment Factor: 0.6
Slope Steepness: 5-20%

Peak Weather - Offshore/Santa Ana Condition (RUN 1& 2):
1h Moisture: 1%
10h Moisture: 2%
100h Moisture: 4%
Live Herbaceous Moisture: 30%
Live Woody Moisture: 50%
20-ft Wind Speed: 56 mph
Wind Adjustment Factor: 0.6
Slope Steepness: 3-20%

RUN 1

Run 1
Fuel Model: Chamise-Bigberry manzanita, (Gs2, Sh5)
Flame Length: 63.7 feet
Fireline Intensity: 47,368 Btu/ft/s
Spread Rate: 14.3 mph

RUN 4

Run 4
Fuel Model: Oak Woodlands & Chamise-Bigberry manzanita, (Gs2, Sh5)
Flame Length: 10.6 to 26.2 feet
Fireline Intensity: 956 to 6,883 Btu/ft/s
Spread Rate: 1.2 to 2.4 mph

RUN 2

Run 2
Fuel Model: Oak Woodlands & Chamise-Bigberry manzanita, (Gs2, Sh5)
Flame Length: 30.2 to 63.6 feet
Fireline Intensity: 9,392 to 47,294 Btu/ft/s
Spread Rate: 9.6 to 14.3 mph

RUN 3

Run 3
Fuel Model: Oak Woodlands & Chamise-Bigberry manzanita, (Gs2, Sh5)
Flame Length: 10.6 to 26.2 feet
Fireline Intensity: 956 to 6,883 Btu/ft/s
Spread Rate: 1.2 to 2.4 mph

N
0 500 1,000 Feet

Proposed Site Boundary

SOURCE: Bing Maps, 2015

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FIGURE 7
Fire BehavePlus Analysis Map

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3 ANALYSIS OF PROJECT EFFECTS

3.1 Adequate Emergency Services

3.1.1 Emergency Response

The Proposed Project is located within the SDCFA responsibility area. Emergency response for the Project would be provided, initially, by the SDCFA Decanso Fire Station, which is staffed with CAL FIRE firefighter/paramedics via Schedule A contract with SDCFA. The Descanso Fire Station is located at 9718 River Road. The Descanso Station is approximately 6.5 miles to the most remote portion of the SVC facility with a calculated travel time of approximately 11.7 minutes[3].

Response to the Proposed Project from nearby fire stations will be within the acceptable time frame as designated in the County General Plan. The Project site is west of the boundary of the Central Mountain Subregional Plan, but within several hundred feet of that Plan's coverage area. The Central Mountain Subregional Plan was developed in conjunction with the San Diego County General Plan (County of San Diego 2011). The Proposed Project is located within lands that are zoned as Agricultural Use – Limited Agricultural Use Regulations (A70) and Agricultural Use – General Agricultural Use Regulations (A72), and lands that are designated as RL-80. Based on this category, maximum travel time is greater than 20 minutes. The intent of the 20 minute travel time is that very-low rural densities mitigate the risk associated with wildfires by reducing the number of people potentially exposed to wildfire hazard. The Project would include the adjusted equivalent of one person (see Section 4.1.1.1), roughly the same as one dwelling unit population, on the entire 6-acre site. Response from Descanso Fire Station is calculated at approximately 11 minutes. Therefore, the project complies with the General Plan's intent of the RL80 land use category for response travel time from nearby fire stations. A Fire Service Facility Availability Form is included in Appendix C (to be provided later on)).

Additional County Fire Resources

Within the unincorporated region's emergency services system, fire and emergency medical services are also provided by Fire Protection Districts (FPD), County Service Areas (CSA) and CALFIRE. Collectively, there are over 2,800 firefighters responsible for protecting the San Diego region from fire. Generally, each agency is responsible for structural fire protection and

[3] Travel distances were derived from Google Earth road data and driving on the access roads to fire stations from Proposed Project site while travel times were calculated applying the nationally recognized Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard formula (T=0.65 + 1.7 D, where T= time and D = distance). The ISO response travel time formula discounts speed for intersections, vehicle deceleration and acceleration, and does not include turnout time.

wildland fire protection within their area of responsibility. However, mutual and automatic aid agreements enable non-lead fire agencies to respond to fire emergencies outside their district boundaries. Interdependencies that exist among the region's fire protection agencies are primarily voluntary as no local governmental agency can exert authority over another.

The next due in will be the SDCFA Pine Valley Fire Station, (Station 44), which is approcimately 9.5 miles from the site and is staffed with CAL FIRE firefighter/paramedics via Schedule A contract with SDCFA. Response time from the fire station is approximately 15 to 20 minutes.

Additional resources could also come from the Alpine Fire Protection District's (AFPD) Fire Station 17. The fire station is located at 1364 Tavern Road in Alpine and it is approximately 14 miles from the Proposed Project's entrance. It is a full-time station staffed 24/7 by career firefighters. Response time from the AFPD Fire Station is calculated at approximately 24 minutes.

Private Fire Brigade

NextEra Energy will contract with a private fire industrial brigade (Capstone Fire & Safety Management, or similar) to conduct operations on electrical-related fires within the facility. The contract will be executed prior to the project beginning construction at the site. The contract will be in place for the duration of the project's lifespan and will provide technical expertise for responding to fires in an energized facility.

Emergency Services

Mercy is the contracted ambulance service provider for the Proposed Project area. The Mercy ambulance is in the Alpine area during the day and at night is housed in the Descanso Fire Station. In addition to Mercy, primary medical response is provided by area fire stations. The Proposed Project area is served by Sharp Grossmont Hospital, 5555 Grossmont Center Drive, La Mesa, located approximately 25 miles west (SWCA 2015a).

3.1.1.1 Emergency Service Level

The project does not propose any full-time personnel on site. This on-site worker population will vary, not be consistent, and therefore, does not fit into typical models to calculate projected call volume. During the 9-month construction period, the typical number of workers and visitors on site will be approximately 40 to 50 (or less) persons per day. The peak number of workers on a single day will be approximately 64. As a conservative assumption, the total number of unique construction workers over the entire construction period will be approximately 120. Visitors will include NEET West management, engineering consultants, government inspectors, and construction monitors, who will visit the site intermittently.

During operation, there will be a monthly inspection of the SVC, an inspection of the transmission line every 6 to 8 months, and periodic maintenance of the equipment. None of these activities will add full-time employees, and these activities will not result in new residents in the area. Each of these inspection and maintenance activities would be conducted by a small crew of, at most, two workers.

As a conservative comparison, this analysis uses two people on-site during daylight hours. There will be some variation throughout the year with a higher number of persons during the construction phase, but this will be short term. Therefore, the 24-hour equivalency for two people during a workshift would be ½ that number since staff would not be on site after dark/overnight. Using San Diego County fire agencies' estimate of 82 annual calls per 1,000 population, the project's estimated one daylight only on-site personnel, would generate up to 0.08 calls per year (approximately 1 call every 10 years). The type of call would be expected to be medical-related. These estimates are likely overly conservative because County statistics represent calls from dense urban areas where medical and fire related calls are much higher than would be anticipated from the Project. The existing fire and emergency medical response in the area can absorb this low number of calls.

3.1.1.2 Response Personnel Training

Studies (Grant 2010 and others) indicate that for some types of energy-producing facilities' fire data is lacking. This is true for SVC facilities, but it is clear that electrical fires can occur, when at energized facilities. The same studies evaluated what measures provide the best results for improving response capabilities and firefighter safety. Among the types of measures that provide the most benefit are firefighter training, proper labeling, firefighter familiarizing, and extreme caution during fire response. To that end, this FPP requires the Project to implement the following measures:

- Conduct training sessions with local fire station personnel;
- Provide a Technical Report identifying project specific firefighting issues;
- Create a customized video training CD with SDCFA and CALFIRE input that will be provided to local fire agencies for refresher training and training new firefighters who may rotate into potentially responding stations;
- Create consistent and clear labeling and placarding warnings on all electrical equipment; and
- Provide system technical contact information for reliably available key personnel who can assist responding firefighters with technical aspects of the Project

3.2 Fire Safety Requirements For Proposed Project

3.2.1 Fire and Maintenance Access Roads for SVC Facility

Primary access to the Proposed Project site for both construction and operations would be along Bell Bluff Truck Trail, which is an existing, private 30-foot wide paved road. Bell Bluff Truck Trail provides access to the area and the SDG&E Suncrest Substation from Japatul Valley Road located approximately 1.8 miles to the east of the Proposed Project site. Japatul Valley Road connects with Interstate 8 to the north.

Two entrances for emergency ingress/egress would be provided for the site off of Bell Bluff Truck Trail. These entrances would be controlled by 20-foot wide security gates. Secondary access is not necessary for this project since it would not include a significant increase in the number of people beyond a threshold that could impact the ability to evacuate those people while providing suitable ingress for emergency personnel. This project, once operational, will include an average of two people or fewer on site and will include no overnight accommodations, so no staff will be sleeping at the site.

Fire Access Roads (Internal)

The new access route will include construction of a paved turning apron, a graveled access drive, internal circulation route, and associated improvements. Access off of Bell Bluff Truck Trail to the SVC facility will occur along two, new access driveways. The turning aprons immediately off Bell Bluff Truck Trail will be designed to accommodate large construction and haul vehicles and will be paved. Permanent access to the proposed SVC area will be immediately off Bell Bluff Truck Trail via two new access driveways. The new access drives will entail construction of two 95-foot-long by 20-foot-wide graveled access road and paved turning aprons off Bell Bluff Truck Trail. SVC access driveways would be constructed to a minimum width of 20 feet improved designed, constructed, and maintained to support the imposed loads of fire apparatus (not less than 50,000 lbs.) and would be provided with an approved surface (6 inches of gravel) so as to provide all-weather driving capabilities. The SVC access drive will occur prior to construction of the SVC.

Deadends

Road distance thresholds specified under Section 503.1.3 of the Consolidated Fire Code restrict maximum dead end road lengths for varying parcel size. The project is zoned RL80 with a minimum allowable parcel size of 80 acres. Parcels of this size are allowed a maximum dead-end road length of 5,280 feet according to Section 503.1.3. The distance from Japatul Valley Road where there exists the opportunity to egress in two separate directions, to the entrance of the

Project is approximately 10,204 feet (1.9 miles), however, the Proposed Project's circulatory driveways/roadways will include opportunities for fire engine turn-around. Further, the intent of the dead end road length requirements is for evacuation of civilians from a wildfire emergency as well as fire department access. The Project includes a very low average number of on-site staff so that evacuation during an emergency would not impede fire access.

Vertical Clearance

Minimum vertical clearance of 13 feet 6 inches will be maintained for the Project's Fire Access Road (outside the project's perimeter fence) from the driving surface.

Grade

Road grades will not exceed 10%, complying with the Consolidated Fire Code for the proposed decomposed granite aggregate road surface. If during construction it is realized that any road surface may exceed 10%, appropriate mitigations will be provided including providing paved surface for those stretches over 10%.

Surface

The non-load-bearing surface material of the perimeter fire access roads would consist of an all-weather surface (6 inches of gravel over compacted soil) capable of supporting 75,000 pounds as required by County Fire Code.

Gates

The double swing gates at the entrances to this project shall be equipped with an approved emergency key-operated switch overriding all function commands and opening the gates or a fire accessible padlock. The gates have a measured opening of 22 feet and will be installed in compliance with Section 503.5 and 503.6 of the CCFC. The gate will be set back from Bell Bluff Truck Trail 90 feet or more on both site driveways, exceeding the 30 feet setback required by the Fire Code. The site will be completely fenced with a chain link (7-foot) fence.

3.2.2 Identification

Identification of roads and structures will comply with CCFC, Section 505. Additionally, an illuminated sign at the Project entrance will be provided that clearly indicates entire site de-energizing disconnect switch identification and location. Lighting for the sign will be provided by a motion sensor-activation so the light is not on all night, every night. Additionally, the sign lettering will be reflective and the sign locate where vehicle headlights may provide adequate illumination.

3.2.3 De-Energizing (Project Shut-off)

The SVC is connected to the electrical grid by a radial 'line' feed. Isolation of this line will electrically isolate the site. However, permission granting access to the site can only be from NEET West authorized personnel since electrical dangers 'charged capacitors' still exist after site isolation. To support 'project electrical shut-off' an appropriate site access protocol will be created and communicated, this will include typical routine site meetings with SDCFA during the operational phase. In addition, project contacts will be provided to the fire authority so a person with project equipment knowledge can be contacted to assist responding firefighters.'

3.2.4 Transmission Line

The transmission line will consist of an underground alignment. The proposed transmission line will occur along Bell Bluff Truck Trail within the 30- foot wide paved portion of the road within the curbs.

3.3 Water

Potential water supplies include primarily non-potable and recycled water sources. In an effort to minimize the use of potable water in drought conditions, a recycled water source has been identified at Padre Dam Municipal Water District's (PDMWD) Water Recycling Facility (PDMWD 2015), located 19 miles to the west of the Proposed Project for construction phase water. A water services agreement is currently being negotiated with PDMWD. NEET West is also coordinating with the current owner of the SVC property to provide an on-site water source in the event that reclaimed water sources are unavailable prior to construction. An on-site source would reduce the number of truck trips required to and from the site to deliver water. Existing PVC piping is already in place between the property owner's storage ponds and a water tank at the SVC site as the water is currently being used by SDG&E for restoration purposes.

This water will be obtained from a nearby water source and/or trucked in, as described above. Because the SVC and transmission line are electrical, equipment fires, should they occur, will be managed with chemical extinguishers or other non-water methods. Vegetation fires will be addressed with trucked in water or with emergency firefighting water reserves in the water tank next to the SVC location or the 300,000 gallon water tank on SDG&E property next to the Suncrest Substation. A 10,000 gallon water storage tank will be situated to the southwest of the northernmost access driveway and accessible by fire engines. The tank shall comply with NFPA 22, Private Fire Protection Water Tanks. The capacity of the water tank at the SVC facility will be based upon the demand for hand lines, plus a reasonable allocation for water supply for Fire Engines to generate firefighting foam for 15 minutes at an application density of 0.16 gpm/sq ft from a hose line using a 3% Aqueous Film-Forming Foam (AFFF) concentrate, for use on an oil fire in transformer containment. A conceptual estimate at this point, prior to detailed design, is

250 gpm for 15 minutes (3,750 gallons of water) plus 112.5 gallons of foam concentrate for oil firefighting. The actual amount of stored water is to be determined upon detailed design of the SVC facility. A procedure for ongoing inspection, maintenance and tank filling will be in place. The tanks and fire engine connections shall be located on the side of the fire access road(s). The width of the road at the water tank locations shall be at least 18 feet (travel width) plus an additional 10-foot width, for a distance of 50 feet, to allow for fire engine to park and connect to the tank, while leaving the road open. The tanks shall be labeled "Fire Water: 10,000 gallons" using reflective paint. Final location of the tanks and total number of gallons will be approved by the SDCFA based on a tank location drawing to be submitted by the Project applicant. Drawings shall show tank location, road, and shall include the tank standard drawing and notes.

If the secondary source of water is used, i.e., from the ponds of the current owner of the SVC property, that source will also not change the ability of the water suppliers identified to serve their customers, or substantially deplete local or regional groundwater supplies. The ponds are fed by rainwater, and SDG&E successfully used the same source during construction of the Sunrise Powerlink. For comparison, the ponds have an annual availability of 40 acre-feet per year, and during the two year Sunrise Powerlink construction period, SDG&E used 32 acre-feet per year. The Proposed Project's need during construction will be 8 acre-feet over less than one year.

For the above reasons, the Proposed Project's operational impact with respect to water facilities and overall effect on water supplies will be less than significant.

3.4 Operation and Maintenance

The Proposed Project will be remotely operated and monitored from NEET West's Lone Star control center in Austin, Texas. NEET West anticipates using similar substation monitoring, control and data acquisition architecture as used for its other power delivery assets, including the use of standard monitoring, control, protection equipment, use of circuit breakers and other line relay protection equipment. The Proposed Project will be monitored and operated via an Energy Management Systems (EMS) with redundant servers and telecommunications to two data centers. The project facilities will be dual scanned from both data centers and redundant ICCP (Inter-Control Center Communications Protocol or IEC 60870-6/TASE.2) servers will exchange SCADA data with CAISO and the neighboring transmission operator entities. The EMS will include displays and alarm processing to ensure transmission operations has real-time situational awareness. The EMS support personnel will perform daily checks of the applications and hardware to ensure they are in proper working order. The EMS system will also be maintained to ensure compliance with NERC Critical Infrastructure Protection Standard requirements. Any site anomalies will be communicated to the NextEra local high voltage technicians. NextEra local high voltage technicians will manage and undertake site corrective actions.

A maintenance plan will be created in accordance with the equipment vendors' directives, industry practice, NEET West's internal guidelines and regulatory requirements. The plan will be in compliance with the CAISO Transmission Control Agreement and Maintenance Practices Procedure and approved by the CAISO before the start of commercial operation.

In general, monthly inspections will be performed on the SVC to inspect each item of the equipment and check that no obvious abnormalities exist to the extent possible without taking the SVC out of service. Annually, it is anticipated, the facility will be taken out of service to perform more invasive checks and maintenance on the SVC main components. Inspection and maintenance will be performed by a one to two person crew of NextEra local high voltage technicians and personnel provided by equipment vendor.

3.5 Security Lighting

Lighting would be designed to provide security lighting and general nighttime lighting for O&M personnel, as may be required from time to time. Lighting will be installed at the SVC and will conform to National Electric Safety Code (NESC) requirements and County of San Diego Light Pollution Code Section 59.101 et seq. Lighting would be shielded and directed downward to minimize any effects to the surrounding area, and would be used only on an as-needed basis.

The on-site SVC would include lighting inside the site to allow for safety inspections or maintenance that may be required during the evening hours. Automatic Photo-sensor controlled lighting will be provided at a level sufficient to provide safe entry, and exit to the SVC site and Control Building. Lighting would also be provided next to the entrance door to the Control Building and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, manually controlled lighting will be provided to create safe working conditions at the SVC when required.

3.6 Security Fencing

The SVC site would be fenced along the entire property boundary for security with fencing that meets NESC requirements for protective arrangements in electric supply stations. Fencing will be 7 feet in height with a secure gate that is accessible by NEET West staff. The fencing would include a pedestrian access on the south side for use by responding fire personnel. The fence would be constructed with anti-climbing material(s). Signage in Spanish and English for electrical safety would be placed along the perimeter of the project site, warning the public of the high voltage and the need to keep out. Signage would also be placed within the project site where appropriate.

Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system will be required during construction and/or operation. Site security will be monitored by CCTV and intruder detection systems. Oversight of the security status will be monitored by NextEra 24/7 Corporate Security Central Station personnel.

3.7 Defensible Space and Vegetation Management

The Proposed Project will be provided defensible space by a perimeter FMZ buffer the will include at least 84 feet of modified natural fuels in all directions from site equipment and up to 144 feet (Figure 8), by removing or maintaining them to a height of no more than 6 inches. The entire site within the perimeter fencing will be maintained free of vegetation. No off-site clearing is required or authorized, as fuel modification can be accommodated on site. Combustible vegetation within the Proposed Project area shall be limited to approved species. None of the plants on the prohibited plant list (Appendix E) shall be allowed on site.

Prescribed Defensible Space (site-wide fuel management zones) will be maintained on at least an annual basis or more often, as needed, by the Project owner. Planting used in the defensible space will consist of low-growing ground cover selected from the SDCFA desirable plant list. A potential plant mix for the fuel modification areas is included as Attachment F. The planting list

and spacing will be reviewed and approved by the SDCFA Fire Marshal and included on submitted Landscape Plans.

3.7.1 Fuel Modification

Project fuel modification will include one zone (opposed to multiple zones) consisting of areas of no fuel within the project's fenced area, retention basins with non-irrigated, low growing ground cover, or areas of other maintained fuels. Because this site will utilize non-combustible construction and the equipment will be of metal or concrete materials, the proposed fuel modification areas will provide adequate setback for the potential short duration wildfire that may be realized in the adjacent wildland fuels.

A minimum 84 foot wide fuel modification area up to 144 feet wide, will be provided for the project including the entire facility inside the perimeter fence and the off-site wildland fuels to the north, south, and west. To the east, a vertical retaining wall ranging between 4 and approximately 15 feet tall will occur at the facility boundary. The facility will be below the natural off-site grade. The wall will provide vertical separation between fuels and the facility and is considered adequate with no need for additional fuel modification to the west.

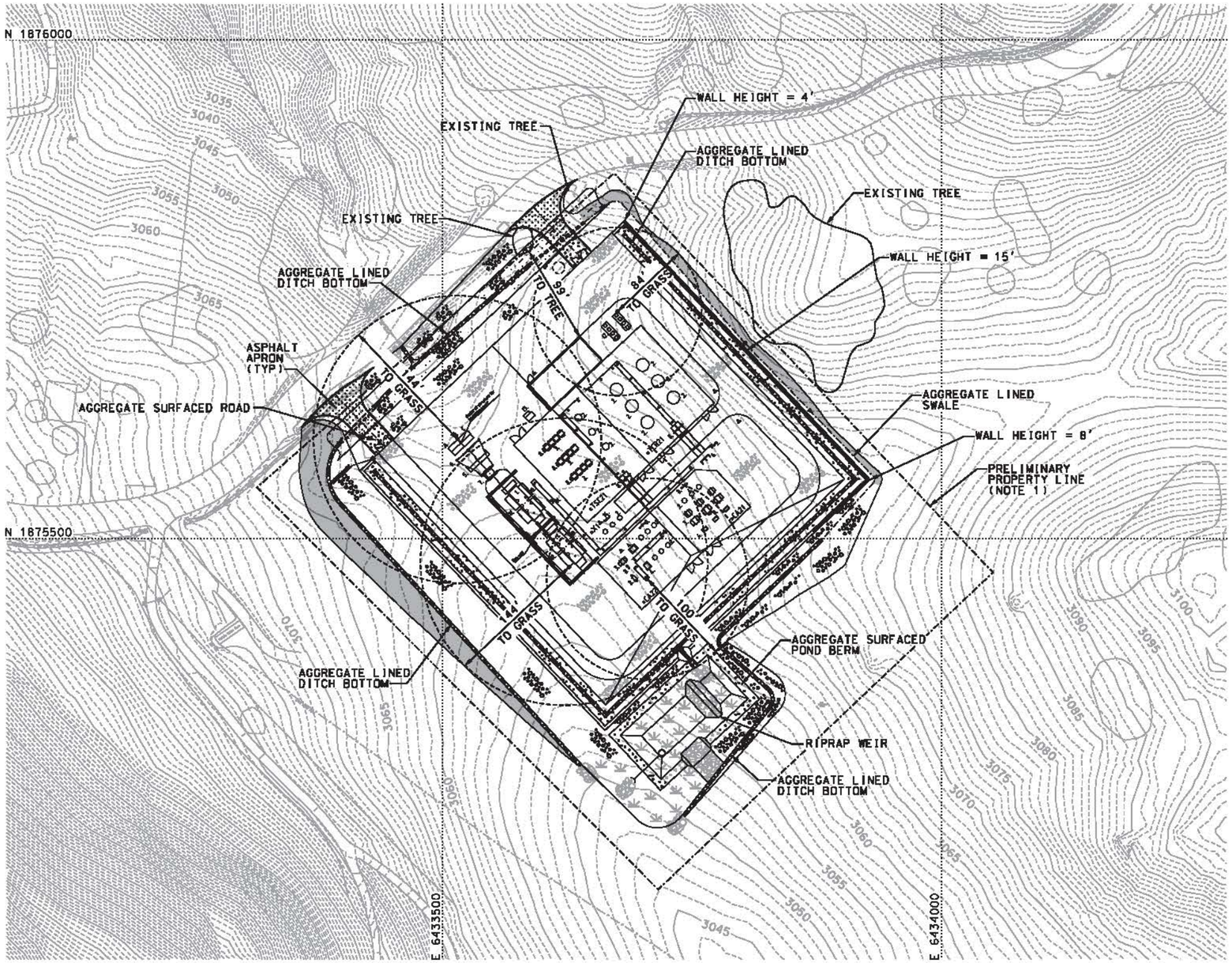
3.7.1.1 Fuel Modification Requirements

The following recommendations are provided for fuel modification, which are proposed to occur throughout the site from perimeter fence to SVC facility. There would be no fuel modification zone markers in the field.

Site Wide Low-Flammability Zone

The site's fuel modification is applicable throughout the developed portions of the site. The area where the site's equipment is located will be free of vegetation. As such, the existing vegetation will be removed The following specifications apply to the fuel modification area:

- Non-combustible surface (gravel, dirt, etc.) is acceptable, or:
- Cleared of all existing native vegetation and replanted with drought tolerant native species. This area will be maintained to 6 inches or less.
- Ground cover, less than 6 inches high in areas immediately outside perimeter fence
- Removal of all dead, dying, and dried (low fuel moisture) vegetation
- Refer to Appendix D for Prohibited Plants that will not be allowed on site. Trees are not recommended on the site or its perimeter
- Refer to Appendix E customized fuel modification plant list for potential plants that may be suitable for the site-wide low-flammability zone
- If the area is planted with native annual and perennial grasses they shall be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they will be cut to 6 inches or less in height.



NOTES:

1. PROPERTY LINE MUST BE CONFIRMED BY NEXTERA ENERGY.

LEGEND

- RIPRAP STABILIZED SIDESLOPE
- RIPRAP PAD
- SEEDING
- AGGREGATE SURFACING
- PAD AGGREGATE SURFACING
- ASPHALT PAVEMENT

NORTH

0 60 120 180

GRAPHIC SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

UNDERGROUND OR EMBEDDED UTILITIES MAY BE LOCATED WITHIN OR ADJACENT TO THE AREA IN WHICH EXCAVATION, DEMOLITION, FOUNDATION, OR MODIFICATION WORK IS TO BE PERFORMED.

REFERENCES RELATING TO THE UNDERGROUND OR EMBEDDED UTILITIES ARE PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING THOSE UTILITIES AND OTHER POSSIBLE UNDERGROUND OR EMBEDDED INTERFERENCES WITH THE WORK.

THE CONTRACTOR/INSTALLER SHALL EXERCISE DUE CAUTION DURING ALL EXCAVATION/FOUNDATION/DEMOLITION WORK.

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.

HOLD INFORMATION

NO.	DESCRIPTION

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.

RELEASE INFORMATION

REV.	DATE	DESCRIPTION
0	02-12-2016	PRELIMINARY
1	03-21-2016	PRELIMINARY

ISSUE PURPOSE: PRELIMINARY
SPECIFICATION: S-7350
PROJECT NO.: 13139-018

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CALIFORNIA.

ENTER NAME
ENTER DATE

MY LICENSE RENEWAL DATE IS: ENTER DATE
PAGES OR SHEETS COVERED BY THIS SEAL: THIS DOCUMENT ONLY.

CERT OF AUTHORIZATION (WHEN REQ'D)

CAD FILE NAME: CSK-100.DGN
PREPARED BY: C.FLAMINI
REVIEWED BY: M.BERNARDI-REIS
APPROVED BY: ---

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NEXTera ENERGY TRANSMISSION WEST

PROJECT

SUNCREST SVC
230 KV YARD
NEXTERA ENERGY
SAN DIEGO, CALIFORNIA

DRAWING TITLE

MINIMUM DISTANCES TO VEGETATION

DRAWING NUMBER	REVISION
CSK-100	1
SHEET 1 OF 1	

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3.7.1.2 Other Vegetation Management

1. Electrical Transmission Line Vegetation Management

In addition to the Proposed Project site fuel modification requirements, the Proposed Project interconnection transmission line would require standard vegetation clearance for the 300-foot-long overhead span and riser pole. Overhead transmission line and transmission pole vegetation management is regulated by various codes and ordinances including the following regulations:

California Public Utilities Commission

GO 95: Rules for Overhead Electric Line Construction

GO 95 is the standard governing the design, construction, operation, and maintenance of overhead electric lines in California. It was adopted in 1941 and updated most recently in 2006.

GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, standards for calculating maximum sag, and vegetation clearance requirements.

Vegetation clearance requirements of GO 95 are:

GO 95: Rule 35, Tree Trimming Criteria, defines minimum vegetation clearances around power lines.

Rule 35 guidelines specify, at the time of trimming require:

- 4 feet radial clearances are required for any conductor of a line operating at 2,400 volts or more, but less than 72,000 volts;
- 6 feet radial clearances are required for any conductor of a line operating at 72,000 volts or more, but less than 110,000 volts;
- 10 feet radial clearances are required for any conductor of a line operating at 110,000 volts or more, but less than 300,000 volts (this would apply to the project);
- 15 feet radial clearances are required for any conductor of a line operating at 300,000 volts or more.

CCR, Title 14 Section 1254

The firebreak clearances required by PRC § 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of CCR, Title 14 Section 1255 or PRC § 4296.

The radius of the cylindroids is 10 feet measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

- At ground level – remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will propagate fire;
- From 0 to 8 feet above ground level – remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 8 feet;
- From 8 feet to horizontal plane of highest point of conductor attachment – remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

North American Electric Reliability Council (NERC)

The purpose of the NERC FAC-003, *Standard Application Guide for Transmission Vegetation Management*, is to improve the reliability of the electric transmission systems by preventing outages from vegetation located on transmission rights-of-way (ROW) and minimizing outages from vegetation located adjacent to ROW, maintaining clearances between transmission lines and vegetation on and along transmission ROW, and reporting vegetation related outages of the transmission systems to the respective Regional Reliability Organizations (RRO) and the NERC. This standard shall apply to all transmission lines operated at 200 kV and above and to any lower voltage lines designated by the RRO as critical to the reliability of the electric system in the region.

2. Pre-Construction Vegetation Management

- Perimeter Vegetation Management Zones must be implemented prior to commencement of construction utilizing combustible materials.
- Fuel modification must be maintained on the perimeter throughout construction .

3. Undesirable Plants

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical.

The plants included in the Prohibited Plant List (Appendix D) are unacceptable from a fire safety standpoint, and shall not be planted on the site. The area retained outside of the Project footprint in the western portion of the project that includes terrain not desirable for grading

includes non-native pine and eucalyptus trees as well as undesirable native plant species. These trees and flammable plants shall be removed and any subsequent sprouting or volunteering of trees or undesirable plant materials will be removed on an annual basis.

3.7.1.3 Fuel Modification Area Vegetation Maintenance

All fuel modification area vegetation management shall be completed annually by May 15 of each year and more often as needed for fire safety, as determined by the SDCFA. Project applicant or current owner shall be responsible for all vegetation management throughout the facility and Project site, in compliance with the requirements detailed herein. The Project applicant or current owner shall be responsible for ensuring long-term funding and ongoing compliance with all provisions of this FPP, including vegetation planting, fuel modification, vegetation management, and maintenance requirements throughout the Project site.

Fuel modification maintenance work may be provided by mowing, trimming, or other methods that result in the desired low-fuel conditions detailed herein.

As a further means of ensuring the fuel modification area is maintained per this FPP, the Project owner shall obtain an inspection and report from a SDCFA-authorized Wildland Fire Safety Inspector by June 1st of each year, certifying that vegetation management activities throughout the project site have been performed pursuant to this plan. This effort further ensures vegetation maintenance and compliance with no impact on the SDCFA.

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4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

As presented in this FPP, the Proposed Project provides customized measures that address the identified potential fire hazards on the site. The measures are independently established, but will work together to result in reduced fire threat and heightened fire protection. Figure 9 provides a Site Fire Safety Plan indicating the locations of important site safety features including roads, an on-site water storage tank, battery storage containers, inverters, and fuel modification areas. The provided measures include both required and Project-volunteered items, as follows:

1. Fuel Modification throughout the Project site from boundaries inward with restrictions on plant species, heights, densities, and locations. Implementation of vegetation management standards for electrical transmission line/interconnect to Suncrest substation.
2. Provide a technical report indicating special precautions for firefighting response (Appendix F).
3. Two, 20-foot wide access entrance driveways.
4. Participation in a CFD or a similar Developer Agreement, for funding firefighting and emergency medical resources, the details of which will be determined in the project Fire Service Agreement.
5. Project funded annual fuel modification inspections to ensure compliance with this FPP.
6. Motion sensor illuminated (and/or reflective) signage at main entrance with electrical grid disconnect and isolation information and identification.
7. Ability of first responders to de-energize the project's non-panel components from one location and a project contact who can assist responding firefighters with equipment knowledge.
8. Training program for local fire agencies.
9. Preparation of a construction fire prevention plan for this project to be implemented by all contractors working on this project.
10. Portable carbon dioxide (CO_2) fire extinguishers mounted at strategic locations approved by SDCFA.
11. One 10,000-gallon water tank adjacent northeast entrance to facility.
12. Committed on-going maintenance of all facility components for the life of the project
13. Consistent placarding and labeling of all components for fire safety/response

Additionally, the following Applicant Proposed Measures (APM) in Table 5 relating to hazards and hazardous materials (HAZ) include measures that are already required by existing regulations and/or requirements, or are standard practices that will minimize or prevent any potentially hazards.

Table 5
Applicant Proposed Measures for Hazards and Hazardous Materials

APM No.	Description
	Hazards and Hazardous Materials
APM HAZ-1	**Hazardous Materials and Waste Management Plan (HMWMP).** A HMWMP will be prepared and implemented for the Proposed Project. Construction will not begin until the plan is complete. The plan will be prepared in accordance with relevant state and federal guidelines and regulations (e.g., Cal/OSHA). • The plan will include the following information related to hazardous materials and waste, as applicable: • A list of hazardous materials present on-site during construction and operation to be updated as needed along with product Safety Data Sheets and other information regarding storage, application, transportation, and disposal requirements; • A Hazardous Materials Communication (i.e., HAZCOM) Plan; • Assignments and responsibilities of Proposed Project Health and Safety roles; • Standards for any secondary containment and countermeasures that will be required for hazardous materials; • Spill response procedures based on product and quantity. The procedures will include materials to be used, location of such materials within the Proposed Project area, and disposal protocols; and • Protocols for the management, testing, reporting, and disposal of potentially contaminated soils or groundwater observed or discovered during construction. This will include termination of work within the area of suspected contamination sampling by an OSHA trained individual, and testing at a certified laboratory. A copy of the plan will be provided to the CPUC for recordkeeping prior to the start of construction. Plan updates will be made and submitted as needed if construction activities change whereas the existing plan does not adequately address the Proposed Project.
APM HAZ-2	**Environmental and Hazardous Materials Safety and Management Plans.** Environmental and hazardous materials safety and management plans will be developed for the Proposed Project. This may include but is not limited to the preparation of a Hazardous Materials Business Plan, Spill-Response Plan, 90-day temporary storage and disposal facility permit, and a Spill Prevention Control and Countermeasure Plan (i.e., if the Proposed Project will result in storage of over 1,320 gallons of oil at any one location).
APM HAZ-3	**Weed Control Plan.** A Proposed Project-specific weed control plan will be prepared and implemented. for controlling the introduction and distribution of weeds during construction. The plan will include cleaning of tires and surfaces of all trucks and construction equipment prior to commencing work in off- road areas, using rocks/grates at the Proposed Project entry points to physically dislodge seeds, using certified weed-free mulch for stabilizing areas of disturbed soil, utilizing on-site soil to the maximum extent practicable for fill.
APM HAZ-4	**Construction Fire Prevention Plan (CFPP).** A CFPP will be prepared and implemented for the Proposed Project. The CFPP will address fire prevention measures that will be employed during the construction phase, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The Plan will be developed in coordination with the SDCFA and CALFIRE at a minimum of 45 days prior to construction activities associated with this Proposed Project. .

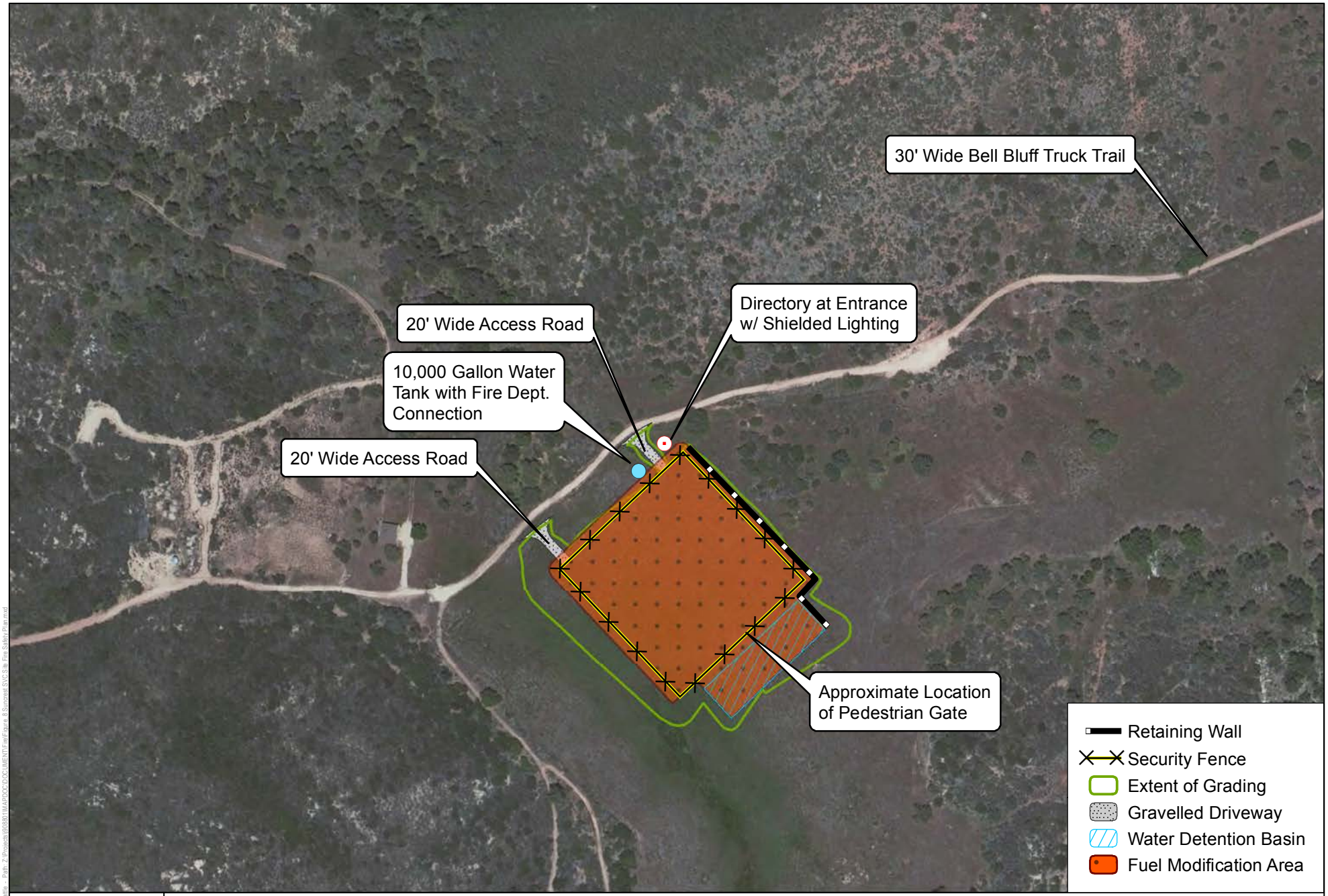
Table 5
Applicant Proposed Measures for Hazards and Hazardous Materials

APM No.	Description
	Hazards and Hazardous Materials
APM HAZ-5	Remove hazards from work area. The removal of hazards (i.e., fuels) from the work area will reduce the severity of construction- and maintenance-related ignitions that escape initial containment efforts by minimizing fuel loads. This will reduce the potential impact to communities and natural resources in the event of a project construction- or maintenance-related ignition.
APM HAZ-6	Establish and maintain adequate equipment clearances. Establishing and maintaining adequate clearances from electrical equipment, such as the riser pole structure or SVC transformer components, will reduce the risk of vegetation contact with the 300-foot overhead conductor and provide a defensible space around the SVC site. Maintenance of vegetation will be in accordance with CPUC General Order No. 95, Section 3, Rule 35, Vegetation Management.
APM HAZ-7	**Fire Safe Working Conditions and Best Management Practices.** The following measures will be implemented during construction and operation to reduce the potential for ignitions and minimize fire related hazards: • All work vehicles will be required to carry fire suppression equipment, including but not limited to a fire extinguisher and shovel. Workers will be trained in the use of equipment for incipient stage fire suppression. • Smoking will be confined to vehicles or approved smoking areas where fire suppression equipment and appropriate disposal facilities are present. All smoking materials will be disposed of in appropriate disposal bins. • All on-road vehicle parking will be restricted to paved or graveled surfaces unless parking is required during an emergency or required for worker safety. • Require spark arrestors on all off-road equipment. • Restrict work activities during Red Flag Warnings issued by the National Weather Service to the extent possible. Where it is not possible to stop or restrict work activities due to safety or time sensitive activities, work activities will be limited to those needed to complete the current task and establish safe working conditions. During Red Flag Warnings a crew member will be assigned to fire watch for each separate and distinct active work area. • Weather and fire danger will be monitored on a daily basis. Fire suppression equipment such as backpack water pumps or water buffaloes will be kept on-site at a minimum of 50 feet from each separate and distinct active work area.
APM HAZ-8	Blasting Plan. If blasting is deemed necessary for the construction of Proposed Project components, NEET West shall conduct a pre-blast survey and prepare a Blasting Plan. A written report of the pre-blast survey and final blasting plan shall be provided to the appropriate regulatory agency and approved prior to any rock removal using explosives. In addition to any other requirements established by the appropriate regulatory agencies, the pre-blast survey and blasting plan shall meet the following conditions, as well as relevant noise impacts outlined in APM NOI-2, *Reduction of Blasting Impacts* in the Proposed Project's PEA: • The pre-blast survey shall be conducted for structures within a minimum radius of 1,000 feet from the identified blast site to be specified by NEET West. Notification that blasting will occur shall be provided to all owners of the identified structures to be surveyed prior to commencement of blasting. The pre- blast survey shall be included in the final blasting plan. • The final blasting plan shall address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the air- blast, ground vibration, and peak particle velocity requirements. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement.

Table 5
Applicant Proposed Measures for Hazards and Hazardous Materials

APM No.	Description
Hazards and Hazardous Materials	
	• The blasting plan shall outline the anticipated blasting procedures for the removal of rock material at the proposed SVC, riser pole and underground transmission line structures. The blasting procedures shall incorporate line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area. Prior to blasting, all applicable regulatory measures shall be met. NEET West, or its subcontractor (as appropriate) shall keep a record of each blast for at least 1 year from the date of the last blast. • The blasting plan shall incorporate provisions to post signage along roads and trails within a minimum of 1000 feet of the identified blast site. Precautions such as fencing or taping will be incorporated that limit access to recreationalists and the general public.

Source: Proponent's Environmental Assessment (PEA) for Suncrest Dynamic Reactive Power Support Project prepared by SWCA Environmental Consultants August, 2015



SOURCE: Nextera, 2015; Bing Maps, 2015

FIGURE 8

Suncrest SVC Site Fire Safety Plan

DUDEK

Suncrest Dynamic Reactive Power Support Project FPP

Date: 11/13/2015 - Last saved by: cbattle - Path: Z:\Projects\800891\MAPDOCS\DOCUMENT\Final\Figure 8 Suncrest SVC Site Fire Safety Plan.mxd

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5 CONCLUSION

This FPP is submitted in support of an application for project entitlement of the Suncrest Dynamic Reactive Power Support Project. It is submitted as required in compliance with the County's conditions for FPP content. The requirements in this document meet the intent and purpose of the Code for fire safety, building design elements, fuel management/ modification, and landscaping requirements of San Diego County. This FPP documents required fire safety features required by applicable codes and recommends additional measures that will enhance the site's fire safety and reduce potential impacts to insignificant without lessening health, life, or fire safety.

Fire and Building Codes and other local, county, and state regulations in effect at the time of each Proposed Project phase's building permit application supersede these recommendations unless the FPP recommendation is more restrictive.

The Proposed Project provides fire access, off- and on-site water, structures built to ignition resistant standards, fuel modification and vegetation management, and measures for fire protection during construction. The site fuel modification is based on fire behavior modeling representing the fire environment and the type of fire that would be anticipated at this site. The fuel modification areas will be maintained and inspected annually by a SDCFA-approved, Project-funded wildland fire inspector, removing all dead and dying materials and maintaining appropriate horizontal and vertical spacing. In addition, plants that establish or are introduced to the fuel modification area that are not on the approved plant list will be removed.

In addition, the project will participate in a CFD or a similar Developer Agreement, which has provides resources in this portion of eastern San Diego County by requiring projects to provide funding toward fire department assets (stations, apparatus, equipment, personnel).

Ultimately, it is the intent of this FPP to guide, through code and mitigation requirements, the construction of the SVC facility and underground transmission line that is defensible from wildfire and, in turn, does not represent significant threat of ignition source for the adjacent native habitat. It must be noted that during extreme fire conditions, there are no guarantees that a given structure will not burn. Precautions and mitigating actions identified in this report are designed to reduce the likelihood that fire would impinge upon the proposed structures. There are no guarantees that fire will not occur in the area or that fire will not damage property or cause harm to persons or their property. Implementation of the required enhanced construction features provided by the applicable codes and the mitigating fuel modification requirements provided in this FPP will accomplish the goal of this FPP to assist firefighters in their efforts to defend these structures and reduce the risk associated with this project's WUI location.

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6 LIST OF PREPARERS

Project Manager:

Michael Huff
Fire Protection Planner; San Diego County California Environmental Quality Act Consultant List
Dudek

FPP Preparation and Fire Behavior Modeling:

Michael E. Scott
Urban Forester and Fire Protection Planner
Dudek

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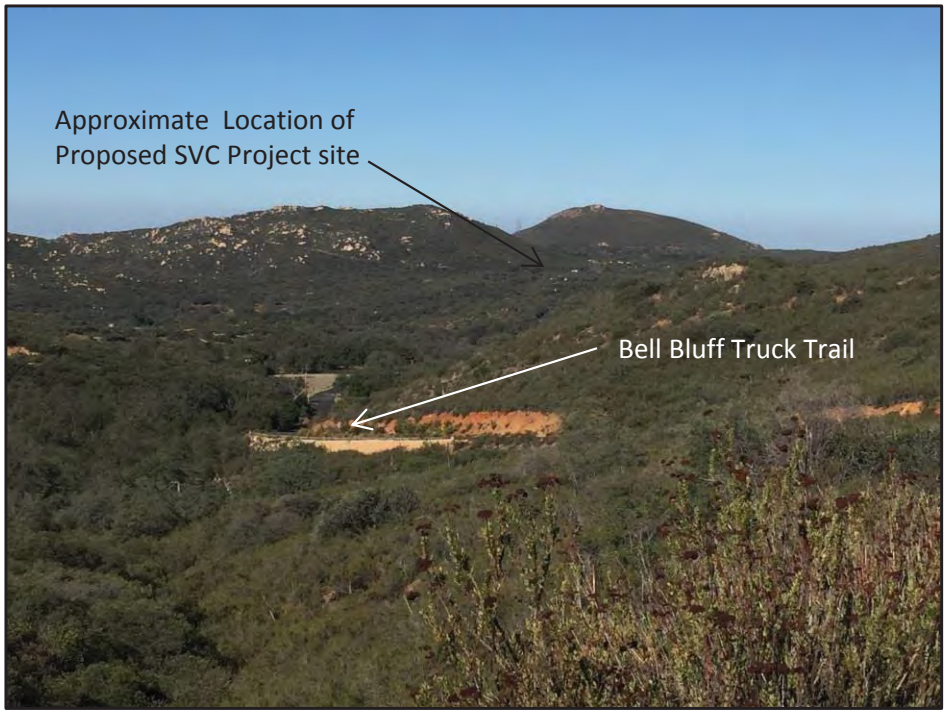
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APPENDIX A

Site Photograph Log

Appendix A
Project Area Photographs



Photograph 1. Photograph shows view of terrain within the proximity of Proposed Project site. Bell Bluff Truck Trail , a 30-foot wide paved road, winds through the middle of the photograph.



Photograph 2. View of electric gate on Bell Bluff Truck Trail road before Proposed Project site and SDG&E Suncrest substation property.

Appendix A
Project Area Photographs (cont.)



Photograph 3. View looking west at existing conditions on Static Var Compensator (SVC) Proposed Project site.

Photo 3 Source: SWC Environmental Consultants Biological Resources Technical Report, August 2015

Appendix A
Project Area Photographs (cont.)



Photograph 4. View looking north towards Proposed Project area. Existing vegetation is chaparral- oak woodlands fuel types.



Photograph 5. View of Engelmann Oak-Coast Live Oak/ Poison Oak/ Grass Association (*Quercus engelmannii-Quercus agrifolia/ Toxicodendron diversilobum*/ Grass Association) at the Proposed Project. This vegetation type was modeled as a moderate load grass-shrub understory fuel model for the Project . Photograph source: SWCA Environmental Consultants Biological Resources Technical Report, August 2015.

Appendix A
Project Area Photographs (cont.)



Photograph 6. View of California Buckwheat Scrub (*Eriogonum fasciculatum* Association) at the Proposed Project site.



Photograph 7. View of Chamise Chaparral (*Adenostoma fasciculatum* Alliance) at the Proposed Project. This vegetation type was modeled as a high load shrub fuel model for the Project .

Photos 6 & 7 Source: SWC Environmental Consultants Biological Resources Technical Report, August 2015

Appendix A
Project Area Photographs (cont.)



Photograph 8. View of Bigberry Manzanita – Chamise Chaparral Association (*Arctostaphylos glauca – Adenostoma fasciculatum* Association) at the Proposed Project area.



Photograph 9. View looking west along Bell Bluff Truck Trail (Developed area).

Photos 8 & 9 Source: SWC Environmental Consultants Biological Resources Technical Report, August 2015

Appendix A
Project Area Photographs (cont.)



Photograph 10. Panoramic View looking west at existing conditions towards SVC Proposed Project site.

Photo 10 Source: SWC Environmental Consultants Biological Resources Technical Report, August 2015

Appendix A
Project Area Photographs (cont.)



Photograph 11. View looking east at existing conditions with Suncrest substation water tank in foreground.

Photo 11 Source: SWC Environmental Consultants Biological Resources Technical Report, August 2015

APPENDIX B

BehavePlus Fire Behavior Analysis

APPENDIX B
BehavePlus Fire Behavior Analysis

BEHAVEPLUS FIRE BEHAVIOR MODELING

Fire behavior modeling includes a high level of analysis and information detail to arrive at reasonably accurate representations of how wildfire would move through available fuels on a given site. Fire behavior calculations are based on site-specific fuel characteristics supported by fire science research that analyzes heat transfer related to specific fire behavior. To objectively predict flame lengths, spread rates, and fireline intensities, the BehavePlus 5.0.5 fire behavior modeling system was applied using predominant fuel characteristics, slope percentages, and extreme weather variables for the site.

Predicting wildland fire behavior is not an exact science. As such, the movement of a fire will likely never be fully predictable, especially considering the variations in weather and the limits of weather forecasting. Nevertheless, practiced and experienced judgment, coupled with a validated fire behavior modeling system, results in useful and accurate fire prevention planning information.

To be used effectively, the basic assumptions and limitations of BehavePlus must be understood.

- First, it must be realized that the fire model describes fire behavior only in the flaming front. The primary driving force in the predictive calculations is dead fuels less than one-quarter inch in diameter. These are the fine fuels that carry fire. Fuels greater than one inch have little effect while fuels greater than three inches have no effect on fire behavior.
- Second, the model bases calculations and descriptions on a wildfire spreading through surface fuels that are within six feet of the ground and contiguous to the ground. Surface fuels are often classified as grass, brush, litter, or slash.
- Third, the software assumes that weather and topography are uniform. However, because wildfires almost always burn under non-uniform conditions, length of projection period and choice of fuel model must be carefully considered to obtain useful predictions.
- Fourth, the BehavePlus fire behavior computer modeling system was not intended for determining sufficient fuel modification zone widths. However, it does provide the average length of the flames, which is a key element for determining “defensible space” distances for minimizing structure ignition.

Although BehavePlus has some limitations, it can still provide valuable fire behavior predictions which can be used as a tool in the decision-making process. In order to make reliable estimates of fire behavior, one must understand the relationship of fuels to the fire environment and be able to recognize the variations in these fuels. Natural fuels are made up of the various components of vegetation, both live and dead, that occur on a site. The type and quantity will depend upon the soil, climate, geographic features, and the fire history of the site. The major fuel groups of grass, shrub, trees, and slash are defined by their constituent types and quantities of litter and duff

layers, dead woody material, grasses and forbs, shrubs, regeneration, and trees. Fire behavior can be predicted largely by analyzing the characteristics of these fuels. Fire behavior is affected by seven principal fuel characteristics: fuel loading, size and shape, compactness, horizontal continuity, vertical arrangement, moisture content, and chemical properties.

The seven fuel characteristics help define the 13 standard fire behavior fuel models (Anderson 1982) and the more recent custom fuel models developed for southern California (Weise and Regelbrugge 1997). According to the model classifications, fuel models used in BehavePlus have been classified into four groups, based upon fuel loading (tons/acre), fuel height, and surface to volume ratio. Observation of the fuels in the field (on site) determines which fuel models should be applied in BehavePlus. The following describes the distribution of fuel models among general vegetation types for the standard 13 fuel models and the custom southern California fuel models:

- ≠ Grasses — Fuel Models 1 through 3
- ≠ Brush — Fuel Models 4 through 7, SCAL 14 through 18
- ≠ Timber — Fuel Models 8 through 10
- ≠ Logging Slash — Fuel Models 11 through 13

In addition, the aforementioned fuel characteristics were utilized in the recent development of 40 new fire behavior fuel models (Scott and Burgan 2005) developed for use in BehavePlus modeling efforts. These new models attempt to improve the accuracy of the standard 13 fuel models outside of severe fire season conditions, and to allow for the simulation of fuel treatment prescriptions. The following describes the distribution of fuel models among general vegetation types for the new 40 fuel models:

- ≠ Non-Burnable — Models NB1, NB2, NB3, NB8, NB9
- ≠ Grass — Models GR1 through GR9
- ≠ Grass-shrub — Models GS1 through GS4
- ≠ Shrub — Models SH1 through SH9
- ≠ Timber-understory — Models TU1 through TU5
- ≠ Timber litter — Models TL1 through TL9
- ≠ Slash blowdown — Models SB1 through SB4

BEHAVEPLUS FIRE BEHAVIOR MODELING INPUTS

Vegetation/Fuels

To support the fire behavior modeling efforts conducted for this Fire Protection Plan, fuel models were identified for four key locations in order to represent multiple wildfire scenarios on or adjacent to the project site. While vegetation types other than the selected four are located on site, the selected areas represent the most likely wildfire threat for the proposed project. Table 1 summarizes fuel model assignments by modeling scenario.

Table 1
Fuel Model Assignments

Scenario	Vegetation Type	Fuel Model[1]
1	Bigberry Manzanita-Chamise chaparral	Sh2
2	Oak woodlands/Manzanita-chamise chaparral	Gs2/Sh5
3	Oak woodlands/Manzanita-chamise chaparral	Gs2/Sh5
4	Oak woodlands/Manzanita-chamise chaparral	Gs2/Sh5

Note:
1. Sh2= high load, dry climate shrub fuel model; Gs2= moderate load, dry climate grass-shrub understory fuel model

Weather

Fire behavior modeling conducted in support of this FPP utilized the guidelines and standards presented by the County of San Diego, Department of Planning and Land Use[1]. These guidelines identify acceptable fire weather inputs for extreme fire conditions during summer months and Santa Ana fire weather patterns. The County analyzed and processed fire weather from Remote Automated Weather Stations (RAWS) between April 15 to December 31 in order to represent the general limits of the fire season. Data provided by the County's analysis included temperature, relative humidity, and sustained wind speed and is categorized by weather zone, including Maritime, Coastal, Transitional, Interior, and Desert.

To evaluate potential fire behavior for the project site, Dudek utilized the BehavePlus (v. 5.0.5) fire behavior modeling software package to determine fuel moisture values and expected fire behavior for the site. The temperature, relative humidity, and wind speed data for the Interior[2] weather zone were utilized for this FPP based on the project location. Reference fuel moistures were calculated in BehavePlus and were based on site-specific topographic data inputs. Fire behavior for the site was calculated in four different locations using worst-case fuels and topography (steepest slopes). Two of the modeling scenarios analyzed potential fire behavior to

[1] County of San Diego Report Format and Content Requirements – Wildland Fire and Fire Protection (August 31, 2010). On-line at http://www.sdcounty.ca.gov/dplu/docs/Fire-Report-Format.pdf

[2] http://www.sangis.org

the east of the project site (Scenarios 1 and 2) during peak, Santa Ana fire weather conditions. The other two modeling scenarios (Scenarios 3 and 4) analyzed potential fire behavior in the western portion of the project site during Summer (on-shore) weather conditions. Table 2 summarizes the fuel moisture calculations utilized for this FPP.

Topography

The topography of the site is discussed in greater detail in the FPP. Slope is a measure of angle in degrees from horizontal and can be presented in units of degrees or percent. Slope is important in fire behavior analysis as it affects the exposure of fuel beds. Additionally, fire burning uphill spreads faster than those burning on flat terrain or down hill as uphill vegetation is pre-heated and dried in advance of the flaming front, resulting in faster ignition rates. Slope values for this site were measured from site topographic maps and are presented in units of percent. The modeling locations were located within undeveloped areas adjacent to the site with slope measurements ranging from 3 to 20 percent.

Scenarios to the east and southeast were selected based on the strong likelihood of fire approaching from both directions during a Santa Ana wind-driven fire event. Scenarios on the west and southwest were selected to evaluate fire behavior potential during a summer fire occurring during typical on-shore wind flow patterns. The fire behavior modeling input variables for the project site are presented in Table 2.

Table 2
BehavePlus Fire Behavior Modeling Inputs

Variable	Summer Weather (Onshore Flow)	Peak Weather (offshore/Santa Ana Condition)
Fire Scenario Runs	3 and 4	1 and 2
Fuel Model	Sh5, Gs2	Sh5, Gs2
1h Moisture	2%	1%
10h Moisture	4%	2%
100h Moisture	6%	4%
Live Herbaceous Moisture	50%	30%
Live Woody Moisture	80%	50%
20-ft Wind Speed	18 mph	56
Wind Adjustment Factor	0.6	0.6
Slope Steepness	5-20%	3-20%

BEHAVEPLUS FIRE BEHAVIOR MODELING RESULTS

Three fire behavior variables were selected as outputs from the BehavePlus analysis conducted for the project site, and include flame length (feet), rate of spread (mph), and fireline intensity (BTU/feet/second). The aforementioned fire behavior variables are an important component in understanding fire risk and fire agency response capabilities. Flame length, the length of the flame of a spreading surface fire within the flaming front, is measured from midway in the active flaming combustion zone to the average tip of the flames (Andrews, Bevins, and Seli 2004). It is a somewhat subjective and non-scientific measure of fire behavior, but is extremely important to fireline personnel in evaluating fireline intensity and is worth considering as an important fire variable (Rothermel 1983). Fireline intensity is a measure of heat output from the flaming front, and also affects the potential for a surface fire to transition to a crown fire. Fire spread rate represents the speed at which the fire progresses through surface fuels and is another important variable in initial attack and fire suppression efforts. The information in Table 3 presents an interpretation of these fire behavior variables as related to fire suppression efforts. The results of fire behavior modeling efforts are presented in Table 4. Additionally, identification of modeling run locations is presented graphically in Figure 6 of the FPP.

Table 3
Fire Suppression Interpretation

Flame Length (ft)	Fireline Intensity (Btu/ft/s)	Interpretations
Under 4 feet	Under 100 BTU/ft/s	Fires can generally be attacked at the head or flanks by persons using hand tools. Hand line should hold the fire.
4 to 8 feet	100-500 BTU/ft/s	Fires are too intense for direct attack on the head by persons using hand tools. Hand line cannot be relied on to hold the fire. Equipment such as dozers, pumpers, and retardant aircraft can be effective.
8 to 11 feet	500-1000 BTU/ft/s	Fires may present serious control problems -- torching out, crowning, and spotting. Control efforts at the fire head will probably be ineffective.
Over 11 feet	Over 1000 BTU/ft/s	Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective.

Source: Andrews, Bevins, and Seli 2004

Table 4
BehavePlus Fire Behavior Modeling Results

Model Run	Fuel Model(s)	Flame Length (feet)	Fireline Intensity (Btu/ft/s)	Surface Rate of Spread (mph)
1	Sh5	63.7	47,368	14.3
2	Gs2, sh5	30.2 to 63.6	9,392 to 47,294	49.6 to 14.3
3	Gs2, Sh5	10.6 to 26.2	956 to 6,883	1.2 to 2.4
4	Gs2, Sh5	10.6 to 26.2	952 to 6,898	1.2 to 2.4

REFERENCES

Anderson, Hal E. 1982. Aids to Determining Fuel Models for Estimating Fire Behavior. USDA Forest Service Gen. Tech. Report INT-122. Intermountain Forest and Range Experiment Station, Ogden, Utah.

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APPENDIX C

Fire Facilities Availability Form

County of San Diego, Planning & Development Services

PROJECT FACILITY AVAILABILITY - FIRE

ZONING DIVISION

F

Please type or use pen

NextEra Energy Transmission West, LLC, a Delaware limited liability company
Owner's Name — Phone

700 Universe Blvd
Owner's Mailing Address — Street

Juno Beach FL 33408
City — State — Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____
DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A.
- ☐ Major Subdivision (TM)
- ☐ Minor Subdivision (TPM)
- ☐ Boundary Adjustment
- ☐ Rezone (Reclassification) from_____to_____zone.
- ☐ Major Use Permit (MUP), purpose:_____
- ☐ Time Extension...Case No._____
- ☐ Expired Map...Case No._____
- ☒ Other Utility Use
- ☐ Specific Plan or Specific Plan Amendment
- ☐ Certificate of Compliance:_____

B.
- ☐ Residential ..... Total number of dwelling units_____
- ☐ Commercial ..... Gross floor area_____
- ☐ Industrial ..... Gross floor area_____
- ☒ Other ..... Gross floor area 112200 ft^2

C. Total Project acreage 6 +/- Total lots_____ Smallest proposed lot_____

Assessor's Parcel Number(s)
(Add extra if necessary)

523-040-08-00	

Thomas Guide. Page 1255 Grid_____

23376 Bell Bluff Truck Trl
Project address — Street

Alpine CA 91901-3330
Community Planning Area/Subregion — Zip

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature:_____ Date: 12-1-16

Address: 700 Universe Blvd, Juno Beach FL 33408 Phone: (561) 694-3487

(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: San Diego County Fire Authority

Indicate the location and distance of the primary fire station that will serve the proposed project:
FS 45, 24592 Viejas Grade Rd., 5.5 miles

A. ☒ Project is in the District and eligible for service.
- ☐ Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
- ☐ Project is not in the District and not within its Sphere of Influence boundary.
- ☐ Project is not located entirely within the District and a potential boundary issue exists with the_____District.

B. ☒ Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is 10.0 minutes. with participation in CFD 04-1
- ☐ Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.

C. ☒ District conditions are attached. Number of sheets attached: 1
- ☐ District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by Planning & Development Services.

☒ Within the proposed project 100 feet of clearing will be required around all structures.
☐ The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized Signature	JAMES PINE, DFM *Print Name and Title*	858.495.5439 *Phone*	12/21/16 *Date*

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Planning & Development Services -- Zoning Counter, 5510 Overland Ave, Suite 110, San Diego, CA 92123

HERMAN REDDICK
PROGRAM MANAGER
(858) 974-5999
FAX (858) 467-9662

County of San Diego

Public Safety Group
San Diego County Fire Authority
5510 Overland Ave, Suite 250, San Diego, CA 92123-1239
www.sdcountyfire.org

SUSAN QUASARANO
PROGRAM COORDINATOR
(858) 974-5924
FAX (858) 467-9662

December 21, 2016

NextEra Energy Transmission West, LLC
700 Universe Blvd.
Juno Beach, FL 33408

Ref: **Project Facility Availability Form (399F)**
APN 523-040-08
Suncrest Dynamic Reactive Power Support Project – Conditions

IMPACT TO EMERGENCY SERVICES

This project, along with all other development, has a cumulative impact on the emergency services for this community. To mitigate for this impact, the project will be conditioned to participate in the existing County Service Area 135 Community Facilities District No. 04-1.

FIRE PROTECTION – Fire Protection Plan

A Fire Protection Plan, prepared by a PDS-approved consultant, shall be provided and be formatted per the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements—Wildland Fire and Fire Protection.

Please call or email me if you have any questions or need clarification – (858) 495-5434 or James.Pine@sdcounty.ca.gov.

Best regards,

James Pine, Deputy Fire Marshal
San Diego County Fire Authority
Public Safety Group

APPENDIX D

Prohibited Plant List

APPENDIX D
Prohibited Plant List

Botanical Name	Common Name
Trees	
Abies species	Fir
Acacia species (numerous)	Acacia
Agonis juniperina	Juniper Myrtle
Araucaria species *(A. heterophylla, A. araucana, A. bidwillii)*	Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya)
Callistemon species *(C. citrinus, C. rosea, C. viminalis)*	Bottlebrush (Lemon, Rose, Weeiping)
Calocedrus decurrens	Incense Cedar
Casuarina cunninghamiana	River She-Oak
Cedrus species *(C. atlantica, C. deodara)*	Cedar (Atlas, Deodar)
Chamaecyparis species (numerous)	False Cypress
Cinnamomum camphora	Camphor
Cryptomeria japonica	Japanese Cryptomeria
Cupressocyparis leylandii	Leyland Cypress
Cupressus species *(C. fobesii, C. glabra, C. sempervirens,)*	Cypress (Tecate, Arizona, Italian, others)
Eucalyptus species (numerous)	Eucalyptus
Juniperus species (numerous)	Juniper
Larix species *(L. decidua, L. occidentalis, L. kaempferi)*	Larch (European, Japanese, Western)
Leptospermum species *(L. laevigatum, L. petersonii)*	Tea Tree (Austrailian, Tea)
Lithocarpus densiflorus	Tan Oak
Melaleuca species *(M. linariifolia, M. nesophylla, M. quinqenervia)*	Melaleuca (Flaxleaf, Pink, Cajeput Tree)
Olea europea	Olive
Picea (numerous)	Spruce
Palm species (numerous)	Palm
Pinus species *(P. brutia, P. canariensis, P. eldarica, P. halopensis, P. pinea, P. radiate, numerous others)*	Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey)
Platycladus orientalis	Oriental arborvitae
Podocarpus species *(P. gracilior, P. macrophyllus, P. latifolius)*	Fern Pine (Fern, Yew, Podocarpus)
Pseudotsuga menziesii	Douglas Fir
Schinus species (S. molle, S. terebenthifolius)	Pepper (California and Brazilian)
Tamarix species *(T. Africana, T. apylla, T. chinensis, T. parviflora)*	Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk)
Taxodium species *(T. ascendens, T. distichum, T. mucronatum)*	Cypress (Pond, Bald, Monarch, Montezuma)
Taxus species *(T. baccata, T. brevifolia, T. cuspidata)*	Yew (English, Western, Japanese)
Thuja species (*T. occidentalis, T. plicata)*	Arborvitae/Red Cedar
Tsuga species *(T. heterophylla, T. mertensiana)*	Hemlock (Western, Mountain)
Groundcovers, Shrubs and Vines	
Acacia species	Acacia
Adenostoma fasciculatum	Chamise
Adenostoma sparsifolium	Red Shanks
Agropyron repens	Quackgrass
Anthemis cotula	Mayweed
Arbutus menziesii	Madrone
Arctostaphylos species	Manzanita

APPENDIX D (Continued)

Botanical Name	Common Name
Arundo donax	Giant Reed
Artemesia species *(A. abrotanium, A. absinthium, A. californica, A. caucasia, A. dracunulus, A. tridentate, A. pynocephala)*	Sagebrush (Southernwood, Wormwood, California, Silver, True tarrangon, Big, Sandhill)
Atriplex species (numerous)	Saltbush
Auena fatua	Wild Oat
Baccharis pilularis	Coyote Bush
Bambusa species	Bamboo
Bougainvillea species	Bougainvillea
Brassica species *(B. campestris, B. nigra, B. rapa)*	Mustard (Field, Black, Yellow)
Bromus rubens	Foxtail, Red brome
Cardera draba	Noary Cress
Carpobrotus species	Ice Plant, Hottentot Fig
Castanopsis chrysophylla	Giant Chinkapin
Cirsium vulgare	Wild Artichoke
Conyza bonariensis	Horseweed
Coprosma pumila	Prostrate Coprosma
Cortaderia selloana	Pampas Grass
Cytisus scoparius	Scotch Broom
Dodonea viscose	Hopseed Bush
Eriodyctyon californicum	Yerba Santa
Eriogonum species *(E. fasciculatum)*	Buckwheat (California)
Fremontodendron species	Flannel Bush
Hedera species *(H. canariensis, H. helix)*	Ivy (Algerian, English)
Heterotheca grandiflora	Telegraph Plant
Hordeum leporinum	Wild barley
Juniperus species	Juniper
Lactuca serriola	Prickly Lettuce
Larix species (numerous)	Larch
Larrea tridentata	Creosote bush
Lolium multiflorum	Ryegrass
Lonicera japonica	Japanese Honeysuckle
Mahonia species	Mahonia
Mimulus aurantiacus	Sticky Monkeyflower
Miscanthus species	Eulalie Grass
Muehlenbergia species	Deer Grass
Nicotania species *(N. bigelevil, N. glauca)*	Tobacco (Indian, Tree)
Pennisetum setaceum	Fountain Grass
Perronskia Atriplicifloria	Russian Sage
Phoradendrom species	Mistletoe
Pickeringia montana	Chaparral Pea
Rhus species *(R. diversiloba, R. laurina, R. lentii)*	Sumac (Poison oak, Laurel, Pink Flowering)
Ricinus communis	Castor Bean
Rosmarinus species	Rosemary

Botanical Name	Common Name
Salvia species (numerous)	Sage
Sacsola austails	Russian Thistle
Solanium Xantii	Purple Nightshade (toxic)
Sylibum marianum	Milk Thistle
Thuja species	Arborvitae
Urtica urens	Burning Nettle
Vinca major	Periwnkle
Rhus lentii	Pink Flowering Sumac

Notes:

1 For the purpose of using this list as a guide in selecting plant material, it is stipulated that all plant material will burn under various conditions.
2 The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistive.
3 All vegetation used in Vegetation Management Zones and elsewhere in this development shall be subject to approval of the Fire Marshal.
4 Additional plants that are considered undesirable due to their invasiveness nature are detailed on the California Invasive Plant Council's Web site at www.cal-ipc.org/ip/inventory/index.php.
5 Landscape architects may submit proposals for use of certain vegetation on a project specific basis. They shall also submit justifications as to the fire resistivity of the proposed vegetation.

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APPENDIX E

Potential Plant List for Fuel Modification Areas

APPENDIX E
Potential Plant List for Fuel Modification Areas

Botanical Name	Common Name
Trees	
Achillea spp.	Yarrow – only species growing under 12 inches height
Baccharis pilularis	Dwarf coyote bush – only in areas over 50 feet from structures/CPV trackers
Cerastium tomentosum	Snow in Summer
Coprosma kirkii	Tequila sunrise – only prostrate varieties
Cotoneaster spp.	Cotoneaster – only species growing to less than 12 inches height
Dudleya brittonii	Britton's dudleya
Dudleya pulverulenta	Chalk lettuce
Eschscholzia californica	California poppy
Gazania spp.	Gazania
Helianthemum spp.	Sunrose*
L*asthenia californica glabrata*	California goldfields
Trifolium frageriferum Verbena	Strawberry clover
Trifolium frageriferum rigida	White clover
Viguiera laciniata	Goldeneye
Vinca minor	Dwarf periwinkle
Satureja douglasii	Yerba buena
Sisyrinchium bellum	Blue-eyed grass*
Sisyrinchium californicum	Yellow-eyed grass*

Notes:

1 For the purpose of using this list as a guide in selecting plant material, it is stipulated that all plant material will burn under various conditions.

2 The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is not fire resistive.

3 All vegetation used in Vegetation Management Zones and elsewhere in this development shall be subject to approval of the Fire Marshal.

4 Plants that are considered undesirable due to their invasiveness nature should not be utilized in the fuel modification area plantings. The California Invasive Plant Council's Web site at www.cal-ipc.org/ip/inventory/index.php provides a listing of invasive plants.

5 Landscape architects may submit proposals for use of certain vegetation not included on this list. They shall also submit justifications as to the fire resistivity of the proposed vegetation.

* Project area is outside preferred Zone.

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APPENDIX F

Technical Report

Suncrest Dynamic Reactive Power Support Project
Static Var Compensator (SVC) Facility
Technical Report

Prepared by:

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DECEMBER 2016

Printed on 30% post-consumer recycled material.

Suncrest Dynamic Reactive Power Support Project
Static Var Compensator (SVC) Facility
Technical Report

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1 INTRODUCTION

The safety of fire fighters and other emergency first responder personnel depends on understanding and properly handling potential hazards associated with energized facilities through adequate training and preparation. This Technical Report provides basic facility information for responding firefighters. It is important that firefighters who may respond to this or any SVC facility understand the potential risks associated with their electricity producing components and what strategies, tools and equipment, and precautions are required for safely responding to emergencies. This Technical Report summarizes project features and readers should refer to the Proposed Project's Project Environmental Assessment (PEA) and Fire Protection Plan (Dudek 2015) for additional information.

The Suncrest Dynamic Reactive Power Support Project (the Proposed Project) proposes to install a Static Var Compensator (SVC) facility and 230 kV single circuit underground transmission line (underground transmission line). The Proposed Project would support the development of renewable generation to the Suncrest area in compliance with California's Renewable Portfolio Standard.

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2 BACKGROUND

2.1 Project Location

The Proposed Project is located on privately owned lands in the south central portion of San Diego County, approximately 33 miles east of the Pacific Coast. The Proposed Project is located approximately 3.8 miles southwest of the community of Descanso and 3.4 miles southeast of the community of Alpine. The Proposed Project will be constructed immediately south of Bell Bluff Truck Trail within an approximately six-acre portion of Assessor's Parcel Number (APN) 523-040-080. The project site lies within a portion of the northwest quarter of Section 3 of Township 16 South, Range 3 East, on the U.S. Geographical Survey (USGS), 7.5 minute, Viejas Mountain, California quadrangle map.

2.2 Proposed Project

The Proposed Project involves two primary components: the SVC facility and the 230 kV single circuit underground transmission line. The proposed SVC is an approximately 112,000-square-foot facility that would produce and consume reactive power and interconnect with the 230 kV bus of the existing San Diego Gas and Electric (SDG&E) Suncrest Substation through the proposed underground transmission line, which is approximately 1.0 mile in length. The proposed transmission line will be installed underground within polyvinyl chloride (PVC) conduits in a concrete-encased duct bank system beneath an existing paved, private road known as Bell Bluff Truck Trail. At the western terminus of the approximately 1-mile-long underground transmission line, the conductors would surface at a riser pole structure where they would transition to a 300-foot-long overhead transmission line span and terminate into the existing Suncrest Substation's 230 kV bus.

The Proposed Project would include the following primary components:

- ≠ A new SVC facility with a rated real power output of 0 MW, and a nominal terminal voltage of 230 kV;
- ≠ Two new access driveways to facilitate construction, operation, and maintenance of the SVC;
- ≠ A new approximately 1-mile 230 kV single-circuit underground electrical transmission line within a concrete-encased electrical duct bank between the SVC and the Suncrest Substation 230 kV bus;

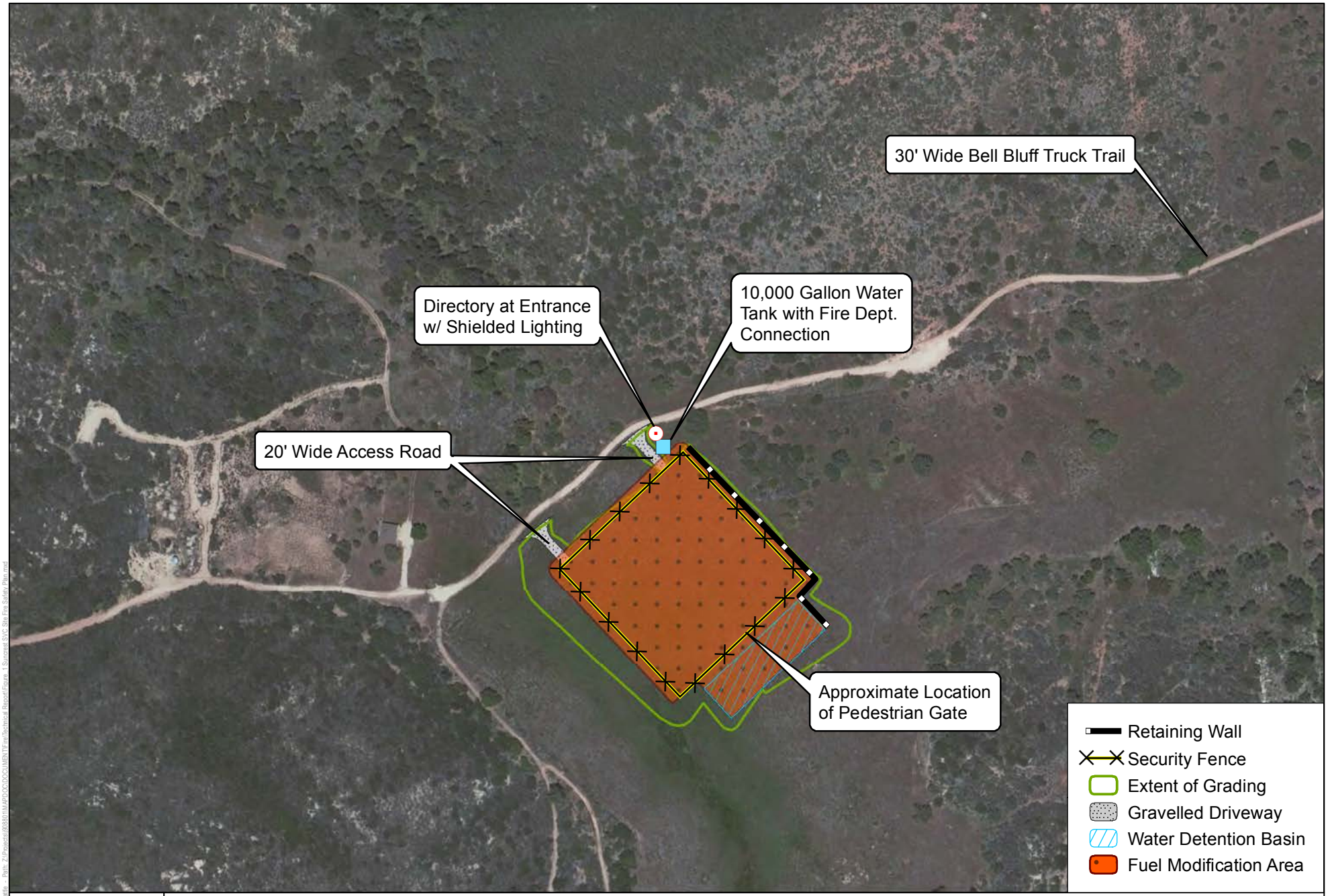
- A fiber optic cable within the same underground duct bank as the 230 kV cable to provide communications for line relaying, the Supervisory Control and Data Acquisition (SCADA) communications and control system, and other devices as required;
- Up to five splice vaults to facilitate installation of the new underground cable and operation and maintenance of the transmission line;
- A 12 kV underground electrical distribution feed to the SVC; and,
- A riser pole approximately 85 to 95 feet in height north of the Suncrest Substation to transition the transmission line from underground to overhead to connect to the 230 kV bus.

The Proposed Project would be located entirely on private lands within unincorporated San Diego County, including the underground transmission line. Upon completion, the Proposed Project would be monitored off site through a supervisory control and data acquisition (SCADA) system.

As indicated in Figure 1 (The Site Fire Safety Plan), primary access to the Project site would be provided via Bell Bluff Truck Trail, a 30-foot wide improved access road, from Japatul Valley Road. Bell Bluff Truck Trail was recently paved as part of the Suncrest Substation project. Two additional points of emergency access would be provided for the SVC site off of Bell Bluff Truck Trail.

SDG&E would provide electrical service to the Proposed Project SVC facility. A 12 kV distribution electric line runs under Bell Bluff Truck Trail. It was built as part of the Sunrise Powerlink to serve the needs of the Suncrest Substation. The Proposed Project's 12 kV distribution feed will connect to this existing 12 kV service line under Bell Bluff Truck Trail. NEET West has requested this underground distribution service from SDG&E.

The Proposed Project would operate for an estimated 30 years or longer. Due to the establishment of the project infrastructure (both physical and contractual), the continued operation of the Proposed Project beyond the initial estimated term is very likely. At the end of its useful life, two alternative scenarios are possible: (1) retool the technology and continue its operation or (2) decommission and dismantle the facility.



DUDEK

SOURCE: Nextera, 2015; Bing Maps, 2015

FIGURE 1

Suncrest SVC Site Fire Safety Plan

Suncrest Dynamic Reactive Power Support Project

Date: 10/30/2015 - Last saved by: cbattle - Path: J:\Projects\9098\01\MAPDOC\DOCU\MEMTF\FinalTechnical Report\Figure 1 Suncrest SVC Site Fire Safety Plan.mxd

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3 DYNAMIC REACTIVE POWER SUPPORT TECHNOLOGY

3.1 Static Var Compensator (SVC) Facility

The Proposed Project would include installation of a Static Var Compensator (SVC) facility. The proposed SVC will keep transmission voltages within specified parameters, thereby reducing and preventing blackouts and brownouts and allowing increased deliverability of generated renewable energy. Construction of the SVC (e.g. limit of grading and associated site improvements based on current information) will occupy a total area of approximately 6.0 acres. Within the graded area, the SVC will be contained within a fenced area of up to approximately 2.58 acres. The final design, layout, and footprint of the SVC will be procured through a functional specification detailing capacity, performance, available site area, and other requirements. The final design will generally incorporate a number of common components including the following contained within the SVC fenced area:

- ≠ Lightning Shielding Masts
- ≠ 230 kV Circuit Breaker
- ≠ 230 kV Main Stringbus and Busbar
- ≠ 230 kV Group Operated Air Break Switch
- ≠ 230 kV Lightning Arresters
- ≠ 230 kV Potential Measurement Transformers
- ≠ Three Single Phase 230 kV Main Power Transformers (plus One Spare) Outdoor HVAC Equipment and Thyristor/Convertor Cooling Equipment
- ≠ Outdoor Capacitor Banks
- ≠ Outdoor Air Core Reactors
- ≠ Outdoor Medium Voltage Busbars
- ≠ Outdoor Medium Voltage Instrument/Auxiliary Transformers
- ≠ Outdoor Medium Voltage Surge Arresters
- ≠ Outdoor Medium Voltage Group Operated Air Break Switches
- ≠ Control House of approximately 2,500 square feet containing the following equipment:
  - o Thyristor Valves and/or IGBT Convertors
  - o Protective Relaying and Control Equipment

- SCADA Equipment
- Cooling Equipment
- AC/DC Auxiliary Power Equipment
- Spare Parts and Maintenance Tool Storage
- Miscellaneous Support Facilities

In addition to the electrical equipment, the SVC will include the following facilities or components for the site design:

≠ Signage and lighting;

≠ Access road improvements;

≠ A stormwater detention basin;

≠ A retaining wall, stormwater drainage ,and conveyance system;

≠ Chain link and barb wire security fencing approximately 7 feet in height with a secure gate accessible only by NEET West staff and emergency services personnel; and,

≠ Transformer oil containment basins designed to contain the oil volume of the transformers plus the 25 year 24-hour storm (See Transformer and Associated Equipment Section, below).

All facilities at the SVC, including the associated access drives and stormwater drainage and conveyance system, will occur within the property line of the approximately 6-acre parcel to be owned by NEET West. The tallest structures within the SVC will be the approximately 75-feet high lighting shielding masts.

3.2 Underground Transmission Line

An underground electric transmission line will connect the proposed SVC to the existing SDG&E Suncrest Substation. The proposed transmission line will be a new 230 kV single-circuit line composed of cross-linked polyethylene-insulated, solid-dielectric, copper or aluminum conductor cables. For a single-circuit line, there will be three separate cables installed within PVC conduits in a concrete-encased duct bank system. In addition to the 230 kV cables, a fourth spare PVC conduit will be installed in the duct bank to facilitate installation of a spare cable in the event of a failure occurs. There will be four smaller conduits for fiber optics to provide communications for line relaying, SCADA, and other devices as required. Dimensions of the overall duct bank are approximately 30 inches wide by 24 inches tall. Up to five underground

splice vaults will be installed along the transmission line alignment about every 900 feet to facilitate installation of the underground cables and to operate and maintain the transmission line following construction. The new transmission line will be approximately 1.0 mile in length and include a permanent Right-of-Way that will be approximately 12-feet-wide.

The proposed transmission line will be installed within the curbs of the existing Bell Bluff Truck Trail. The proposed underground transmission line will parallel an existing underground 12 kV distribution line owned by SDG&E, which is located on the south side of Bell Bluff Truck Trail, for approximately 3,400 feet. From the intersection of Bell Bluff Truck Trail and SDG&E's substation access road to the riser structure, NEET West anticipates having to cross a 12 kV distribution feeder (powering a communication site on the north side of Suncrest Substation), and the water pipe connecting SDG&E's water tank to the Suncrest Substation. Existing utilities and culverts within the roadway will be located and potholed prior to construction to ensure proper separation and avoidance by the proposed underground transmission line. Separation will be in accordance with CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communication Systems.

Final entry into the Suncrest Substation will be via an approximately 300-foot-long overhead span. The underground transmission line will be routed to a new self-supporting riser pole installed north of Bell Bluff Truck Trail outside of the Suncrest Substation. The riser pole at the end of the underground alignment where the line transitions to overhead will be located on the road shoulder just north of Bell Bluff Truck Trail. This riser pole will be between 85 and 95 feet tall and located just outside the pavement on the north side of Bell Bluff Truck Trail and approximately 250 feet southeast from the nearest, 142-foot-tall 230 kV Sunrise Powerlink transmission tower. The base of the riser pole has a diameter of approximately 7 feet and an approximate 15-foot radius of permanent clearance will be required around the riser pole, per GO-95 Rules.

3.3 Transformers and Associated Equipment

All major equipment (e.g. power transformers, power circuit breakers, control buildings, capacitors, and reactors) will be installed on concrete foundations. The maximum amount of oil required for the transformers at the SVC will be approximately 10,000 to 12,000 gallons for each of the four transformers. Secondary containment basins will be provided for each piece of equipment, including internal oil storage and transformers. The basins will be designed to retain 100 percent of the oil plus 24-hour 25-year storm in the transformer or storage area. Outdoor oil-insulated transformers will be separated from adjacent structures and from each other by firewalls for the purpose of limiting damage and potential spread of fire from a transformer

failure. Determination of the type of physical separation between transformers, control equipment, and building structures will be in accordance with NFPA 850, Section 5.1.4. *Outdoor Oil-Insulated Transformers*.

3.4 O&M Control System

Operation of the SVC facility would require monitoring and operation through a SCADA system. The Proposed Project will be remotely operated and monitored from NEET West's Lone Star control center in Austin, Texas. NEET West anticipates using similar substation monitoring, control and data acquisition architecture as used for its other power delivery assets, including the use of standard monitoring, control, protection equipment, use of circuit breakers and other line relay protection equipment. The Proposed Project will be monitored and operated via an Energy Management Systems (EMS) with redundant servers and telecommunications to two data centers. The project facilities will be dual scanned from both data centers and redundant ICCP (Inter-Control Center Communications Protocol or IEC 60870-6/TASE.2) servers will exchange SCADA data with California Independent System Operator and the neighboring transmission operator entities. The EMS will include displays and alarm processing to ensure transmission operations has real-time situational awareness. The EMS support personnel will perform daily checks of the applications and hardware to ensure they are in proper working order. The EMS system will also be maintained to ensure compliance with NERC Critical Infrastructure Protection Standard requirements. Any site anomalies will be communicated to the NextEra high voltage technicians. NextEra local high voltage technicians will manage and undertake site corrective actions.

3.5 Fire Access

It is not anticipated that fire personnel will need to drive into the SVC facility. However, permanent access to the proposed SVC area will be through two gated entrances and driveways immediately off Bell Bluff Truck Trail. The gates will be two feet wider than the access roads (22 feet over 20 feet wide roads) and will be set back over 90 feet from Bell Bluff Truck Trail. Each new access driveway will be comprised of a paved, turning apron off Bell Bluff Truck Trail onto a 95-foot long by 20-foot wide graveled access road. Both driveways would be constructed with an all-weather surface capable of supporting 75,000 pounds as required by County Fire Code.

3.6 Security Lighting

Lighting would be designed to provide security lighting and general nighttime lighting for Operations and Maintenance (O&M) personnel, as may be required from time to time. Lighting will be installed at the SVC and will conform to National Electric Safety Code (NESC) requirements and County of San Diego Light Pollution Code Section 59.101 et seq. Lighting would be shielded and directed downward to minimize any effects to the surrounding area, and would be used only on an as-needed basis.

The on-site SVC would include lighting inside the site to allow for safety inspections or maintenance and firefighter emergency operations that may be required during the evening hours. Automatic Photo-sensor controlled lighting will be provided at a level sufficient to provide safe entry, and exit to the SVC site and Control Building. Lighting would also be provided next to the entrance door to the Control Building and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, manually controlled lighting will be provided to create safe working conditions at the SVC when required.

3.7 Security Fencing

The SVC site would be fenced along the entire property boundary for security with fencing that meets NESC requirements for protective arrangements in electric supply stations. Fencing will be 7 feet in height with a secure gate that is accessible by NEET West staff. The fencing would include a pedestrian access on the south side for use by responding fire personnel, if necessary. The fence would be constructed with anti-climbing material(s). Signage in Spanish and English for electrical safety would be placed along the perimeter of the project site, warning the public of the high voltage and the need to keep out. Signage would also be placed within the project site where appropriate.

Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system will be required during operation. Site security will be monitored by CCTV and intruder detection systems. Oversight of the security status will be monitored by NextEra 24/7 Corporate Security Central Station personnel.

3.8 Water Source

A 10,000 gallon, gravity based water tank will be situated to the southwest of the northernmost access driveway and accessible by fire engines. This tank will be maintained full via existing water source adjacent this site. PVC piping is already in place between the property owner's

storage ponds and a water tank at the SVC site as the water is currently being used by SDG&E for restoration purposes and an agreement to provide water for this site's 10,000 gallon tank will be in place prior to beginning construction. Water will be stored in an aboveground metal tank complying with the requirements of the SDCFA. The tank shall comply with NFPA 22, Private Fire Protection Water Tanks. The water capacity of the tank shall be at a minimum of 10,000 gallons. The capacity of the water tank at the SVC facility will be based upon the demand for hand lines, plus a reasonable allocation for water supply for Fire Engines to generate firefighting foam for 15 minutes at an application density of 0.16 gpm/sq ft from a hose line using a 3% Aqueous Film-Forming Foam (AFFF) concentrate, for use on an oil fire in transformer containment. A conceptual estimate at this point, prior to detailed design, is 250 gpm for 15 minutes (3,750 gallons of water) plus 112.5 gallons of foam concentrate for oil firefighting. The actual amount of stored water is to be determined upon detailed design of the SVC facility. A procedure for ongoing inspection, maintenance and tank filling of tanks will be in place. The tanks and fire engine connections shall be located on the side of the fire access road(s). The width of the road at the water tank locations shall be at least 18 feet (travel width) plus an additional 10-foot width, for a distance of 50 feet, to allow for fire engine to park and connect to the tank, while leaving the road open. The tanks shall be labeled "Fire Water: 10,000 gallons" using reflective paint. Final location of the tanks and total number of gallons will be approved by the SDCFA based on a tank location drawing to be submitted by the Project applicant. Drawings shall show tank location, road, and shall include the tank standard drawing and notes.

Because the SVC and transmission line are energized, equipment fires, should they occur, will primarily be managed with chemical extinguishers or other non-water methods unless a water fog is used to cool burning equipment. Vegetation fires will be addressed with trucked in water or with emergency firefighting water reserves in the 10,000 gallon water tank next to the SVC location or the 300,000 gallon water tank on SDG&E property next to the Suncrest Substation.

4 ANALYSIS

This Technical Report supplements the project's Fire Protection Plan (FPP) which evaluates and recommends actions for the Proposed Project to ensure it does not unnecessarily expose people or structures to fire risks and hazards. The FPP identifies and prioritizes the measures necessary to adequately mitigate those impacts. It considers the property location, topography, geology, combustible vegetation (fuel types), climatic conditions and fire history. It considers water supply, access, structure ignitability and fire resistive building materials, fire protection solar facilities and equipment, impacts to existing emergency services, defensible space and vegetation management.

The primary purpose of this Technical Report is to assist the fire authority/responding agencies in identify pre-suppression actions that would reduce risk directly associated with the SVC facility, actions that would protect and enhance the safety of fire suppression resources, and actions that could protect the SVC facility from ignition caused by other sources.

Emergency responders face unexpected challenges as new uses of alternative energy increase. These renewable power sources save on the use of conventional fuels such as petroleum and other fossil fuels, but they also introduce new or non-typical hazards that require varying firefighting strategies, procedures, and training.

The safety of firefighters and other emergency first responder personnel depends on understanding and properly handling these hazards through adequate training and preparation. San Diego County firefighters receive the necessary training required to respond to the various types of emergency incidents that they may face. Electrical firefighting and emergency response are not new to responding firefighters. There are existing electrical facilities that have led to firefighter training in best response strategies. This project will be similar to existing substation facilities and is not anticipated to result in unfamiliar technology requiring special training.

The goal of this report is to assemble core principle and best practice information for fire fighters, fire ground incident commanders, and other emergency first responders to assist in their decision making process for any emergencies at this site.

4.1 SVC Facility Effect on Fire Risk

The primary objective of this report is to identify the potential hazards resulting from the operation and maintenance of the SVC facility or underground transmission line as well as from natural conditions that could result in fire risk. Ignition risks are anticipated to drop considerably following the project's construction phase. Operation and maintenance activities

occur within a defined project footprint where the adjacent fuels have been removed or converted to fuel modification-consistent vegetation. Operation activities include conversion of electricity to a useable form and transmission of electricity to the grid. Maintenance activities will include repair, maintaining, and replacing equipment. Equipment failures may occur over time in different components of the SVC project. Among the type of equipment that may present ignition sources:

- **Transformers** – are subject to occasional failure, sending sparks, hot materials out in any direction; fire in a transformer may result in ignition of the oil therein
- **Capacitors** – may overheat, fail, and cause a spark, which may result in combustion of flammable materials, such as vegetation, if nearby
- **Electrical transmission lines** – energized lines may arch from adjacent vegetation (trees) or if tower/pole fails, may arch on the ground, causing ignition of vegetation
- **Vehicles** – heated exhausts in contact with vegetation may result in ignition
- **Hot Works Equipment** – all small hand tools either gas or electric powered that may result in sparks, flames, or excessive heat may result in vegetation ignition.

Among the potential hazards to responding firefighters are:

1. Firefighting crews should consider that all electrical components must always be considered energized. Crews should fight the fire as they would any other electrical fire and use a water spray for ordinary combustibles or vegetation located outside the SVC facility or dry chemical extinguishers (or other suppression technology for energized equipment) on any electrical wiring and any SVC component.
2. Depending on the level of damage to the SVC facility during a fire incident, the electrical connection to ground may have been lost and create an extremely hazardous situation, especially if pooling of water occurs.
3. The use of electrical conductive tools is hazardous, since the SVC facility components may be energized.
4. Care must be taken to avoid unnecessary contact with potentially energized SVC facility components until they can be isolated and confirmed de-energized.
5. Burning transformers and wire insulation may produce toxic vapors. Outdoor oil-insulated transformers will be installed on concrete foundations and separated from each other by firewalls for the purpose of limiting damage and potential spread of fire from a transformer failure. Firefighters should wear full personal protection equipment (PPE)

and Self Contained Breathing Apparatus (SCBA) due to the potential for toxic or hazardous inhalation that may be produced by these burning components. Crews should work upwind of the smoke plume, whenever possible.

6. Overhead transmission line contacting vegetation that could cause an ignition, especially when excessive electrical load demands cause line sag. This potential issue is not considered likely given the alignment of the underground transmission line will be located just outside the pavement on the north side of Bell Bluff Truck Trail. Road side vegetation along Bell Bluff Truck Trail will be thinned and kept cleaned of deadwood per County of San Diego standards. The base of the riser pole will also be permanently cleared for a 15-foot radius around the riser pole, per CPUC General Order No. 95, Section 3, Rule 35: Vegetation Management.
7. Firefighters should never cut the wiring in a SVC facility or transmission line. Specialized tools may be required for disconnecting the wiring. SVC electrical components should not be disassembled, damaged or removed by firefighters until all of the SVC facility's components are isolated or de-energized by a qualified NextEra high voltage technician. Firefighters should limit their activities to containment of the fire until it can be confirmed that the SVC facility is isolated or de-energized.
8. At any incident where electrical components are present, the Incident Command (IC) must designate a "Utilities Group" early to aid in locating and disabling all of the SVC facility components. This can greatly decrease the electric shock hazard to all crews operating on the fire ground. Firefighters must remember that all SVC components must be considered HOT.
9. At the conclusion of an incident, demobilization and termination efforts should be directed at leaving the property in the safest condition possible. An overall focused size-up and risk-benefit analysis should be conducted.
10. Along with a structural stability assessment, hazard identification and the marking of any potentially energized areas should be a priority. A qualified NextEra high voltage technician should be called to the incident to de-energize any SVC facility that has been compromised or creates a hazard. Transferring scene safety and security to an appropriate local, municipal authority may be an option if the fire department is unable to quickly secure the assistance of a qualified NextEra high voltage technician or electrician. All hazards should be appropriately marked or barricaded. The contact information for a NEET technician who will serve as the emergency contact will be provided to the local fire agencies prior to the project being brought on-line.

4.2 Fuels Management to Protect Facilities from other Sources

The Proposed Project will be provided defensible space by a perimeter FMZ buffer the will include at least 84 feet of modified natural fuels in all directions from site equipment and up to 144 feet (refer to Project Fire Protection Plan for details), by removing or maintaining them to a height of no more than 6 inches. The entire site within the perimeter fencing will be maintained free of vegetation. No off-site clearing is required or authorized, as fuel modification can be accommodated on site. Combustible vegetation within the Proposed Project area shall be limited to approved species. None of the plants on the prohibited plant list (Appendix E of the FPP) shall be allowed on site.

Prescribed Defensible Space (site-wide fuel management zones) will be maintained on at least an annual basis or more often, as needed, by the Project owner. Planting used in the defensible space will consist of low-growing ground cover selected from the SDCFA desirable plant list.

4.2.1 Fuel Modification

Project fuel modification will include one zone (opposed to multiple zones) consisting of areas of no fuel within the project's fenced area, retention basins with non-irrigated, low growing ground cover, or areas of other maintained fuels. Because this site will utilize non-combustible construction and the equipment will be of metal or concrete materials, the proposed fuel modification areas will provide adequate setback for the potential short duration wildfire that may be realized in the adjacent wildland fuels.

A minimum 84 foot wide fuel modification area up to 144 feet wide, will be provided for the project including the entire facility inside the perimeter fence and the off-site wildland fuels to the north, south, and west. To the east, a vertical retaining wall ranging between 4 and approximately 15 feet tall will occur at the facility boundary. The facility will be below the natural off-site grade. The wall will provide vertical separation between fuels and the facility and is considered adequate with no need for additional fuel modification to the west.

4.2.1.1 Fuel Modification Requirements

The following recommendations are provided for fuel modification, which are proposed to occur throughout the site from perimeter fence to SVC facility. There would be no fuel modification zone markers in the field.

Site Wide Low-Flammability Zone

The site's fuel modification is applicable throughout the developed portions of the site. The area where the site's equipment is located will be free of vegetation. As such, the existing vegetation will be removed. The following specifications apply to the fuel modification area:

- ≠ Non-combustible surface (gravel, dirt, etc.) is acceptable, or:
- ≠ Cleared of all existing native vegetation and replanted with drought tolerant native species. This area will be maintained to 6 inches or less.
- ≠ Ground cover, less than 6 inches high in areas immediately outside perimeter fence
- ≠ Removal of all dead, dying, and dried (low fuel moisture) vegetation
- ≠ Refer to Appendix D for Prohibited Plants that will not be allowed on site. Trees are not recommended on the site or its perimeter
- ≠ Refer to Appendix E customized fuel modification plant list for potential plants that may be suitable for the site-wide low-flammability zone
- ≠ If the area is planted with native annual and perennial grasses they shall be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they will be cut to 6 inches or less in height.

4.2.1.2 Fuel Modification Area Vegetation Maintenance

All fuel modification area vegetation management shall be completed annually by May 15 of each year and more often as needed for fire safety, as determined by the SDCFA. Project applicant or current owner shall be responsible for all vegetation management throughout the facility and Project site, in compliance with the requirements detailed herein. The Project applicant or current owner shall be responsible for ensuring long-term funding and ongoing compliance with all provisions of the FPP, including vegetation planting, fuel modification, vegetation management, and maintenance requirements throughout the Project site.

- ≠ Fuel modification maintenance work may be provided by mowing, trimming, or other methods that result in the desired low-fuel conditions detailed herein.
- ≠ As a further means of ensuring the fuel modification area is maintained per the FPP, the Project owner shall obtain an inspection and report from a SDCFA-authorized Wildland Fire Safety Inspector by June 1st of each year, certifying that vegetation management activities throughout the project site have been performed pursuant to that plan. This effort further ensures vegetation maintenance and compliance with no impact on the SDCFA.

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5 EFFECTS OF ELECTRICITY ON THE HUMAN BODY

5.1 Physiological Effects

Electricity flowing through the human body can shock, cause involuntary muscle reaction, paralyze muscles, burn tissues and organs, or kill. The typical effects of various electric currents flowing through the body on the average **150-lb male** and **115-lb female** body are given in Table B-1.

Burns. Although a current may not pass through vital organs or nerve centers, internal electrical burns can still occur. These burns, which are a result of heat generated by current flowing in tissues, can be either at the skin surface and/or in deeper layers (muscles, bones, etc.). Typically, tissues damaged from this type of electrical burn heal slowly.

Burns caused by electric arcs are similar to burns from high-temperature sources. The temperature of an electric arc, which is in the range of 4,000–35,000°F, can melt all known materials, vaporize metal in close proximity, and burn flesh and ignite clothing at distances up to 10 ft from the arc.

Table B-1
Effects of Electric Current on the Human Body (Ref. 1)

	Direct current		Alternating current (mA)				
	(mA)		*60 Hz*		*10,000 Hz*		
Effect/feeling	*150 lb*	*115 lb*	*150 lb*	*115 lb*	*150 lb*	*115 lb*	**Incident severity**
Slight sensation	1	0.6	0.4	0.3	7	5	None
Perception threshold	5.2	3.5	1.1	0.7	12	8	None
Shock not painful	9	6	1.8	1.2	17	11	None
Shock painful	62	41	9	6	55	37	Spasm, indirect injury
Muscle clamps source	76	51	16	10.5	75	50	Possibly fatal
Respiratory arrest	170	109	30	19	180	95	Frequently fatal
$\propto$0.03-s vent. fibril.	1300	870	1000	670	1100	740	Probably fatal
$\propto$3-s vent. fibril.	500	370	100	67	500	340	Probably fatal
$\propto$5-s vent. fibril.	375	250	75	50	375	250	Probably fatal
Cardiac arrest	—	—	4000	4000	—	—	Possibly fatal
Organs burn	—	—	5000	5000	—	—	Fatal if it is a vital organ

Delayed Effects. Damage to internal tissues may not be apparent immediately after contact with the current. Internal tissue swelling and edema are also possible.

Critical Path. The critical path of electricity through the body is through the chest cavity. At levels noted in Table A-1, current flowing from one hand to the other, from a hand to the opposite foot, or from the head to either foot will pass through the chest cavity paralyzing the respiratory or heart muscles, initiating ventricular fibrillation and/or burning vital organs.

5.2 Biological Effects of Electrical Hazards

Influential Variables. The effects of electric current on the human body can vary depending on the following:

1. Source characteristics (current, frequency, and voltage of all electric energy sources).
2. Body impedance and the current's pathway through the body.
3. How environmental conditions affect the body's contact resistance.
4. Duration of the contact.

Source Characteristics. An AC with a voltage potential greater than 550 V can puncture the skin and result in immediate contact with the inner body resistance. A 110-V shock may or may not result in a dangerous current, depending on the circuit path which may include the skin resistance. A shock greater than 600 V will always result in very dangerous current levels. The most severe result of an electrical shock is death.

Conditions for a serious (potentially lethal) shock across a critical path, such as the heart, are:

1. More than 30 V root mean square (rms), 42.4-V peak, or 60 V DC at a total impedance of less than 5000
2. 10 to 75 mA
3. More than 10 J

Conditions for a potentially lethal shock across the heart are:

1. More than 375 V at a total body impedance of less than 5000
2. More than 75 mA
3. More than 50 J

Frequency: The worst possible frequency for humans is 60 Hz, which is commonly used in utility power systems. Humans are about five times more sensitive to 60 Hz AC than to DC. At

60 Hz, humans are more than six times as sensitive to AC than at 5000 Hz—and the sensitivity appears to decrease still further as the frequency increases. Above 100–200 kHz, sensations change from tingling to warmth, although serious burns can occur from higher radio-frequency energy. At much higher frequencies (e.g., above 1 MHz), the body again becomes sensitive to the effects of an alternating electric current, and contact with a conductor is no longer necessary; energy is transferred to the body by means of electromagnetic radiation (EMR).

Body Impedance: Three components constitute body impedance: internal body resistance and the two skin resistances at the contact points with two surfaces of different voltage potential. One-hand (or single-point) body contact with electrical circuits or equipment will prevent a person from completing a circuit between two surfaces of different voltage potential. Table B-2 provides a listing of skin-contact resistances encountered under various conditions. It also shows the work area surfaces and wearing apparel effects on the total resistance from the electrical power source to ground. This table can be used to determine how electrical hazards could affect a worker in varying situations.

Table B-2
Human resistance (Q) for Various Skin-contact conditions.

Body contact condition	Dry (Z)	Wet (Z)
Finger touch	40,000–1,000,000	4,000–15,000
Hand holding wire	15,000–50,000	3000–5000
Finger-thumb grasp	10,000–30,000	2000–5000
Hand holding a pliers	5,000–10,000	1000–3000
Palm touch	3000–8000	1000–2000
Hand around 1.5-in. pipe or drill handle	1000–3000	500–1500
Two hands around 1.5-in. pipe	500–1500	250–750
Hand immersed	—	200–500
Foot immersed	—	100–300

Life-Threatening Effects. Charles F. Dalziel, Ralph H. Lee, and others have established the following criteria for the lethal effects of electric shock:

1. Currents in excess of a human's "let-go" current (∝16 mA at 60 Hz) passing through the chest can produce collapse, unconsciousness, asphyxia, and even death (see also Table B-1).
2. Currents (∝30 mA at 60 Hz) flowing through the nerve centers that control breathing can produce respiratory inhibition, which could last long after interruption of the current.

3. Cardiac arrest can be caused by a current greater than or equal to 1 A at 60 Hz flowing in the region of the heart.
4. Relatively high currents (0.25–1 A) can produce fatal damage to the central nervous system.
5. Currents greater than 5 A can produce deep body and organ burns, substantially raise body temperature, and cause immediate death.
6. Delayed reactions and even death can be caused by serious burns or other complications.

Source: Lawrence Livermore National Laboratory.

The complete document can be found at http://www.llnl.gov/es_and_h/hsm/doc_16.01/doc16-01.html

6 DETAILED RESPONSE RECOMMENDATIONS

Every emergency incident to which a fire department responds is unique. Despite the differences, however, there are common characteristics that allow fire service personnel to better understand the tasks that need to be performed and to prepare for their duties. This section provides a review of the common elements of most interest to fire fighters when handling emergencies involving electrical power systems.

SVC Systems Highest Concerns

1. Tripping/Slipping
2. Transformer Failure
3. Flame Spread
4. Inhalation Exposure
5. Electrical Shock

6.1 Energized System Firefighting

If the SVC components become engulfed in fire, appropriate care should be exercised in firefighting response, and it should be attacked similarly to any piece of electrically energized equipment. Normally this would involve shutting down the power and applying water in a fog pattern on combustible materials or utilizing a dry chemical or foam, but it is critical to be aware that these materials could be energized.

Even with known shutdown steps taken to isolate electrical current, fire fighters should always treat all wiring and solar power components as if they are electrically energized.

Care should be taken throughout fireground operations never to cut or damage any conduit or any electrical equipment, and they should be treated as energized at all times.

6.2 Respiratory Protection

Proper respiratory protection should be used during all fireground operations that involve a potentially hazardous atmosphere. Similarly, these protective measures apply during post-fire activities such as overhaul or fire investigations. Care should be taken during all fire ground operations to protect against respiratory exposure from products of combustion involving electrical or transformer systems. Under normal conditions the materials used for the SVC facility are relatively inert and safe, but they can become dangerous when exposed to fire. If

power components are involved in a fire, care should be taken to avoid exposure to the products of combustion due to the somewhat unusual materials involved. In addition to inhalation concerns, dermal exposure from system materials damaged by fire should also be handled with caution regardless of the type of power system.

Emergency responders are required to wear full respiratory protection (e.g., self-contained breathing apparatus) for any atmosphere that is possibly IDLH (immediately dangerous to life or health), and this should be the case when handling damaged equipment involved in fire unless proven otherwise

6.3 Firefighting Strategic Mode

Following an assessment of a fire related situation, the choice of a strategic mode should be made by the Incident Commander (IC) following local jurisdiction Emergency Operation Manuals, SOPs and guides that would normally be used for Electrical Hazards. Tactics, like strategy, should also be based upon normal standard operating procedures for responding to an emergency incident for an electrical transformer facility.

1. **Strategy -** When a fire incident occurs in the vicinity of a SVC facility, the following items must be considered when developing a strategy:
    a. Document fire conditions found on arrival – confirm fire location, type of fire, extents, potential threats
    b. Confirm whether a component of the SVC facility itself is burning or whether fire is confined to the surrounding vegetation
    c. Confirm whether anyone on-site is threatened by the fire
    d. Confirm whether aerial firefighting resources are being used or should be ordered for wildfire and know potential limitations of its use on/near SVC facility.
    e. Document any threatened exposures, including wild land areas
    f. Locate water and additional resources available (site includes one 10,000 gallon water tank with firefighting water (Figure 1).

    Once the IC has completed a size-up, the IC should determine the strategy and assign tasks to the fire suppression resources assigned to the incident. Due to the potential hazards associated with the SVC site, the IC must adjust the strategy and potentially rearrange the order of the tactics to deal specifically with the SVC facility technology. If the IC chooses an offensive strategy it needs to be supported as it would under other fire

operations with an emphasis on disabling all power sources to and from the site or remaining at a safe distance and limiting spread if energy is not confirmed disabled.

2. **Tactics -** Tactics will be based on the chosen strategy and Department SOPs:
   a. Components are always hot! The single most critical message of emergency response personnel is to always consider SVC facilities and all their components as electrically energized.
   b. Isolation of the inverters and disconnection of the facility from the main electrical panel will be an important task. Assistance from a NEET technician is key for disabling the facility and confirming that all of the hazards have been mitigated. An emergency response plan identifying all tasks and the parties responsible for providing the electrical isolation for emergency responders is required.
   c. Another priority will be preventing fire spread and isolating it to its area of origin. This task may be difficult during a vegetation fire adjacent the site, especially if aerial resources are being used. Ground resources should be removed from the site until the air attack has concluded.
   d. Dry chemical extinguishers should be used to contain or extinguish electrical fires. Water should be used to extinguish any ordinary combustibles near the facility, or if the volume of fire requires its use. If water is used, a 30º fog pattern from at least a 30 foot distance, at 100 psi is recommended.
   e. Full PPE must be used due to the potential toxic inhalation hazard if oils are burning. Fire crews should position themselves upwind and out of any toxic atmosphere.
   f. Ingress and egress will require that gates have an inside measurement of a minimum of 20 feet wide. The primary fire access will require a Knox Lock. Existing gates plus any future gates that may be installed on the access roads or fence lines must be equipped with an approved padlock, Knox key box (“Knox” padlock, or “Knox” weather resistant lock box, for use with a “Knox” sub-master key) or “Knox” box electronic access system.
   g. During the overall fire suppression and mop-up phases of an on-site fire, firefighters should avoid all potential electrical hazards until there is confirmation that the facility no longer poses an electric shock hazard. Firefighters must avoid inadvertently damaging SVC components with their tools.
   h. The IC will need the assistance from qualified NextEra high voltage technician to confirm that all of the hazards have been mitigated before the incident is terminated

and the scene is turned over to the owner or responsible party. The contact information for a NEET technician will be provided to the fire authority prior to project operation.

i. The tactical approach to a fire incident with electrical equipment must be stressed to all fire suppression personnel (i.e., stay clear).

Appendix L

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PLAN

The California Public Utilities Commission (CPUC) is the California Environmental Quality Act (CEQA) Lead Agency. In that role, if the Suncrest Dynamic Reactive Power Support Project (Proposed Project) or an alternative is approved, the CPUC would be responsible for ensuring monitoring and reporting on required mitigation.

NextEra Energy Transmission West (NEET West), as the Applicant and project proponent, would be responsible for implementing all applicable measures, including the adopted mitigation measures and conditions of project approval, as well as conditions imposed in any permits or regulations administered by other responsible agencies.

The Mitigation Monitoring and Reporting Plan (MMRP) for the Proposed Project (or approved alternative) establishes the approach to implementing the mitigation measures and APMs identified in the EIR. If the project is approved and the MMRP described below is adopted by the CPUC, a detailed Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) would be developed, as described in this Appendix. The MMCRP would be the mechanism for CPUC implementation of the MMRP.

The MMRP summary table, included at the end of this Appendix, includes the mitigation measures identified in the CPUC's Draft Environmental Impact Report (DEIR) for NEET West's Proposed Project. For each mitigation measure, this table identifies monitoring and reporting actions that shall be carried out and the monitoring schedule. This table also includes a column where responsible parties can check off monitoring and reporting actions as they are completed.

The MMCRP would be the basis for the CPUC's environmental monitoring and reporting activities throughout project construction, including during site rehabilitation and restoration after construction is completed. It would detail how and when the mitigation measures would be implemented. The MMCRP would also identify duties and responsibilities of the various parties, communication protocols to follow, and record management requirements. The MMCRP would be prepared and instituted prior to any notices to proceed being issued or the initiation of any construction.

AUTHORITY FOR THE MMCRP

California Public Utilities Commission

The California Public Utilities Code confers authority upon the CPUC to regulate the terms of service and the safety, practices, and equipment of utilities subject to its jurisdiction. It is CPUC practice, pursuant to its statutory responsibility, to protect the environment and to require that mitigation measures stipulated as conditions of approval be properly implemented, monitored, and reported on. This requirement is codified statewide as PRC § 21081.6, which requires a public agency to adopt a mitigation monitoring or reporting program, when it approves a project that is subject to preparation of an EIR and where the EIR for the project identifies significant adverse environmental effects. CEQA Guidelines Section 15097 describes agency requirements for mitigation monitoring or reporting.

The CPUC would address its responsibilities under PRC § 21081.6 when it takes action on NEET West's application for a Certificate of Public Convenience and Necessity. If the CPUC approves the Proposed Project or an alternative, it also would adopt an MMRP and include the mitigation measures as a condition of approval. The MMRP would be incorporated into the MMCRP.

The purpose of an MMCRP is to ensure that the measures adopted to mitigate or avoid significant impacts of a project are implemented, and to report on their implementation. The CPUC views the MMCRP as a working guide to facilitate implementation of mitigation measures imposed by the approving agencies measures and any measures proposed by the project proponent, and to provide for the monitoring, compliance, and reporting activities of the CPUC and its designated monitors.

ORGANIZATION OF THE MMCRP

If the Proposed Project or an alternative is approved, the CPUC would compile the Final MMRP and include it in the Final EIR, as adopted. Based on the MMRP, the MMCRP would be prepared and would serve as a self-contained guide for implementing the MMRP throughout project construction.

The Final MMCRP would contain a concise overview and description of the approved project, outline its physical locations, and, to the extent known, provide the project schedule. It would include all adopted mitigation measures and would specify the master reference document(s) that the monitors and NEET West would use in carrying out the MMRP (e.g., the Final Environmental Impact Report (EIR), detailed working maps and plans, issued permits, etc.). The Applicant Proposed Measures (APMs) to which NEET West has committed would be incorporated to the extent they have not been superseded by specific mitigation measures in the Final EIR.

The MMCRP would include a list of the agencies having jurisdiction over various aspects of the project, and a description of where these respective jurisdictions occur. For example, the MMCRP would state which California Department of Fish and Wildlife (CDFW) regional office has jurisdiction and provide contact information, including the designated representative's name, address, email, and telephone and fax numbers.

The MMCRP would also include definition of the manner in which NEET West's monitoring team would interact with the CPUC staff and consultants. In addition, the MMCRP would define NEET West's required submittals to the agencies, and protocol for interactions among agency and NEET West team members.

The MMCRP would be structured as follows:

1. Introduction
    a. Authority and Purpose of the MMCRP
    b. Jurisdictional Agencies
    c. Project Description
    d. Organization of the MMCRP

2. Roles and Responsibilities
    a. Monitoring Responsibility
    b. Enforcement Responsibility
    c. Mitigation Compliance Responsibility
    d. Communications
    e. Dispute Resolution
    f. NEET West Roles
        i. Identification of the qualified NEET West team members who would verify that all adopted measures and conditions have been successfully implemented.
        ii. Organization of the NEET West team, including specifying duties, roles, and responsibilities.
        iii. Identification of primary NEET West contacts for CPUC environmental monitoring staff liaison.
3. General Monitoring and Compliance Procedures
    a. Environmental Monitors
    b. Construction Personnel
    c. General Reporting Requirements
        i. Neet West Compliance Levels for internal reporting
        ii. NEET West Daily Incident Summary format and protocol
        iii. NEET West Weekly Monitoring Report format and content
        iv. NEET West Annual Monitoring Report format and content
    d. Records Management and Public Access to Records
4. Mitigation Measure Tables

ROLES AND RESPONSIBILITIES

Responsibility for implementing the adopted measures rests with NEET West, unless otherwise specified in the measure.

As Lead Agency under CEQA, the CPUC is responsible for monitoring an approved project to ensure that required mitigation measures and APMs are implemented. The required MMRP would be implemented through the MMCRP. The purpose of the MMRP is to document that the mitigation measures required by the CPUC are implemented and that mitigated environmental impacts are reduced to the level identified in the EIR.

The CPUC may delegate duties and responsibilities for monitoring to environmental monitors or consultants working on behalf of the CPUC. As well, some monitoring responsibilities may be assumed by responsible agencies, where areas or resources under their jurisdiction are potentially affected or involved.

NEET West would deploy its own monitors for its own purposes, to ensure implementation of its commitments and execution of its responsibilities. The number of NEET West construction monitors assigned to the project would be determined by the utility and would depend on the number of concurrent construction activities underway, their locations, and the types of resources potentially affected. The CPUC would ensure that persons assigned monitoring duties by NEET West are qualified to undertake those duties.

When a mitigation measure requires that a study or plan be developed during the design or pre-construction phase of the project, NEET West must submit the final study or plan to CPUC for review and approval. Any study or plan that requires approval of the CPUC must allow at least 60 days for adequate review unless noted otherwise in the mitigation measure. Other agencies and jurisdictions with authority over aspects of the Proposed Project or particular resources may require additional review time. The CPUC environmental monitoring team would be responsible for confirming that appropriate agency reviews have occurred and required approvals were obtained by NEET West.

During the course of construction, circumstances may arise that require deviations from the project as approved. The CPUC, along with their environmental monitors, would evaluate any proposed deviations from the approved project to ensure they are consistent with CEQA requirements. Depending on its nature, a requested deviation would be processed as a Minor Project Change (MPC) or be the subject of a Petition for Modification (PFM) submitted by the Applicant.

MPCs would be strictly limited to minor project changes that do not trigger additional permit requirements, do not increase the severity of an impact or create a new impact, and are within the geographic scope of the EIR.

If a project change would create or have the potential to create a new significant impact, increase the severity of an impact, or occur outside the geographic area evaluated in the EIR, NEET West would be required to submit a PFM. The CPUC would evaluate the PFM under CEQA, as appropriate, to determine what form of supplemental environmental review would be required.

Enforcement Responsibility

The CPUC would be responsible for monitoring implementation of the MMCRP and enforcing the procedures adopted. Generally, this would be done through the Environmental Monitors assigned by the permitting agencies. In addition, if the permitting agencies' Environmental Monitors note conditions or situations falling within the purview of other agencies, they may notify the appropriate agencies or individuals about any problems, and report these to the CPUC.

As the State's regulator of investor-owned utilities, CPUC has the authority to halt any construction, operation, or maintenance activity associated with the project if the activity is determined to be a deviation from the approved project or the adopted mitigation measures.

Compliance Responsibility

NEET West would be responsible for successfully implementing all the adopted mitigation measures in the MMCRP. The MMCRP would contain criteria that define whether mitigation

is successful. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Additional mitigation success thresholds may be established through the review and approval of specific plans required under mitigation measures. Other requirements may be stipulated by another agency with applicable jurisdiction during that agency's permitting process.

NEET West would inform CPUC and the Environmental Monitors in writing of any mitigation measures that are not or cannot be successfully implemented and provide alternative approaches for successful mitigation implementation. The CPUC, in coordination with their Environmental Monitors, would review the alternative approach to determine if it is adequate and whether an MPC or PFM would apply.

DISPUTE RESOLUTION

It is expected that the Final MMCRP would greatly reduce or eliminate potential disputes. However, even with the best preparation, disputes may occur. In such an event, the following procedure would be observed:

- Step 1. Disputes and complaints (including those from the public) should be directed first to the CPUC Project Manager or designee, as appropriate, for resolution. The Project Manager or designee would attempt to resolve the dispute.
- Step 2. Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the approved project or adopted MMRP.

The following steps apply to the CPUC only:

- Step 3. If a dispute or complaint regarding the implementation or evaluation of the MMRP or the mitigation measures cannot be resolved informally or through enforcement or compliance action by the CPUC, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC's Executive Director. This notice should be filed expeditiously in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall meet or confer with the filer and other affected participants for purposes of resolving the dispute. The Executive Director shall issue an Executive Resolution describing his/her decision, and serve it on the filer and other affected participants.
- Step 4. If one or more of the affected parties is not satisfied with the decision as described in the Resolution, they may appeal it to the Commission via a procedure to be specified by the Commission. Parties may also seek review by the Commission through existing procedures specified in the Commission's Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should be made to use the foregoing procedure first.

GENERAL MONITORING PROCEDURES

Environmental Monitors

Many of the monitoring procedures would be conducted during the construction phase of the project. The CPUC and Environmental Monitors are responsible for integrating the mitigation monitoring procedures into the construction process in coordination with NEET West. To oversee the monitoring procedures and to ensure success, the Environmental Monitors assigned must be onsite during any construction activity for which mitigation is required. The Environmental Monitors are responsible for ensuring that all procedures specified in the MMCRP are followed.

Construction Personnel

A key element in the success of mitigation and mitigation monitoring is the full cooperation of construction personnel and supervisors. Successful implementation of many of the mitigation measures requires specific actions and behaviors on the part of the construction supervisors or crews. To ensure success, the following actions, detailed in specific mitigation measures included in the MMCRP, would be taken:

- Procedures to be followed by construction companies engaged to do the work would be written into their contracts with NEET West. Procedures to be followed by construction crews would be written into a separate agreement that all construction personnel would be asked to sign, denoting consent to the procedures.
- As specified by mitigation, a training program would be conducted to inform construction personnel about the requirements of the monitoring program (as detailed in the MMCRP). The CPUC Environmental Monitors would verify that each crew member receives the required training.
- A written summary of mitigation monitoring procedures would be provided to construction supervisors for all mitigation measures requiring their attention.

Reporting Procedures

Detailed weekly reports would be prepared and submitted by the CPUC environmental monitoring team. These would include detailed information on construction activities, compliance activities observed by the Environmental Monitors and others documented by NEET WEST, any issues and their resolution, and photographs of relevant activities and conditions.

NEET West is required to have its own monitors for particular resources, depending on project needs and activities. These monitors shall provide daily reports/surveys that are entered into a field record environmental database employed by NEET West. Construction is not allowed to start in a particular area until the required pre-construction surveys and flagging/staking are completed per the MMCRP, and the CPUC environmental monitor has validated compliance and the CPUC has issued a Notice to Proceed.

NEET West is required to provide the CPUC with written weekly and annual reports of the project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the project.

Public Access to Records

The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports would be made available for public inspection by the CPUC on request. The CPUC and NEET West would develop a filing and tracking system. For additional information on mitigation monitoring and reporting for the project, the Energy Division of the CPUC would maintain an Internet website, accessible at:

- http://www.cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html

To facilitate the public's awareness, the CPUC would make weekly reports available on the website.

ACRONYMS AND ABBREVIATIONS (FOR APPENDIX L)

APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measure
BMPs	best management practices
CAL FIRE	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFPP	Construction Fire Protection Plan
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
DEIR	draft environmental impact report
DMP	Debris Management Plan
EIR	environmental impact report
FPP	Fire Protection Plan
HMWMP	Hazardous Materials and Waste Management Plan
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MMCRP	Mitigation Monitoring, Compliance, and Reporting Program
MMRP	Mitigation Monitoring and Reporting Plan
MPC	Minor Project Change
NAHC	Native American Heritage Commission
NEET West	NextEra Energy Transmission West
PFM	Petition for Modification
SDCFA	San Diego County Fire Authority
SDG&E	San Diego Gas & Electric
SVC	Static Var Compensator
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traffic Control Plan
TCR	tribal cultural resource

USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

Mitigation Measure/Applicant Proposed Measure		Monitoring and Reporting Action	Monitoring Schedule	Completion Date and Initials
Aesthetics				
AES-1	**Use Design and Architectural Features on Project Structures to Complement the Surrounding Visual Landscape.** NEET West or their contractor(s) shall implement the following measures to the extent feasible: ▪ Material and paint colors should be selected that are compatible with the existing colors of the surrounding area (i.e., dull grey, light brown, or dull green) in order to minimize visual contrast. ▪ Natural materials should be selected that blend with the natural surroundings and avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. ▪ Dulled metal finish transmission structures and non-specular conductors (within the SVC and for the overhead span to interconnect into Suncrest Substation) shall be used for the Proposed Project. ▪ Non-specular conductors shall be treated to reduce reflectivity and have a smooth matte gray finish that blends unobtrusively with the environment.	1. Incorporate requirements into Project design and bid documents. 2. Confirm that materials and paint colors do not contrast substantially with the surrounding landscape. 3. Confirm that dulled metal finish transmission structures and non-specular conductors are used.	1. During design phase and preparation of plans and specifications. 2. During/following construction. 3. During/following construction.	
AES-2	**Light and Glare Reduction.** Temporary construction and permanent SVC lighting shall be the lowest illumination allowed for human safety and security, selectively placed, shielded and downward facing to minimize nighttime glare.	1. Confirm that measure is incorporated into contract documents. 2. Confirm that temporary construction lighting is lowest allowed, and is	1. Before construction. 2. At the start of construction. 3. Following construction,	

Mitigation Measure/Applicant Proposed Measure		Monitoring and Reporting Action	Monitoring Schedule	Completion Date and Initials
		shielded and downward-facing. 3. Confirm that permanent SVC lighting is lowest illumination allowed, and shielded and downward-facing.	prior to Project operation.	
Agriculture and Forestry				
None.				
Air Quality				
AIR-1	**Fugitive Dust Control.** During construction, water or non-toxic soil stabilizers will be applied in sufficient quantities on access roads, staging areas, work areas, and on stockpiles to control fugitive dust.	1. Confirm water or non-toxic soil stabilizers have been applied to access roads, staging areas, work areas, and stockpiles.	1. During construction.	
AIR-2	**Speed Limits.** During construction, vehicle speeds will be limited to 15 miles per hour on unpaved roads or work areas and vehicles should be turned around in established or designated areas only.	1. Confirm vehicles are operated to maintain a 15-mile-per-hour speed limit and are turned around in designated areas.	1. During construction.	
AIR-3	**Vehicle Use and Idling Time.** To the extent feasible construction vehicle use and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up times following start-up that limit their	1. Confirm "common-sense" approach is applied to vehicle usage and idling times are minimized.	1. During construction.	

Mitigation Measure/Applicant Proposed Measure		Monitoring and Reporting Action	Monitoring Schedule	Completion Date and Initials
	availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.			
AIR-4	**Construction Equipment Emissions.** Low-emission construction equipment will be utilized during construction of the Proposed Project. Construction equipment will be maintained per manufacturer specifications. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in Cal. Code Regs., tit. 13 § 2423(b)(1).	1. Confirm construction equipment are maintained per manufacturer specifications and are either are registered under the CARB Statewide Portable Equipment Registration Program or meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines.	1. During construction.	
AIR-5	**Loss of Sulfur Hexafluoride (SF_6).** In operation of the SVC, NEET West will maintain the 230-kv circuit breaker so that the loss of SF_6 is less than 0.5 percent per year. To assess the loss of SF_6, NEET West will conduct monthly inspections and maintain the records of such inspections. NEET West will also participate in the U.S.	1. Confirm the loss of SF_6 is less than 0.5 percent per year through NEET West monthly reporting. 2. Confirm participation in the U.S. Environmental Protection Agency's	1. During operation. 2. During operation.	

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	Environmental Protection Agency's voluntary SF_6 Emission Reduction Partnership for Electric Power Systems.	voluntary SF_6 Emission Reduction Partnership for Electric Power Systems.		
AQ-1	**Off-Road Equipment Control.** NEET West or their contractor(s) shall implement the following measure: ▪ All off-road equipment engines that are 50 horsepower or greater shall meet or exceed U.S. Environmental Protection Agency/California Air Resources Board Tier 3 emissions standards. ▪ Exceptions to the Tier 3 requirement shall be allowed for specialty equipment that will be used for no more than 5 days; provided that a due diligence search, which includes at least three (3) appropriate equipment rental firms could not procure the necessary equipment type with a Tier 3 compliant or better engine.	1. Ensure requirement is included in contract documents. 2. Confirm that off-road construction equipment meets applicable standards.	1. Before construction. 2. Before construction.	
Biological Resources				
BIO-1	**Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants** NEET West or their contractor(s) shall implement the following measures: ▪ To the extent feasible, the Proposed Project shall avoid or minimize impacts on known occurrences of felt-leaved monardella (as shown on Figure 7-6 of this EIR). Avoidance and minimization measures may include adjustments of the project design to avoid special-status plants.	1. Incorporate measure into Project design plans and specifications. 2. Confirm that felt-leaved monardella occurrences have been avoided and/or impacts have been minimized.	1. Before construction. 2. Before/during construction.	

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BIO-2	**Perform Focused Surveys for Special-Status Plants** NEET West or their contractor(s) shall implement the following measures: Within 1 year before commencement of ground-disturbing activities, a qualified botanist shall perform surveys for special-status plant species with the potential to occur at the site. Floristic surveys will be performed according to the *Protocols for Surveying and Evaluating Impacts to Specials Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009 or current version). Floristic surveys will be performed during the appropriate bloom period(s) for each species. If special-status plants are detected within the construction zone or within a 100-foot radius of the construction zone, Mitigation Measure BIO-1c shall be implemented.	1. Retain qualified botanist to perform surveys. 2. Confirm that special-status plant/floristic surveys are completed in accordance with the measure. 3. If special-status plants are detected within the construction zone or within 100-foot radius, confirm implementation of Mitigation Measure BIO-1c.	1. Before construction. 2. Before construction, during survey period. 3. Before construction, during survey period, if necessary.	
BIO-3	**Avoid or Minimize Impacts on Special-Status Plant Species during Construction** If special-status plants are detected within the construction zone or within a 100-foot radius of the construction zone while implementing Mitigation Measure BIO-2, NEET West or the contractor(s) shall install exclusion fencing to protect plants that remain in place. Locations of special-status plant populations shall be clearly identified in the field by staking, flagging, or fencing. The plants shall be monitored throughout the duration of construction to determine whether the project has resulted in adverse effects (direct or indirect), as determined by a qualified botanist. If the botanist determines that special-status plants may have been adversely affected, NEET West shall implement measures to compensate for the impact as described in Mitigation Measure BIO-4.	1. Ensure measure is included in Project contract documents. 2. If necessary, based on Mitigation Measure BIO-1b surveys, confirm that exclusion fencing is installed to protect plants in place. 3. If necessary, based on Mitigation Measure BIO-1b surveys, ensure that identified plants are monitored throughout the duration of construction.	1. Before construction. 2. Before construction, if necessary. 3. During construction, if necessary. 4. Following construction, if necessary.	

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		4. If botanist determines that special-status species have been adversely affected, confirm implementation of Mitigation Measure BIO-1d.		
BIO-4	**Compensate for Impacts to Special-Status Plant Species** If avoidance of special-status plants is not feasible, NEET West shall implement measures to compensate for impacts on special-status plants. Compensation may be provided by purchasing credits at an approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species, collecting and dispersing seed of annual species, and other conservation strategies that shall restore and protect the viability of the local population. Because of the differences in plant growth forms and life histories, conservation measures would be developed on a species-specific basis based on input from CDFW and would be consistent with the East San Diego County Multiple Species Conservation Plan (MSCP) planning process. If compensation measures are implemented, monitoring plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness. Monitoring shall assess vegetative density, population size, natural recruitment, and plant health and vigor. Monitoring results may trigger management actions such as collection and sowing of additional seed, tillage/disturbance within existing populations to induce establishment, installation of container plants, and control of other competing vegetation to ensure successful plant establishment and survival. The determination of success will be based on whether there has been a substantial reduction	1. Retain a qualified biologist, if needed, and if it is decided to provide compensation through transplanting, collecting and dispersing seed, or other strategies (rather than through purchasing credits at an approved mitigation bank). 2. Confirm implementation of adequate compensation strategy. 3. Confirm monitoring is conducted for 5-year period following implementation, and that monitoring assesses appropriate metrics identified in mitigation measure. 4. Evaluate compensation plant population at the end of the 5-year period and confirm achievement of success criteria.	1. During or following construction, if it is identified that special-status plant species have been impacted (see Mitigation Measure BIO-1c). 2. Following construction or identification of adverse impacts to special-status plants. 3. Following implementation of compensation measures. 4. At the end of 5-year monitoring period, following implementation of compensation measures.	

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	(greater than 20 percent) in the size or abundance of the population compared to baseline conditions. The site shall be evaluated at the end of the 5-year monitoring period to determine whether the mitigation has met the success criteria.	5. If mitigation is not deemed successful following 5-year monitoring period, implement corrective actions to ensure successful mitigation is achieved.	5. Following 5-year monitoring period.	
BIO-5	**Avoid Impacts on Nesting Birds.** Whenever possible, NEET West or their contractor(s) shall avoid impacts on native nesting birds by not initiating Proposed Project activities that involve clearing vegetation, generating mechanical noise, or ground disturbance during the typical breeding season from February 1 to August 31.	1. Confirm that measure is included in contract documents. 2. Confirm that breeding season limitation for applicable activities is adhered to.	1. Before construction. 2. During construction.	
BIO-6	**Implement Preconstruction Surveys for Birds Protected under the Migratory Bird Treaty Act (MBTA).** If construction is scheduled to commence during the non-nesting season (September 1 to January 31), no preconstruction surveys for nesting birds are required. If construction begins between February 1 and August 31, NEET West or their contractor(s) shall ensure that surveys for nesting birds are to be conducted by a qualified biologist within a 500-foot radius of the construction area. The survey shall be conducted no more than 14 days prior to construction. If the biologist determines that the area surveyed does not contain any active nests, then construction activities may commence without any further mitigation. If active nests are found, CDFW and U.S. Fish and Wildlife Service (USFWS) will be notified and no-work buffers around nests shall be established that are sufficient to ensure that	1. Retain a qualified biologist to conduct preconstruction surveys. 2. If construction is scheduled to commence during the nesting season, confirm that preconstruction surveys for nesting birds are conducted in accordance with this measure. 3. If active nests are found, ensure that CDFW and USFWS are notified and no-work buffers are established	1. Prior to construction. 2. Prior to construction. 3. Prior to construction, if necessary.	

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	breeding is not likely to be disrupted or adversely affected by construction. Buffers for non-special-status birds protected under the MBTA shall be 250 feet around the nest. Special status birds are not anticipated to nest within 500 feet of the Proposed Project, but if active special status bird nest are detected, no-work buffer shall be 500 feet around the nest. Buffers will be maintained until the young have fledged or the nests become inactive.	in accordance with this measure.		
BIO-7	**Structures Constructed to Minimize Impacts to Raptors and other Avian Life.** NEET West or their contractor(s) shall construct structures to conform to "Suggested Practices for Raptor Protection on Power Lines" (Raptor Research Foundation, Inc. 1981) to minimize impacts to raptors. NEET West or their contractor(s) shall 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* (APLIC 2006, 2012).	1. Incorporate appropriate design into project plans. 2. Confirm that constructed structures conform to APLIC standards.	1. During preparation of project plans and specifications. 2. Following installation of above-ground transmission structures.	
BIO-8	**Survey for Potential Hermes Copper Habitat.** Prior to the start of vegetation clearing for the Project, a survey shall be conducted to determine the presence or absence of potentially suitable Hermes copper habitat within the Project footprint. Potentially suitable habitat is defined as mature (woody) spiny redberry shrub(s) within 15 feet of California buckwheat. If Hermes copper habitat is mapped within the project footprint and will be affected by Project activities, then Mitigation Measure BIO-9 shall be implemented.	1. Retain qualified biologist to conduct survey. 2. Confirm that survey shows no suitable habitat for Hermes copper butterfly within the Project footprint. 3. If survey shows positive findings for butterfly habitat in Project footprint, confirm	1. Prior to construction. 2. Prior to construction, following survey completion. 3. Following completion of	

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		implementation of Mitigation Measure BIO-5b.	survey, if necessary.	
BIO-9	**Mitigate for Impacts to Hermes Copper Butterfly Habitat.** NEET West or their contractor(s) shall implement the following measures: ▪ If areas mapped as Hermes Copper butterfly habitat are adversely affected by the Proposed Project, NEET West shall mitigate permanent impacts at a 1:1 ratio for unoccupied habitat and 3:1 ratio for occupied habitat. Habitat should be considered occupied if it is within 150 meters of a Hermes copper sighting (County of San Diego 2010).	1. If surveys under Mitigation Measure BIO-5a show positive findings for Hermes copper butterfly habitat within the Project footprint, ensure impacts are mitigated in accordance with this measure.	1. Following Hermes copper butterfly survey, if necessary.	
BIO-10	**Educational Training.** NEET West or their contractor(s) shall ensure that before conducting construction activities all Proposed Project personnel shall participate in an educational training session conducted by a qualified biologist. All on-site personnel shall be informed about relevant special-status species and their habitat, conservation goals, identification, and procedures to follow in the event of a possible sighting. Personnel who miss the first training session or are hired later in the season must participate in a make-up session before conducting Project activities. A record of the personnel that attended the training shall be kept by the qualified biologist.	1. Retain qualified biologist to conduct educational training. 2. Confirm that all on-site construction personnel undergo training. 3. Confirm that training is conducted in accordance with this mitigation measure.	1. Prior to construction. 2. Prior to construction. 3. Prior to construction.	
BIO-11	**Biological Monitor.** NEET West or their contractor(s) shall employ a qualified biologist or environmental inspector who is familiar with the	1. Retain qualified biologist or environmental inspector	1. Prior to construction.	

Mitigation Measure/Applicant Proposed Measure		Monitoring and Reporting Action	Monitoring Schedule	Completion Date and Initials
	biological resources and issues at the Proposed Project to conduct monitoring during all construction-related ground-disturbing activities that may impact sensitive biological resources. These activities would include but not necessarily be 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 shall flag or otherwise clearly mark environmentally sensitive areas with appropriate buffers, within which construction is not allowed. The monitor/inspector shall 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. Such steps shall be pre-approved by CDFW and/or USFWS, as applicable given the species' status.	familiar with resources and issues at the Project site. 2. Confirm that biological monitor/inspector has authority to stop work if sensitive biological resources are found and has in place pre-approved steps to follow in event of such a discovery. 3. Confirm that monitoring is conducted in accordance with this measure and environmentally sensitive areas are clearly marked with appropriate buffers.	2. Prior to construction. 3. During construction.	
BIO-12	**Vehicle Use of Existing Roads.** NEET West or their contractor(s) shall restrict all Proposed Project vehicle movement to existing roads as a part of the Proposed Project, except when not feasible due to physical or safety constraints. 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, NEET West shall perform a site survey in the area where the work is to occur. This survey shall be performed to determine presence or absence of special-status nesting birds or other special-status species in the work area.	1. Confirm measure is included in contract documents. 2. Confirm that requirement is followed and project vehicle movement is limited to existing roads to the extent feasible. 3. If it is not feasible to keep vehicles on existing access roads, confirm that site survey is performed in	1. During preparation of plans and specifications. 2. During construction. 3. Before or during construction, as necessary. 4. During construction.	

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	Parking or driving on unpaved areas underneath oak trees shall not be allowed in order to protect root structures. In addition, a 15-mile-per-hour speed limit shall be observed on roads in the Proposed Project area to reduce dust and allow reptiles and small mammals to disperse.	accordance with this measure. 4. Confirm that vehicles are not parked or driven on unpaved areas underneath oak trees, and that a 15 mile-per-hour speed limit is observed on Project roads.		
BIO-13	**Preconstruction Sweeps for Biological Resources.** Prior to initial vegetation clearance, grubbing, and ground-disturbing activities, NEET West or their contractor(s) shall ensure that a qualified biologist shall conduct pre-construction sweeps of the Project site for special-status wildlife and plants. During these surveys, the biologist shall: a) Ensure that potential habitats become inaccessible to wildlife (e.g., burrows are removed that would otherwise provide temporary refuge); b) Survey for bat roosts by performing a daytime pedestrian survey to inspect potential habitat within 100 feet of the Proposed Project limits for indications of bat use (e.g., occupancy, guano, staining, smells, or sounds) and a night roost/emergence survey. The survey must be performed a qualified bat biologist. If the bat biologist determines that habitat within the survey area is used, or is likely to be used, as a bat roost, and may be affected by construction, then specific measures will be developed and implemented to minimize impacts on the roost.	1. Retain qualified biologist to conduct preconstruction sweeps. 2. Confirm that potential habitats on Project site are made inaccessible to wildlife (e.g., burrows removed). 3. Confirm that pre-construction bat survey is performed and appropriate avoidance and minimization measures are performed in the event of a roost discovery. 4. In the event of discovery of a special-status ground-dwelling animal, confirm biologist appropriately recovers and relocates the animal.	1. Prior to construction. 2. Prior to construction. 3. Prior to construction. 4. Prior to construction, if necessary. 5. Prior to construction, if necessary. 6. Prior to construction, if necessary.	

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	Such measures may include minimizing construction activity near the roost during the maternity season (May 1- August 15) or other measures developed by a qualified bat biologist that will minimize the disturbance to a level that would not cause long-term roost abandonment or failure of a maternity roost. c) In the event of an unanticipated discovery of a special-status ground-dwelling animal, a biologist holding the appropriate State and/or federal permits shall recover and relocate the animal to adjacent suitable habitat within the Proposed Project at least 200 feet from the limits of grading; and, d) In the event of the discovery of a previously unknown special-status plant, the area will be marked as an environmentally sensitive area, and avoided to the maximum extent practicable. If avoidance is not possible, NEET West will implement Mitigation Measure BIO-4.~~consult with USFWS and/or CDFW as appropriate given the species' status.~~	5. In the event of the discovery of a special-status plant, confirm that the area is marked and avoidance to the extent feasible. 6. In the event avoidance of an identified special-status plant is not feasible, confirm ~~appropriate consultation with USFWS and/or CDFW~~ implementation of Mitigation Measure BIO-4.		
BIO-14	**Inspect Excavations for Trapped Wildlife.** NEET West or their contractor(s) shall inspect all steep-walled trenches or excavations used during construction twice daily (early morning and evening) to protect against wildlife entrapment. If wildlife is located in a trench or excavation, the on-site biological resource monitor shall 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	1. Ensure that measure is included in contract documents. 2. Confirm that steep-walled trenches and excavations are inspected twice daily for entrapped wildlife in accordance with this measure.	1. During preparation of plans and specifications. 2. During construction. 3. During construction, if necessary.	

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	agency may be employed to remove the wildlife and transport them safely to other suitable habitats. Steep-walled trenches and excavations shall be fenced and/or covered at the end of each workday, to prevent wildlife from becoming entrapped and for safety purposes. Alternatively, escape ramps shall be installed in trenches or excavation to allow wildlife to exit on their own volition.	3. If wildlife is located in a trench or excavation, ensure that wildlife is removed and relocated by appropriate means. 4. Confirm that steep-walled trenches and excavations are fenced and covered at the end of each day, or that escape ramps are installed in trenches and excavations to allow wildlife to exit on their own volition.	4. During construction.	
BIO-15	**Minimize Night Lighting.** NEET West or their contractor(s) shall minimize construction night lighting on adjacent habitats. Exterior lighting within the Proposed Project area adjacent to habitat shall 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 Proposed Project activities shall be kept to a minimum volume and speed to prevent mortality of nocturnal wildlife species.	1. Ensure that measure is incorporated into contract documents and Project design. 2. Confirm that exterior lighting within the Project area adjacent to habitat is lowest illumination allowed and directed downward to maximum extent practicable. 3. Confirm that Project vehicle traffic is kept to a minimum volume and speed.	1. During preparation of plans and specifications. 2. During construction (for temporary construction lighting), and during operation (for permanent lighting). 3. During construction (for construction vehicle traffic) and	

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			during operation (for Project operational traffic).	
BIO-16	**Restoration and Revegetation.** NEET West shall develop a Restoration and Revegetation Plan to guide restoration activities on the Project site that promotes locally appropriate native plant growth and eliminates non-native and invasive species. The Restoration Plan shall identify measures and success criteria specific to each impacted plant community at the Proposed Project. The total area to be planted, and species composition, shall be tailored for each impacted plant community based on existing standards and precedents. The Restoration Plan shall identify success criteria for each habitat type and develop monitoring measures to ensure that success criteria will be met. <u>The Restoration Plan shall be consistent with the East San Diego County MSCP planning process. Monitoring results shall be provided to CDFW on a basis determined in the Restoration Plan.</u> Disturbed soils shall be revegetated with an appropriate weed-free, native seed mix. All areas designated for temporary impacts shall 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 shall 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 Storm Water Pollution Prevention Plan (SWPPP). Herbicides, if required	1. Confirm development of a Restoration and Revegetation Plan that meets requirements identified in this mitigation measure. 2. Confirm implementation of the Restoration and Revegetation Plan, and revegetation of disturbed soils. 3. Ensure that herbicides are applied in accordance with measure.	1. Prior to completion of construction. 2. Following construction, during revegetation/restoration period. 3. During revegetation/restoration efforts.	

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	during the restoration period, shall be applied using hand-held applicators for spot-treatment and shall not be used within 100 feet of drainages or sensitive plant populations.			
BIO-17	**Minimize Area of Disturbance of Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association Habitat.** NEET West or their contractor(s) shall ensure that the disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction and shall only occur within the defined work area.	1. Confirm measure is incorporated into contract documents. 2. Confirm that vegetation removal/disturbance is minimized and only occurs within the defined work area.	1. During preparation of plans and specifications. 2. During construction.	
BIO-18	**Develop and Implement a Restoration Plan for Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association Habitat Disturbed during Construction.** NEET West or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association habitat. The Restoration Plan shall be consistent with the East San Diego County MSCP planning process. Monitoring results shall be provided to CDFW on a basis determined in the Restoration Plan. At a minimum, ~~f~~For any temporary impact, all disturbed soils and new fill in this habitat shall be revegetated with site-appropriate native species. For any permanent impact, Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association habitat shall be mitigated, at a minimum, at a ratio of 1.1:1 (replacement to impact). Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association restoration or compensation may be completed at the Project site, in the vicinity, or at a conservation bank with a service	1. Confirm development of a Restoration Plan for Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association habitat disturbed during construction. 2. Confirm implementation of Restoration Plan and mitigation of temporary and/or permanent impacts in accordance with the measure. 3. Confirm revegetated or restored areas are maintained and monitored to ensure 65 percent	1. Prior to completion of construction. 2. Following construction, during revegetation/restoration period. 3. Following construction, during 5-year monitoring period.	

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	area that covers the Project site. Revegetated or restored areas shall be maintained and monitored to ensure a minimum of 65 percent survival of woody plantings after 5 years.	survival of woody plantings after 5 years.		
Cultural Resources				
CR-1	**Conduct archaeological sensitivity training and construction monitoring.** Prior to initiation of ground-disturbing activities, NEET West shall arrange for construction crews to receive training about the kinds of archaeological materials that could be present within the project site and the protocols to be followed should any such materials be uncovered during construction. Training materials shall be developed ~~shall be conducted~~ by an archaeologist who meets the U.S. Secretary of Interior's professional standards. Training may be required during different phases of construction to educate new construction personnel. The presence of archaeological sites both within the Proposed Project SVC area and along the Bell Bluff Truck Trail indicates that the area is sensitive for archaeological resources. As a result, a qualified archaeological monitor shall be retained to conduct full-time monitoring of initial~~monitor all~~ ground disturbing activities associated with the project. A Native American monitor shall also participate in observing initial ground-disturbing activities. The archaeological monitor will work under the supervision of the principal investigator. 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 monitoring is no longer warranted, he or she may recommend	1. Ensure measure is included in contract documents. 2. Retain a qualified archaeologist to conduct worker training and monitor ground-disturbing activities. 3. Retain Native American monitor to conduct monitoring of ground-disturbing activities. 4. Conduct construction crew training regarding archaeological materials that could be present in the project area. 5. Confirm that ground disturbing activities are monitored by archaeologist and Native American monitor. 6. In the event that cultural resources are encountered, ensure that work stops	1. During preparation of plans and specifications. 2. Prior to construction. 3. Prior to construction. 4. Prior to construction. 5. During construction. 6. During construction, if necessary.	

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	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 continue beyond initial ground disturbance. If any prehistoric or historic-era features, or human remains, are exposed during construction, the archaeological monitor shall have the authority to stop work in the vicinity of the finds and implement the actions identified in Mitigation Measure CR-2.	immediately, and Mitigation Measure CR-2 is implemented.		
CR-2	**Immediately halt construction if cultural resources are discovered, evaluate all identified cultural resources for eligibility for inclusion in the California Register of Historical Resources (CRHR), and implement appropriate mitigation measures for eligible resources.** Not all cultural resources are visible on the ground surface. Construction activities, including possible blasting, at the SVC would require excavation up to approximately 18~~15~~ feet deep. ~~and trenching~~ Excavation for the installation for the transmission line along ~~the~~ Bell Bluff Truck Trail would be up to approximately 9 feet deep. These activities have the potential to uncover buried cultural resources. If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains are encountered during any project construction activities, work shall be suspended immediately at the location of the find and within a radius of at least 50 feet and the CPUC shall be notified within 24 hours. All cultural resources accidentally uncovered during construction within the project site shall be evaluated for	1. Confirm that measure is incorporated into contract documents. 2. In the event cultural resources are identified during excavation and related activities, confirm that work stops immediately. 3. Ensure all accidentally uncovered cultural resources are evaluated for inclusion in the CRHR. 4. If resources are identified to meet the CRHR eligibility criteria, develop and implement appropriate mitigation measures. 5. If resources eligible for listing would be rendered ineligible by the effects of	1. During preparation of plans and specifications. 2. During construction. 3. During construction, if necessary. 4. During or following construction, if necessary. 5. During or following construction, if necessary.	

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	eligibility for inclusion in the CRHR. Resource evaluations shall be conducted by individuals who meet the U.S. Secretary of the Interior's professional standards in archaeology, history, or architectural history, as appropriate. If any of the resources meet the eligibility criteria identified in Public Resources Code section 5024.1 or CEQA section 21083.2(g), mitigation measures shall be developed and implemented in accordance with CEQA Guidelines section 15126.4(b) before construction resumes. For resources eligible for listing in the CRHR that would be rendered ineligible by the effects of project construction, or a Tribal Cultural Resource (TCR), additional mitigation measures shall be implemented. Mitigation measures for archaeological resources may include (but are not limited to) avoidance; incorporation of sites within parks, greenspace, or other open space; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for archaeological resources shall be developed in consultation with responsible agencies and, as appropriate, interested parties, such as Native American tribes. Native American consultation is required if an archaeological site is determined to be a TCR. Implementation of the approved mitigation would be required before resuming any construction activities with potential to affect identified eligible resources at the site. Furthermore, archaeological resources may also contain previously unidentified human remains. Although it would be unlikely for human remains to be disturbed during construction, given the previously disturbed nature and geology of the location, the possibility, though remote, exists that burials could be encountered. If human remains are	project construction, implement additional mitigation measures in accordance with this measure.		

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	encountered, Mitigation Measure CR-3 would be implemented during construction to ensure that potential impacts to these resources are less than significant with mitigation.			
CR-3	**Immediately halt construction if human remains are discovered and implement applicable provisions of the California Health and Safety Code.** If human remains are accidentally discovered during the Proposed Project's construction activities, the requirements of California Health and ~~Human~~ Safety Code section 7050.5 shall be followed. Potentially damaging excavation shall halt in the project site of the remains, with a minimum radius of 100 feet, and the County Coroner shall be notified. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code § 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code § 7050[c]). Pursuant to the provisions of Public Resources Code section 5097.98, the NAHC shall identify a Most Likely Descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. NEET West shall work with the MLD to ensure that the remains are removed to a protected location and treated with dignity.	1. Confirm that measure is included in project plans and specifications. 2. In the event that human remains are encountered, follow California Health and Safety Code requirements and contact the County Coroner. 3. Confirm that any discoveries of human remains are evaluated and addressed properly as outlined in the measure.	1. During preparation of plans and specifications. 2. During construction. 3. During construction.	

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Geology, Soils, and Seismicity				
GEO-1	**Implement Recommendations in the Project Geotechnical Investigation Report.** NEET West and/or its contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the Proposed Project by Kleinfelder, dated September 2015 (see Appendix H, *Geotechnical Investigation Report*). These include recommendations for a geotechnical engineer to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, and to observe and test site preparation and fill placement.	1. Ensure that geotechnical investigation report recommendations are incorporated into project design. 2. Ensure that geotechnical investigation report recommendations are followed during Project construction.	1. During the design phase. 2. During construction.	
Greenhouse Gases				
None.				
Hazards and Hazardous Materials				
HAZ-1	**Hazardous Materials and Waste Management Plan (HMWMP)** NEET West and/or its contractor(s) shall prepare and implement a HMWMP. The HMWMP may include components or requirements which are part of compliance documents for other applicable federal and state hazardous materials regulations. The HMWMP shall include the following information: ▪ A list of hazardous materials present on-site during construction and operation, to be updated as needed along with product Safety Data Sheets and	1. Ensure measure is included in the contract documents. 2. Confirm preparation and implementation of a HMWMP. 3. Confirm HMWMP includes all components/information identified in the mitigation measure.	1. During preparation of project plans and specifications. 2. Before construction. 3. Before construction.	

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	other information regarding storage, application, transportation, and disposal requirements; ▪ A Hazardous Materials Communication (i.e., HAZCOM) Plan; ▪ Assignments and responsibilities of Proposed Project Health and Safety roles; ▪ Standards for any secondary containment and countermeasures that will be required for hazardous materials; ▪ Spill response procedures based on product and quantity. The procedures shall include materials to be used, location of such materials within the Proposed Project area, and disposal protocols; and ▪ Protocols for the management, testing, reporting, and disposal of potentially contaminated soils or groundwater observed or discovered during construction. This will include termination of work within the area of suspected contamination sampling by an OSHA trained individual, and testing at a certified laboratory. A copy of the HMWMP shall be provided to the CPUC for recordkeeping prior to the start of construction. HMWMP updates shall be made and submitted as needed if construction activities change whereas the existing HMWMP does not adequately address the Proposed Project.			

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HAZ-2	**Prepare and Implement Blasting Plan** NEET West shall conduct a pre-blast survey, prepare a blasting plan, and obtain appropriate blasting and explosive permits prior to conducting any blasting activities during Project construction. NEET West shall submit a written report of the pre-blast survey and final blasting plan to CPUC and the County of San Diego and receive approval from that agency prior to any rock removal activity. The pre-blast survey and blasting plan shall meet the following conditions: ▪ The pre-blast survey shall be conducted for structures within a minimum radius of 1,000 feet from the identified blast site to be specified by NEET West. Notification that blasting will occur shall be provided to all owners of the identified structures to be surveyed prior to commencement of blasting. The pre-blast survey shall be included in the final blasting plan. ▪ The final blasting plan shall outline safe and lawful procedures for transport, handling, and storage of explosives. The blasting plan shall identify where on the site explosives will be stored and explain what safety precautions will be taken in transporting and handling explosives to prevent potential accidental explosions or release of hazardous materials into the environment. ▪ The final blasting plan shall address air-blast limits, ground vibrations, and maximum peak	1. Confirm preparation of blasting plan. 2. Confirm that all appropriate blasting and explosive permits are obtained prior to conducting blasting activities. 3. Ensure pre-blast survey and blasting plan includes all components/meets all requirements identified in this measure. 4. Confirm that blasting is conducted in accordance with requirements of the blasting plan.	1. Prior to conducting blasting activities. 2. Prior to conducting blasting activities. 3. Prior to conducting blasting activities. 4. During blasting activities.	

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	particle velocity for ground movement, including provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement. ▪ The final blasting plan shall identify fire-safe blasting procedures and measures to prevent possible ignition of wildfires during blasting activities. ▪ The blasting plan shall include measures to prevent contamination of groundwater including proper drilling, explosive handling and loading procedures; observing the entire blasting procedures; evaluating blast performance; and handling and storage of blasted rock, as follows: **1. Loading practices.** The following blasthole loading practices to minimize environmental effects shall be followed: a. Drilling logs shall be maintained by the driller and communicated directly to the blaster. The logs shall indicate depths and lengths of voids, cavities, and fault zones or other weak zones			

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	encountered as well as groundwater conditions. b. Explosive products shall be managed on-site so that they are either used in the borehole, returned to the delivery vehicle, or placed in secure containers for off-site disposal. c. Spillage around the borehole shall either be placed in the borehole or cleaned up and returned to an appropriate vehicle for handling or placement in secured containers for off-site disposal. d. Loaded explosives shall be detonated as soon as possible and shall not be left in the blastholes overnight, unless weather or other safety concerns reasonably dictate that detonation should be postponed. e. Loading equipment shall be cleaned in an area where wastewater can be properly contained and handled in a manner that prevents release of contaminants to the environment. f. Explosives shall be loaded to maintain good continuity in the column load to promote complete detonation.			

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	Industry accepted loading practices for priming, stemming, decking and column rise need to be attended to. **2. Explosive selection.** The following measures shall be followed to reduce the potential for groundwater contamination when explosives are used: a. Explosive products shall be selected that are appropriate for site conditions and safe blast execution. b. Explosive products shall be selected that have the appropriate water resistance for the site conditions present to minimize the potential for hazardous effect of the product upon groundwater. **3. Prevention of misfires.** Appropriate practices shall be developed and implemented to prevent misfires. **4. Muck pile management.** Muck piles (the blasted pieces of rock) and rock piles shall be managed in a manner to reduce the potential for contamination by implementing the following measures:			

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	a. Remove the muck pile from the blast area as soon as reasonably possible. b. Manage the interaction of blasted rock piles and stormwater to prevent contamination of water supply wells or surface water. ▪ The blasting plan shall outline the anticipated blasting procedures for the removal of rock material at the proposed SVC, riser pole and underground transmission line structures. The blasting procedures shall incorporate line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area. Prior to blasting, all applicable regulatory measures shall be met. NEET West, or its subcontractor (as appropriate) shall keep a record of each blast for at least 1 year from the date of the last blast. ▪ The blasting plan shall incorporate provisions to post signage along roads and trails within a minimum of 1000 feet of the identified blast site. Precautions such as fencing or taping will be incorporated that limit access to recreationalists and the general public.			

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HAZ-3	**Prepare and Implement a Construction Fire Protection Plan (CFPP)** NEET West and/or its contractor(s) shall prepare and implement the Project's CFPP in accordance with applicable sections of the San Diego County Consolidated Fire Code. The document will address fire prevention measures that will be employed during the construction phase, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The CFPP shall be prepared, reviewed, and approved by the San Diego County Fire Authority (SDCFA) and California Department of Forestry and Fire Protection (CAL FIRE) a minimum of 45 days prior to commencement of construction activities.	1. Ensure that measure is included in the contract documents. 2. Confirm preparation of CFPP in accordance with applicable regulations and the Project's FPP. 3. Confirm review and approval of CFPP by SDCFA and CAL FIRE. 4. Confirm requirements of CFPP are full implemented.	1. During preparation of project plans and specifications. 2. Prior to construction. 3. Minimum of 45 days prior to commencement of construction activities. 4. During construction.	
HAZ-4	**Fire Safe Working Conditions and Best Management Practices.** NEET West and/or its contractor(s) shall implement the following measures during construction and operation to reduce the potential for ignitions and minimize fire-related hazards (these measures may be included in the CFPP, as appropriate): ▪ All work vehicles will be required to carry fire suppression equipment. Workers will be trained in the use of equipment for incipient stage fire suppression. ▪ Smoking will be confined to vehicles or approved smoking areas where fire suppression equipment and appropriate disposal facilities are present. All	1. Ensure that Best Management Practices (BMPs) are included in the contract documents. 2. Confirm that all BMPs are implemented fully, including equipping vehicles and equipment with spark arrestors and ensuring fire suppression equipment is available.	1. During preparation of project plans and specifications. 2. During project construction.	

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	smoking materials will be disposed of in appropriate disposal bins. ▪ All on-road vehicle parking will be restricted to paved or graveled surfaces unless parking is required during an emergency or required for worker safety. ▪ Require spark arrestors on all off-road equipment. ▪ Restrict work activities during Red Flag Warnings issued by the National Weather Service to the extent possible. Where it is not possible to stop or restrict work activities due to safety or time sensitive activities, work activities will be limited to those needed to complete the current task and establish safe working conditions. During Red Flag Warnings a crew member will be assigned to fire watch for each separate and distinct active work area. ▪ Weather and fire danger will be monitored on a daily basis. ▪ Fire suppression equipment such as backpack water pumps or water buffaloes will be kept on-site at a minimum of 50 feet from each separate and distinct active work area.			
HAZ-5	**Follow Requirements and Recommendations Identified in the Fire Protection Plan (FPP)** NEET West and/or its contractor(s) shall follow all of the requirements and recommendations contained in the FPP prepared for the Proposed Project by Dudek, dated ~~June~~December 2016. These requirements include, but are not limited to, design and implementation of defensible space around the proposed SVC facility according to the parameters	1. Ensure that defensible space and other design parameters identified in the FPP are incorporated into the project design. 2. Confirm that training sessions with local fire station personnel and other	1. During design phase. 2. Prior to Project operation.	

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	described in the FPP; conducting training sessions with local fire station personnel and providing technical support to fire personnel regarding electrical fires and firefighting at energized facilities; appropriate design of driveways and access roads to allow for safe and efficient fire personnel and equipment access; development and implementation of appropriate protocols for de-energizing the proposed facilities; inclusion of a 10,000 gallon water storage tank accessible to firefighters at the SVC site, and arrangement of electrical equipment on the SVC site to maintain adequate setbacks from vegetated areas.	non-design FPP measures are implemented.		
Hydrology and Water Quality				
HYD/WQ-1	**Implement Construction Best Management Practices for Erosion Control** NEET West and/or its contractor(s) shall implement the following measures during Proposed Project construction, or shall implement alternative measures that are equally or more effective: ▪ Implement practices to reduce erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls. ▪ Minimize soil disturbance areas. ▪ Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm-drain inlet protection. ▪ Where feasible, limit construction to dry periods.	1. Confirm that BMPs are included in contract documents. 2. Confirm that all BMPs are implemented fully, and that erosion control measures use the best available technology that is economically achievable.	1. During preparation of plans and specifications. 2. During construction.	

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	▪ Prevent standing water from forming and remaining in depressions, excavations, trenches, or any other areas for more than 96 hours. ▪ Revegetate disturbed areas. The performance standard for these erosion control measures is to use the best available technology that is economically achievable. These measures may be included in SWPPP requirements, as appropriate.			
HYD/WQ-2	**Avoidance and Minimization of Impacts to Existing Culverts and Stormwater Conveyance Features** The Proposed Project will be designed to avoid existing stormwater conveyance structures to the extent feasible. Specific avoidance strategies include: ▪ Siting splice vault structures and the riser pole structure within or immediately adjacent to Bell Bluff Truck Trail or in uplands outside of existing drainage features and the storm water conveyance system along Bell Bluff Truck Trail. ▪ Where feasible based on geotechnical investigation, avoiding culverts within Bell Bluff Truck Trail during construction of the underground transmission line by bracing or stabilizing culvert structures and excavating beneath the culvert structures to maintain culvert function. Where it is infeasible to avoid impacts to existing culverts or other stormwater conveyance structures, 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. Prior to removing or impacting any	1. Incorporate avoidance and minimization of impacts to existing culverts into Project design. 2. If avoidance of existing culverts/stormwater conveyance structures is infeasible, ensure work does not occur within 48 hours of forecasted rain event of 0.5 inches or greater. 3. If existing culverts/stormwater conveyance structures must be impacted, ensure all necessary permits are obtained. 4. If existing culverts/stormwater conveyance structures	1. During design phase. 2. During construction. 3. Prior to conducting work that would affect culverts/stormwater conveyance structures. 4. Following construction.	

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	existing culverts during construction, NEET West shall obtain all necessary regulatory approvals/permits from the appropriate agency (e.g., U.S. Army Corps of Engineers, CDFW, or Regional Water Quality Control Board) with jurisdiction over the features. Following construction, NEET West shall reinstall any temporarily removed culverts or other stormwater conveyance structures and restore work areas to preconstruction conditions.	have been temporarily removed or impacted, reinstall and/or restore such features following construction.		
Land Use and Planning				
None.				
Mineral Resources				
None.				
Noise and Vibration				
NOI-1	**Construction-Noise Mitigation Plan** NEET West and/or its contractors shall develop and implement a construction-noise mitigation plan in close coordination with adjacent noise-sensitive land uses so that construction activities can be scheduled to minimize noise disturbance. The plan must be approved by the CPUC prior to the initiation of construction activities. The construction-noise mitigation plan shall consider the following available controls to reduce construction-noise levels to as low as practicable. ▪ Equip all internal combustion-driven equipment with mufflers that are in good condition and appropriate for the equipment.	1. Confirm development of a construction-noise mitigation plan that meets requirements of this measure. 2. Confirm equipment and vehicles are equipped with proper noise-reducing features, and are in good operating condition. 3. Confirm proper notification of residents and sensitive	1. Prior to construction. 2. Prior to construction. 3. Prior to construction. 4. Prior to construction. 5. During construction.	

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	▪ Construct temporary sound barriers using plywood or similar material bearing the same sound attenuating effectiveness as plywood between portions of the construction sites and sensitive receptors. These temporary sound barriers, which could also consist of construction grade sound blankets/curtains, should be at least 12 feet in height. Sound barriers shall be used during activities involving use of a rock drill, scraper, and/or blasting. Alternatively, if a rock drill was not required for the project, construction equipment with a reference noise level of 89 dB or less could be used and would not require construction of temporary sound barriers. ▪ Residences or noise-sensitive land uses within 500 feet of the construction site should be notified in writing of construction at least seven (7) days prior to the onset of construction activities. A "construction liaison" contact person should be designated in the notifications; he/she would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. The phone number of the liaison should be conspicuously posted at the construction site.	receptors within 500 feet of project site. 4. Ensure that construction liaison is identified to receive noise complaints. 5. Confirm that temporary sound barriers are used to shield sensitive receptors from construction noise, particularly during use of rock drill, scraper, and/or blasting.		
Population and Housing				
None.				

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Public Services and Utilities				
PUB/UTL-1	**Fund Fair Share toward Any Necessary Fire Protection Service Improvements.** NEET West shall coordinate with the County of San Diego, CAL FIRE, and U.S Forest Service (USFS) to determine if any additional apparatus, equipment, personnel, or facilities are necessary to provide adequate fire service to the Proposed Project. If recommended improvements or upgrades to facilities, and/or additional apparatus, equipment, or personnel are identified, NEET West shall contribute its fair share toward the attributed costs. The Proposed Project's, or NEET West's, fair share will be proportionate to its contribution to the need for improvements.	1. Confirm coordination with County of San Diego, CAL FIRE, and USFS. 2. If these agencies recommend improvements or upgrades, contribute the Proposed Project's fair share toward the needed improvements.	1. Prior to construction and operation of the Proposed Project. 2. Prior to construction and operation of the Proposed Project.	
PUB/UTL-2	**Diversion of Solid Waste in Accordance with San Diego County's Construction and Demolition Debris Recycling Ordinance** NEET West and/or its contractors shall follow the requirements specified in the County of San Diego's Construction and Demolition Debris Recycling Ordinance. This will include recycling of 90 percent of inerts and 70 percent of all other construction demolition debris materials, and preparation of a Construction and Demolition Debris Management Plan (DMP). In accordance with Section 68.511 of the San Diego County Code, the DMP shall provide the following information: 1. The type of project;	1. Ensure measure is included in contract documents. 2. Confirm preparation of a DMP in accordance with applicable sections of the San Diego County Code. 3. Ensure that construction debris is diverted from the landfill in accordance with this measure.	1. During preparation of plans and specifications. 2. Prior to construction. 3. During/following construction.	

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	2. The total square footage of the project; 3. The estimated volume or weight of project construction and demolition debris, by material type that the project will generate; 4. The maximum volume or weight of construction and demolition debris that can feasibly be diverted via reuse or recycling; 5. The estimated volume or weight of construction demolition debris that will be disposed of in a landfill; and 6. The name and address of any person and/or recycling facility the applicant proposes to use to collect, process or receive construction and/or demolition debris the project will generate.			
Recreation				
None.				
Transportation and Traffic				
TR-1	**Maintain Traffic Flow** NEET West or their contractor(s) shall implement the following measures: ▪ To the extent feasible, work shall be staged and conducted in a manner that maintains two-way traffic flow on roadways in the vicinity of the work site. ▪ Heavy equipment and haul traffic shall be prohibited in residential areas to the greatest extent feasible.	1. Confirm measure is included in contract documents. 2. Confirm that work is staged and conducted in a manner that maintains two-way traffic flow, to the extent feasible.	1. During preparation of plans and specifications. 2. During construction. 3. During construction.	

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	When no other route to and from the site is available, heavy equipment and haul traffic through residential areas shall be restricted to the hours of ~~8 a.m. to 5:30~~ 7 am-7 p.m., Monday through Friday. ▪ If heavy equipment or hauling is required beyond the hours above, NEET West or their contractor would provide notice to adjacent property owners 48 hours in advance of such activities.	3. Confirm that heavy equipment movement and haul traffic conforms to requirements of this measure.		
TR-2	**Minimize Effects of Temporary Roadway Disturbances.** NEET West or their contractor(s) shall implement the following measures: ▪ Prepare and implement a Traffic Control Plan (TCP) to describe procedures to guide traffic (such as signage and flaggers), safeguard construction workers, provide safe passage of traffic, and minimize traffic impacts, as necessary, through the duration of construction. In the event that closure of any portion of the private Bell Bluff Truck Trail were to become necessary, notification shall be provided to SDG&E at least 5 days in advance of anticipated closures. ~~In the event that road closure were to become necessary for any publicly-accessible road segment, notification shall be posted and/or circulated to the public at least 5 days in advance of anticipated closures. NEET West shall employ adequate control devices, signage, a detour route, and flaggers, as necessary, through the duration of construction.~~	1. Confirm measure is included in contract documents. 2. Confirm preparation of a TCP that complies with requirements of this measure. 3. If closure of any portion of Bell Bluff Truck Trail or a publicly-accessible road segment becomes necessary, confirm proper notification. 4. Ensure implementation of adequate traffic control devices, signage, etc.	1. During preparation of plans and specifications. 2. Prior to construction. 3. At least 5 days in advance of anticipated closures. 4. During construction.	

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TR-3	**Emergency Coordination and Access Considerations** NEET West or their contractor(s) shall implement the following measures: ▪ When work is conducted on ~~roads~~ the private portion of Bell Bluff Truck Trail and may have the potential to affect traffic flow, work shall be coordinated with local emergency service providers, as necessary, to ensure that emergency vehicle access and response is not impeded. ▪ ~~Access for driveways and private roads shall be maintained to the extent feasible. If brief periods of construction work would temporarily block access, property owners shall be notified prior to construction activities.~~ ▪ If closure of any portion of the private Bell Bluff Truck Trail is necessary during Project construction, NEET West shall have staff available on-site at all times to place plates over open trenches, move construction equipment, or clear any other obstructions to allow for 24-hour emergency vehicle access to SDG&E facilities.	1. Ensure measure is incorporated into contract documents. 2. If necessary, ensure proper coordination with emergency service providers to ensure access and response is not impeded. 3. Confirm emergency access for driveways and private roads is maintained to the extent feasible. 4. Confirm that staff is available on-site at all times to place plates over open trenches, take other appropriate access to allow for 24-hour emergency vehicle access to SDG&E facilities.	1. During preparation of plans and specifications. 2. Prior to conducting work on roads that could affect traffic flow. 3. During construction. 4. During construction.	